AGRICULTURE AND THE WORLD TRADE ORGANISATION

INDIAN AND FRENCH PERSPECTIVES

Edited by
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Éditions de la Maison des sciences de l'homme, Paris
The present volume offers to the reader a multi-faceted dialogue between noted experts from two major agricultural countries, both founding members of the World Trade Organisation, each one with different stakes in the great globalisation game: France, the world’s second-ranking exporter of agricultural products and headquarters of a number of very active agro-business companies; and India, crossing the one billion population mark while emerging from its traditional protectionism, and legitimately concerned about preserving the interests of its huge farming community and not falling victim to the profit logic of the multinational corporations.

After providing the recent historical background of agricultural policies in India and France, the contributors address burning issues related to market and regulation, food security and food safety, the expected benefits from the WTO and the genuine problems raised by the new forms of international trade in agriculture, including the sensitive question of intellectual property rights in bio-technologies.

Whatever the differences between the two countries, and eventually their conflict of interests, this informed volume underlines the necessity of moving beyond the North-South divide, in order to address the real challenges of the future; a fair global order in a sector vital for the world, the multi-functionality of agriculture, the access for all to secure and safe food, the preservation of common goods and the ethical dimension of science and technology.
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Note on the Contributors and Editors
Foreword

1 The present volume offers the proceedings of the seminar on “Agriculture and the World Trade Organisation. Indian and French Perspectives”, held in Paris in April 1999 at the Maison des Sciences de l’Homme (MSH), in the framework of the Indo-French Programme of Co-operation in Social Sciences. The event was organised under the aegis of the MSH and the Indian Council of Social Science Research (ICSSR), with the support of the Society, Economics and Decision Department of the Institut National de la Recherche Agronomique, the French National Research Institute on Agronomy (INRA).

2 Institutional cooperation works well when the people in charge do their best for supporting, implementing and developing it. The convenors of the seminar and editors of this volume would like to place on record, at the very beginning, their deep appreciation to those who made this dialogue possible: in New Delhi, Professor R. Radhakrishnan, then Member-Secretary of ICSSR, Dr Mrs R Burman Chandra and to Dr K.N. Jehangir, who, in position of responsibility have always encouraged the Indo-French cooperation; in Paris, Professor Maurice Aymard, Administrator of MSH and Mrs R. de Montfalcon, the section officer so kindly remembered by all the Indian guests of the Maison. Thanks are due also to Professor Emmanuel Jolivet who readily extended the support of the INRA-SED Department.

3 Since the mid-nineties, bilateral seminars organised by the Indo-French Programme of Co-operation in Social Sciences have paid attention to the reforms engineered by the liberalisation process in the two countries, which, despite their differences, share a significant experience of mixed economy deeply regulated by the state. Let us mention here the seminar on Globalisation, organised in Hyderabad in 1997 (Rama Melkote, ed: Meanings of Globalisation: Indian and French Perspectives, Sterling Publishers, New Delhi, 2001); the seminar on the Reform of Public Administration, organised at the Institute of Public Administration New Delhi in 2001 in collaboration with the Centre de Sciences Humaines, New Delhi, and the seminar on Liberalisation, organised at the Institute of Public Enterprise, Hyderabad, in 2001 as well.

4 The present seminar on Agriculture and the WTO was convened by G.S. Bhalla (Jawaharlal Nehru University, New Delhi), Jean-Luc Racine (Centre National de la Recherche Scientifique and Maison des Sciences de l’Homme, Paris) and Frédéric Landy (Paris X-University).
The seminar organisers invited some of the foremost Indian and French experts to sit down around a table for three days of presentations and discussions. On the Indian side were three former chairmen of the Agricultural Prices Commission: G.S. Bhalla, professor emeritus at Jawaharlal Nehru University and co-organiser of the seminar; S.S. Acharya, now Director of the Institute of Development Studies, Jaipur; and the then Commission chairman Abhijit Sen, also a professor at Jawaharlal Nehru University. Three leading economic research institutes were represented by such figures as Bhupat Desai, professor at the Indian Institute of Management, Ahmedabad; Ashok Gulati, professor at the Institute of Economic Growth, Delhi; and Bibek Debroy, Director of the Rajiv Gandhi Institute for Contemporary Studies, a division of the Rajiv Gandhi Foundation. Rural economists from the University of Ajmer (Rajasthan), M.L. Chippa, and the University of Dharwad (Karnataka), Pushpa Savadatti, also took part.

On the French side, participants included some of the foremost experts on French and European agriculture and on the implications of the World Trade Organisation, many of whom have been connected in one way or other with focus groups held for or by policymakers: Jean-Marc Boussard and Jean-Christophe Bureau of the Institut National de la Recherche Agronomique, Philippe Chalmin, from the Université Paris-Dauphine, Jean-Pierre Doussin from the Université de Nantes, Jean-Paul Charvet from the Université Paris-Nanterre, Jacques Loyat from the Centre for European Studies in Strasbourg, Hélène Ilbert, affiliated with SOLAGRAL, the principal French NGO in this area, Christophe Blanc from the Evaluation Directorate of the French Agriculture Ministry. Michel Griffon, head of the Research Unit on Agricultural Prospectives and Policy, (CIRAD/Centre for International Co-operation in Agronomical Research for Development), chaired one of the sessions.

The present volume includes most of the papers discussed during the seminar. In addition, two general updates have been contributed in 2001, offering an Indian perspective and a French analysis of the recent developments, taking particularly into account the failure of the Seattle WTO conference, and the issues debated upon recently in both countries.

Things seem sometimes to move fast, but in fact they are often developments of longer trends whose fundamentals have been analysed before. The sudden popular surge for food safety in France, which made prime news in 2000-2001, offers a significant example of a development whose basic parameters have been presented during the seminar, months before it became a matter of large public debate. We hope that the contributions gathered here will make useful reading for all those interested in the impact of globalisation on the vital sector of agriculture, and with the ongoing debates about the way the WTO redefines the relationship between countries from the North and from the South.

G.S.B & J.L.R
Introduction

Of Food, Farmers, Trade and States. An Indo-French Dialogue on Agriculture and the WTO

Jean-Luc Racine

1 Plagiarising Kipling, sceptics might believe that in the field of socioeconomic studies, North is North and South is South, and that both can never meet. This is today less true than ever. The competitive trade in goods and the dissemination of research, which contribute to defining the globalisation process in one hand, and the international quest for regulating the market by defining rules acceptable by most of the States on the other, bring the rich, the emerging and the poor countries to the same table, although not necessarily with the same bargaining power. However, as this book will show, the room for discussion is not confined to the high sphere of international negotiations and multinational corporations. When we talk about farmers and food, whatever be the differences between hemispheres, continents and countries, some fundamental questions arise, which relate not only to the quality of life, but also to the role attributed to a conquered and transformed nature by societies which are mostly governed by urban decision-makers.

2 We offer here to the reader a multi-faceted dialogue between members of the scientific communities of two major agricultural powers, both founding members of the WTO, each with different stakes in the great globalisation game: France, the world’s second-ranking exporter of agricultural products and headquarters of a number of very active agro-business firms (including in India), and India, emerging since 1991 from its traditional protectionism but legitimately concerned, upon joining GATT, to preserve the interests of its huge farming community and not to fall victim to the profit logic of the multinational corporations, flush with technological capital and determined to exploit the new laws on patent and license fees. In his inaugural speech, the Indian ambassador to France, Mr. Kanwal Sibal, did not fail to stress all that was at stake for his country:

3 “For India, agriculture is not simply a trade issue... Taking into account numerous internal constraints like subsistence level farming, small land holdings which restrict attempts at introduction of mechanisation, low productivity, rapidly growing rural
population, agricultural growth needs to be supported by government efforts. Such support which is aimed towards ensuring adequate food supply and livelihood cannot, in any context, be construed as being trade distortive.”

4 The date of the seminar whose proceedings are offered below made it all the more salient: the preceding month, following a long drawn-out debate begun in 1995, both houses of the Indian Parliament passed a bill on patent reform, which had become indispensable in the framework of India’s WTO commitments. One of the basic issues was precisely the application of intellectual property rights to living organisms, in particular to seeds and geographical indications for reputed agricultural products like Basmati rice. Same focus on the European scene, since difficult negotiations for the reform of the Common Agricultural Policy (CAP) had been under way since March 1999, first in Brussels, then at the European Conference in Berlin, against a background of violent demonstrations by French farmers.

5 Could French agriculture, marked by a minority of its workforce employed on the land (5% for 2.5% of the GDP) and consumers increasingly worried about food quality, be compared with Indian agriculture, with its 65% of the active population in farming (for 30% of the GDP) and a government still concerned primarily about food security rather than food safety? The answer was a clear “yes”. Christophe Blanc began by recalling the goals of post-war French governments in a country plagued by food shortages: reduce France’s dependence on food imports, improve farmers’living standard; modernise agriculture. How? Subsidies for fertilisers and farm machinery, low-interest loans, minimum support prices for staple crops. As for the Common Agricultural Policy, the “cornerstone of European integration” set out in the 1957 Treaty of Rome, what were its original aims? Guarantee food security, increase productivity, stabilise the markets, ensure farmers a decent living, make food available at reasonable prices. One cannot fail to see the similarity with the goals adopted over the years by successive Indian governments.

6 More generally, and in spite of fundamental differences between the two societies, the two economies and the two agriculture systems, the ongoing globalisation process raises common problems having to do with more than competition. One bears on the forms of both internal and international markets, and on the desirable level of government regulation. Another problem is the impact of liberalisation and the WTO on rural societies and national markets. The debate opposes not only developed major exporters and developing countries, for the European Community, as well as India, has taken the United States before the WTO. The third area of concern is the problem of the impact of biotechnologies and the marketing of their products.

7 We will first attempt to synthesise a few of the shared preoccupations before going on to present two national perspectives. The first concern, which will deal with the Indian debate, together with the planned reforms to agriculture, trade and food strategy, touches on an area of liberalisation that is particularly sensitive, as it is in all strongly rural countries of the South. The second perspective deals with the nature of the recent changes in French agriculture, which suggests a novel model for relations between production, preservation of the countryside and quality. We will then report on the aspirations voiced in support of a world order in which the necessary market rationales might not exclude the ethical concern for the various forms of food security. Last of all, attention will be paid to the post-seminar most significant developments.
Forms of market, prices, subsidies, competition, equity

8 Is there such a thing as liberalisation when it comes to agriculture? Beyond the public positions of principle, even the advocates of the most unadulterated liberalisation acknowledge the need for some market regulation, or at least, as Philippe Chalmin has clarified in his oral presentation, of a public-policy based interventionism that would bolster the strong points and temper the weak points of national economies. The problem, as Jean-Marc Boussard stresses, is not so much the principle of trade as the way the markets work. There turns out to be no such thing as a perfect market. Therefore not only is it socially legitimate to leave room for intervention, it is economically justified when the goal is price stability and security.

9 The question of prices and subsidies is inseparable from the issue of poverty, especially in India, which in turn raises the problem of equity. Is it not the case that too many government subsidies, in France as in India, go into the pockets of those who do not really need them? Nevertheless, India is wary of IMF calls for significant reduction of India’s agricultural subsidies, arguing that this direct or indirect support is in fact moderate, and noting as well that, conversely, those countries with the greatest power in the IMF provide very substantial funding to their own agricultural producers. In the broader framework of international economic relations, what kind of equity is expected of the most advantaged countries? Is “Fortress Europe”, denounced by some Indian participants, a reality in the agricultural debate, among others? In any event, the “Banana War”, or Australian or American protectionism in the area of agricultural imports testifies to the existence of numerous barriers and disputes between developed Western countries themselves. Suspicion of the major agricultural powers is not restricted to India. The European Union, too, stresses the amount of aid that Washington pours into American agriculture (49 billions US dollars in 2000), while the US sees European reticence towards hormone-treated or genetically modified products as purely a manoeuvre to use sanitary and phytosanitary criteria as non-tariff barriers to free trade.

10 Large-scale negotiations thus have as much to do with power relations as with compromise. In this context, many Indian leaders tend to see Western pleas for greater freedom of trade as a fairly hypocritical weapon used by developed countries, who find ways of getting around their principles when it suits them. This is tantamount to saying that the type of liberalisation advocated by the WTO in its global agreements is not yet effective enough to enable the comparative advantages of the developing countries to emerge. We will see below that a number of Indian participants called for more liberalisation, seen as weakening the dominant powers.

Liberalisation and globalisation: an opportunity or the modern form of an unequal world?

11 Despite their respective experience, the experts present were not speaking on behalf of either their own governments or of any national consensus: analyses diverged within the national delegations, and this divergence was no doubt most clear-cut among the Indian participants. In India as in France, but in different ways, globalisation is seen at times as an opportunity to be seized, at times as an inevitable mutation to which one must adapt
or which must be humanised to the best of one’s abilities, and at times as a trend to be resisted however powerful it may be. Social concerns were no doubt more apparent on the Indian side for obvious reasons. This is in India a two-pronged issue, bearing at once on the fate of small landholders eking out a living (and all the more on that of landless agricultural labourers) and on consumers’ buying power, in particular that of the urban or rural poor, who spend a sizeable portion of their budget on food. Economists and political leaders both are caught in the pincers of price fluctuations. The hypothesis that prices rise when the economy is liberalised has proved true for the basic commodities, affecting the already weak buying power of the most disadvantaged. The opposite hypothesis of a drop in prices in the event of importing commodities for which India is not competitive would affect incomes and perhaps even compromise the economic survival of small producers or export non-competitive sectors. The debate cannot content itself with dogmas or generalisations. The effects of liberalising trade must be studied with respect to the various types of production concerned, the reform calendars and the complex regulations that allow some leeway while setting out, at least for transitional periods, different obligations for different types of national economy.

On the French side, modernisation of agriculture has long since decimated the workforce. What remains is the farmers’ anxiety, not all of a piece and which cannot be reduced simply to the most powerful lobbies. The fact that French agriculture is a strong export sector in no way lessens the social tensions or the status of a farmer dependent on subsidies and no longer on his own production for the survival of his farm. It is clear that the Common Agricultural Policy makes French agriculture very different, in substance, from Indian agriculture, because it defines in completely different terms the problem of the country’s room to elaborate government choices. The mediating role of the European Union between France and the global agricultural markets does not have an Indian counterpart, since relations between central government and the 28 State governments do not operate in a comparable framework. Therefore France needs, in the words of Jacques Loyat, to keep her “French identity within the framework of a supranational policy”, a European one in this case, which itself is part of the overall framework of globalisation.

The issue of opening up to global markets is particularly acute in India. While agriculture is only one of the areas affected by the liberalisation policy cautiously conducted by the government since 1991, it is a particularly sensitive one as much for social and economic reasons as for reasons of political balance. Food security, which has been achieved at the national level, despite the malnutrition still afflicting a portion of the population, is seen as an indispensable condition for national security and independence. For some of the Indian participants, the current liberalisation drive will put an end to the rigid policy of government intervention, which, despite its positive aspects, has been unable to solve the problem of poverty or that of full efficiency. The conclusion is that the public distribution system of foodgrains at subsidised prices must be revamped in order to fulfil its social goals. For those most sceptical about these reforms, the decisive question is different: when the WTO was set up, it was understood that India, together with other developing countries, would stand to gain, especially in the area of agriculture. The balance sheet seems very disappointing however. The benefits are highly uncertain (even if India now exports rice), since the regions or countries afraid of competition from emerging countries — starting with the European Union - have devised a variety of protective
measures. In this matter, as in industrial competition, India “is not asking for preferential treatment, but for a level playing field.”

14 In such a vital and passion-ridden area as the future of agriculture and food security, the readings of the world order should inevitably alternate between economic analyses (of course the experts differ among themselves) and ideological interpretations put forth by political and media sources, including in India which has an active, high-quality, pluralist press. It might be useful, in this regard, to look beyond the widespread North/South or Developed Countries/Developing Countries dichotomies and focus on the oppositions within each camp (for example the divergences between the US and the EU) and the tensions within each country stemming from conflicts of interest between various sectors of the farming community, between different production sectors or between various actors and investors in the agriculture and food chain.

15 As always, we need to look beyond the large categories. To see the French government defend its “national interests” in inter-European negotiations or to hear French participants stress that Europe could need India in its negotiations with the American-led Miami Club casts a more subtle light on the traditional divisions. At issue here is the room for national sovereignty in regional groupings as well as the construction of a truly multipolar world order. And what is true for customs tariffs or non-tariff barriers is just as true for the new scientific-commercial field associated with the biotechnology boom.

Intellectual property rights and bio-technology. Is research caught between profit and ethics? The status of science

16 The question of intellectual property rights and bio-technologies opened up a debate that went well beyond national boundaries. Two types of problems came under discussion. The first, the question of biotechnologies in the strict sense of the term, concerns the purported effects of genetically modified organisms, GMO’s. In both France and India a debate is raging over this still controversial point. The question of the application of intellectual property rights to biotechnologies is a broader issue, which was informatively discussed by Hélène Ilbert. India is one of the countries spearheading the global debate over the legitimacy of patenting living organisms and the profit logic driving the biotechnology multinationals. These multinational corporations such as Monsanto (which is active in India), are sometimes seen as trampling on farmers’basic rights - as in the plan to diffuse so-called “Terminator” seeds, which cannot be saved and reused - and sometimes legitimised due to the lack of public funding for research. But accepting the positive contribution of GMO’s, their promise of a less-polluting agriculture with guaranteed yields does not settle the question for India, since, for certain observers, among whom Pushpa Savadatti, this positive assessment carries a negative corollary: the future of agriculture would then lie in the hands of the multinational corporations controlling biotechnology research.

17 Beyond the concerns of activists and governments, and the full-page advertisements taken out by the multinationals, familiarity with the texts is necessary, especially when it comes to distinguishing between the concepts of product and process. But it is also important to note the still-unresolved contradictions between the Agreement on Trade Related Intellectual Property Rights (TRIPS), put forward by the WTO, and other
international agreements such as the 1992 agreement on bio-diversity, FAO farmers' rights and the recognition of traditional types of knowledge. Not every country is capable of building its strategy on biotechnology. Although India has undertaken research in this area, it is still wary of the imperialism of the multinational biotechnology firms and only ratified WTO legislation on intellectual property rights after a prolonged public and parliamentary debate. Yet because of its bio-diversity and the quality of its scientists, India may become a serious competitor in the international arena.

18 Three questions remain unresolved:

- How can a strategy of commercialised research be reconciled with the interests of a peasantry concerned about the cost of the new technologies?
- How can the domination of a few multinational corporations be reconciled with the national need for food security and the global concern for “bio-security”? The failure of the Cartagena meeting, which, due to American pressure, was unable to agree on the regulation of trade in genetically modified products, shows just how much remains to be done.
- What future does publicly funded research have in an area where 90% of the world’s patents are held by the private sector? The February 1999 creation of the French research firm Génoplante attests the desire to associate publicly funded research and specialised private laboratories. This choice has been depicted either as the only way for France to stay in the race to sequence foodgrains genes or as the capitulation of public powers to private appropriation of genetic resources.

19 Thus arises the question of the status of science, a topic that was discussed less from the standpoint of the relation between public-sector and private-sector research than from the perspective of the relativity of scientific criteria and the implications this has in the framework of the WTO. The papers read by J.C. Bureau and J.P. Doussin were highly significant from this point of view. The US-EU conflict over hormone-treated beef is a perfect illustration of different conceptions of the validity of sanitary criteria. These divergent views have a number of consequences - and widen the gap - for risk assessment and even more for risk management: the “principle of precaution” invoked by Europe, vacillates between high-handed prudence (i.e. reject a product if you are not reasonably sure about its safety) and suspicions of protectionist manoeuvres. The two French contributions go further still: even though the risks associated with a product or a technique (irradiated food, for example) are zero, or more probably near-zero, cultural tastes or differences cannot be discounted. Like ethical concerns (over animal welfare, for example) consumer preferences have an economic impact. Although public opinion may be more ideological than scientific, it cannot be ignored: sceptical views of globalisation or official science are not without their effect on public or private policy-makers.

20 There where the life sciences cross paths with the social sciences, what correlations can be established between science, economics, culture, civil society and state policies? This question is not restricted to the most industrialised countries. It is also of concern in India, where there are a great number of activist organisations: from farmer pressure groups to ecological associations, from movements for the defence of disadvantaged groups to debates on bio-technologies, from scientific symposiums to the prospective departments of the major political parties... From the responsibilities incumbent on experts to the citizens'reight to know, we are in a field that is bound to develop as much through discussions on the commercial use of research on living organisms as on the economic and security implications of new forms of agriculture in an era of globalisation.
Indian positions: differences and consensus

21 Having outlined some of the main lines of the French-Indian dialogue, we would now like to bring out some of the issues debated within the Indian delegation itself. One detects in the Indian contributions a number of essential and enlightening lines of reflection which define, so to speak, the leeway for choice in a country that is home to one sixth of humanity, and which sees food security as one of the basic instruments of national independence.

22 First of all, India’s liberalisation policy is regarded, even by its critics, as an established fact. Pushpa Savadatti views the founding of the WTO as “a definitive victory for the industrialised countries”. She considers the agreement on intellectual property rights as a loss for citizens and civil society to the benefit of monopoly-holding multinational corporations. She however admits that this would still not be enough to decide India to leave the WTO. G.S. Bhalla, whose distinguished career path would tend to place him among the opponents of liberalism, admits that globalisation may hold opportunities for India’s farmers, provided two major conditions are met. Firstly, food security and foodgrains self-sufficiency must be top priority (with which M.L. Chhipa agrees). Secondly, the interests of small and marginal farmers must be protected, since those working less than two hectares account for 78% of India’s farming community. This being said, “India should partake of the benefits of trade liberalization”. It can do this only by acting on two sets of parameters.

23 The first calls for stepped-up public and private investment in agriculture with a view to attaining greater productivity, lower prices and availability of exportable surpluses once food security has been achieved.

24 The second identifies productions which are to be high value-added and labour-intensive items: milk and dairy products, horticultural crops, flowers and fisheries. It is up to India to use the negotiation leeway provided in the framework of the WTO (and the effects of the rupee’s devaluation) on two fronts: i) with respect to the developing countries “dragging their feet” over their own subsidy reductions, ii) in the framework of the GATT provisions for protecting small farmers, to see that the necessary protective measures are adopted.

25 While G.S. Bhalla is faithful to decades of planned economy – stressing in particular the need to keep land ceilings – his acceptance of foodgrains trade reform is testimony to the evolutions taking place in India: both the restrictions on foodgrains movement between districts, regions and states of India, and the obligation to sell part of the foodgrains production to the Food Corporation of India for stockholding and public distribution must be lifted.

26 At the other end of the ideological scale, what do the liberals have to say? Like Bibek Debroy, they reject the populist “myths” that paint a dark picture of the implications of the WTO. No, farmers subsidies will not be ended. No, the public distribution system (PDS) will not disappear. No, India will not be forced to import massive quantities of foreign agricultural products. No, all seeds will not have to be bought from multinational corporations. Confronted with myths, attention must be focused on the real implications of the WTO, which are far more shaded... and more technical. Like Ashok Gulati, Bibek Debroy stresses the fact that the support India actually gives its peasants is below the
WTO benchmark, and that India therefore has nothing to fear on this point. Why has India not clearly profited from world trade liberalisation when it could be altogether competitive in rice, certain fruits and certain canned vegetables? For Debroy it is not enough to blame non-trade barriers erected by rich countries: the first thing to do is reform the Indian economy by doing away with a number of policies, such as export quotas and minimum export prices, certain protective measures and monopolies for the small-scale sector which stifle growth of the food-processing sector, or land ceilings that do not permit economies of scale. It is also necessary to modernise the infrastructure by providing food-processing industries with the necessary equipment. All of which means encouraging both private and public investment, and giving agriculture the same support enjoyed by industry so as to promote, with the help of major companies, “the industrialisation of agriculture”. Without such reforms, “the Uruguay Round agreement on agriculture will merely represent an elusive potential that India is not in a position to tap.”

Ashok Gulati, who stresses India’s lag in recognising the considerable export potential of some of its agricultural products, presents a detailed analysis of WTO implications for Indian agriculture and then goes on to define an Indian strategy for international negotiations: since India’s agricultural sector receives far fewer subsidies than is commonly believed, India should not ask the WTO for special protective measures to ensure food security. It would be better off playing other cards, and playing them “aggressively”. India must take a stand against the level of export subsidies the United States and the European Union pay their farmers. It must press for reduction of government subsidies to agriculture. It must take a stand against the monopoly powers of state trading enterprises in such countries as Canada, China, Japan, Russia… and even India. But India will no doubt be hindered more by its own export capacity than by the various forms of the world market. It must therefore actively promote reform of the system of subsidies in many developing countries. “India need not be ‘defensive’ in opening up her own agriculture. If at all, it needs to be somewhat ‘aggressive’ in negotiating faster liberalisation.”

Standing somewhere between the liberal school and those who stress the achievements of planned economies, Bhupat Desai argues for a consensus based on better information, and on combination of the roles of the state and the market. Among the positive measures that have been adopted, some are “rightly conceived” and others “misconceived” or “ill conceived”. For instance, too much emphasis on setting prices right as a basis of agricultural policy is a mistake, for price always has an ambiguous impact. Other factors are more important (positively and negatively) for growth: irrigation, technology, landholding size, yields, expenditures on rural development, institutional rigidities, quality of infrastructure for transportation and commercialisation (not to mention climate!). The GATT price and trade reforms correspond to a logic of more efficient markets and services, but they do not in themselves fulfil the first goal, which should be increased agricultural production. This requires a “new green revolution”, and therefore more state expenditure on technology, research and equipment. All the better if the WTO can fit such state support into the “Green Box” of exempted measures. This stand converges to a certain extent with the position of S.S. Acharya, who also argues that India must step up foodgrains production, improve technologies, develop spending on agriculture – and on the regions lagging behind: one way of saying that a stronger Indian agricultural sector depends primarily on national
parameters, even though there is the danger that India’s entry into the world food market may have a negative impact on its own terms of trade.

29 The two experts diverge, however, on the strategy to adopt. Acharya advocates striking a balance between minimum support price for food grains and a cautious reduction of subsidies to those entering the market. Desai, on the other hand, argues that effective support for agriculture means subsidies for entrants rather than price control. Intellectual property rights, the famous TRIPS, for their part, can clearly stimulate innovation, but there is the danger that they may raise the cost of the new patented technologies. The price of these patents or licenses should therefore be added into the supports exempted under the “Green Box”.

30 Over and beyond differences of approach, what is the margin of consensus that might be the smallest common denominator of the agricultural policy recommended by the various schools of thought? Here are a few essential points:

• Trade liberalisation has not had the positive impact announced at the signing of the GATT on developing countries in general and on India in particular.

• And yet benefits can be expected for certain sectors, depending on the type of agricultural product, provided two kinds of reform are carried out:
  First, reform of the practices of developed countries, especially the United States and the European Union, which preach liberalism but in fact protect their own agriculture much more strongly than the developing countries, including India. In this respect, India is not asking for less liberalism, but on the contrary, for faster reform in rich countries. Second, reforms to be carried out in India in view of further liberalisation of the agricultural economy. The consensus here includes, at the minimum, reforming the Public Distribution System (PDS) and redirecting it at the most disadvantaged, as well as dropping a certain number of regulatory measures such as those on the foodgrains market.

• Another, perhaps more shaded, consensus, recognizes the need for state spending, which must continue together with parallel private investment, and the need for development of the technology and infrastructure indispensable for both increased production and more powerful market tools, in particular for food processing and export.

31 Beyond this point, consensus is scant, for although no one believes that the market gods are omniscient and can be left entirely to their own devices, opinions differ on the leeway to be left to international forces. G.S. Bhalla, for instance, stresses the absolute necessity for foodgrains self-sufficiency as the basis for food security, while Bibek Debroy feels that this security could be safely achieved by the internationalisation of food movement. The spread of opinions is wide.

32 No doubt there is still the decisive area of the negotiations to come. This supposes that the Indian government, speaking with a single voice having assessed the technical parameters of India’s agriculture and the WTO regulations, finds a way to tread the narrow path between its own GATT commitments, the social duties a parliamentary democracy owes its largely poor peasant population and the announced implementation of a firm but cautious policy of economic reform. The Indian negotiators can be expected to be hard-headed. So can their partners. The question is whether everyone will be playing the game of the new world order on a level field.
The new French agriculture

One hundred million farms in India (60% of which have an area of less than 1 ha), 730,000 farms in France. A race to produce more in India. European regulations and even quotas to limit production in France. And we could go on citing differences. Let us simply point out what, for the Indian participants, seemed to characterise France, as opposed to the traditional picture of an agricultural sector striving to satisfy the basic needs of a nation, and perhaps produce a surplus for export in some areas. Two points stand out, both of which are linked to the productivity of French agriculture based on a numerically very limited farming community. The first concerns the definition of product quality and the second has to do with the “territoriality”, in other words the physical moorings, of farming activities and of the farmer’s new role in maintaining the countryside.

In France as in the rest of the European Union, quantity, as a problem exacerbated more by surpluses than by scarcity, and quality have taken on a hitherto unseen importance. The polysemy of the French term “sécurité alimentaire”, masks a twofold concept that is more clearly expressed by the English notions of “food security” – a problem still present in India but not merely at the production level – and “food safety”, which involves primarily sanitary criteria. The French participants were far more interested than their Indian colleagues in public-health issues, which are defined in medical terms, of course, but also in terms of taste and culture, as well as in relation to trade, since sanitary and phyto-sanitary criteria can be used to block foreign agricultural imports.

Another noteworthy point from the Indian perspective was the paradox between the small number of French farmers and their considerable political weight. This is clearly a legacy from the early days of the French parliamentary democracy, when the countryside weighed heavily in the electoral equation. But today there is another essential fact that should no doubt be taken into account as well: the French farmer is no longer simply a producer. He is also a decisive agent in the preservation of the rural landscape, a space perceived as an aesthetic, economic and ecological asset in a post-industrial society where the relationship between a mainly urban population and nature may have changed form, but has not lost any of its importance. The concern to preserve the countryside and villages as part of the national heritage echoes a number of complementary rationales: valorisation of a territory that supports an increasingly important tourist economy; search for less polluting and more sustainable agricultural practices; and creation of new kinds of rural non-farm employment. The same objectives can be seen in the logic of Agenda 2000 – with its emphasis on the importance of product quality and protecting the environment –, direct subsidies being uncoupled from production (Jacques Loyat), as in the new “territorial exploitation contracts”. From this standpoint, Jean Paul Charvet depicts a French agriculture whose total inclusion in the European Common Agricultural Policy as well as its position in the world markets are by no means vectors of uniformisation. On the contrary, territorial differentiation is on the rise, and is even institutionalised through the various subsidies granted not only for production, but also as a function of geographical context: mountainous terrain, wetlands, etc.
Agriculture and the world order: Europe and the appeal for a global food security fund

In the transition phase that marks the end of our century, all of the partners are watching each other, each keeping one eye on his own interests and the other on practices in the opposite camp judged to be irregular. In this global barter, two figures cited by Bibek Debroy are particularly striking: export subsidies in developed countries amount to some 21 billion US dollars; those in developing countries come to around 1.7 billion dollars. To these must be added import restrictions, sometimes based on non-trade criteria (social clauses, new phytosanitary regulations...), often regarded by developing countries - and by India – as ploys used by well-off countries to block the growing competition from emerging nations. That is the first work site, which falls within the framework of the WTO.

There remains finally, the issue of the major cleavages dividing the world: to what extent should the North/South opposition - mentioned above – be validated? To be sure, it inevitably crops up in WTO negotiations, but alongside other competing criteria and other rationales of conflict. While India – like many emerging countries – does not always appreciate the social cost of globalisation to advanced countries, are the latter any better at gauging the extent to which the problem of food security (in terms of quantity as well as availability) in massively rural countries, underpins social issues and is the key to the political stability of state structures? The appeal to create a global food security fund, launched by the Indian convenor of this seminar, is more than a purely Indian concern. The question G.S. Bhalla raises is not addressed solely to France, but to the entire European Union. In what could become a multi-polar world order, India raises the question of the degree of autonomy Europe intends to maintain with respect to the United States. The question, “Is Europe concerned by the global food situation?”, in reality echoes some major uncertainties having to do with an eventual European specificity, the respective roles of multinational corporations and states in the globalisation process with a view to “good governance”, and on WTO’s placing with respect to the other international organisations: ILO for social clauses and the FAO for food-related issues.

Seattle and after: commonality and divergences

Finally, the comments on the most recent developments offer a significant perspective on the commonality existing between India and France, and on the divergences which set them apart. Fundamentally, the Indian perspective presented by G.S. Bhalla is focussed on the drawbacks of WTO. The failure of the Seattle conference, which was supposed to launch a new round of negotiations, exposes the imbalance of the new economic world order. Far from drawing benefits from the new trade regime, developing countries find themselves faced with unresolved challenges, for the developed countries still adopt a double-edged protectionist policy, based upon high import tariffs and non-trade barriers on one hand, and huge export subsidies on the other hand. This strategy prevents developing countries from having fair access to developed markets, and weakens their own national markets, “targeted by the subsidised products from the developed countries”. These concerns define the issues that should be addressed in the new
Millennium Round of Agreement on Agriculture. To quote Bhalla, “there is a need for a total overhaul of the whole system of import and export subsidies”. Issues of nontariff barriers are important as well, and would call particularly for “reasonable levels of sanitary and phyto-sanitary requirements”, as defined by the Codex Alimentarus, and not devised according to national standards. Last but not least, the impact of liberalisation on small farmers remains a decisive parameter. India, which remains “fully committed to the WTO’s objective of multilateral trade liberalization” is therefore asking, as many other developing countries, for a more genuine liberalisation, which implies that the developed countries accept equitable rules of the game, instead of promoting a protectionist agenda under the veil of liberalisation.

Certainly India, as other developing countries, has to “increase productivity, develop human capital and skill and ensure effective rural infrastructure to realise the potential benefits of liberalization”. But this being said, the divergences between developed and developing countries remain wide open.

The French perspective presented by Jacques Loyat does recognise that the divide between developed and developing countries is partly responsible for the failure of the Seattle Conference and acknowledges the need for reforming the system. However, the problems faced by French agriculture are not seen only through the basic filter of the North-South dichotomy. Two additional dimensions must be considered as well, and in fact define more precisely the French agenda. The first relates to the European Union, which defines now, through the Common Agricultural Policy (CAP), the rules of the game for the EU member countries. The second addresses the growing problem of food safety. While GS Bhalla acknowledges the necessity to define “reasonable levels” of sanitary requirements, he strongly underline that “the issue of food security remains of fundamental importance for all developing countries”. By contrast, food safety has drawn attention as never before in Europe, following the spread of the “mad cow” disease in the nineties, and the foot and mouth disease in 2000-2001. The dreadful threat hanging over European (and particularly British) cattle is seen as a challenging drift of industrialised agriculture and animal husbandry, lured by the short term quest for profit. On a different front, but related as well to food safety, the Cartagena Protocol on Bio-safety, signed in 2000 admits that the States, for health emergency reasons, may define public policy conflicting with the liberal WTO rules.

The Agenda 2000, agreed upon in 1999, calls for redefining the European Common Agricultural Policy, while the new French Agricultural Orientation Act, passed also in 1999, has launched a new concept: the multi-functionality of agriculture, whose aim is not just to produce more and more, but to address three different objectives: i) a better equilibrium between agriculture, environment and a sustainable development which includes the preservation of landscape and rural population as well; ii) the necessary correlation between reformed agricultural practices and food safety; iii) the search for fair world trade. The present thinking in France is therefore multi-scale: national, European and global. To quote Loyat, “in the EU, increasing productivity leads to more environmental and social damage, while the subsidisation of intensive farming generates distortions and conflicts at the international level”.

When Jean Glavany, the French Agriculture Minister calls (in Le Monde, 06-04-2001) for defining “a new contract between Europe and its farmers”, in order to produce not more, but better, he is not just addressing an EU issue. For behind the structural divide between developed and developing countries, the WTO debate on agriculture, in India and in
France, in the South and in the North, raises questions which are in fact of global relevance. Those who criticise the double standards and the blatant or disguised protectionism of the developed countries, and those who, in these developed countries, denounce the “negative effects of an uncontrolled liberalisation of the agricultural trade” on food security, food safety, the environment and the rural economy, address in fact the same global issue. Whatever could be their divergences, all of them raise the same question: how to regulate the liberalisation process of agricultural production, trade and transformation, for the benefit of society as a whole, at the global level between poor and rich countries, and inside each nation as well?
I. The national legacies in India and in France
1. The National Legacy in India: Evolution of Agricultural Policy since the Sixties

G.S. Bhalla

Introduction

1 India was a semi-feudal and backward agrarian economy on the eve of independence. With nearly two thirds of the work force engaged in agriculture and more than half of total domestic product originating in it, agriculture constituted by far the most dominant sector of the Indian economy. The agricultural sector was characterised by high pressure of population, low levels of productivity and income and extreme institutional rigidities. These outmoded institutional structures combined with poor infrastructural facilities in most parts of India resulted in near stagnation of agriculture during the British period. In spite of large investments in irrigation during the first half of the 20th century (1901-04 to 1940-44), foodgrains growth rate was even lower than the population growth rate thereby resulting in a substantial reduction in the per capita availability of foodgrains (Blyn, 1966).

2 It was only after independence that a planned attempt was made to bring about agrarian transformation in India with the objective of removing institutional bottlenecks to growth and improving the lot of the poor peasantry. Since peasant movement constituted a part of the national movement and imparted immense strength to it, the national leadership was committed to bringing about radical land reforms after independence. The second main objective of policy was that of providing food security to India’s rising population and simultaneously providing employment to a large proportion of workforce traditionally engaged in agriculture. Keeping in view the fact that food availability had emerged as a major concern and constraint to the development process, accelerating agricultural and foodgrains growth with a view to providing food security became the central objective of the agricultural policy (Chakravarti, 1987).
The policy package employed to achieve this consisted of institutional changes like land reforms, large investments in rural infrastructure including irrigation and power, and agricultural research and extension. After the mid-sixties, these measures were supplemented by a positive price policy and other market interventions that ensured remunerative prices for major foodgrains and some other crops.

This policy was instrumental in accelerating agricultural growth and in raising the output and income level of a large number of cultivators particularly in the irrigated regions of India. But because of large interpersonal and inter-regional inequalities, the gains of agricultural growth were not shared equitably amongst various categories of farmers and among various regions. Nevertheless, rapid growth consequent to the adoption of new seed-fertilizer technology resulted in raising foodgrains production in India and thereby enabling the country to meet the foodgrains demand generated by rapid growth of population combined with modest growth in per capita income-albeit at a low level of consumption.

With the liberalisation of the Indian economy in June 1991, agricultural policy is also bound to undergo a significant change. Quite a few of the new policy measures taken already are expected to significantly affect the agricultural sector. The most important among these are trade reforms that have resulted in the devaluation of the Indian currency, withdrawal of excessive protection to industry and reduction of tariffs on imports. All the above measures are supposed to have benefited the agricultural sector and made it highly competitive in the international market. The signing of the Dunkel text in April 1994 has committed India to multilateralism. Further, there is a general expectation that with the reduction of subsidies by the developed countries, exports of sub-tropical and temperate products from developing countries would register significant increases. The other important steps that have been taken as a part of new policy are reduction of subsidies to fertilizers, proposals to raise the prices of other administered inputs and measures designed to rationalise the institutional rural credit market. On the other hand, major hikes have been given to output prices with a view to giving higher incentive to the producers even though these price hikes are likely to adversely affect the poor in India.

An attempt is made below to critically examine the efficacy of agricultural policy adopted during the pre-liberalisation era and to assess the extent of challenges and opportunities likely to become available with agricultural liberalisation. The first part of the discussion is devoted to a description of the main feature of economic policy during the planned era. An attempt is then made to briefly review the efficacy of these policy measures in achieving the stated objectives of land reforms, higher growth, regional equality and achievement of food security. Finally, an attempt is made to critically review the prospects of Indian agriculture in the era of economic liberalisation.

Agricultural policy in India prior to liberalisation in 1991

Prior to the liberalisation of the Indian economy in June 1991, a planning framework governed agricultural policy like all other sectoral policies. The entire gamut of macroeconomic policies, notably trade, fiscal and monetary policies were designed to subserve the plan objectives. The quantum of Plan outlay, its financing and targets set for the
agricultural sector were all decided through the planning process at the State and Central levels.

It needs to be underlined that the nature and role of planning for the agricultural sector of India was primarily determined by its specific characteristic of being under the operation of millions of independent producers. Hence, agricultural planning in India consisted of creation of a rural infrastructure combined with the provision of modern inputs and a framework of incentives for the farmers to enable them to increase output through the adoption of modern technology. In this respect, there was a basic difference in the nature of agricultural planning in India and in China before China initiated its agricultural reforms in 1977. In China, after liberation in 1949 under the programme of village communes, co-operative farming had superseded the private ownership and operation of land. Much of the post 1977 reforms in China had to do with restoring private ownership and reinstating price incentives—, the two institutions that have always existed in India.

There were several components of agricultural policy and programmes in the First and subsequent Five Year Plans in India during the post-independence period.

The first and the most important was the implementation of land reforms during the mid-'fifties with the objective of eliminating the intermediaries and bringing about a greater degree of equality in land distribution. The second was to undertake substantial investment in rural infrastructure like irrigation and power; agricultural research and extension; roads and communications; regulated markets; and credit institutions. Promotional policies like the Special Food Production Programme (SFPP) and Agroclimatic Regional Planning, Land and Water Development Programmes, etc. initiated by the Planning Commission were also aimed at accelerating agricultural development.

During 1950-51 to 1966-67, the Community Development Programme and a network of extension services were the main instruments employed to transform traditional agriculture. This was supplemented by the initiation of the Intensive Area Development Programme (IADP) in a few well endowed districts during the early 'sixties.

The advent of green revolution in the mid-'sixties marked a turning point in the technological up-gradation of Indian agriculture. To begin with, the new technology was confined to wheat production in the north-western states of India. The focus of agricultural policy became modernisation of agriculture through extending the Borlaug seed-fertiliser technology to different parts of the country. Deliberate measures were also taken to involve the small and marginal farmers in the production process through up-gradation of their technology by providing them new inputs including seeds, fertilisers and credit at subsidised rates. During the mid-sixties, positive price policy was also introduced with a view to encourage the adoption of new technology. The objective of the price policy was to reconcile two opposing interests. It had to ensure remunerative price to the farmers to encourage them to adopt the new technology while simultaneously ensuring a reasonable price for the consumers.

The fourth important component of policy was the establishment of a comprehensive food management system of procurement, storage and public distribution of foodgrains with a view to providing food to consumers at reasonable prices. During periods of scarcity, minimum support and procurement price operations were combined with compulsory procurement, levy on millers, zonal restrictions etc. for maximising procurement to enable distribution of foodgrains at subsidised rates through the public
distribution system (PDS). Sufficient food stocks were kept not only for the smooth running of the PDS but also for use in helping to stabilising prices through open market operations.

14 The fifth component was tightly controlled trade and exchange rate policy. In the case of agriculture, except for a few traditional commercial crops, the rest of the agricultural sector was insulated from world agricultural markets through almost total control of exports and imports. The estimated surplus over domestic consumption requirements determined the marginal quantities to be exported and vice versa for imports. More importantly, foodgrains, sugar and edible oils were imported in times of scarcity to prevent domestic prices of essential commodities from rising and to impart a measure of stability to domestic prices in the interest of both producers and consumers. Foreign trade in most agricultural goods was subject to quota restrictions or canalised or subject to other restrictions such as minimum price requirements.

15 Finally, the financial policy was primarily geared to mobilising resources for public sector expenditures and for co-operative and institutional credit to the rural sector with a view to facilitating private investment in infrastructure and in encouraging the adoption of new technology.

Critical assessment of agricultural policies during the planning period

16 Having listed the various policies pursued in India before 1991, it is worthwhile to review how far these policy packages were successful in firstly transforming the outmoded agrarian structure. Secondly, it is also important to evaluate their success in terms of accelerating the growth rate through modernising of Indian agriculture; reducing regional inequalities and raising the standard of living of working peasantry. These aspects are briefly discussed below.

Land reforms and changes in production relations

17 Implementation of land reforms in all the states of India was one of the most important measure designed to change the agrarian structure in India. Broadly speaking, there were four bouts of land reform legislation in India after Independence. The most important legislation dealing with abolition of absentee landlordism and introduction of tenancy reforms were enacted during the mid-'fifties. The acts imposing ceiling on land holdings and distribution of surplus land among landless and small holders were first passed during the mid-'fifties and subsequently, during the mid-'sixties as also during the emergency as a part of the Twenty Point Programme.

18 An evaluation of the implementation of land reforms would suggest that the stated objectives were only partially realised. Land reforms were fairly successful in fulfilling the objective of abolition of intermediaries in most parts of India. As a result as many as 20 million tenants were brought in direct contact with the state and Rs. 6700 million worth of compensation was to be paid to the ex-intermediaries of which nearly half had been paid by the beginning of the Fifth Five Year Plan. It is, however, notable that in many parts of the country, the landlords with the connivance of the local bureaucracy were able to resume land for self-cultivation by ejecting a large number of tenants. In
states like Bihar, Orissa, Rajasthan, Madhya Pradesh and West Bengal, landlords managed to keep very large holdings because of their power and influence. In general, the level of success of zamindari abolition depended on the strength of the peasant movement. In spite of these failures, the legislation on abolition of intermediaries was fairly well implemented, except in the states mentioned above. One important consequence of the abolition of intermediaries was that the extent of tenancy declined considerably and selfcultivation became the dominant mode of production in most parts of India. At the all India level, the proportion of tenant holdings declined from 40 per cent in 1953-54 to 23.5 per cent in 1961-62 and in the meantime, the percentage of area under tenancy declined from nearly one-fifth of total operated area to onetenth. By 1992, the number of tenant holdings had declined to 11 per cent and the area under tenancy to only 8.3 per cent (Table 1).
**TABLE 1. PERCENTAGE OF OPERATED AREA LEASED-IN**

<table>
<thead>
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**SOURCE: GOVERNMENT OF INDIA, NATIONAL SAMPLE SURVEY FROM 8TH ROUND TO 48TH ROUND. SEE BIBLIOGRAPHY**

19 Despite several bouts of legislation during the 50’s, the late 60’s and early 70’s, all attempts regarding imposition of ceilings on land holdings and distribution of surplus land among the landless and poor peasants failed miserably. This was primarily due to loopholes in law and large scale connivance of the surplus farmers with revenue administration, lack of will power of policy makers and relative weakness of the peasant movement. Consequently, the pattern of land distribution has remained extremely skewed and has not undergone any significant changes (Table 2).

20 To begin with during the early ‘fifties, the land distribution was extremely skewed. The distribution of operational holdings shows that in 1953-54, marginal and small cultivators
with less than 2 hectares constituted 60.0 per cent of all cultivating households, but accounted for only 15.4 per cent of operated area. By 1992, the proportion of marginal and small farmers had increased to 78.0 per cent although the area under their cultivation constituted 34.3 per cent of total area. The phenomenal increase in the number and proportion of marginal and small farmers and landless labour has very serious implications for the emerging agrarian structure in India.

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<td>37.54</td>
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**Operational Holdings**

<table>
<thead>
<tr>
<th>Year</th>
<th>Small (0.00-1.99ha) Ownership Holdings</th>
<th>Medium (2.00-5.99ha) Ownership Holdings</th>
<th>Large (6.00 ha &amp; above) Ownership Holdings</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Area</td>
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<td>Area</td>
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<tr>
<td>1953-54</td>
<td>67.14</td>
<td>16.31</td>
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<td>18.32</td>
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<td>1982</td>
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<td>28.71</td>
<td>16.56</td>
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<td></td>
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**Landless Households**

<table>
<thead>
<tr>
<th>Year</th>
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<tbody>
<tr>
<td>1953-54</td>
<td>23.09</td>
</tr>
<tr>
<td>1961-62</td>
<td>11.69</td>
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<td>1971-72</td>
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<tr>
<td>1982</td>
<td>11.33</td>
</tr>
<tr>
<td>1992</td>
<td>11.24</td>
</tr>
</tbody>
</table>

**Source:** Government of India, National Sample Survey, from 8th round to 48th round. See bibliography

---

21 The legislation regarding security of tenure to the tenants and determination of fair rents has also remained more or less on paper except in Jammu & Kashmir, Kerala and now West Bengal. In actual practice, tenants hardly enjoy any security and it is the market forces that determine the terms of tenancy. In a few areas where mechanisation has
proceeded on a rapid rate, the phenomenon of reverse tenancy (large farmers leasing in from the small and marginal farmers) has become quite important.

22 To sum up, unlike among East Asian countries and China, land reforms miserably failed to bring about equitable distribution of land among peasantry and to protect the tenants. However, with the abolition of intermediaries and the emergence of self-cultivation as the dominant mode of production in most parts of India, a few of the serious institutional constraints have been removed and conditions have been created for the growth of agriculture albeit on capitalist lines.

Nature of agricultural growth and transformation

23 The post-independence period marks a turning point in the history of the development of Indian agriculture. This is clear from the fact that compared with a paltry rate of growth of less than 0.25 per cent annum during the first half of this century, agricultural and foodgrains output rose at the unprecedented rate of 2.7 per cent annually during the post-independence period 1949-50 to 1996-97. Nevertheless, though this growth rate represents a major advance over the earlier historical record and is higher than a population growth rate of 2.1 per cent, it falls considerably short of the needs of the economy because of increasing demand arising out of rapidly increasing population and per capita income.

24 Broadly speaking, two periods can be distinguished in the history of post independence agriculture, characterised by two different strategies which were adopted for agricultural development. The first period roughly extended from 1949-50 to 1964-65. In this period the main thrust was to bring about institutional changes and land reforms and to expand the irrigation infrastructure. The community development programmes sought to spread the benefits of development to all parts of the country. Having weakened the power of semi-feudal landlords, an attempt was made to acquaint a large number of owner cultivators with better practices associated with irrigation.

25 The expansion of irrigation led to a notable increase in crop yields in the irrigated regions of India. But for the country as a whole agricultural production was characterised by wide yearly fluctuations. The agricultural situation deteriorated considerably during the early sixties and 1964-65 and 1965-66 turned out to be two among the worst drought years of the century. Consequently the country had to import large quantities of foodgrains. But despite these fluctuations, taking the entire period 1949-50 to 1964-65, agricultural output grew at an average compound rate of 3.15 per cent per annum and area increases accounted for nearly 50 per cent and yield increases 38 per cent of the total growth of output (GOI, 2001).

26 During the second period 1967-68 to 1980-81, the growth rate of agricultural output decelerated to 2.19 per cent per annum. During this period, while the contribution of yield to growth of output increases to 58 per cent that of area declined to 23 percent.

27 The third period namely 1980-81 to 1990-91 is characterised by a very significant acceleration in agricultural output to 3.19 percent per annum compared with only 2.19 percent during the earlier period. The consolidation of green revolution and its spread to all parts of India was primarily responsible for this acceleration. During this period growth in agriculture contribution of productivity increase to total output growth rose to about 77 per cent compared with only 58 per cent during the earlier period while that of
area increase declined from 23 per cent to only 8 per cent (Table 3). But agricultural growth has experienced a notable deceleration from 3.19 per cent per annum to 1.96 percent during the post-reform period of nineties. The main reason for this is a sharp deceleration in total investment in agriculture.

### TABLE 3. ALL INDIA COMPOUND GROWTH RATES OF AREA (A), PRODUCTION (P) AND YIELD (Y) OF MAJOR CROPS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>P</td>
<td>Y</td>
<td>A</td>
</tr>
<tr>
<td>Rice</td>
<td>1.21</td>
<td>3.5</td>
<td>2.25</td>
<td>0.77</td>
</tr>
<tr>
<td>Wheat</td>
<td>2.69</td>
<td>3.96</td>
<td>1.27</td>
<td>2.94</td>
</tr>
<tr>
<td>Coarse C.</td>
<td>0.90</td>
<td>2.25</td>
<td>1.23</td>
<td>-1.03</td>
</tr>
<tr>
<td>T. Cereals</td>
<td>1.25</td>
<td>3.21</td>
<td>1.77</td>
<td>0.37</td>
</tr>
<tr>
<td>T. Pulses</td>
<td>1.72</td>
<td>1.41</td>
<td>-0.18</td>
<td>0.44</td>
</tr>
<tr>
<td>T. Foodg</td>
<td>1.35</td>
<td>2.82</td>
<td>1.36</td>
<td>0.38</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>3.28</td>
<td>4.26</td>
<td>0.95</td>
<td>1.78</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>2.67</td>
<td>3.2</td>
<td>0.3</td>
<td>0.26</td>
</tr>
<tr>
<td>Cotton</td>
<td>2.47</td>
<td>4.55</td>
<td>2.04</td>
<td>0.07</td>
</tr>
<tr>
<td>NonFoodg</td>
<td>2.44</td>
<td>3.74</td>
<td>0.89</td>
<td>0.94</td>
</tr>
<tr>
<td>All Crops</td>
<td>1.58</td>
<td>3.15</td>
<td>1.21</td>
<td>0.51</td>
</tr>
</tbody>
</table>

**COARSE C. = COARSE CEREALS; T. CEREALS = TOTAL CEREALS; T. FOODG = TOTAL FOODGRAINS; NON FOODG = TOTAL NON-FOODGRAINS**

**SOURCE:** GOVERNMENT OF INDIA, 2001, AGRICULTURAL STATISTICS AT A GLANCE, MINISTRY OF AGRICULTURE.

The main strategy adopted to increase the growth rate of agriculture in the post-green revolution period was to increase yields through the use of modern inputs and improved methods of production the role of technology as a major input in agriculture was accorded explicit recognition. The new strategy in agriculture which was successfully introduced in a few northwestern states and was confined mainly to wheat, gradually spread to other crops and new areas. The culmination of new technology came about only after the eighties, when it expanded from irrigation belt to almost all regions of India. The new strategy became successful as a consequence of large scale investments in irrigation and in scientific research and large scale use of fertilisers.
That the input use increased significantly leading to large increase in yield and output of many crops over the period 1960-61 to 1996-97 is brought out by Table 4. Further, the introduction of positive price policy during the mid-'sixties as a result of the creation of Agricultural Prices Commission, provided the necessary incentive to the farmers to adopt new technology on a large scale.

**TABLE 4. USE OF MAJOR INPUTS AND INCREASE IN YIELDS OF MAJOR CROPS DURING 1950-51 TO 1999-2000**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Net Area Sown (mn Hect)</td>
<td>118.75</td>
<td>140.27</td>
<td>143.00</td>
<td>142.02</td>
</tr>
<tr>
<td>Gross Cropped Area (mn Hect)</td>
<td>131.89</td>
<td>165.79</td>
<td>188.15</td>
<td>190.76</td>
</tr>
<tr>
<td>Land Under Forests (mn Hect)</td>
<td>40.48</td>
<td>63.91</td>
<td>67.80</td>
<td>68.86</td>
</tr>
<tr>
<td>Cropping Intensity</td>
<td>111.10</td>
<td>118.19</td>
<td>131.70</td>
<td>134.3</td>
</tr>
<tr>
<td>Net Irrigated Area (mn Hect)</td>
<td>20.85</td>
<td>31.10</td>
<td>53.00</td>
<td>54.5</td>
</tr>
<tr>
<td>Gross Irrigated Area (mn Hect)</td>
<td>22.56</td>
<td>38.19</td>
<td>70.64</td>
<td>79.9</td>
</tr>
<tr>
<td>Area Under HYV (mn Hect)</td>
<td>--------</td>
<td>15.38</td>
<td>72.11</td>
<td>76.0</td>
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<tr>
<td>Area Covered Under Soil</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Conservation (mn Hect)</td>
<td>1.58</td>
<td>13.37</td>
<td>9.3</td>
<td>na</td>
</tr>
<tr>
<td>Fertilizer Consumption (mn tons)</td>
<td>0.29</td>
<td>2.2</td>
<td>12.5</td>
<td>16.2</td>
</tr>
<tr>
<td>Fertilizer Consmp (kg per Hect)</td>
<td>1.90</td>
<td>13.13</td>
<td>67.64</td>
<td>88.6</td>
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**Progress**

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<tbody>
<tr>
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<td>1013</td>
<td>1123</td>
<td>1990</td>
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<tr>
<td>Wheat</td>
<td>851</td>
<td>1307</td>
<td>2725</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>507</td>
<td>579</td>
<td>944</td>
</tr>
<tr>
<td>Cotton</td>
<td>125</td>
<td>106</td>
<td>190</td>
</tr>
<tr>
<td>Sugarcane (tons per Hect)</td>
<td>46</td>
<td>48</td>
<td>70</td>
</tr>
<tr>
<td>Tea</td>
<td>971</td>
<td></td>
<td>1787</td>
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</tbody>
</table>

**Source:** GOI (2001), Agricultural Statistics at a Glance, Ministry of Agriculture
Regional patterns of agricultural growth

Data on levels and growth of aggregate crop output at the state and the regional levels are available for 1962-65 to 1992-95 (Bhalla, G.S. and G.Singh, 1997). Table 5 gives details about regional pattern of agricultural growth during 1962-95 and the three sub periods, namely 1962-65 to 1970-73, 1970-73 to 1980-83 and 1980-83 to 1992-95. Taking the entire period 1962-65 to 1992-95, total agricultural output in India increased at a compound annual growth rate of 2.71 per cent at constant 1990-93 prices. During this period, the highest growth rate of output of 3.35 per cent per annum was recorded by the north-western region of India, followed by the central region and southern region. The lowest growth rate of only 1.98 per cent was registered by the highly populated eastern region.

There were important changes during the various sub-periods in the pattern of agricultural development. Firstly, during the first phase of the green revolution, that is from 1962-65 to 1970-73, the new technology was only confined to wheat and the main beneficiaries were the irrigated north-western states of India, in particular Punjab, Haryana and western Uttar Pradesh. Another state that benefited from wheat revolution was West Bengal. The new technology had hardly any impact on rice, the main foodgrain crop, with the result that the rice growing eastern states were not able to derive appreciable gains from the new technology. The southern states of Karnataka, Kerala and Tamil Nadu also registered medium to high growth, but in their case also the new technology could make any appreciable contribution only in limited areas. Crop output in the dry rainfed states in the central region was hardly influenced by new technology and agricultural production in that region was characterised by sharp weather-borne year to year fluctuations.

The second period from 1970-73 to 1980-83 is characterised by the extension of new seed-fertiliser technology from wheat to rice and its spread from Punjab and Haryana not only to eastern Uttar Pradesh but also to the rice producing states in the southern region. Along with Punjab and Haryana, Uttar Pradesh also slightly accelerated its growth from 2.54 per cent during 1962-65 to 1970-73 to 2.77 per cent per annum during 1970-73 to 1980-83.

In the matter of growth of agricultural output, the period 1980-83 to 1992-95 marks a turning point in India’s agricultural development. At the all India level, the growth rate of crop output accelerated from 2.38 per cent during 1970-73 to 1980-83 to 3.40 per cent during 1980-83 to 1992-95. An interesting feature of the ‘eighties was that agricultural growth permeated to all the regions in India.

The most significant development was a notable acceleration of growth in the eastern region. Specially creditable was the performance of West Bengal where the growth rate increased to an unprecedented level of 5.39 per cent per annum. Bihar also recorded a significant acceleration in growth rate. However, there was a deceleration in growth rates in Assam and Orissa. Rapid growth in the densely populated states of eastern India is likely to percolate to large population dependent on agriculture, thereby making a significant dent on rural poverty.

Two of the major states in central India namely Madhya Pradesh and Rajasthan recorded an significant acceleration in their growth rates during this period. In these states, besides increase in yields, cropping pattern changes resulting in large shifts of areas from coarse cereals to oilseeds also made an important contribution to higher growth.
However, there took place a sharp deceleration in Maharashtra and Gujarat primarily as a result of persistent drought for several years during the late 'eighties.

Among the southern states, the growth rate accelerated very significantly during this period and the southern region recorded even a higher growth rate than the northwestern region. But most interesting development was an unprecedented rate of growth of 4.59 per cent recorded by Tamil Nadu during 1980-83 to 1992-95 compared with a negative growth registered by it during the earlier decade.

One of the important consequences of widespread growth over all the regions has been a reduction in inequalities in both the yield levels and growth rate of output. The coefficient of variation of yields which had increased from 56.9 in 1962-65 to 58.2 in 1970-73 declined to 46.3 during 1992-95. The coefficient of variation for growth rates declined from 88 during 1962-65 to 50 during 1980-83 to 1992-95, but increased again to 112 during 1996-99.

**TABLE 5. STATE WISE GROWTH OF AGRICULTURAL OUTPUT, 1962-65 TO 1996-99**

<table>
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<tr>
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<th></th>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Haryana</td>
<td>4.65</td>
<td>3.02</td>
<td>5.04</td>
<td>1.98</td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td>3.33</td>
<td>0.96</td>
<td>2.74</td>
<td>-0.11</td>
</tr>
<tr>
<td>Jammu &amp; Kashmir</td>
<td>5.37</td>
<td>3.47</td>
<td>0.17</td>
<td>0.49</td>
</tr>
<tr>
<td>Punjab</td>
<td>6.63</td>
<td>4.74</td>
<td>4.22</td>
<td>0.73</td>
</tr>
<tr>
<td>Uttar Pradesh</td>
<td>2.54</td>
<td>2.77</td>
<td>3.06</td>
<td>2.47</td>
</tr>
<tr>
<td>North West Region</td>
<td>3.60</td>
<td>3.21</td>
<td>3.55</td>
<td>1.91</td>
</tr>
<tr>
<td>Region</td>
<td>1.85</td>
<td>2.80</td>
<td>2.42</td>
<td>1.31</td>
</tr>
<tr>
<td>-----------------</td>
<td>------</td>
<td>------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Assam</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bihar</td>
<td>1.12</td>
<td>-0.41</td>
<td>2.12</td>
<td>3.33</td>
</tr>
<tr>
<td>Orissa</td>
<td>0.99</td>
<td>2.65</td>
<td>2.92</td>
<td>-5.14</td>
</tr>
<tr>
<td>West Bengal</td>
<td>2.37</td>
<td>0.68</td>
<td>5.97</td>
<td>2.99</td>
</tr>
<tr>
<td>Eastern Region</td>
<td>1.57</td>
<td>1.09</td>
<td>3.63</td>
<td>1.25</td>
</tr>
<tr>
<td>Gujarat</td>
<td>1.78</td>
<td>3.12</td>
<td>0.86</td>
<td>6.83</td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>1.97</td>
<td>1.28</td>
<td>4.53</td>
<td>3.86</td>
</tr>
<tr>
<td>Maharashtra</td>
<td>-3.64</td>
<td>6.57</td>
<td>2.12</td>
<td>3.29</td>
</tr>
<tr>
<td>Rajasthan</td>
<td>4.29</td>
<td>1.26</td>
<td>6.06</td>
<td>4.90</td>
</tr>
<tr>
<td>Central Region</td>
<td>0.73</td>
<td>3.13</td>
<td>3.33</td>
<td>4.50</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>0.93</td>
<td>3.61</td>
<td>3.42</td>
<td>1.52</td>
</tr>
<tr>
<td>Kamataka</td>
<td>2.64</td>
<td>2.32</td>
<td>3.68</td>
<td>3.62</td>
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<td>Kerala</td>
<td>4.09</td>
<td>-0.91</td>
<td>1.92</td>
<td>3.60</td>
</tr>
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<td>Tamil Nadu</td>
<td>2.76</td>
<td>-0.57</td>
<td>4.00</td>
<td>3.25</td>
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<tr>
<td>Southern Region</td>
<td>2.40</td>
<td>1.38</td>
<td>3.43</td>
<td>2.19</td>
</tr>
<tr>
<td>All States</td>
<td>2.08</td>
<td>2.38</td>
<td>3.44</td>
<td>2.83</td>
</tr>
<tr>
<td>C.V.</td>
<td>88</td>
<td>89</td>
<td>50</td>
<td>112</td>
</tr>
</tbody>
</table>

C.V = COEFFICIENT OF VARIATION
SOURCE: GOI, AREA AND PRODUCTION OF PRINCIPAL CROPS IN INDIA, VARIOUS ISSUES, MINISTRY OF AGRICULTURE.

Increased food security

38 One of the most important consequences of accelerated growth in agricultural and foodgrains output was in the provision of a greater degree of food security to a rapidly rising population and in reducing dependence on food imports. By the end of the 'seventies, India had emerged as marginally self-sufficient in foodgrains production.

39 Because of creditable growth in foodgrains production, over time, both the physical and economic access to foodgrains of the population registered a significant increase. The per capita availability of foodgrains (cereals and pulses), which was 395 gm per day in 1951, increased to 497 gm per day during the triennium ending 1991.

40 The economic access to food for the poor population increased firstly since the real price of wheat and rice declined over a period of time because of rapid growth in productivity.
During 1980-81 to 1989-90, whereas the adjusted wholesale prices of all commodities recorded an annual compound growth rate of 6.9 per cent per annum, the wholesale prices of wheat and rice rose at the rate of only 4.1 per cent and 6.5 per cent, respectively. The producers as well as the consumers shared the gains of productivity increases. Hence, even though the inter-sectoral barter terms of trade became adverse for wheat and rice growers, their income terms of trade remained favourable because of yield and profitability increases.

Second, access to food for the poor increased also because the proportion of per capita income required to buy food declined over time. While the index of per capita income increased by 545 per cent during 1970 to 1990, the price index of food increased by only 280 per cent. Finally, economic access to food for the poor also increased because of the operation of anti-poverty programmes like the Integrated Rural Development Programme (IRDP), the Rural Landless Employment Guarantee Programme (RLEGP), the National Rural Employment Programme (NREP) and, later on, the Jawahar Rozgar Yojana (JRY). Moreover, effective mechanisms were developed for scarcity relief and in tackling the extremely severe droughts through the initiation of special employment programmes.

**Dent on poverty**

Rapid agricultural growth during the post independence period in general and during 1980/83 to 1992/95 in particular, also made a visible dent on rural poverty. The available data from Planning Commission brings out that the incidence of rural poverty which was 56.44 during 1973-74 had declined to 39.09 in 1987-88. The incidence further declined to 37.27 during 1993-94.

The state-wise incidence of rural poverty also brings out that as compared with the slow growing states, the incidence of poverty is much lower in the agriculturally developed states that recorded high growth in agricultural output (Table 6).

**TABLE 6. INCIDENCE OF POVERTY**

<table>
<thead>
<tr>
<th>State</th>
<th>1973-74</th>
<th>1993-94</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
</tr>
<tr>
<td></td>
<td>No of poor (lakhs)</td>
<td>Pov Ratio (%)</td>
</tr>
<tr>
<td>Andhra Pradesh</td>
<td>178.21</td>
<td>48.41</td>
</tr>
<tr>
<td>Assam</td>
<td>76.37</td>
<td>52.67</td>
</tr>
<tr>
<td>Bihar</td>
<td>336.52</td>
<td>62.99</td>
</tr>
<tr>
<td>Gujral</td>
<td>94.62</td>
<td>46.33</td>
</tr>
<tr>
<td>Haryana</td>
<td>30.08</td>
<td>34.23</td>
</tr>
</tbody>
</table>
Growth transmission to other sectors

Finally, the rapid growth in agriculture in the green revolution region was also instrumental in triggering growth in the secondary and tertiary sectors through the generation of input, output and consumption linkages. This in turn, helped to enlarge the home market. There is sufficient evidence to suggest that during the first phase of green revolution up to the ‘seventies, in many states like Punjab and Haryana agricultural growth resulted in bringing about acceleration in the overall growth of the economy through generation of backward, forward, and consumption linkages. However, the tempo of growth in these states could not be sustained over the ‘eighties partly because of some deceleration in agricultural growth and partly because of import leakages. It is expected that in some states like West Bengal which are late starters in the matter of agricultural development, growth in the agricultural sectors would most likely lead to more diversified growth of the secondary and tertiary sectors.

Some limitations of plan performance

Most studies recognise the achievements of Indian policy in achieving higher growth and providing increasing food security to its rising population. However, some distortions also emerged in the pattern of agricultural development.
Firstly, land reforms failed to bring about equitable distribution of land and consequently very large interpersonal inequalities continue to exist in the countryside. This has given rise to a great deal of social tension in rural India.

Secondly, in the absence of employment opportunities in the non-agricultural sector, the increasing workforce in the country has perforce to find employment in low productivity agriculture. In 1991, 60 per cent of the male workforce was engaged in agriculture. Although there is some evidence of creeping diversification of labour force since 1971 and some increase in rural non-farm employment, the population burden on agriculture continues to be very high (Bhalla, S., 1993). It also tends to increase the number of small and marginal holdings and the number of landless agricultural labourers many of whom are poor because of low productive asset base.

The third major distortion was that the new technology was confined to the richly endowed irrigated region of India. Consequently, the regional inequalities in productivity and income have remained high. The plight of agriculturists in general and that of small and marginal farmers and landless labour remains extremely poor in the lagging regions.

Finally, even though there has taken place a reduction in the incidence of poverty as a result of agricultural growth, in absolute numbers the extent of rural poverty continues to be very high. Further, as many as 83 million children in India were malnourished during 1991 (World Bank, 1994).

New economic policy and critique of planning framework

The critique of planning framework

Until recently, while many critics focussed their attention on the above limitations, the general thrust of agricultural policy within the framework of planning had not been seriously questioned. However, in the wake of the introduction of new economic policy, all aspects of planning framework and associated macro-economic policy have come under attack.

The argument is firstly that the macro-economic policy under the planning framework pursued in most developing countries, including India, were discriminatoiy against agriculture. The inward-looking import substitution development strategy aimed at rapid industrialisation is said to have shifted resources from tradable agriculture to industry by turning the terms of trade against agriculture. (It is interesting to note that many writers now talking about discrimination against agriculture did not think so earlier. See Srinivasan, 1987).

Secondly, the overvaluation of the exchange rate not only made the import and domestic production of agricultural inputs more costly, it also adversely affected all exports and specially hurt agricultural exports (Manmohan Singh, 1994).

Finally, most sector-specific policies at all stages of production, consumption and marketing of agricultural produce, it is argued, also worked against agriculture. For example, the price policy was designed primarily to help the consumers. Farmers were generally given low administered prices in the name of helping the urban poor even while they had to pay higher prices for domestically produced industrial inputs because
of protection given to local industry. In addition, a major proportion of the costs of inefficient functioning of state-inspired organisations like the Food Corporation of India were borne by the farmers (World Bank, 1986).

It is also argued that large subsidies given on agricultural inputs also led to resource misallocation. According to one study, the various subsidies given to the agricultural sector on account of fertilisers, irrigation and electricity were estimated to be of the order of Rs. 90.9 billion per year during the 80’s. (Gulati, 1986). These subsidies placed an unsustainable burden on state and central finances and reduced the capacity of government to undertake large investments. But these subsidies failed to compensate the farmers for the negative impact of lower administered price paid on outputs; discrimination against agriculture due to overvalued currency; and higher input prices due to excessive protection given to industry. The net effect, it was argued, was that agriculture had negative protection and was discriminated against (Mody, 1989).

It is accordingly argued that agricultural liberalisation and trade and exchange reforms including devaluation of the rupee and lifting of protection to industry are likely to end agricultural discrimination and make Indian agriculture competitive thereby resulting in enhanced exports and growth of the economy.

Critical examination of arguments for agricultural liberalisation

Various arguments given above need a careful examination. First, is the very popular argument about discrimination against agriculture. There are three reasons given for it, these being overvaluation of currency and discrimination against agricultural exports; protection of industry and availability of industrial inputs to agriculture at a high price; and keeping terms of trade adverse for agriculture by giving it low administered price (including compulsory procurement, controls, and movement restrictions that kept price low). Discrimination in general and adverse terms of trade in particular are said to have acted as major barriers to rapid growth of agriculture because of lack of incentive for the producers.

The first argument is theoretically sound but it was a hypothetical proposition till the mid-sixties since India faced serious food shortages and had very little foodgrains to export. As far as commercial crops are concerned, exports were encouraged except in the case of cotton, where the interests of domestic textile industry were protected sometimes at the cost of farmers. It is interesting to note that with the achievement of self-sufficiency in food grains by the middle of 80’s, sometimes before the economic liberalisation in 1991, India had relaxed its policy and had started encouraging exports of superior rice. With devaluation of the currency in 1991, India has acquired a comparative advantage in many agricultural commodities, and therefore export opportunities for agriculture have certainly increased.

The second argument about protection to industry having resulted in providing inputs at a higher price to agriculture also seems valid. But for some of the inputs like fertilisers where India along with China was a major importer, and where monopolistic position existed, border prices charged by the monopolistic suppliers were not very favourable for the farmers. In this situation the building of an indigenous fertiliser industry specially after the discovery of oil in Bombay High was a correct strategy.
Finally, the third argument namely adverse terms of trade is the most popular argument given for proving that Indian agriculture was discriminated. This argument is basically flawed since barter terms of trade do not necessarily lead to adverse income terms of trade because of changes in productivity and cost of production. And income terms of trade is a more valid concept for providing incentive for growth. As noted earlier, in India there were very large productivity gains in many agricultural crops consequent to the introduction of new technology in agriculture. This led to substantial decline in cost of production of these commodities. For example, in the case of both wheat and rice, the productivity gains were substantial after the introduction of new technology. Consequently, the growth rates in the real price of wheat and rice were lower than that in the wholesale price of all agricultural commodities (Table 6). Simultaneously the profitability of producers was also kept quite high. The fact that there was an unprecedented growth in both the area and output of wheat and rice after the adoption of new technology is indicative of their increased profitability and is borne out by numerous studies (Bhalla G.S. and D.S. Tyagi, 1998). For example, according to Vyas, instead of import substitution strategy leading to high unit cost of production, because of new technology, not only the task of food self-sufficiency was accomplished, the country could fill in the gap between demand and supply of foodgrains without raising the real cost of production - a fact which is generally not appreciated. “In fact along with higher yields, the unit cost of production of superior cereals came down and benefits of growth could be shared by the producers (in terms of higher income) and consumers (in terms of stable prices) in an equitable manner”. (Vyas, 1998).

Thirdly, the argument that turning the terms of trade in favour of agriculture through the provision of higher relative prices for agricultural commodities vis-à-vis other sectors of the economy provides an appropriate incentive structure for the growth of agriculture is based on the assumption of a high price responsiveness of agricultural output in general and that of exportable commodities, in particular, to rise in prices envisaged as a result of trade liberalisation and the expected withdrawal of subsidies by the developed countries. Although price is an important determinant of acreage shifts among competing crops, all empirical studies bring out that price elasticity of aggregate agricultural output (aggregate supply elasticity) in most developing countries including India is quite low even in the long run and that it is investment in rural infrastructure which has a much more important impact on promoting agricultural growth. As discussed earlier, it is established by most studies that one of the precondition of generating export surpluses for growth would be to undertake large investment in infrastructure including irrigation, water management, electrification, rural roads, and market intelligence including information technology. On the other hand, as a result of fiscal compression and the erosion of planning and the diminishing role of public sector, infrastructural investments in India have declined perceptibly after 1985 and more so after the economic liberalisation in 1991. For example, although the share of private investment has risen, the share of total agricultural gross capital formation (GCF) has declined from 14.8 per cent to 9.88 per cent by 1995-96.

Further, a disproportionate rise in the price of foodgrains with the aim of turning the terms of trade in favour of agriculture is generally detrimental to the interests of the poor as it generally leads to disproportionate rise in the price of foodgrains. This is for several reasons. One is the need to contain fiscal deficit through withdrawal of input subsidies. This generally leads to more than proportionate hike in output prices under
the pressure of the kulak lobby. The second is the need to reduce food subsidy through a big rise in issue prices from the public distribution channel. As the experience of liberalisation in 1991 shows, the excessive rise in foodgrains prices during 1994 resulted not only in increasing the incidence of poverty but also fostered high rate of inflation in the country, thereby eroding a great deal of comparative advantage of agriculture in these countries (Tendulkar and Jain, 1995). The rise in foodgrains prices, an important wage good, besides adversely affecting the food security of the poor, is also likely to reduce employment opportunities in the non-agricultural sector.

Finally, there is no assurance that the rise in prices of foodgrains would end up in turning the terms of trade in favour of agriculture, the opposite is more likely to happen as prices of non-agricultural commodities bought by agriculture may rise faster because of inflation caused by rise in foodgrains prices.

**Challenges and opportunities of agricultural liberalisation**

These arguments notwithstanding, it is to be underlined that India is now committed to economic liberalisation and to multilateralism under a free trade environment to be guaranteed and enforced by WTO. The question therefore is not that of abandoning reforms but that of undertaking agricultural reforms in a manner that best subserves the interest of the country. Some of the steps that ought to be taken are listed below.

First, while liberalising agriculture, the most important caveat is that food security and foodgrains self-sufficiency must continue to get the highest priority. This is for several reasons. India is a big country with very rapidly growing large population. The foreign exchange cost of imports can be excessively high unless most of the demand is met from domestic production. Further, the demand is likely to increase very rapidly as a result of increase in population and more so increase in per capita income (Bhalla, Hazell and Kerr, 1999). With world stocks of foodgrains dwindling, a large scale dependence on imports would lead to unprecedented rise in imports and would certainly erode food security so assiduously built over the years. This can be very detrimental to the interests of the country. Food self-sufficiency also imparts a certain degree of self-confidence in large countries. By providing an assurance of food availability at reasonable price throughout the year, it also lays down the basic condition for agricultural diversification into high value export crops by a large proportion of small and marginal farmers. Thirdly, most of the agricultural households are also producers of foodgrains and their income depends on growth of foodgrains sector. Finally, the poor in India spend a large proportion of their income on foodgrains (this constitutes as much as 40 per cent of the expenditure of three lowest expenditure groups during 1993-94) and have very high income elasticity of demand for foodgrains. In this situation, price volatility which is characteristic of international prices of foodgrains is likely to hurt the poor (Vyas, 1998).

Given the important consideration of food security, India should try to avail of the opportunities arising form trade liberalisation. There is a general agreement that export opportunities in agriculture have increased as a result of trade liberalisation and exchange devaluation. The rise in prices following the withdrawal of agricultural subsidies by the developed countries as envisaged in the GATT Agreement is expected to further increase the export potential of many agricultural commodities like cereals, horticultural and vegetable crops, sugar and livestock and agro-processing industries products (Nayyar and Sen, 1993). But one should not get an exaggerated view about the
likely benefits of GATT Agreement. This is for two reasons. Firstly, it is now agreed by various experts that the price rise in the international market for agricultural commodities would be much lower (only about 5 to 7 per cent) than envisaged earlier (20 to 25 per cent). Contrary to earlier expectations, this would hardly provide much of additional export market to developing countries. Secondly, and it is more important, the developed countries are dragging their feet on withdrawal of subsidies to their agriculture and are trying to put several extraneous conditionalities that obstruct free flow from developing countries.

Finally, the benefits from export prospects can only accrue if and only if a country could maintain its comparative advantage through higher productivity, lower relative prices and generation of adequate exportable surpluses. This could only be achieved through much higher public and private investment which needs great emphasis. As underlined by Vyas, “nothing should be done to impair food security and poverty alleviation efforts in the process of economic reforms. Adjustments in the food sector should be gradual and non-doctrinaire” (Vyas, 1998).

This only highlights the facts that reforms in agriculture sector should take into account the necessity of maintaining food security, protecting the interest of a large number of small and marginal farmers and ensuring that the new policy framework does not lead to accentuation of intra-personal and intra-regional inequalities.

But while keeping in mind these caveats, there are numerous areas like trade reforms, exchange rate reforms and other macro-economic reforms, which benefit export competitiveness and which should be carried on. Some of the WTO requirements would have to be met over time. India should not only try to improve its bargaining position in the next round of negotiations, it should also try to improve its competitiveness in many agricultural commodities through increased productivity. Secondly, domestic controls like restrictions on movement of agricultural commodities, zonal restrictions, compulsory procurement, etc. which were products of scarcity conditions, should be removed. Thirdly, while no sanctity can be accorded to border prices for investment decisions, they cannot be disregarded for the purpose of export competitiveness. The Commission for Agricultural Costs and Prices should keep in mind the border prices also as referral prices while recommending prices for important commodities. Fourth, there is a need to proceed further with the consolidation of holdings and gradually freeing the lease market, keeping in mind the interests of existing occupancy tenants. On the other hand, nothing should be done to dilute the legislation on ceilings on land holdings despite the suggestion of some scholars, industrial interests, and kulak lobby for their abolition. This is because in a country where small and marginal farmers constitute 70% of the landholders, it would be disastrous to endanger their only source of livelihood. Instead, a pro-active policy should be designed to involve them in deriving benefits of increased agricultural exports through innovative institutions like integrated cooperatives like the Mother Dairy and other service co-operatives. Special efforts should also be made to develop new technologies for the farming sector and extend these to the small farmers for enabling them to diversify their production towards high value commercial and export commodities, including provision of processing facilities. The efforts on the production front should be supplemented by creation of institutions like trading houses and market intelligence services.

To sum up, agricultural policy during the post-independence period was determined by the sociol-economic conditions prevalent at that time. The policy underwent a change in
response to changing conditions in agrarian scenario. The land reforms were initiated during the mid-fifties with a view to abolishing the semi-feudal barriers to agricultural modernisation. The acute food shortage and humiliation of dependence on food imports (some time combined with arms twisting) resulted in major emphasis on accelerating foodgrains growth through large investments in infrastructure and in new agricultural technology during the mid-'sixties. This technology was successful in raising food output and in making India self-sufficient by the end of the eighties.

70 The achievements of food self-sufficiency has imparted a great deal of flexibility in the matter of policy options since the binding constraint of striving of higher foodgrains production is no longer applicable. However, food self-sufficiency has to continue to be one of the main objective of policy in India for quite some time to come. The alternative of dependence on imports of foodgrains on a large scale is extremely dangerous for a large country like India where food production is a major activity of a large proportion of agricultural workers and where any rise or fluctuation in foodgrains prices immediately results in eroding the food security of the small and marginal farmers and other rural and urban poor.

71 But even within the framework of foodgrains self-sufficiency, there exist large areas where India can partake the benefits of globalisation in general and trade liberalisation in particular. It is also possible for India now to remove many of the internal and external controls and to evolve a framework of agricultural reforms that is consistent with its interests. This is because besides achievement of food security, in the process of achieving higher agricultural growth, a large rural infrastructure has been created in irrigation, scientific research, credit and markets etc. The farmers have also learnt a great deal about the use of new technology. This makes it possible for India to diversify its agricultural production. It is possible for India to enter a new phase of agricultural liberalisation with much greater confidence and avail of new opportunities that have arisen as a result of trade liberalisation under the new GATT agreement and WTO, despite many of the irritants (like human rights, child labour, rigorous provision about phyto-sanitary measures, etc) constantly being introduced by the developed countries. The only caveat is that large investments would be required for generating surpluses and for diversifying in a big way in high value added agricultural and allied products like milk and dairying, horticultural crops and flowers and fisheries.

72 Globalisation of Indian agriculture offers both opportunities and challenges to the policymakers. There do exist opportunities for deriving large benefits through massive increase in agricultural exports specially exports of high value labour intensive agricultural commodities. Since the diversification of Indian agriculture for both domestic consumption and exports can only take place after achievement of self-sufficiency in foodgrains output and after agricultural sector is able to generate large surpluses, the challenges lie in generating these surpluses. This has to be done through increased public and private investment in rural infrastructure, in research and development, new technology and in market infrastructure. The other important challenge is to undertake specific policy measures to enable the mass of peasantry including the small and marginal farmers and agricultural labourers, in all parts of India to partake in the gains from development and from increased export opportunities likely to become available with multilateral trade liberalisation (Bhalla, G.S. 1995).
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NOTES

1. This happened in spite of the fact that as a result of the belated response to recurring famines during the late nineteenth and early twentieth century, the British Government had undertaken a fair amount of investment in irrigation in some parts of India, the growth rate of agriculture during the first half of the century was truly dismal as the total crop output index registered an increase of only 12 per cent during 1904-05 to 1944-45. While the output index of non-foodgrains rose by 54 per cent that of foodgrains did not show any increase whatsoever. Consequently, with 0.83 per cent per annum increase in population during 1901 to 1941, the per capita food availability declined from 200.2 kg. per year in 1905-06 to only 152.2 kg. per year in 1945-46.

2. One of the important development is that along with the increase in the proportion of small and marginal farmers, their share in total area operated is also increasing relative to other categories.

3. Imports of foodgrains which averaged only 2.8 mn tonnes during the 50's nearly doubled to an average of 5.4 mn tonnes during the 'sixties. In two years 1965-66 and 1966-67 India imported as much as 19 mn tonnes of foodgrains.

4. Mundle has also argued that agriculture sector in India which was being subsidised in 1950-51 was being net taxed by 1970-71. The opposite view that agriculture is being subsidised is given by Mody. See Mody, Ashok (1989).
2. Thirty-five Years of Common Agriculture Policy. Consequences on French Agriculture

Christophe Blanc

1 The main objective of this paper is to review French agricultural policies since the 1960's and their consequences.

2 In 1945, as a legacy of the Second World War, France was suffering heavy food shortages. Modernisation of agriculture had been very slow during the first part of the 20th century. Thus France was in deficit for most food production. The number of farms had also decreased very slowly and agriculture still accounted for 35% of the workforce in 1939. It mostly relied on small family farms and farmers'living standards were very low compared with the rest of the population.

3 After the war the government wanted to modernise agriculture. It wanted to reduce French dependency on food imports and improve farmers'living standards. Production growth and modernisation were first encouraged in the 1950's with subsidies for fertilisers and machinery, low rate loans and high guaranteed prices for main productions. Those aspects of the French agricultural policy: modernisation of farms and high guaranteed prices for main productions, would be enhanced in the 1960's by the “guidance laws” (lois d’orientation agricole) of 1960 and the establishment of the Common Agricultural Policy.
Modernisation of French agriculture in the 1960’s and its consequences

The common agricultural policy (CAP)

The CAP devised in the early 1960’s had important consequences on the evolution of French agriculture. The Treaty of Rome (1957) founding the European Economic Community defined the aims of the Common Agricultural Policy. It should:

- guarantee food supplies
- increase productivity
- ensure a fair standard of living for farmers
- stabilise markets
- provide consumers with food at reasonable prices.

Designed at a time when Europe was in deficit for food products and most founding members (France, Germany, the Netherlands, Belgium and Italy) were willing to modernise their agriculture, CAP mechanisms were devised to meet that situation. Thus, like the French policy of the 1950’s, CAP’s clear aim was to increase agricultural productivity, food production and to reduce the dependency of Europe on food imports.

The CAP was also the cornerstone of European integration. One aim of the European Economic Community was the creation of a common market and agriculture could not be excluded from it. But in that case the regulation of agricultural markets could only be performed through a Common Agricultural Policy. French politicians were convinced that the European market could offer great opportunities to French agriculture. Germany and Italy were big importers of agricultural products and France had a good potential to develop its agriculture. It is often considered that the founding of the European Community and the Common Agricultural Policy result from an agreement between France and Germany. A common market would be a great advantage for Germany whose industry was the most powerful in Western Europe whereas France would dominate agriculture.

The main principles of the Common Agricultural policy were set at the Stresa conference of 1958 and practically applied in 1962. The CAP relies on four fundamental principles:

- Free circulation of goods in the Community
- Community preference. The European market has to be protected from imports at low prices from outside the Community
- Common intervention. The Community regulates European markets. If prices fall below intervention prices, goods are bought at guaranteed prices by the Community
- Financial solidarity. Each country pays its contribution to the European budget. Collected funds are then allocated to the European programs.

The regulation mechanisms on which the CAP relied can be explained with the following chart (see Graph 1). Those rules typically applied to cereals in the Common Market Organisation. Each year different prices were set by the Council of ministers of agriculture of the Community. The threshold price defined the minimum price for imports entering the Community. If world prices fell below that level, variable duties were imposed on imports. Those variable levies made up for the difference between the threshold price and world prices. The European market was supported with common
intervention. If market prices inside the Community fall below the intervention price, intervention organisations must buy surpluses and stock them. Those surpluses can be sold later or exported. In that case, subsidies make up for the difference between intervention price and world prices. Those price mechanisms in fact isolated the Community from world market fluctuations and ensured that European prices evolved between limits defined by threshold prices and intervention prices. It also ensured European farmers endless outlets at guaranteed prices for their products.

GRAPH 1: CAP MECHANISMS

Expenses due to intervention policy or export subsidies (export refunds) are financed by the European Agricultural Guidance and Guarantee Fund (EAGGF). It was first funded by levies on food imports and contributions from Member States. Later contributions were based on Value Added Taxes in each Member States and GDP. As the CAP remained for a long time the most important European policy and accounted for most of European expenses, it entailed benefits for big agricultural and exporting countries. It ensured them a large market and financed their subsidised exports outside the Community. On the contrary net importers would have to import dearer products from other member states or pay heavy duties for imports from third countries (those duties would partly finance EAGGF).

So French farmers would benefit a lot from the CAP. It isolated Europe from fluctuations of the world market and ensured them stable markets and high guaranteed prices. That was a great incentive for them to improve productivity. French orientation laws of 1960-1962 clearly revealed the strong will of the government to modernise French agriculture.

The “guidance laws” of 1960-1962

Michel Debré, the Prime Minister of General de Gaulle who came to power in 1958, was convinced of the necessity of a new agricultural policy which would be defined for ten years in a guidance law (loi d’orientation). A second law initiated by the Minister of Agriculture (E. Pisani) completed the first one in 1962.
The aim of those laws was the modernisation of the French agriculture. It was admitted that many farms were too small to provide their owner with sufficient income. The number of farmers should thus decrease so that those remaining would have larger and modern farms and should enjoy higher incomes. That modernisation took several aspects

**Structural and modernisation policy**

The aim was to encourage the creation of medium size farms large enough to absorb technical improvement and to provide its owner with a sufficient income. Other farms had to disappear. Therefore retirement of old farmers was encouraged. The government introduced IVD (*indemnité viagère de départ*), a special allowance designed to improve their pensions. It was a great success since between 1960 and 1970, 300,000 IVDs were distributed. 34,000 farmers were retiring annually between 1954 and 1962, that number increased to 60,000 between 1962 and 1970.

Because of the rising prices of land, special loans at subsidised rates were developed for buyers. Land freed by retiring farmers was sold with priority to farmers presenting a sufficient potential of modernisation. For instance, after 1964, a minimum size was required for young farmers founding a new farm and asking for a start-up grant. Thus farms presenting sufficient potential were favoured, they were selected by local committees in which agricultural professional organisations played an important role and favoured the development of medium size family farms.

**The economic organisation of agriculture**

The French agricultural policy of the 1960’s encouraged the organisation of producers. Food industry was then growing rapidly. It was processing an increasing share of agricultural production. Better organisation could thus enable farmers to provide it with sufficient quantities of products of adequate quality. It would also protect farmers against the growing power of food industry.

Producer groups were created for certain agricultural productions (fruits and vegetables, pork, beef, poultry…) for which farmers’ organisations were non-existent. Those groups could for instance define rules to improve product quality. Their powers were extended in 1964. For example, production rules designed by a producer group in charge of a product could be extended to all farmers producing those particular goods.

For other productions, development relied on co-operatives. Particularly developed for dairy products, they bought milk from farmers, processed it, stored and sold dairy products. They provided their members with technical advice, tools and machinery. Those co-operatives played an important role in promoting technical improvements and helping farmers willing to modernise.

**Development**

Before World War II there was no public concern about the training of farmers. Thus farmers’ qualification was very low. Agricultural teaching was developed in the 1960’s. Numerous agricultural schools training future farmers were founded throughout the country. Adult training was also developed for farmers. But providing farmers with better training was not the only aim. One also had to convince farmers of the necessity of modernisation and to prepare them to overcome entailing difficulties. Mentalities had to
be changed. Thus farmers’ professional organisations were closely associated with development and many started their own training programs.

19 The 1966 law more clearly defined the aims of development. The state wanted to develop family farms providing their owners with adequate incomes. Chambers of agriculture representing farmers were a suitable place to put development actions in practice. New technical services were then added to those chambers. They were in charge of providing technical advice to farmers and thus replaced local government services. Development actions were partly financed by a new association for agricultural development (ANDA: Association Nationale pour le Développement Agricole), which was jointly controlled by the State and professional organisations.

20 One must thus outline that all those services in charge of development were at least partly controlled by farmers and their professional organisations. Those could thus adapt to local situations the development policy defined by the state and could also choose farmers suitable for modernisation.

21 Thus farmers’ professional organisations played an important role in defining the modernisation policy and implemented it.

Consequences

22 The system of guaranteed prices for unlimited quantities ensured by the CAP was a good stimulus for agriculture. It was the extrapolation of a system already set in Western Europe to fight post war shortages.

23 Production increased rapidly during the following decade. But demand also grew (especially for animal products), thanks to rapid economic growth and the quick improvement of standards of living.

24 The quick increase in French production and the development of intra-European trade enabled a rapid growth of French exports. In the 1950’s and the 1960’s France suffered a heavy trade deficit of agricultural products. In 1960 exports covered 60% of imports. A small surplus appeared temporarily at the beginning of the 1970’s. It would grow more decisively during the next decade (see Annexe 3 and Annexe 4).

25 The modernisation policy also entailed in France a rapid decrease in the number of people working in agriculture. The number of farms decreased by a third between 1960 and 1975 (see Table 1). That decrease in the number of jobs in agriculture did not cause particular problems since the French economy was then expanding rapidly and people leaving agriculture could easily find jobs in other economic sectors. It also enabled a rapid increase of farmers’ incomes (see Annexe 1).

**TABLE 1: NUMBER OF FARMS IN FRANCE (IN MILLION)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Farms (in million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1960</td>
<td>2.13</td>
</tr>
<tr>
<td>1965</td>
<td>1.83</td>
</tr>
<tr>
<td>1970</td>
<td>1.59</td>
</tr>
<tr>
<td>1975</td>
<td>1.37</td>
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</table>
The problems of the 1970’s and 1980’s

At the beginning of the 1970’s French agriculture was enjoying great prosperity. World prices were high thanks to strong overseas demand. Agricultural prices in the world market grew sharply in 1970-1974 with the development of shortages due to the development of imports from the Soviet Union. French farmers’ incomes increased by 25% between 1971 and 1973 (see Annexe 1).

The general economic crisis beginning in 1974, hit agriculture first with the sharp increase in prices of fertilisers, fuel and other inputs. Farm expenses were also growing rapidly because of rising inflation whereas agricultural prices were dropping in constant terms (see Annexe 2) because of increasing overproduction problems. Thus farm incomes stagnated during the late 1970’s and the 1980’s.

High prices and guarantees provided through intervention and subsidised exports, thus stimulated productions in the European Community at a rate beyond the market’s absorption capacity. European food consumption growth slowed in the 1970’s. Population was growing more slowly and income growth would not entail further increase in food consumption once a certain level of consumption had been reached.

TABLE 2: PRODUCTION AS A PERCENTAGE OF CONSUMPTION IN THE EUROPEAN COMMUNITY

<table>
<thead>
<tr>
<th></th>
<th>1973/74</th>
<th>1989/90</th>
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<tbody>
<tr>
<td>Cereals</td>
<td>90%</td>
<td>120%</td>
</tr>
<tr>
<td>Sugar</td>
<td>89%</td>
<td>123%</td>
</tr>
<tr>
<td>Beef</td>
<td>92%</td>
<td>101%</td>
</tr>
</tbody>
</table>

SOURCE: APCA

To sustain agricultural markets, the Community had to rely more and more heavily on intervention and subsidised exports. This entailed growing expenditures. Devised when the EC was a net importer for most agricultural products the CAP was not initially very costly but expenditures grew rapidly with surpluses.
In the 1980’s EC governments agreed on the necessity to stop the growth of CAP costs, and means to reduce them and solving overproduction crisis were discussed. The most problematic sectors were dairy products and cereals.

**Milk quotas**

In the late 1970’s and early 1980’s over-production of dairy products at the European level was obvious. Special taxes had been created in 1977 to finance the exportation of surpluses but the entailed drop of prices had been insufficient to stop production growth and expenditure growth. Countries with high productivity such as the Netherlands and the United Kingdom wanted a severe drop in the prices of dairy products but this would have entailed for farmers’income losses unacceptable for other countries. So milk quotas were decided in 1984. Maximum production quantities were allocated to member states who were free to allocate them among their farmers. Producing more than one’s quota implied heavy fines. Those quotas were managed in France by the Milk Board created in 1982. It allocated quotas to dairies which then allocated them to farmers. Several steps were also taken to reduce production and free quotas for younger farmers. Premiums were granted to farmers stopping their milk production and early retirement of dairy farmers was encouraged. This stopped production growth and the number of dairy farms declined sharply during the following years. Quotas were reduced several times during the next years. The aim of stopping production growth was clearly reached since between 1980 and 1989 European production fell by 11%.

**Cereals, oilseeds and protein crops**

Thanks to high prices and rapid technological improvements, European cereal production had grown rapidly in the 1960’s and 1970’s. Self-sufficiency was reached in 1979 and European surplus became endemic after 1980.

High prices of European cereals also discouraged cereal use in animal feed. Intensive animal farming (pig, poultry) had developed rapidly in Europe (in western France and the Netherlands) in the 1960s and 1970s and it relied more and more heavily on cereal substitutes (manioc, com gluten feed...), which could be imported duty free and therefore were cheaper than European cereals. Thus consumption of European cereals in livestock farming grew very slowly and growing quantities had to be exported on the world market with subsidies.

In a first attempt to reduce over production, cereal prices were lowered by 25% in real terms between 1984 and 1987 and maximum guaranteed quantities were set for production in 1989. If production was higher than those quantities, prices for the next harvest would be lowered by 3%. Set aside programs on a voluntary basis were also developed, but they had very little success.

Oilseed production also expanded very rapidly in the 1970’s and early 1980’s. This was due to a new policy decided by the Community in the early 1970’s. The Community depended on oilseeds for vegetal proteins. These are a by-product of oil production (oil cakes). This product was first developed in the US (soya-beans). Their use as animal feed was then promoted in Western Europe. When the CAP was designed in the 1960’s it was decided that cattle-cake could be imported without duties. Imports were then very low
but their consumption and imports from the US grew rapidly as intensive livestock farming expanded.

36 In the early 1970s severe shortages appeared in the world market. The European Community then decided to promote the cultivation of oilseeds and protein crops in Europe with subsidies. High prices were guaranteed to farmers for oilseeds and protein crops. Industrialists were compensated for higher prices of domestic products (compared with duty free cattle-cake imports) with subsidies. These crops expanded rapidly in Europe, and more particularly in France, the first producer. Sunflower, non-existent in 1970, expanded afterwards, rapeseeds also increased, but Europe and France still had a heavy deficit for proteins. In spite of that deficit, the Community decided to reduce expenditures and maximum guaranteed quantities were also instituted for oilseeds.

37 Beef Common Market Organisation was also altered in the 1980’s. Intervention purchase conditions were hardened and prices were lowered. In compensation direct premiums were granted to farmers. This initiated an alteration of the CAP: a move from support of agriculture through high prices to support through direct subsidies. It would be emphasised by the 1992 CAP reform.

Internal criticism of the CAP

38 Thus the CAP was meeting growing criticism in Europe. Its aim of increasing productivity had clearly been reached for main products and growing surpluses were entailing increasing costs.

39 In order to stop the increase in costs a guideline was set for EAGGF guaranty expenditures in 1988. Their growth rate could not be higher than 75% of European GNP growth rate. Thus the annual growth rate for 1988-1992 was 2%. This enabled them to reduce the share of agricultural expenditures in the Community budget.

40 Thanks to measures previously outlined, intervention stocks of cereals, beef and dairy products decreased at the end of the 1980’s but growth resumed in 1990-1991 and the spending guideline was reached in 1991. Furthermore those costs seemed less and less related with improvement of farmers’ incomes which stagnated during the 1980’s (see Annexe 1). Income inequalities were also increasing in the farming sector and CAP costs seemed to mostly benefit the biggest farmers who were causing overproduction. High prices also stimulated intensification which was causing growing environmental problems. There was thus a strong incentive to change the way European agriculture was supported.

The GATT negotiations

41 The CAP was also meeting growing criticism from Europe’s trade partners. Until the mid-1980’s agriculture had been excluded from GATT negotiations. But in the 1970’s and 1980’s the European Community had to rely more and more on subsidised exports. An increasing share of world food exports came from Europe (see Table 3). This was criticised by other food exporters such as the United States whose agriculture was undergoing a serious crisis at the end of the 1980’s. They accused the European Community of depressing world markets because of subsidised exports and reacted by increasing their subsidies for exports. This trade war was more and more costly for food exporters and the
USA with free-trader countries obtained the inclusion of agriculture in the new round of GATT negotiations starting in 1986.

**TABLE 3: CEREAL EXPORTS (million tons)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>USA</td>
<td>40.4</td>
<td>117.0</td>
<td>97.9</td>
</tr>
<tr>
<td>Canada</td>
<td>15.9</td>
<td>21.6</td>
<td>24.2</td>
</tr>
<tr>
<td>Australia</td>
<td>11.9</td>
<td>13.3</td>
<td>12.9</td>
</tr>
<tr>
<td>European Economic Community</td>
<td>7.1</td>
<td>19.3</td>
<td>27.8</td>
</tr>
<tr>
<td>World</td>
<td>108.9</td>
<td>208.4</td>
<td>194.0</td>
</tr>
<tr>
<td>EEC share</td>
<td>6.5%</td>
<td>9.3%</td>
<td>14.3%</td>
</tr>
</tbody>
</table>

Source: APCA

42 The way the CAP was criticised in those negotiations would greatly influence its reform in 1992. Free traders accused European high guaranteed prices and import duties of encouraging production while discouraging internal demand. Growing surpluses had then to be exported with subsidies on the world market, which depressed prices.

43 According to free traders, agricultural subsidies had to be decoupled from production. First, unlike high guaranteed prices, direct payments to farmers do not discourage consumption. If those direct payments are decoupled payments (for instance based on historical references and independent of market conditions), they do not encourage production the same way as high prices and thus imply smaller distortions on markets. Furthermore, entailed expenses are known in advance. They are thus more easily controlled than budgetary costs entailed by intervention and subsidised exports.

44 In the Uruguay Round, agriculture was a major stumbling block. Negotiations lasted seven years. The United States first wanted the suppression of all subsidies to agriculture which was refused by the European Community. An agreement was finally reached in 1993 after the reform of the Common Agricultural Policy.

45 That reform implied a partial change of the way agriculture was supported. Guaranteed prices were lowered and farmers' losses were compensated with direct aids. Thus support of European agriculture was more “decoupled” after the reform. The GATT agreement implied a programmed reduction in domestic support for agriculture by 20% between 1986-88 to 2000. This concept (domestic support) resulted from the addition of direct subsidies and indirect support provided by high prices. An important point was that new direct aids created in the 1992 reform were excluded from the planned reduction. Budget spending on export subsidies had to be reduced by 36% and quantity of subsidised exports had to be cut by 21%.
The CAP reform of 1992 and its consequences

The CAP reform

46 That reform was adopted in May 1992. The major changes consisted in replacing a system of support mainly based on high guaranteed prices with a support system to farmers’ income based on both prices and direct aids. The goal of the reform was to:

- ensure competitive advantages worldwide by bringing prices more in line with world prices and recapturing the home market with focus on cereals
- control production and the excess rise of budget spending
- contribute to territorial planning and environment conservation

47 Thus the reform consisted in substantially lowering support prices for main productions and increasing direct aids to farmers. Cereal intervention prices were lowered by 35%. This entailed income losses which were compensated with direct subsidies. Those payments depended on acreage and unit premiums were independent of market conditions (i.e. prices). They were based on historic yields. Guaranteed prices were suppressed for oilseeds and protein crops. In the same way premium calculated per hectare compensated income losses.

48 In an attempt to reduce cereal, oilseed and protein crop production, the compensatory payments were dependent on the withdrawal of land from production. A simplified scheme was introduced for small producers. Those farmers with an area producing no more than 92 tons of grains at average regional yields were, as small producers, exempted from the set aside requirement. The set aside rate was first set at 15% in 1993. It was later lowered to 10% in 1996, and 5% in 1997 and 1998 thanks to better market conditions. For each of those crops unit premiums were lowered if cropped areas were higher than maximum guaranteed cropped areas.

49 The same approach was applied to the beef sector. Beef guaranteed prices were lowered by 15%. Premiums based on the number of livestock created in the 1980’s were increased. Those premiums were subject to individual ceilings or regional ceilings and were payable on a maximum stocking rate per hectare. In an attempt to encourage extensification of production methods additional payments were payable when the stocking rate was less than 1.4 livestock unit per hectare.

50 An important aspect of the reform was accompanying measures which covered agro-environment, afforestation and early retirement measures. Those measures provided partial responses to environmental and structural problems within the European Union.

51 As was previously outlined, high prices of the old CAP had also encouraged intensification. This had entailed higher uses of fertilisers and problems of pollution in certain areas. Thus one of the accompanying measures consisted in granting aid to farmers for the maintenance of production techniques which encouraged the protection of environment, the landscape and natural resources. In France, the main agro-environmental measure consisted of a special premium for extensive livestock farming. It was considered that intensive livestock farming had been favoured by the reform for it got compensatory payments for cereals and silage maize grown for animal feed. Thus the French government created a premium per hectare of meadow. In 1996 that premium was distributed to 102 000 farmers. It represented 1,4 billion FF. Other local actions were
financed thanks to agro-environmental measures but the number of farmers and financial amounts involved were a lot lower.

52 Afforestation of farmland was encouraged through special premiums but that measure had little success in France. Early retirement scheme permitted those member states which so desire to grant aid to farmers and farm workers, aged at least 55, who wish to cease work before normal retirement age. In 1992 early retirement was proposed in France under certain conditions to farmers aged 55-60 (normal retirement age being 60). Between 1992 and 1997 43 000 farmers benefited from that measure. That freed 1.3 million hectares and enabled extension of remaining farms but few young farmers settled.

53 The reform in France met fierce opposition from the main farmers’ unions. Thus as a concession to farmers, taxes on farmland were decreased and special premiums to mountainous areas were increased. In contrast, some French policy analysts considered the reform a success for French negotiators. Being the biggest producers of cereals and oilseeds in Europe, France would benefit a lot from new direct aids. The reduction of price support would also increase competitiveness of French cereals in the European market.

**Consequences of the reform**

**Consequences on EAGGF expenditures**

54 European agricultural production growth in the two decades preceding the CAP reform had entailed a rapid rise of EAGGF guarantee part expenses in spite of various attempts to stem that growth (milk quotas, maximum guaranteed quantities, etc.).

55 The reform enabled that growth to slow down, for direct aids introduced or increased by the reform were subject to individual or global ceilings. Hence they were better controlled than expenses entailed by price support. Thus between 1991 and 1996 expenditures of the guarantee part of EAGGF grew by 20%, but after taking into account expenses due to European Union 1995 enlargement that growth was reduced to 13% and expenses remained under the guideline (see Annex 3).

56 The most obvious consequence of the reform was the growing role of direct subsidies. From 5 billion ECU in 1991 they increased to 28 billion ECU in 1996 (see Graph 2). They now account for 70% of EAGGF guarantee expenditures compared with 15% in 1991.
The composition of those direct aids also changed as the number of sectors supported by direct subsidies increased (see Table 4). Direct subsidies to arable crops increased by 15.3 billion ECU compared with 3.7 billions for beef. As a result the share of direct aids to arable crops increased to 57% (11% in 1991). On the contrary, direct subsidies for beef and sheep which represented 46% of direct support in 1991 now constitute only 22% of those subsidies.

**TABLE 4: EAGGF GUARANTEE EXPENDITURES, DIRECT AIDS (MILLION ECU)**

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable crops</td>
<td>632</td>
<td>15938</td>
<td>11%</td>
<td>57%</td>
</tr>
<tr>
<td>Beef</td>
<td>713</td>
<td>4383</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Sheep</td>
<td>1963</td>
<td>1681</td>
<td>34%</td>
<td>6%</td>
</tr>
<tr>
<td>Milk</td>
<td>894</td>
<td>348</td>
<td>16%</td>
<td>1%</td>
</tr>
<tr>
<td>Accompanying measures</td>
<td>0</td>
<td>1853</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>1521</td>
<td>3604</td>
<td>27%</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5723</td>
<td>27808</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

**SOURCE: EC COMMISSION. EAGGF GUARANTEE VI - GI - BEP CALCULATION.**

Thus the reform greatly altered the composition of expenditures (see Annexe 6 and Table 4). Expenses for productions depending on reformed Common Market Organisation, for
which direct subsidies were introduced or increased, grew of course rapidly during that period. For instance expenses for arable crops increased by 75%. Increase in direct subsidies for cereals, oilseeds and protein crops more than offset the decrease in market support. Expenditures for arable crops now account to 42% of all expenses compared with 29% in 1991.

**TABLE 5: EAGGF GUARANTEE EXPENDITURES (MILLION ECU)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Arable crops</td>
<td>9332</td>
<td>16371</td>
<td>29%</td>
<td>42%</td>
</tr>
<tr>
<td>Other crops</td>
<td>8852</td>
<td>8630</td>
<td>27%</td>
<td>22%</td>
</tr>
<tr>
<td>Milk</td>
<td>5858</td>
<td>3582</td>
<td>18%</td>
<td>9%</td>
</tr>
<tr>
<td>Beef, sheep</td>
<td>6274</td>
<td>8481</td>
<td>19%</td>
<td>22%</td>
</tr>
<tr>
<td>Accompanying</td>
<td>0</td>
<td>1853</td>
<td>0%</td>
<td>5%</td>
</tr>
<tr>
<td>Other</td>
<td>2310</td>
<td>170</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>Total</td>
<td>32626</td>
<td>39087</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

SOURCE: EC COMMISSION. EAGGF GUARANTEE - VI - G1 - BEP CALCULATION.

Expenditures for animal productions barely changed between 1991 and 1996. But expenses for beef increased by 58% (this is partly due to exceptional expenses because of the BSE crisis of 1996) whereas expenditures for milk decreased sharply. Thus expenditures for the milk sector now account for only 9% of total expenditures and the share of expenditures for other animal productions remained stable.

**GRAPH 3: EAGGF GUARANTEE EXPENDITURES PER COUNTRY**

SOURCE: EC COMMISSION. EAGGF GUARANTEE - VI - G1 - BEP CALCULATION.
Another important consequence of the reform was an increase in the share of EAGGF guaranty expenditures devoted to French agriculture. Due to the importance of France for COP productions in the EU, French farmers get 29% of expenses for cereals support, 36% for oilseeds and 59% for protein crops. Thus French agriculture now gets 25% of EAGGF guaranty expenditures compared with 20% in 1991. The British share also increased while the German share was barely altered. Thus French agriculture appeared as one of the biggest beneficiaries of the reform.

Consequences on farm incomes

Direct aids to European agriculture increased a lot during the reform. They were supposed to compensate income losses deriving from higher prices. Many forecasting studies predicted sharp income losses when the reform was decided. Studies of farm income evolution in France show that those dire predictions did not come true.

Results presented in this part of the text derive from a study based on the Farm Accountancy Data Network (FADN). That database offers technical information (acreages, herds...), and financial information (net production, value added, gross farm surplus...) of about 7,200 French farms, which can be considered as a representative sample of the 430,000 professional farms. Thus FADN provides data for about only 60% of French farms. But these farms account for more than 90% of used agricultural acreage and 95% of production. This study gives therefore a fair idea of income evolution between 1991 and 1995 for French farms specialised in productions affected by the CAP reform.

Arable crops

We studied the evolution of a constant sample between 1991 and 1995 of farms specialised in COP products (Cereals Oilseeds Proteins crops).

One of the first evolutions to be noticed is the sharp increase in farm sizes (see Table 6). Farmers reacted to the negative effects of mandatory set aside by increasing the size of their farms. This was of course accompanied by a reduction in the number of farms. The main consequence of the CAP reform and entailed decrease in prices was a decline in average net production value per farm, which fell by 28% between 1991 and 1995. That 200 000 FF drop in production value was more than offset by the increase in direct subsidies. Thus total receipts grew by 4%. But only increase in average farm size enabled that growth. Average receipt per hectare fell by 7% during that period.

<table>
<thead>
<tr>
<th>TABLE 6: RECEIPTS. COP FARMS AVERAGE PER FARM IN FRENCH FRANCS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
</tr>
<tr>
<td>Net production (FF)</td>
</tr>
<tr>
<td>Subsidies (FF)</td>
</tr>
<tr>
<td>Total receipts (FF)</td>
</tr>
<tr>
<td>Acreage (ha)</td>
</tr>
</tbody>
</table>
COP farms also reacted to falling prices by reducing expenses. That was particularly true for intermediate consumption (fertilisers...). Taxes were also reduced during that period. Thanks to dropping expenses gross farm surplus grew by 19% in current terms and 10% in constant terms. As financial costs and medium and long-term loan repayments barely changed, this enabled a sharp rise of disposable income (33%).

### TABLE 7: EXPENSES AND INCOME. COP FARMS AVERAGE PER FARM IN FRENCH FRANCS

<table>
<thead>
<tr>
<th></th>
<th>1991</th>
<th>1995</th>
<th>95/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermediate consumption</td>
<td>319 511</td>
<td>306 788</td>
<td>-4%</td>
</tr>
<tr>
<td>of which fertilisers</td>
<td>76 973</td>
<td>66 768</td>
<td>-13%</td>
</tr>
<tr>
<td>Taxes</td>
<td>42 667</td>
<td>14 447</td>
<td>-66%</td>
</tr>
<tr>
<td>Gross farm surplus</td>
<td>287 881</td>
<td>345 047</td>
<td>+19%</td>
</tr>
<tr>
<td>Disposable income</td>
<td>190 489</td>
<td>254 166</td>
<td>+33%</td>
</tr>
</tbody>
</table>

Source: FADN-COP farms - constant sample

Thus good cereal prices in 1995 and increasing subsidies enabled a strong improvement of disposable incomes for COP farms. Part of this improvement can however be explained by the increasing size of farms. COP farms became also more dependent on direct subsidies. 95% of their disposable income derived from it in 1995 compared with 8% in 1991.

**Beef and dairy farms**

Prospective studies predicted income improvements for those farms since subsidy increases more than offset the price reductions. The study of income evolution of a constant FADN sample of beef and dairy farms enabled to confirm that result.

As COP farms and beef farms reacted to the reform by increasing their size the thus increased production volumes per farm enabled them to offset the drop in prices. Furthermore, price fall for beef was very low between 1991 and 1995. Beef prices declined by only 4% during that period (compared with a 15% lowering of intervention prices). That slower decrease of market prices can be explained by several factors. Prices in 1991 were very low because that particular year was a peak in the beef production cycle and the production decline during the following years improved market conditions before the 1996 BSE crisis. Their growing size enabled beef farms to expand their herds by 16%. They could that way increase production volume and number of premium units.

Subsidies more than doubled. As French beef farms were more extensive than their European counterparts, most of them got extensive additional payments. This showed that extensification incentives in the CAP reform were not very constraining and average
beef farms stocking rate barely changed between 1991 and 1995. Extensive beef farms also benefited from new agro-environmental measures whereas their more intensive counterparts benefited from cereal premiums for silage maize and lower cereals prices. Thus total receipts grew by 24%. As expenses increased more slowly, average gross farm surplus increased by 42%. Subsidy increases, as forecasted, more than offset the negative effects of the fall in prices. But just as COP farms and beef farms became more dependent on subsidies, 60% of their gross farm surplus (40% in 1991) and 90% of their disposable income now derive from it.

**TABLE 8: GROSS FARM SURPLUS, BEEF FARMS AVERAGE PER FARM IN FRENCH FRANCS**

<table>
<thead>
<tr>
<th></th>
<th>1991</th>
<th>1995</th>
<th>95/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net production</td>
<td>288 076</td>
<td>296 540</td>
<td>+3%</td>
</tr>
<tr>
<td>Subsidies</td>
<td>57 870</td>
<td>131 265</td>
<td>+127%</td>
</tr>
<tr>
<td>Total receipts</td>
<td>345 946</td>
<td>427 805</td>
<td>+24%</td>
</tr>
<tr>
<td>Expenses</td>
<td>195 356</td>
<td>213 369</td>
<td>+9%</td>
</tr>
<tr>
<td>Gross farm surplus</td>
<td>150 590</td>
<td>214 435</td>
<td>+42%</td>
</tr>
</tbody>
</table>

**SOURCE: FADN - BEEF FARMS - CONSTANT SAMPLE**

The Common Market Organisation for dairy products was not particularly altered by the reform but dairy farms endured lower beef and veal prices and benefited partly from subsidy hikes. As COP and beef farms, those farms extended their acreage. This enabled them to increase their production volumes. As milk prices barely changed, net production value increased by 5%. Subsidies almost tripled: many dairy farms benefited from cereal premiums particularly for silage maize and from new agro-environmental measures. Thus global receipts rose by 24% whereas expenses grew by 4%. As a consequence, gross farm surplus increased by 23% but subsidies accounted in 1995 for 20% of gross farm surplus compared with 9% in 1991.

**TABLE 9: GROSS FARM INCOME, DAIRY FARMS AVERAGE PER FARM IN FRENCH FRANCS**

<table>
<thead>
<tr>
<th></th>
<th>1991</th>
<th>1995</th>
<th>95/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net production</td>
<td>489 522</td>
<td>515 354</td>
<td>+5%</td>
</tr>
<tr>
<td>- of which milk</td>
<td>348 108</td>
<td>387 122</td>
<td>+9%</td>
</tr>
<tr>
<td>- of which beef and veal</td>
<td>14 414</td>
<td>28 232</td>
<td>+96%</td>
</tr>
<tr>
<td>Subsidies</td>
<td>18 471</td>
<td>50 870</td>
<td>+175%</td>
</tr>
<tr>
<td>- arable crops</td>
<td>0</td>
<td>20 265</td>
<td></td>
</tr>
<tr>
<td>- beef subsidies</td>
<td>2 898</td>
<td>6 821</td>
<td>+135%</td>
</tr>
</tbody>
</table>
So in France the CAP reform did not entail the predicted income losses. Farmers benefited from increasing subsidies and reacted to falling prices by extending their farm size, which enabled them to increase production volumes.

But they became heavily dependent on those direct aids, which account for 50% of disposable income of French professional farms. Those percentages reach 90% for COP farms and beef farms. The rate of decrease in the number of farms also briefly accelerated during the reform.

Conclusion

French agriculture underwent tremendous changes during the last 40 years. Total agricultural production more than doubled, and France, a net importer of agricultural and agro-business products in 1960, became the second biggest exporter after the USA in the 1990’s.

But that modernisation entailed a rapid decrease in the number of farm jobs. Two-thirds of French farms disappeared between 1960 and 1996 and the CAP reform briefly accelerated this phenomenon. That did not cause any particular problem in the 1960’s when the economy was expanding rapidly and people leaving the farming sector could find jobs in other economic sectors. It also enabled income improvement for remaining farmers. But nowadays this leads to population desertification problems in certain rural areas where agriculture is the sole provider of employment. Modernisation also entailed for certain products growing surpluses, which had to be exported with subsidies. Furthermore, excessive intensification increased pollution problems particularly with the development of intensive animal factory farming.

The 1992 CAP reform was partly devised to solve those problems. It partially alleviated overproduction problems. Lower cereal internal prices increased European consumption particularly for animal feed. This led to a reduction of subsidised exports. However incentives for extensification of beef farms were insufficient. Production did not decrease. This is all the more problematic since European beef consumption is falling. Thus beef production surplus in the European Union remains endemic. Agro-environmental measures were also insufficient to promote on a large-scale environment protection.

The reform with its shift from price support to direct aids enabled a better control of the growth of EAGGF expenditures, but farms, more particularly COP farms and beef farms, became heavily dependent on subsidies which make up 90% of their disposable income. Furthermore those aids based on acreage or livestock units still favour the biggest farms. It also increased incentives for farms to expand and the number of French farms is still decreasing rapidly.
The CAP will also have to meet several challenges in the coming years. One of them will be the upcoming WTO negotiations starting in 2000. Restrictions on subsidised exports will probably be hardened and agricultural support will have to be lowered. It will also have to be more decoupled (i.e. independent from productions, areas and livestock units...) than it is today. Another challenge will be the enlargement of the European Union to Eastern European countries whose agricultural prices are lower than Western European ones.

Therefore a new reform of the CAP has been decided. It mainly consists of a deepening of the process initiated in 1992: lowering of prices compensated with direct subsidies for arable crops and the beef sector. More emphasis will also be put on rural development and agro-environment.

French agriculture heavily dependent on public subsidies will also have to pay more attention to society's expectations. Consumers are more and more anxious about quality of food and society becomes more conscious of the role agriculture plays in taking care of the landscape and animating certain low density rural areas where it is very often the sole provider of employment. Thus agricultural function is not reduced to the production of cheap food. It also provides other services but those cannot be paid for by the market. Therefore a new "guidance law" (loi d'orientation) for agriculture is under discussion in the French Parliament. Its cornerstone will be "land management contracts". The role of those contracts will be to pay for those new functions. For instance, help will be granted to farmers adopting less environment damaging practices, promoting employment and rural development or improving their production quality. Thus one aim of French agricultural policy currently consists of basing an increasing share of agricultural support on the remuneration of those new functions. It will help farmers to meet social expectations and, being fully decoupled from production, those support measures will be more easily accepted by our trade partners during the upcoming WTO negotiations.

ANNEXE 1 AVERAGE INCOME PER FARM (FRANCE REAL TERMS 1980 = 100)

SOURCE: INSEE
ANNEXE 2 AGRICULTURAL AND INPUT PRICES (REAL TERMS 1980 = 100)

SOURCE: INSEE

ANNEXE 3 FRANCE’S AGRICULTURE AND AGROBUSINESS TRADE BALANCE

SOURCE: SCEES
ANNEXE 4 AGRICULTURE AND AGRIBUSINESS TRADE EXPORT AS A PERCENTAGE OF IMPORTS

![Graph showing agriculture and agribusiness trade export as a percentage of imports.](image)

**SOURCE:** SCEES

ANNEXE 5 EAGGF GUARANTY EXPENDITURES

![Graph showing EAGGF guaranty expenditures.](image)

**SOURCE:** EC COMMISSION. EAGGF GUARANTEE - VI+G1 - BEP CALCULATION.

ANNEXE 6 EAGGF GUARANTY EXPENDITURES IN MILLION ECU

<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>Cereals</td>
<td>5151</td>
<td>11126</td>
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<tr>
<td>incl. market support</td>
<td>4596</td>
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<td>direct aids</td>
<td>555</td>
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<tr>
<td>Oilseeds</td>
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<td>2451</td>
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<td>Protein crops</td>
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<tr>
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<td>Milk</td>
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<tr>
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<td>Other expenses</td>
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<tr>
<td>Total</td>
<td>32626</td>
<td>39087</td>
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</table>

**Source:** EC Commission. EAGGF guarantee - VI-G1 - BEP calculation.
ANNEXE 7 MANAGEMENT INTERMEDIATE BALANCES IN FRENCH FADN (FARM ACCOUNTANCY DATA NETWORK)

BIBLIOGRAPHY

Bibliography


SCEES, Graph Agri 1998.


NOTES

1. The Community budget for agriculture is handled by the EAAGF (European Agricultural Guidance and Guarantee Fund) which is divided in two areas:
   - the guarantee fund finances most expenditures for: regulating the home market through purchases made by intervention organisations, storage costs, direct aid to income, subsidies to help product sales, export refunds.
   - the guidance fund manages Community funds for structural policy: modernisation operations, compensatory funds for natural handicaps, young farmer settlement aids.

2. Total used agricultural acreage in France amounts to 30 million hectares.

3. BSE: Bovine Spongiform Encephalopathy.

4. COP: Cereals Oilseeds Protein crops.

5. Those concepts are set in context in Annexe 7.

6. Those concepts are set in context in Annexe 7.

7. Those concepts are set in context in Annexe 7.

8. Those concepts are set in context in Annexe 7.
II. Market and regulation: the national scenarios
3. The Uruguay Round, Indian Agriculture and the WTO

Bibek Debroy

Preliminaries

As a founder member of the General Agreement on Tariffs and Trade (GATT) since 1947, India had participated in seven GATT negotiating rounds before the Uruguay Round. But these earlier GATT negotiations had almost passed unnoticed. In contrast, the debate on the pros and cons of the Uruguay Round agreement generated a lot of heat in India. In any process of negotiations, there is a quid pro quo. The obvious areas where India was expected to lose are the so-called new areas of TRIMs (trade-related investment measures), TRIPs (trade-related intellectual property rights) and services. In contrast, India was expected to gain in areas that concern the rules of GATT, since better multilateral rules always tend to benefit a relatively weaker country. India was also expected to gain in areas that concern market access and the agricultural sector is one example of market access.

The Uruguay Round negotiations covered a wide range of issues and were far more ambitious than any MTNs carried out earlier. The traditional concern of such negotiations has generally been a liberalization of trade. The Uruguay Round went beyond that. It talked of the rules and disciplines of the trading system. It also involved discussions in new areas like trade in services, trade-related intellectual property rights (TRIPs) and trade-related investment measures (TRIMs). Originally, there were fifteen different areas earmarked for discussion, although eventually, some amount of reshuffling across these areas also took place. The original fifteen areas fall into three distinct thematic groups. The first is one of reducing specific trade barriers and improving market access for partner countries. Areas under this theme are tariffs, non-tariff measures, natural resource-based products, textiles and clothing and agriculture. A second theme of the negotiations was one of strengthening GATT disciplines and improving the rules under which GATT operated. Areas under this theme
are GATT articles, safeguards, MTN agreements and arrangements, subsidies and countervailing measures, dispute settlement and functioning of the GATT system (FOGS). The third and final theme is that of the new areas and includes TRIPs, TRIMs and services.

3 The national schedules of concessions and commitments on tariffs and NTBs do not form part of the Final Uruguay Round text, but are available separately. Traditionally, there has been an argument that exports from developing countries are constrained by non-tariff barriers (NTBs) in developed countries. In fact, the argument is strangers-as NTBs facing developing country exports tend to be more severe than NTBs facing developed country exports. Such NTBs are particularly serious for food and live animals, agricultural materials, ferrous metals, mineral fuels, leather, textile yarn and fabrics, clothing and footwear.

4 It is therefore natural to ask, how has the Uruguay Round helped in easing these NTBs, both for agricultural and for non-agricultural products? The answer is not simple, as NTBs also cover agriculture and textiles and garments. One point to be noted for NTBs is that grey area measures like voluntary export restraints and orderly marketing arrangements have been prohibited in the Uruguay Round agreement. Grey area measures are measures whose legality under the old GATT was not clear. These have now been prohibited and have to be phased out over a period of four years. Developed countries can however resort to the safeguards agreement to circumvent this. Moreover, developed countries can resort to policy substitution. This means the substitution of prohibited NTBs by new measures that have not been banned. For instance, this is likely to happen for safeguards, anti-dumping and food and sanitation requirements.

5 There are several problems in trying to quantify the impact of easing out of NTBs. Subject to this, some World Bank estimates show what is likely to happen to NTB coverage ratios because of the Uruguay Round agreement. The figures are based on 1992 imports and are coverage-ratios for imports by OECD countries. NTBs include all NTBs. That is, textiles and clothing are included, and so is agriculture, apart from NTBs covered by the Tokyo Round codes. In fact, the drop in coverage ratios is largely explained by what is going to happen to agriculture and textiles and garments. The phasing out of NTBs in the agricultural sector will be almost immediate. But the phasing out for textiles and garments will be staggered, spread out over a period of ten years, leading up to 2005. The figures are impressive. For example, before the Uruguay Round, the coverage ratio for all goods was 29.4% for India. After the Uruguay Round, the coverage ratio is going to decline to 5.1%. The gains are no less significant for other developing countries.

6 A few studies have been undertaken to quantitatively assess the impact of the Uruguay Round agreement on global real income or on the incomes of individual countries. These are generally based on the assumption that implementation begins in 1995 and is completed within a period of ten years. The impact on real world income thus refers to the year 2005. The point that it is real income (in 1992 US dollars) and not nominal income, needs to be emphasized.

7 It also needs to be emphasized that these studies tend to under-estimate the gains from the Uruguay Round liberalization. For example, they concentrate on the market access provisions, specifically tariffs. The gains from reductions in non-tariff barriers and liberalization in textiles and garments, agriculture and services are not that easy to quantify. Nor is it possible to quantify the gains from better rules, such as in anti-dumping, subsidies, safeguards, better standards of intellectual property protection and improved dispute settlement procedures. The studies also tend to assume perfect
competition. This excludes gains from exploiting economies of scale because of imperfect competition. Gains from exploiting dynamic economies of scale, such as through increased cross-border flows of investments, are also excluded. Finally, the benchmark for making comparisons is taken to be the status quo prevailing in 1992. This is not relevant. The benchmark for making comparisons should instead be the counterfactual scenario of a deteriorating trading environment had the Uruguay Round negotiations indeed failed.

Subject to these caveats, what do the studies show? They suggest that real world income (in constant 1992 US dollars) will increase by between 212 billion and 274 billion in 2005. Further such annual increases will follow. This amounts to around 1% of world gross domestic product (GDP).\(^2\)

The increase in real income for the developing countries as a group is expected to be between 36 billion and 78 billion. Since developing countries are not important enough individually, very few studies quantify the gains for individual developing countries. Some figures are available on real income gains as a percent of GDP. These show gains of 2.5% for China, 0.5% for India, 0.6% for South Africa and 0.3% for Brazil. It must be remembered that some developing countries are expected to lose because of the Uruguay Round package. This includes net food importing developing countries, which are likely to lose because of higher world agricultural prices brought by the phasing out of agricultural subsidies. It is because of this that the Final Uruguay Round text includes a “decision on measures concerning the possible negative effects of the reform programme on least developed and net food-importing developing countries”. Other developing countries that are likely to lose are those who have trade preferences in their favour. The value of these trade preferences goes down because of the liberalization.

Quantitative estimates of the increases in world trade are rarer. But since the Uruguay Round package is about direct trade liberalization, the increase in world trade is clearly going to be more than the increase in world income. Some GATT estimates (GATT, 1993) show that world trade will increase by 12% (on top of the normal growth rate), if the Uruguay Round package is completely implemented. In constant 1992 US dollars, this represents an increase of 745 billion. The value of world exports (including services) will increase by around 10%. The value of exports originating in North America will increase by 8%. And those originating in the European Union will increase by 10.3%. Some of the largest projected increases in world trade are in areas that are of interest to developing countries. For instance, world trade in textiles is projected to grow by 34%, that in clothing by 60% and that in agricultural, forestry and fishery products by 20%.

The agriculture agreement

Agriculture is one aspect of the Uruguay Round agreement where myth has been persistently more pervasive than reality. The subsidies given to farmers will have to be eliminated because of the agreement. The public distribution system (PDS) will have to be discontinued. India will have to import agricultural products from abroad. Seeds will have to be patented. Farmers will not be able to sell or save seeds. All seeds will have to be bought from multinational firms. These are a few examples of the myths that abound.

The agreement on agriculture has four main components: concessions and commitments on market access, domestic support and export subsidies, the agreement on sanitary and
phytosanitary measures and a Ministerial Declaration concerning least developed and net food-importing developing countries.

The agreement on agriculture seeks to liberalize world trade in agriculture and free it from governmental measures that distort trade and lead to inefficiency. For instance, in Western Europe, domestic cultivators are protected from foreign competition. Export subsidies are used to get rid of surplus agricultural commodities in world markets at prices below actual costs of production. Through the Common Agricultural Policy (CAP), internal prices are supported even if they are far above world prices.

Broadly speaking, there are three ways of subsidizing farmers through government intervention. The first method is to have a set of domestic and external policies so that domestic cultivators receive higher prices for their outputs than would have been possible, were trade to become completely free. This can be done through domestic price support policies, tariffs, quotas, export enhancement programmes, price stabilization measures, import licensing and canalisation. This does not necessarily mean that agriculture will always be subsidized through such measures. These measures lead to distortions. And depending on what sort of measures are in place, it is also possible for agriculture to have a negative subsidy or a tax. Secondly, farmers can be subsidized by providing them inputs at prices below costs of supply or at prices that are lower than prices charged from other consumers of the same product. Examples are subsidies for electricity, credit, fertilizers, transport and irrigation, farm fuel, tax exemption, livestock feed and crop insurance. Here again, in principle, there can be a negative subsidy. The third method of subsidization is through direct cash payments to cultivators.

Measures that distort agricultural policies can thus be both domestic policies and border measures. Since there can be several such measures, they need to be quantified and aggregated in some sense. This takes us to the notion of the AMS. The Aggregate Measurement of Support (AMS) is a quantification and aggregation of all domestic governments measures that impinge on agriculture. The method for calculating the AMS is set out in Annexe 3 to the agricultural text, with all calculations being done on an annual basis. Not all domestic support measures have to be included in the calculation of the AMS. These exemptions are listed out in Annexe 2 of the agricultural text. These are the so-called green box policies which have a minimal impact on trade and are therefore free from reduction commitments.

Some general services which offer services or benefits to agriculture or the rural community are accordingly exempted. This includes research, pest and disease control, training services, extension services, inspection services, marketing and promotion services and infrastructural services. The exemption on infrastructural services does not however cover “subsidies to inputs or operating costs, or preferential user charges” (Clause 2 g).

Exemptions also extend to public stockholding for food security purposes and domestic food aid. Public stockholding for food security purposes covers “expenditures (or revenue foregone) in relation to the accumulation and holding of stocks of products which form an integral part of a food security programme identified in national legislation. This may include government aid to private storage of products as part of such a programme. The volume and accumulation of such stocks shall correspond to predetermined targets related solely to food security. The process of stock accumulation and disposal shall be financially transparent. Food purchases by the government shall be made at current
market prices and sales from food security stocks shall be made at no less than the current domestic market price for the product and quality in question” (Clause 3).

Domestic food aid covers “expenditures (or revenue foregone) in relation to the provision of domestic food aid to sections of the population in need. Eligibility to receive the aid shall be subject to clearly defined criteria related to nutritional objectives. Such aid shall be in the form of direct provision of food to those concerned or the provision of means to allow eligible recipients to buy food either at market or at subsidized prices. Food purchases by the government shall be made at current market prices and the financing and administration of the aid shall be transparent” (Clause 4).

The public distribution system (PDS) is covered by the clause on domestic food aid and, to some extent, by the clause on public stockholding for food security purposes. Footnotes 5 and 6 of the text make it clearer still that the PDS need not be phased out.

“Governmental stockholding programmes for food security purposes in developing countries whose operation is transparent and conducted in accordance with officially published objective criteria or guidelines shall be considered to be in conformity,... including programmes under which stocks of foodstuffs for food security purposes are acquired and released at administered prices, provided that the difference between the acquisition price and the external reference price is accounted for in the AMS.... The provision of foodstuffs at subsidized prices with the objective of meeting food requirements of urban and rural poor in developing countries on a regular basis at reasonable prices shall be considered to be in conformity.....”.

The argument that the PDS has to be phased out because of the Uruguay Round agreement is thus a myth. Neither the PDS nor the food procurement programme need be affected. However, greater disciplines on the PDS are indicated. For example, the PDS must be transparent and directed at urban and rural poor on the basis of clearly defined nutritional criteria. It should not be across the board for everyone. Moreover, food purchases by the government for the PDS will have to be made at current market prices. These stipulations do not conflict with internal arguments that are advanced in India about the revamping of the PDS so that it is targeted better.

Exemptions also extend to governmental financial participation in income insurance and income safety-net programmes and to payments (made either directly or through governmental financial participation in crop insurance) for relief from natural disasters. There are also exemptions for structural adjustment assistance provided through producer retirement programmes, resource (such as land) retirement programmes and investment aids. In addition, there are exemptions for environmental programmes and payments under regional assistance programmes. Following the GATT accord, the European Union has been arguing that half of its agricultural land is backward, so that the annual farm subsidy can be justified by resorting to this clause.

Provided the AMS is over a benchmark, it has to be brought down in accordance with the time frames that have been submitted to GATT/WTO by member countries. To give some idea about the magnitudes involved, the domestic support in developed countries is now estimated to be around 150 billion US dollars. In contrast, in developing countries, the figure is estimated to be around 19 billion dollars.

The benchmark for product-specific support is 5% of the total value of production of the agricultural product (Article 6.4 a). In other words, if the product-specific support is less than 5%, there are no reduction commitments. For non-product-specific support, the
benchmark is also 5% of the value of total agricultural production (Article 6.4 a). If the non-product-specific support is less than 5%, there are no reduction commitments. There is a special clause for developing countries. “For developing country Members, the de minimis percentage... shall be 10 per cent” (Article 6.4 b). The crucial question thus is, what is India’s AMS like? Is it over 10% or is it less than 10%?

Several people have worked out these figures and they invariably show that India’s AMS (both product-specific and non-product-specific) was far below the 10% benchmark in the base period.

The Ministry of Commerce’s calculations were something like the following, for the base period—of 1986–89. The total value of agricultural production (annual average) was Rs. 113,000 crore and 10% of this is Rs.11,300 crore\(^5\). The average-annual non-product-specific subsidy was Rs.5,300 crore. The average annual product-specific subsidy, calculated as the difference between the international reference price and the domestic support price multiplied by the volume of production, was not even positive. It was a negative subsidy to the extent of Rs.25,161 crore. The resultant aggregate measure of support thus has a negative value of Rs.19,861 crore. Since the benchmark for subsidisation is a positive figure of Rs.11,300 crore, India has the leeway of jacking up agricultural subsidisation by Rs.31,161 crore without falling foul of the agricultural agreement.

Although the precise figures differ, other computations also support the conclusion that the AMS in India is negative. For example, work done at the National Council of Applied Economic Research by Ashok Gulati and Anil Sharma show that the total AMS in India was \(-27.24\%\) of the total value of agricultural production, as opposed to the benchmark of \(+10\%\). Figures on product-specific AMS also mirror the phenomenon of a negative subsidy on agriculture. The Ashok Gulati-Anil Sharma exercise calculated the product specific AMS for 22 agricultural products. For 17 of these, the AMS was negative. And in the remaining 5, the AMS was below the 10% benchmark.

On domestic support, India thus has no reduction commitments. There is the Sharad Joshi type of argument that one wishes the AMS in India had been over the 10% benchmark. Had that been the case, required agricultural reforms would have been carried out thanks to the GATT agreement. However, as things stand, the compulsions for these reforms will have to be unilateral and internal.

When the AMS has to be brought down, it has to be brought down by 20% over a period of 6 years, beginning in 1995 (Article 10). But in this as well, there is special and differential treatment for developing countries. Moreover, developing countries have to reduce domestic support by 13.3% and not by the 20% required for developed countries.

Amongst border measures are requirements on binding and reduction of tariffs, other market access commitments and requirements on export subsidies.

There are various export subsidies that are subject to reduction commitments. Budgetary outlays on such export subsidies must be brought down by 36% over a period of six years. The volume of agricultural exports that receive subsidies must be brought down by 21% also over a period of six years. However, these commitments are for developed countries. For developing countries, there is again special and differential treatment. That is, the time frame for reduction is ten years and not six years. For developing countries budgetary outlays on export subsidies must be brought down by 24% and the volume of exports that receive subsidies must be brought down by 14%. Least-developed countries
have no reduction commitments on export subsidies. There is also a tariffication requirement. This means that quantitative import restrictions, variable import levies, minimum import prices, discretionary import licensing, nontariff measures maintained through state trading enterprises, voluntary export restraints and other such measures must be replaced by tariffs. Once this has been done, developed countries must reduce the tariffs by an average of 36% over a period of six years. And developing countries must reduce the tariffs by an average of 24% over a period of ten years. Minimum tariff reductions of 15% are also required for each tariff line, apart from the average reduction. In the case of developing countries, the minimum tariff reduction for each tariff line is 10%. These tariff reductions do not apply to least-developed countries.

32 If the tariffs after tariffication are very high to start with, the reduction of 36% will not amount to very much. There is thus a minimum market access commitment. This means that countries which maintain quantitative restrictions on agricultural imports must provide for minimal imports at low customs duties. This minimal threshold is defined as 3% of domestic consumption, rising to 5% of domestic consumption at the end of six years. A lot has been made of this market access commitment in India and this is usually presented as requiring that India must import 3-5% of domestic consumption requirements. This is not quite correct, for two reasons. First, the market access stipulation only applies to countries that maintain quantitative restrictions that are inconsistent with GATT. As long as India has balance of payment problems, under Article XVIIIIB, India’s quantitative restrictions are not GATT-inconsistent. The market access requirement does not therefore apply to India immediately. Second, assuming that India no longer has balance of payments problems, the minimum market access clause will indeed be relevant. But there is no compulsion that 3-5% of consumption needs must be imported. The requirement is that 3-5% of consumption needs must be opened up to imports. Stated differently, 3-5% of consumption cannot be on the negative list, but will have to be on the open general licence (OGL) list, subject to whatever tariffs exist. On agriculture, India has indicated tariffs of up to 100% on primary products, up to 150% on processed products and up to 300% on edible oils.

33 There are of course special safeguard provisions if market access leads to an import surge (appropriately defined) or if imports take place at an extremely, low price (again appropriately defined). There are also disciplines on export prohibitions and restrictions, but these do not apply to developing countries (Article 12). Finally, none of the agricultural measures used by member countries, domestic or border, can be challenged before nine years, that is, before 2004.

The implications

34 Table 1, based on GATT compilations from the Integrated Data Base (IDB), gives some idea about tariff bindings for agricultural products. Table 1 is based on data for 26 developing countries that account for around 80% of merchandise imports. As the table shows, all tariff lines for agricultural products will now be subject to bindings. The increase in the coverage of bindings is greatest for developing countries, particularly those in Asia and Latin America. The 100% binding for tariff lines of agricultural products is remarkable when one remembers that only, 83% of tariff lines for industrial products will be bound.

35 Market access is not going to increase only through tariff bindings, it is also going to increase through reductions in tariffs. Some idea of the tariff reductions involved can be
seen from Table 2. As the table shows some tariff lines are already bound duty-free. For other tariff lines, there exist duties at the moment. Some of these will now be bound without reductions others will be bound with reductions. The percentage of tariff lines on which there will actually be reductions is 79% for developed countries, 74% for developing countries and 84% for countries in transition.

TABLE 1: TARIFF BINDINGS (%) FOR AGRICULTURAL PRODUCTS

<table>
<thead>
<tr>
<th>Country Group</th>
<th>Percentage of tariff lines bound</th>
<th>Percentage of imports under bound rates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
</tr>
<tr>
<td></td>
<td>Round</td>
<td>Round</td>
</tr>
<tr>
<td>Developed countries</td>
<td>58</td>
<td>100</td>
</tr>
<tr>
<td>Developing countries</td>
<td>18</td>
<td>100</td>
</tr>
<tr>
<td>Economies in transition</td>
<td>51</td>
<td>100</td>
</tr>
<tr>
<td>North America</td>
<td>92</td>
<td>100</td>
</tr>
<tr>
<td>Latin America</td>
<td>6</td>
<td>100</td>
</tr>
<tr>
<td>West Europe</td>
<td>45</td>
<td>100</td>
</tr>
<tr>
<td>Central Europe</td>
<td>45</td>
<td>100</td>
</tr>
<tr>
<td>Asia</td>
<td>17</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: GATT

TABLE 2: BINDINGS WITH REDUCTIONS FOR AGRICULTURAL PRODUCTS (AS PERCENTAGE OF TARIFF LINES)

<table>
<thead>
<tr>
<th>Country group</th>
<th>Already bound duty-free</th>
<th>Currently dutiable Bindings with reductions</th>
<th>Bindings without reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Developed countries</td>
<td>17</td>
<td>79</td>
<td>4</td>
</tr>
<tr>
<td>Developing countries</td>
<td>0</td>
<td>74</td>
<td>26</td>
</tr>
<tr>
<td>Economies in transition</td>
<td>18</td>
<td>84</td>
<td>2</td>
</tr>
</tbody>
</table>
Developed countries account for around two-thirds of world imports of agricultural products. These countries have offered to reduce tariffs on imports of agricultural products, including those that have been converted from non-tariff barriers to tariffs, by an average of 37%. It is not easy to figure out what has been the magnitude of tariff reductions in the course of the Uruguay Round since prior to the Uruguay Round, many agricultural products were subjected to quantitative restrictions rather than tariffs. In addition, existing tariffs were often specific and not ad valorem. Subject to this caveat, Table 3 gives some idea about the tariff reductions in developed countries for different product categories.

### TABLE 3: TARIFF REDUCTIONS (%) IN DEVELOPED COUNTRIES FOR AGRICULTURAL PRODUCTS

<table>
<thead>
<tr>
<th>Product category</th>
<th>Percentage reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>All agricultural products</td>
<td>37</td>
</tr>
<tr>
<td>Coffee, tea, cocoa, sugar</td>
<td>34</td>
</tr>
<tr>
<td>Fruits and vegetables</td>
<td>36</td>
</tr>
<tr>
<td>Oilseeds, fats and oils</td>
<td>40</td>
</tr>
<tr>
<td>Other agricultural products</td>
<td>48</td>
</tr>
<tr>
<td>Animals products</td>
<td>32</td>
</tr>
<tr>
<td>Beverages and spirits</td>
<td>39</td>
</tr>
<tr>
<td>Flowers, plants, vegetables materials</td>
<td>48</td>
</tr>
<tr>
<td>Tobacco</td>
<td>36</td>
</tr>
<tr>
<td>Grains</td>
<td>39</td>
</tr>
<tr>
<td>Dairy products</td>
<td>26</td>
</tr>
<tr>
<td>All tropical products</td>
<td>43</td>
</tr>
<tr>
<td>Tropical beverages</td>
<td>46</td>
</tr>
</tbody>
</table>
Export subsidies in developed countries are now estimated to be worth around 21 billion US dollars. That is, export subsidies amount to around 20% of developed country exports of agricultural products. In contrast, export subsidies in developing countries are estimated to amount to only 1.7 billion dollars. In the 1986-90 period, developed countries are annually estimated to have subsidized exports of 48.2 million tonnes of wheat, 19.5 million tonnes of coarse grains, 1.8 million tonnes of sugar, 1.2 million tonnes of beef and 1.2 million tonnes of cheese and butter. Table 4 shows the number of individual commitments that developed countries have made on export subsidization of agricultural products.

<table>
<thead>
<tr>
<th>Product</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tropical nuts and fruits</td>
<td>37</td>
</tr>
<tr>
<td>Certain oilseeds and oils</td>
<td>41</td>
</tr>
<tr>
<td>Roots, rice, tobacco</td>
<td>40</td>
</tr>
<tr>
<td>Spices, flowers and plants</td>
<td>52</td>
</tr>
</tbody>
</table>

**SOURCE: GATT**
### TABLE 4: AGRICULTURAL EXPORT SUBSIDIES AND QUANTITATIVE COMMITMENTS BY DEVELOPED COUNTRIES

<table>
<thead>
<tr>
<th>Product category</th>
<th>Base period export subsidies (millions of US dollars)</th>
<th>Number of individual quantitative commitments offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fruits and vegetables</td>
<td>241</td>
<td>15</td>
</tr>
<tr>
<td>Coffee, tea, cocoa, Sugar</td>
<td>1203</td>
<td>23</td>
</tr>
<tr>
<td>Grains</td>
<td>7140</td>
<td>17</td>
</tr>
<tr>
<td>Animals and their products</td>
<td>4473</td>
<td>32</td>
</tr>
<tr>
<td>Oilseeds, fats and oils</td>
<td>301</td>
<td>12</td>
</tr>
<tr>
<td>Flowers, plants</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Beverages and spirits</td>
<td>303</td>
<td>8</td>
</tr>
<tr>
<td>Dairy products</td>
<td>5814</td>
<td>37</td>
</tr>
<tr>
<td>Tobacco</td>
<td>146</td>
<td>3</td>
</tr>
<tr>
<td>Other products</td>
<td>40</td>
<td>8</td>
</tr>
<tr>
<td><strong>Total agricultural products</strong></td>
<td><strong>20998</strong></td>
<td><strong>158</strong></td>
</tr>
</tbody>
</table>

**Source:** GATT

38 We have earlier referred to the increase in world trade that is expected to occur because of the Uruguay Round agreement. This means around 300 billion US dollars worth of additional exports beyond the year 2005. Of this, 90% is expected to be because of the agricultural agreement alone, due to the removal of domestic subsidies and easing of border measures, particularly in developed countries. That means, around 270 billion US dollars worth of additional agricultural exports per year. Because of the liberalization, it is also expected that world agricultural prices will go up by an average of 10%, subject of course to the caveat that all these estimates tend to be somewhat arbitrary. This makes India’s agricultural exports even more price competitive - not only in the United States and Western Europe, but also in Eastern Europe, a region that earlier used to be catered to by agricultural exports from the West.

39 Since agricultural protection was greater in developed countries, the primary beneficiaries of the liberalization are expected to be developing countries, of which India is one. The estimates however show that the major beneficiaries of agricultural trade liberalization are going to be the Cairns Group of countries, a group of agricultural
exporters, not all of which are developing countries. The reason for this is not that India's exports of agricultural products are price uncompetitive.

Most studies assessing the impact of farm liberalization policies on developing countries involve partial equilibrium models. As most such models concentrate on the agricultural sector, leaving other sectors of the economy unaccounted for, they generally abstract from the spillover effects to, and feedback from, other parts of the economy. They are therefore open to the possibility of theoretical inconsistencies. Some multi-sectoral models are also available. But they also consider one commodity market at a time, with an implicit adjustment for cross-price effects. Even when feedback from commodity markets to income growth or from agriculture to non-agricultural markets is incorporated, these models remain partial in the sense that they do not explicitly model factor markets, migration among sectors, and other possible interactions within the economy. Therefore, these studies understate the consequences of trade liberalization for resource movement out of (or into) agriculture, aggregate supply responses, relative prices and hence income distribution and welfare changes. In addition, since these studies deal with reduced form supply-demand elasticities, it becomes difficult to trace back specific assumptions relating to consumer preferences, production technology and factor mobility, on which they are based.

General equilibrium models, on the other hand, take into account not only the working of the particular market under consideration, but also the inter-linkages of various markets or sectors of the economy. In doing so, such studies close the model with respect to all other goods and hence remove the possibilities of theoretical inconsistencies present in partial equilibrium models. All five CGE studies point out that agricultural trade liberalization will result in increases in world farm product prices, global GDP and trade volumes. The studies also indicate substantial factor reallocation and sectoral redistribution of GDP. However, the effect on individual countries is not uniform and depends on how fast industrialized countries liberalize relative to developing countries and how strong the supply response is, from various countries modelled. Although it is difficult to pinpoint the reasons for differences in the results among models, it appears that the choice of key elasticities plays a significant role. Apart from the choice of key elasticities, assumed levels of protection considered by the studies, formulae used for quantifying the levels of protection, reference periods, periods of analysis, choice of countries liberalizing, extent of liberalization, assumptions regarding micro and macro situations affect the results of the studies.

The studies mentioned above were based on the anticipated outcome of the Final Uruguay Round package. The paper by Goldin and Mensbergghe (1995) presented in a World Bank conference on the Uruguay Round and the Developing Countries, on the other hand, offers an ex post evaluation of the tariffication process. In contrast to earlier studies, this paper draws on the available evidence regarding the Uruguay Round agreement and the reference scenario incorporates the latest estimates of global protection measures. Using the RUNS model, it evaluates the gains till the year 2002. The study is confined to tariffs in agriculture and manufacturing alone, and does not attempt to assess the impact of significant reforms in the area of non-tariff barriers. Simulation results of this study reiterate the results demonstrated in earlier studies. That is, the larger the reductions in protection levels, the higher the prices, world GNP, and TOT (terms of trade) for net exporting developing countries. And countries which liberalize the most, gain the most. The first simulation carried out in this study, for analysing the
impact of liberalization, is based on a reference scenario that assumes that the future (1994-2000) levels of protection are the 1982-1993 average levels of protection and that against this base, countries undertake reforms according to their offers on reduction's in tariffs as presented in the Uruguay Round submission. Such a long period for the average level of protection is justified on the ground that tariffs are inherently unstable reflecting world prices and domestic political considerations and an assumption that there has been no underlying trend in the level of tariffs.

The results of this simulation exercise are compared with the earlier published results using the RUNS model. The exercise shows much more modest changes in prices (in no case greater than 1.7%). In contrast, in earlier studies using the same model, price changes varied from -8.2% for coffee to 8% for sugar. As this price change would occur over the period 1995-2002, simulation exercise I suggests that the Uruguay Round is unlikely to have any discernible impact on world prices.

Simulation II, which expects the protection levels of recent years (1991-1993) to continue in the future, results in sharply higher gains. The average protection level was higher in the recent period, as compared to the historical (1982-1993) average level of protection. This implies that the application of the Uruguay Round submissions leads to greater liberalization in the second simulation exercise. On the other hand, for many developing countries which have engaged in fundamental trade reforms in the 1980's, the 1991-1993 levels of protection are generally below the historical 1982-1993 average levels. Therefore, they record lower gains when a recent benchmark is used. As a result of modest reforms in the recent period in these developing countries, the supply response, accounting for declines in coffee, cocoa, tea, rice, sugar and other prices, is more muted. In the OECD countries in contrast, a greater reform leads to a sharper supply response. This is demonstrated in the higher rise in prices of cereals.

In Simulation III, the effects indicated in Simulation II are further reinforced. Against the reference scenario of Simulation II, Simulation III analyses the impact of input subsidy reduction in addition to the application of tariff reduction. Compared to Simulation 11, the reduction in input subsidy further lowered production and exports of OECD countries. The associated changes in world prices, particularly for wheat (6.3%) and oils (3.9%), reflect the importance of input subsidies in OECD regions in these commodities. Food importing regions such as Africa suffer heavy losses in their terms of trade due to higher prices of coarse grains, oils, rice and sugar. However, net gains anticipated in this simulation amount to $68.4 billion. The results of this scenario indicate that the results are sensitive to assumptions regarding reductions in domestic distortions.

Instead of applying the individual submissions documented in the Final Act of December 1993, simulation IV considers the implications of the formula for tariff reforms (reduction in tariffs of 36% in OECD countries and 24% in the non OECD countries) embodied in the December 1992 Draft Final Act of the Uruguay Round. This more than doubles the gains anticipated in Simulation II. This simulation results in greater increases in world prices especially in the case of sugar, meat and dairy products, where tariffs have remained relatively untouched by the Uruguay Round agreement. As a result of this significant increase in world agricultural prices, the terms of trade effect for agricultural exporters improves and hence, except net food importing countries of Africa and Middle East developing countries benefit.

Contrary to previous simulation exercises, Simulation V assumes the existence of unemployment. In all other respects, it is exactly like Simulation III. Rigidity of wage
behaviour is introduced in this exercise. These rigidities and the potential for the expansion of employment alter the effects of trade reform. As trade reform lowers domestic consumer prices for liberalizing countries, the pressure on real wages is reduced and this leads to higher employment and higher overall urban and total welfare in this simulation.

48 Though domestic consumer prices in OECD countries fall due to liberalization, world commodity prices rise. These higher prices are transmitted to higher domestic consumer prices of countries in Africa, Latin America, and other low-income regions, including China and India. This leads to upward pressure on wages and reduces competitiveness and employment in these countries.

49 The impact of agricultural liberalization on world prices in different scenarios is summarized in Table 5.

50 A comparison of the simulation results forcefully demonstrates the extent to which the gains depend on the extent to which countries undertake reforms which go beyond the offers tabled in the Uruguay Round. These results imply that the benefits, in response to liberalization by developed industrialized countries, to developing countries will be minimal if these countries do not liberalize their agricultural sectors. However, changes in prices and production of various commodities, in the long run, are moderate when the impact of agricultural policies are analysed in a CGE framework. This is due to reallocation of resources between sectors in response to the initial price changes.

51 Though these studies do not explicitly report the impact on the Indian economy, it can be deduced that India can benefit by removing the protection levels from its highly protected commodities as countries which liberalize the most, benefit the most. Agricultural liberalization results in higher prices for wheat, sugar, meat, and dairy products. India can benefit by reallocating its resources from tea, rice, etc., (products for which price changes rate either negative or minimal and have a higher share in India’s agricultural exports) to dairy products (products for which price changes are significant and have higher shares in India’s agricultural exports).

TABLE 5: CHANGES IN WORLD AGRICULTURAL PRICES (PERCENT DEVIATION FROM BENCHMARK LEVELS IN 2002)

<table>
<thead>
<tr>
<th>Commodities</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
<th>V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>1.2</td>
<td>3.8</td>
<td>6.3</td>
<td>10.3</td>
<td>6.6</td>
</tr>
<tr>
<td>Rice</td>
<td>-1.5</td>
<td>-0.9</td>
<td>0.8</td>
<td>3.6</td>
<td>1.3</td>
</tr>
<tr>
<td>Coarse Grains</td>
<td>0.1</td>
<td>2.3</td>
<td>3.2</td>
<td>5.4</td>
<td>3.3</td>
</tr>
<tr>
<td>Sugar</td>
<td>-1.0</td>
<td>1.8</td>
<td>2.5</td>
<td>11.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Beef, Veal, &amp; Sheep Meat</td>
<td>0.2</td>
<td>0.6</td>
<td>1.4</td>
<td>6.0</td>
<td>2.3</td>
</tr>
<tr>
<td>Other Meats</td>
<td>-0.9</td>
<td>-0.6</td>
<td>-0.1</td>
<td>2.3</td>
<td>0.6</td>
</tr>
<tr>
<td>Coffee</td>
<td>-1.7</td>
<td>-1.5</td>
<td>-1.4</td>
<td>-0.7</td>
<td>-0.7</td>
</tr>
<tr>
<td>Cocoa</td>
<td>-1.3</td>
<td>-0.7</td>
<td>-0.6</td>
<td>0.3</td>
<td>-0.1</td>
</tr>
</tbody>
</table>
Indian agriculture

Although the share of agriculture has been declining over time, agriculture still remains the most important sector of the Indian economy. Agriculture contributes 33% of gross domestic product and provides direct employment to about 64% of the work force.

India has a great variety of climatic and soil conditions. This results in diverse agro-climatic zones and makes it possible to grow a wide variety of agricultural products. For example, India ranks second only to Brazil in the production of fruits and second only to China in the production of vegetables. India also happens to be the second largest rice producer and the fifth largest wheat producer in the world. The green revolution has witnessed an increase in foodgrains production over the preceding 15-20 years at an average annual rate of 2.5%. From being a net importer of foodgrains, India has become self-sufficient in foodgrains and is today an occasional exporter of foodgrains. For agriculture as a whole, India also enjoys the advantage that agriculture is relatively less import intensive and relatively more labour intensive.

India’s agricultural exports now account for around 18% of the export basket and the agricultural export basket has also become fairly diversified over the years. Included in agricultural exports are coffee, tea, oil cakes, tobacco, cashew kernels, spices, sugar and molasses, raw cotton, rice, fish and fish preparations, meat and meat products, fruits, vegetables and pulses and processed foods.

Several studies on the export competitiveness of Indian agriculture have been done by Ashok Gulati and his colleagues, competitiveness being defined solely in price-terms. These tend to show that India is extremely competitive in cereals like rice, moderately competitive in cereals like wheat and not that competitive in cereals like maize and sorghum. In fruits, India is extremely competitive in products like bananas, grapes, sapotas and lychees, moderately competitive in products like mangoes and relatively uncompetitive in products like apples. In vegetables, India is extremely competitive in onions and tomatoes and moderately competitive in potatoes. In processed fruits like mango pulp and apple juice, India is relatively uncompetitive. But India is extremely competitive in processed vegetables like mushrooms and moderately competitive in products like tomato paste.

If that is the case, why doesn’t India gain much more from the agricultural trade liberalization? The answer again lies in supply-side constraints and the non-introduction of reforms in the domestic agricultural economy.

Indian agriculture continues to be stifled by export controls and regulations like export quotas and minimum export prices. There is canalisation of exports and imports. There are levies and taxes. Industries like rice milling are reserved for the small-scale sector. There are all sorts of restrictions on inter-state movements and futures trading is generally not permitted. Excise and customs duties on capital goods and packaging also tend to be on the high side. In the food-processing sector, inadequate infrastructure and the lack of processing and refrigeration facilities are constraints. The land ceiling legislation does not permit exploitation of economies of scale. Both public and private investments in agriculture need to be stepped up and the traditional dichotomy between agriculture and industry broken down, with a greater corporate involvement in the industrialization of Indian agriculture.

All of this is on the agenda for future agricultural reforms. Until that is done the Uruguay Round agreement on agriculture will merely represent an elusive potential that India is not in a position to tap.

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NOTES

1. Effectively, textiles and garments and agriculture are also new areas, since prior to the Uruguay Round, they were outside the purview of GATT liberalization.

2. In a recent GATT study (GATT, 1994), the figure given is as high as 510 billion US dollars.

3. “Domestic support measures for which exemption from the reduction commitments is claimed shall meet the fundamental requirement that they have no, or at most minimal, trade-distorting effects or effects on production. Accordingly, all measures for which exemption is claimed shall conform to the following basic criteria: (a) the support in question shall be provided through a publicly-funded government programme (including government revenue foregone) not involving transfers from consumers; and, (b) the support in question shall not have the effect of providing price support to producers” (Clause 1).

4. On the latter, “eligibility for such payments shall be limited to producers in disadvantaged regions. Each such region must be a clearly designated contiguous geographical area with a definable economic and administrative entity, considered as disadvantaged on the basis of neutral and objective criteria clearly spelt out in law or regulation and indicating that the region’s difficulties arise out of more than temporary circumstances” (Clause 13 a).

5. One crore is equal to 10 million. We have used crore figures, as that is how the Ministry of Commerce figures are expressed.

6. The member countries of the Caims Group are Argentina, Australia, Brazil, Canada, Chile, Colombia, Fiji, Hungary, Indonesia, Malaysia, New Zealand, Philippines, Thailand and Uruguay.

7. Although mentioned earlier, perhaps it needs to be reiterated that in the Uruguay Round agreement, farm liberalization policies encompass border measures like tariffication of quantitative restrictions, reductions in tariffs, cutbacks in export subsidies and minimum market access commitments. There are also domestic reduction commitments.


10. The studies are: Burniaux, Martin, Delorme, Lienert and van der Mensbrugghe (1990), Burniaux, van der Mensbrugghe and Waelbroeck (1990), Frohberg, Fisher and Parikh (1990), Goldin and van der Mensbrugghe (1995) and Kilkenny and Robinson (1990).

11. In terms of the developed vis-à-vis developing dichotomy.

12. Partial, as opposed to complete. The final Uruguay Round package only became available in December 1993. Studies conducted before this date, therefore, needed to assume the nature of agricultural liberalization, as opposed to the actual liberalization that is going to take place.

13. Factor mobility being a case in point.

15. In terms of global GDP, sectoral production, reallocation of resources and hence, factor incomes and terms of trade.
16. Gulati, Sharma, Das and Chhabra (1994) is an example.
4. The Common Agricultural Policy

Jacques Loyat

Introduction

1 Agriculture has traditionally been one of the main sectors of State concern. The Common Agricultural Policy (CAP) is indeed one of the few common policies in Europe, which mobilises the major part of the European Community (EC) budget. The supranationality of the CAP is based on legislative framework, which is underlined by the following principles: a single market for all agricultural products in the European Union (EU), a Community preference and financial solidarity. These principles mean that products can be traded freely between Member States, custom duties exist only for food imported into the EU, the price advantages given to EU produce over third countries are the same all over the EU and that all Member States are jointly responsible for financing the CAP. The legal framework sets out the means necessary to operate the policy: a budget at the Community level, a series of rules organising agricultural markets and a set of measures aimed at stimulating structural adaptation of farms and rural development.

2 The rules of the various agricultural products are part of Common Market Organisations (CMO). CMOs exist for most EU farm products. The CMO for cereals was defined in 1962 and it served as a model for other CMOs. The main tools adopted for managing the CAP include intervention measures for regulating the domestic market, export refunds and import levies for regulating external trade and income support, such as direct payments and compensatory allowances.
The CAP has been built thanks to long and difficult negotiations. It is in constant evolution, being placed in an institutional environment which is itself in evolution. The CAP has proved its success, leading to more political cohesion and growth within agriculture. New problems have emerged with EC enlargement and economic crisis. Adjustments have been necessary to face trade war and budget expenditure. They needed both national compromises and supranational cohesion.

This paper deals with the CAP reform within Agenda 2000. Our purpose is to understand how national identity can be expressed under a supranational policy, and in return, what is its effect. The historical French identity has been effective in the past. In the first part, we will define the two major steps for the CAP: the first adjustments in the seventies and the 1992 reform. We will then analyse the present context (part 2), the Commission proposal for CAP reform under Agenda 2000 (part 3), the national responses and the conclusions of the 1999 Berlin European Council (part 4).

The CAP and French identity in the past: two major steps

The original CAP and the modernisation of agricultural holdings

The objectives for the CAP were included in the treaty of Rome: to give farmers a comparable average standard of living, to increase agricultural productivity, to stabilise markets, to guarantee food security and to provide food to consumers at reasonable prices. These objectives could not be reached without a profound transformation of the structures and modernisation of agriculture. The French lois d'orientation agricole ("agricultural guidance laws") in 1960 and 1962 defined a series of measures to promote viable family farms, including land control, aids for investments on farms through modernisation plans, aids for young farmers and payments to outgoers.

Soon after, the Community met with new difficulties in the agricultural sector, among others, unsatisfactory state of production and marketing structures, market imbalances, increases of budgetary outlays. In December 1968, the Commission produced a "Memorandum on the Reform of Agriculture", generally known as the Mansholt Plan. The importance of this document was due to the emphasis given to new problems such as oversupply and the need for basic adjustments. The memorandum stressed the necessity of policies where prices would again play their role of guiding production and where structural adjustments would aim at creating modern production units through selective investment aids. The Mansholt Plan was partly based on the same principles as the French 1960-62 lois d'orientation agricole: early retirement schemes or retraining to help people to leave agriculture. Another measure, inspired by the US policy, was to reduce agricultural resources (set aside). The outcome of the memorandum, in 1972, included the introduction of some structural measures into the CAP, to promote the modernisation of agricultural holdings, to help farmers to gain professional qualifications and to create incentives for young farmers to stay in agriculture.
The 1992 reform: a EU-US confrontation for main crops

7 The CAP created in the sixties was based on a mechanism of regulation through public intervention. Producers were able to have security for all of their production at a guaranteed price, with the following consequences: the stabilisation of prices reduced the risks for producers and eliminated rivalry between producers; the internal consumption price was based on the support price; in so far as supply was sold off through intervention, the limit of productivity growth depended on the marginal cost rather than the final demand. This policy resulted in an increase of production, stocks and subsidised exports. The growth of budgetary outlays benefited the bigger and more productive farms.

8 Various changes were introduced in the seventies and the eighties to deal with the growing volumes of surplus produce (co-responsibility levy, milk quotas, control of the volume of production through stabilisers, creation of the agricultural expenditure guideline). In 1992, the Council of Ministers adopted the most radical reform of the CAP since its creation, which mainly concerned the cereal sector.

9 Surpluses in the cereal sector had two main causes. The first cause was a stagnation of the internal demand of cereals for feed due to protein feed and substitutes (mainly manioc and com gluten feed) which were freely imported. The cereal sector did not benefit from the growth of the livestock sector in the EU. The second cause was the expansion of the areas under cereals and the growth of yields due to high internal prices. The EC became a net exporter of cereals thanks to export subsidies. It became the principal rival of the United States on world markets. The United States reacted to the decrease in market shares with export programmes. The commercial war resulted in an increase in budget expenditure on agriculture. The 1992 reform can be analysed as a way to solve the EC-US trade conflict and to reach an agreement in the Uruguay Round.

10 As first producer and exporter of cereals in the EU, this issue mainly concerned France. In the negotiation of the reform, two policies were rejected. The first referred to a policy more market-oriented, with the elimination of public intervention on internal as well as external markets. This policy was supported in countries such as the Netherlands by groups which had more interest in lower prices, especially for feed. On the contrary, the CAP could have generalised the quota system for main crops. This policy was supported by groups in Germany, which had no major interests in exports and were interested in income support through high prices. The 1992 reform for cereals was a compromise. It combined price cuts, land set aside and compensation in the form of direct income support. This policy was very similar to that of the US for cereals. It gave the opportunity to be more competitive on the world market, without eliminating all protection and support. It was the interest of the major producers of cereals in France, with strong comparative advantages due to high levels of land productivity.
The present context: internal and external pressures

The impact of the 1992 reform and the prospects for European agriculture

A spectacular effect of the 1992 CAP reform was the transfer of support from consumers (prices) to the budget. The direct payments become an increasing part of support and the cereal sector increased its part in the EU budget. France, as well as Spain, largely benefit from the reform thanks to main crops. The support this reform provided was distributed somewhat unequally and was concentrated on regions and producers who were not the most disadvantaged. This was the result of direct payments which were created to compensate price decrease rather than to correct disparities between farms and regions.

From the market side, Agenda 2000 highlights that the majority of analyses which attempt to gauge the prospects for world markets agree in predicting strong growth in demand and prices offering a good rate of return. For the Commission, the current level of prices in the EU is still too high for it to be able to take advantage of this expansion of world markets. If this is not corrected, surpluses will appear again and stocks will start to build up and create intolerable budget costs. The risk for the EU is to lose its position on both the world and internal market, not only in agricultural commodities but also in processed products.

Cereals

<table>
<thead>
<tr>
<th></th>
<th>1996</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>202,1</td>
<td>212,5</td>
</tr>
<tr>
<td>Consumption</td>
<td>172,8</td>
<td>180,6</td>
</tr>
<tr>
<td>Imports</td>
<td>4,8</td>
<td>5,0</td>
</tr>
<tr>
<td>Exports</td>
<td>28,3</td>
<td>26,4</td>
</tr>
<tr>
<td>Ending stocks</td>
<td>28,1</td>
<td>72,3</td>
</tr>
</tbody>
</table>

**Assumption:** set aside of 17.5% in 2005/06
**Source:** Prospects for Agricultural Markets, DG VI, October 1998

The internal demand for agricultural products is likely to stay flat over the coming period, whilst current forecasts point to big rises in production due to yield increase.

Meat
**TABLE 2. MEAT BALANCE SHEET - EU 15 COUNTRIES (BOVINE, PORK, POULTRY) (1000 T CARCASS WEIGHT EQUIVALENT)**

<table>
<thead>
<tr>
<th></th>
<th>Beef and veal</th>
<th>Pork</th>
<th>Poultry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>8068 7556</td>
<td>16319 17901</td>
<td>8239 9917</td>
</tr>
<tr>
<td>Consumption</td>
<td>6924 7198</td>
<td>15462 16947</td>
<td>7628 9354</td>
</tr>
<tr>
<td>Imports</td>
<td>358 400</td>
<td>45 90</td>
<td>283 328</td>
</tr>
<tr>
<td>Exports</td>
<td>961 752</td>
<td>844 1042</td>
<td>884 886</td>
</tr>
<tr>
<td>Ending stocks</td>
<td>434 1464</td>
<td></td>
<td></td>
</tr>
<tr>
<td>p.c. cons (kg)</td>
<td>18,6</td>
<td>18,9  41,4</td>
<td>44,4  20,5</td>
</tr>
</tbody>
</table>

**SOURCE: PROSPECTS FOR AGRICULTURAL MARKETS, DG VI, OCTOBER 1998**

14 Without any reform in the meat sector, forecasts show a strong substitution of consumption from beef towards pork and chicken. Market imbalances will increase in the beef sector.

**Milk products**

**TABLE 3. MILK PRODUCTS BALANCE SHEET - EU 15 COUNTRIES (MILLION TONNES MILK EQUIVALENT)**

<table>
<thead>
<tr>
<th></th>
<th>1996 2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>121,4 118,6</td>
</tr>
<tr>
<td>Deliveries</td>
<td>113,8 111,4</td>
</tr>
<tr>
<td>Nb cows (1000)</td>
<td>22107 18555</td>
</tr>
<tr>
<td>Yield (kg/cow)</td>
<td>5421 6317</td>
</tr>
</tbody>
</table>

**SOURCE: PROSPECTS FOR AGRICULTURAL MARKETS, DG VI, OCTOBER 1998**

15 The market balance is due to the quota system. The problems arise from the GATT constraints which impede exports for some products (cheese) without restitution.

16 In conclusion, if the EU wants to maintain or reinforce its position on the external markets, the data tend to show that new reforms are necessary to be more competitive. A double question therefore arises: is the objective of the EU to be competitive on the world market worthwhile for all agricultural products? Is there a unique model of agricultural policy for all sectors? These questions will be considered later.
Environment and rural development

Technological developments, and commercial considerations to maximise returns and minimise costs, have given rise to an intensification of agriculture in the last 40 years. The CAP contributed to the intensification and an increasing use of fertilisers and pesticides, through high levels of price support. This resulted in the pollution of water and soils and landscape changes.

The relationship between agriculture and environment is captured by the term “sustainable agriculture”. It refers to sustainable development which calls for a management of natural resources in a way to preserve the overall balance and value of the natural capital stock. Conservation of water, soil and genetic resources leads to improvements in the integration of the environment into common market regimes. Whilst there is a great diversity in environmental values and land uses from Mediterranean to sub-Arctic regions, the CAP presents a uniform model all over Europe. The 1992 reform of the CAP included specific instruments to encourage less intensive production and agro-environment and afforestation programmes, with a specific environmental focus.

If agriculture still remains the first user of rural areas (44% agricultural land, 33% wooded land) today, agriculture is no longer dominant in the rural economy. At EU level, it accounts for only 2% of total GDP and its share of employment is 5.3%. The total number of farmers in the EU is under 8 million, compared to just over 14 million in the European Community of six countries in 1960. These figures confirm that the future of rural areas no longer depends on agriculture alone. The risk is that rural heritage may decline in parallel with the decline within agriculture. It could affect numerous economically marginal regions. The continuation of farming in rural areas still remains essential. It exerts a dominant influence on the rural environment. Farmers play an important role in the management of the countryside (landscape, biodiversity). The challenge is to reward farmers for the services they provide, and for society it requires a willingness to pay for environmental services that are essential to maintaining the amenity value of the countryside.

The EU’s enlargement to Central and Eastern European countries (CEECs)

After the fall of the Berlin Wall in 1989, the CEECs have engaged in a profound transformation of their economies. The EU in co-ordination with Western nations, set up the Phare Programme. PHARE included emergency aid and also instruments to support modernisation and restructuring. The EU signed association agreements with the candidate countries. The Copenhagen European Council of 1993 set out the criteria for membership and, by 1997, ten CEECs had applied for membership. The candidate countries need to adopt EU legislation known as acquis communautaire (“community legal assets”, i.e. the whole legislation already enacted by the EU which represents the legal base of the European market), in order to take part fully in the internal market. In the field of agriculture this means, for example, harmonising legislation in the areas of veterinary and phytosanitary health, and the free movement of animals and agricultural products.
Enlargement poses a real challenge to the EU. The candidate countries will bring no less than 100 million new consumers with an average purchasing power of one third of that of the current EU Member States. At the same time, the total land area devoted to farming would be expanded by half and the agricultural labour force doubled. The enlarged EU will therefore become one of the first agricultural producers in the world, with an increased internal market and a new capacity to face the expansion of world markets.

The CAP is part of the *acquis communautaire*. The difficulty in implementing the CAP in the CEECs relies upon the disparity of prices, incomes and structures of farms if compared with that of the EU. Applying the actual CAP to these countries would considerably increase the budget costs. A reform of the CAP appears to be necessary.

**TABLE 4. IMPORTANCE OF AGRICULTURE IN CEECs (1994)**

<table>
<thead>
<tr>
<th>Countries</th>
<th>Ag. ares (1000 ha)</th>
<th>Farms (Nb en 1000)</th>
<th>Rate of agriculture (%)</th>
<th>Volume of production (1000 t)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>in employment in GDP</td>
<td>Pork</td>
<td>Bov</td>
<td>Mik</td>
</tr>
<tr>
<td>Poland</td>
<td>18,6</td>
<td>3661</td>
<td>25,6</td>
<td>6,3</td>
</tr>
<tr>
<td>Hungary</td>
<td>6,1</td>
<td>392</td>
<td>10,1</td>
<td>6,4</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>4,3</td>
<td>271</td>
<td>5,6</td>
<td>3,3</td>
</tr>
<tr>
<td>Slovakia</td>
<td>2,4</td>
<td>178</td>
<td>8,4</td>
<td>5,8</td>
</tr>
<tr>
<td>Slovenia</td>
<td>0,9</td>
<td>90</td>
<td>10,7</td>
<td>4,9</td>
</tr>
<tr>
<td>Romania</td>
<td>14,7</td>
<td>3537</td>
<td>35,2</td>
<td>20,2</td>
</tr>
<tr>
<td>Bulgaria</td>
<td>6,2</td>
<td>694</td>
<td>21,2</td>
<td>10,0</td>
</tr>
<tr>
<td>Lithuania</td>
<td>3,5</td>
<td>399</td>
<td>22,4</td>
<td>11,0</td>
</tr>
<tr>
<td>Latvia</td>
<td>2,5</td>
<td>229</td>
<td>18,4</td>
<td>10,6</td>
</tr>
<tr>
<td>Estonia</td>
<td>1,4</td>
<td>89</td>
<td>8,2</td>
<td>10,4</td>
</tr>
<tr>
<td>Total CEECs</td>
<td>60,6</td>
<td>9540</td>
<td>26,7</td>
<td>7,8</td>
</tr>
<tr>
<td>UE-15</td>
<td>138,1</td>
<td>8190</td>
<td>5,7</td>
<td>2,5</td>
</tr>
</tbody>
</table>

**SOURCE: EUROPEAN COMMISSION**
External pressure: the US Fair Act and the Millennium Round

The meeting of the Committee for agriculture at ministerial level of OECD countries in March 1998 concluded that there is a need for further reform in agriculture. The executive summary noted that changing domestic and international environment is creating opportunities but also pressures and constraints on the agro-food sectors. The recommendations are as follows:

- Agricultural policy should seek to increase, by way of a progressive and concerted reduction of agricultural support, the market orientation of the agro-food sector. Where there is compensation for reduced support, it should help facilitate adjustment rather than simply compensate for lost revenue and should be targeted and transparent.

- Rather than through price guarantees or other measures linked to production or factors of production, where farm income support is considered necessary, it should be provided through a progressive move to direct payments that are, as far as possible, decoupled from production.

- Where environmental measures are needed in conjunction with agricultural policy reform, they should be well targeted at specific environmental outcomes that reflect the multifunctionality of the sectors, they should be transparent and should include, as appropriate, both incentives for environmental benefits and penalties for environmental damage.

- Transition and developing countries would benefit from a more open system of world trade and investment, promoting agricultural practices that reconcile productivity improvements with sustainable management of natural resources.

- When governments seek to reduce tariff and non-tariff trade barriers within the various regional and other trade agreements, they should pursue a commitment to multilateral trade liberalisation. Agro-food should be included in such agreements.

The CAP is directly concerned by these recommendations. The main pressure will come inside OECD countries in the multilateral trade negotiations of the Millennium Round, especially the US. The 1996 Farm Bill (the Fair Act, Federal Agricultural Improvement and Reform Act) can be understood as a powerful instrument to impose more decreases in the support of agriculture. It is an important change in the history of the American agricultural policy. Its justification comes from an increasing administrative ascendency, a high budget cost and the will to develop production for exports on increasing international markets. The most significative measures of the Fair Act are the removal of compulsory set aside, the decoupling of direct payments and a decrease of budget outlay. The farmers receive a quota of budget allowances based on historical references independent of crops, volumes of products and prices. The effect is to reduce the role of the State in the market regulations, while maintaining farmers support.

In the US, decoupling is realised through production flexibility contracts signed by the farmers for the period covered by the Fair Act (1996-2002). The previous deficiency payments are replaced by lump sum payments with an upper limit per farm. The total payments amounts to between 5 and 6,4 billion $ per year. In 1998, the US Government adopted a new programme of subsidies in order to support farmers' income ($6 billion). An important mechanism which has direct effects on markets has been maintained, the "non-recourse commodity loan". A producer receives a loan and pays it back on the base of the market price if it is under the loan rate (the loan rate is maintained at the 1995
level, $94.8 per ton for wheat and $74.4 for corn). The difference is an indirect subsidy (the loan repayment).

26 The consequence of the removal of set-aside, decoupled payments and intervention is an increase of US production (mainly soya and corn). The non-recourse commodity loans tend to reduce world prices as internal US prices for cereals and oilseeds are leading on world markets.

27 Another important topic in the multilateral trade negotiation to begin at the end of 1999 will be the area of food safety. As traditional barriers to trade are reduced, regulatory measures are taking on increasing importance in the agro-food sector. One of the challenges will concern the Sanitary and Phytosanitary (SPS) and Technical Barriers to Trade (TBT) Agreements. The US will put strong pressure to impede that harmonisation of regulations governing trade in food products restricts trade. Agricultural biotechnology shall be a specific area where the emphasis in trade negotiations should be on vigorously preventing non-market barriers of trade. The failure of the conference held in Cartagena in February 1999 is largely due to the US. The delegates of the 170 countries have not yet reached an agreement on regulation for international trade of GMOs (genetically modified organisms). The Convention on biodiversity signed in 1992 was the framework for the discussion of a protocol on prevention of biotechnological risks. There is a need to prevent the traffic of GMOs from having negative environmental effects. The US which is the main country engaged in GMOs production and export, followed by Canada, Argentina, Chile, Australia and Uruguay, forming the “Miami Group”, have imposed that the international trade of these products remains free. The conflict will be carried towards the WTO. The US refuses to endorse the precaution principle and to impose on exporters the identification of GMOs, which are two main requirements for the EU.

Agenda 2000 and the future for European agriculture

The European model of agriculture

28 In its Agenda 2000 communication of 16 July 1997 the European Commission set out proposals for a reform of the CAP and structural funds, the process of enlargement to CEECs and pre-accession instruments and the financial framework for the period 2000-2006. The legislative proposals were adopted by the Commission in March 1998, to be submitted to the Council and the European Parliament.

29 For the Commission, the proposals have the aim of giving concrete form to a European model for agriculture in the years ahead. The main lines of this model shall be:

• a competitive agriculture sector which can gradually face up to the world market without being over-subsidised, since this is becoming less and less acceptable internationally
• production methods which are sound and environmentally friendly, able to supply quality products
• diverse forms of agriculture, rich in tradition, which are not just output oriented but seek to maintain the visual amenity of the countryside as well as active rural communities, generating and maintaining employment
• a simpler, more understandable agricultural policy which establishes a clear dividing line between the decisions that have to be taken jointly and those which should stay in the hands of the Member States
• an agricultural policy which makes clear that the expenditure it involves is justified by the services which society at large expects farmers to provide.

The Commission insists upon the fact that “seeking to be competitive should not be confused with blindly following the dictates of a market that is far from perfect”. For centuries, Europe’s agriculture has performed many functions in the economy and the environment and has played many roles in society and in caring for land. The Luxembourg European Council concluded in December 1997 that multifunctional agriculture must develop throughout Europe, including those regions facing particular difficulties. The Commission asserts that there is a need to maintain farming throughout Europe and to safeguard farmers’ incomes.

The need for reforming the CAP

For the Commission, the challenges facing the CAP are first and foremost internal in nature:

• the level of prices in the Union is still too high for it to be able to take advantage of the expansion of world markets given the international commitments it has made
• the CAP has had a number of negative effects (distribution of support, disparities between regions, environmental impact), which have been partially corrected by the 1992 reform
• agriculture in the fifteen countries of the Union is highly diverse in its natural resources, its farming methods, its competitiveness and income levels, and also in its traditions
• a more decentralised model has therefore to be developed which gives the Member States the means of settling a number of issues for themselves by taking better account of the characteristics of a given sector or a given set of local conditions
• but such a development in this direction needs to be carefully controlled so as to avoid any risk of distorting competition or renationalising CAP.

External factors are added to justify a CAP reform: the expansion of the Union and the international trade negotiations. The justification of a reform, before the opening of the WTO negotiations, is for the EU to have a policy which satisfies its own interests and takes a realistic view of developments in the international context. Furthermore, the reform to be adopted is supposed to outline the limits of what the Union is able to agree to in the forthcoming international negotiations. This was precisely the option which was adopted in 1992, with a certain success. Let there be recurrence of this for the Millennium Round!

The proposals

The main proposals for new agricultural regulations cover:

• revised Council regulations for the common market organisations for arable crops, beef and milk
• an horizontal regulation to introduce some common provisions on cross compliance with environmental conditions, modulation of payments linked to the labour force and an element of degressivity in large payments
• a new regulation covering rural development measures financed by the European Agricultural Guidance and Guarantee Fund (EAGGF), both from the Guidance section (in “objective 1” areas, i.e. less developed regions) and from the Guarantee section (elsewhere).

Regarding arable crops, the role of intervention will no longer be to guarantee price stability at a high level, but rather to act as a safety net for farm incomes. The
intervention price for cereals will be reduced by 20% in one single step. Direct payments will partially compensate this price decrease. Direct payments for oilseeds and non-textile linseed will be set at the same level, thereby eliminating the basic conditions for production area which were imposed by the Blair House agreement. While compulsory set-aside will be retained, its compulsory rate will be set at zero. In brief, this reform is running on from the 1992 reform: more decoupling payments, alignment of internal prices with world prices and the possibility to export without refunds.

35 The major innovations come from the beef and milk sectors. For beef, the market support level will be reduced by 30% in three equal steps, starting on 1st July 2000. From 1st July 2002, the present intervention system will be replaced by a private storage regime. To ensure a fair standard of living for the farmers concerned, direct payments will be increased for male bovine animal and suckler cows. In the dairy regime, it is proposed to reduce intervention prices for butter and skimmed milk powder by 15% in four steps, with the aim to improve competitiveness on the internal and external markets. It is proposed to maintain milk quotas until 2006. In view of the price reduction, a 2% increase in the total reference quantity is proposed. A new direct payment for dairy cows will be introduced. The logic of the proposition is to align the policies in these sectors with that of arable crops: removal of quotas and intervention, reduction of internal prices and decoupled direct payments to support farm incomes.

36 Rural development measures concern in particular support for structural adjustment of the farming sector (investment in agricultural holdings, establishment of young farmers, training, early retirement), support for farming in less favoured areas, remuneration for agro-environmental activities, support for investments in processing and marketing facilities, for forestry and for measures promoting the adaptation of rural areas. The new rural development regulation lays the foundation for a comprehensive and consistent rural development policy whose task will be to supplement market management by ensuring that agricultural expenditure is devoted more than in the past to spatial development and nature conservancy. Rural development is supposed to become the second pillar of the CAP. Rural development measures, outside regions covered by Objective 1 programmes, will be transferred from EAGGF Guidance Section to Guarantee Section.

37 The Commission proposes to deal with certain issues concerning all Common Market Organisations providing direct payments in a horizontal Regulation which will contain the following rules:

- Cross compliance: With respect to more systematic integration of the environment into the CAP, Member States should apply appropriate environmental measures concerning the particular market support schemes. They will also be enabled to decide upon appropriate and proportional penalties for environmental infringements and be authorised to reduce or to cancel direct payments.

- Modulation: Agricultural income, including direct payments, has important employment impacts in rural areas. Member States will therefore be authorised to modulate direct payment per farm within certain limits and which is relative to employment on farms.

- Funds made available from aid reducing, either under cross compliance or modulation, will remain available for the respective Member State as an additional Community support for agro-environmental measures.

- Ceilings: to avoid excessive transfers of public funds to individual farmers, the Commission proposes to introduce a degressive overall ceiling to direct payments.
Pre-accession regulation: special accession programme for agriculture and rural development (SAPARD)

38 As part of the accession process, “Accession Partnerships” have been established between the Commission and each of the candidate countries. Each partnership mobilises all forms of EU assistance within a single framework for each country. This framework covers in detail the priorities for adopting the *acquis communautaire* as well as the financial resources available for that purpose, in particular the PHARE Programme. To complement its Accession Partnership, each candidate country has prepared a National Programme for the Adoption of the *Acquis* (NPAA). This document sets out the legislative, administrative and operational adjustments that need to be completed prior to the accession.

39 The framework for Community pre-accession aid is provided by a horizontal co-ordination regulation. The instruments for pre-accession aid proposed in Agenda 2000 comprise:

- an agricultural pre-accession instrument (SAPARD)
- an instrument for Structural Policies pre-Accession (ISPA), targeted at two areas (investment requirements needed to conform with Community legislation on environment; improvements to transport connections)
- the existing PHARE programme with two priorities: to help the administrations to acquire the capacity to implement the *acquis* and to help the candidate countries to bring their industries and major infrastructure up to Community standards.

40 The allocation proposal for all three pre-accession instruments from the year 2000 is 3000 million Euros per year (at 1997 prices): for SAPARD 500 Euros, for ISPA 1000 Euros, for PHARE 1500 Euros.

41 In many of the Central and Eastern European applicant countries, agriculture still represents a major source of employment. The institutional process of privatisation and transformation in the agricultural sector still has to be completed. Community pre-accession aid for agriculture and rural development (SAPARD) will be decided in view of the particular need for adaptation to the *acquis communautaire*. Concentrating on the priority needs for agriculture and rural development, pre-accession measures concern the support for improving the efficiency of farms, processing and distribution, promotion of quality products, veterinary and phytosanitary controls, improving land quality, its reparcelling and registration, water resource management, vocational training, diversification of economic activities in rural areas, agro-environmental and forestry measures, improvement of rural infrastructure and rural villages, including the maintenance of rural heritage as well as technical assistance. Community support will be implemented in the form of multi-annual programmes.

National interests and supranational compromises

Financial perspective and EU discrepancies

42 The proposals for the Financial perspective 2000-2006 constituted the main obstacle for an agreement in the Agenda 2000 negotiation. The financial perspective was initially presented on an EU 15 basis, and was supposed to leave sufficient margin to finance enlargement. In its initial communication, the Commission proposed to keep the ceiling
of own resources at the level of 1.27% of the GNP between 2000-2006. But more than the total level of payments, the repartition of these payments was in question among Member States.

According to the European Council of Fontainebleau in 1984, every Member State which has a budget charge which is not related with its relative prosperity is able to benefit from corrections. The contribution of the UK to the EU budget has been reduced. Germany, Austria, Sweden and the Netherlands have a strong positive contribution to the EU (they pay more than they receive). In particular the net contribution of Germany is above 11 billion Euros.

TABLE 5. THE AGRICULTURE EUROPEAN BUDGET 1997 (IN MILLION EUROS)

<table>
<thead>
<tr>
<th>1997</th>
<th>Contribution</th>
<th>Agric.aids received (mio euros)</th>
<th>Agric.aids received (%)</th>
<th>Structural &amp; cohesion funds (mio euros)</th>
<th>Structural &amp; cohesion funds (%)</th>
<th>Net contrib. (mio euros)</th>
<th>Net contrib. (%)</th>
<th>Nb farmers (X1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germany</td>
<td>21217</td>
<td>5778</td>
<td>14.2</td>
<td>3636</td>
<td>14.0</td>
<td>-10943</td>
<td>1046</td>
<td></td>
</tr>
<tr>
<td>France</td>
<td>13185</td>
<td>9149</td>
<td>22.5</td>
<td>2460</td>
<td>9.4</td>
<td>-781</td>
<td>1072</td>
<td></td>
</tr>
<tr>
<td>Un Kingdom</td>
<td>8928</td>
<td>4399</td>
<td>10.8</td>
<td>1928</td>
<td>7.4</td>
<td>-1798</td>
<td>511</td>
<td></td>
</tr>
<tr>
<td>Italy</td>
<td>8667</td>
<td>5090</td>
<td>12.5</td>
<td>2985</td>
<td>11.1</td>
<td>-61</td>
<td>1332</td>
<td></td>
</tr>
<tr>
<td>Spain</td>
<td>5367</td>
<td>4605</td>
<td>11.3</td>
<td>6376</td>
<td>24.5</td>
<td>5936</td>
<td>1065</td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>4837</td>
<td>1757</td>
<td>4.3</td>
<td>421</td>
<td>1.6</td>
<td>-2276</td>
<td>247</td>
<td></td>
</tr>
<tr>
<td>Belgium</td>
<td>2971</td>
<td>983</td>
<td>2.4</td>
<td>357</td>
<td>1.4</td>
<td>1079</td>
<td>104</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>2326</td>
<td>747</td>
<td>1.8</td>
<td>230</td>
<td>0.9</td>
<td>-1129</td>
<td>130</td>
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</tr>
<tr>
<td>Austria</td>
<td>2110</td>
<td>861</td>
<td>2.1</td>
<td>364</td>
<td>1.4</td>
<td>-723</td>
<td>269</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>1505</td>
<td>1235</td>
<td>3.0</td>
<td>169</td>
<td>0.7</td>
<td>68</td>
<td>102</td>
<td></td>
</tr>
<tr>
<td>Greece</td>
<td>1178</td>
<td>2730</td>
<td>6.7</td>
<td>2643</td>
<td>10.2</td>
<td>4371</td>
<td>784</td>
<td></td>
</tr>
<tr>
<td>Portugal</td>
<td>1077</td>
<td>656</td>
<td>1.6</td>
<td>2941</td>
<td>11.3</td>
<td>2721</td>
<td>541</td>
<td></td>
</tr>
<tr>
<td>Finland</td>
<td>1061</td>
<td>570</td>
<td>1.4</td>
<td>379</td>
<td>1.5</td>
<td>56</td>
<td>161</td>
<td></td>
</tr>
<tr>
<td>Ireland</td>
<td>687</td>
<td>2034</td>
<td>5.0</td>
<td>1211</td>
<td>4.7</td>
<td>2676</td>
<td>146</td>
<td></td>
</tr>
<tr>
<td>Luxembourg</td>
<td>170</td>
<td>23</td>
<td>0.1</td>
<td>20</td>
<td>0.1</td>
<td>725</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

SOURCE: EUROPEAN COMMISSION
The Commission has presented three options to correct the budget disequilibria between Member States:

- a modification of the national contributions
- a reduction of the CAP contribution thanks to a partial financing of direct payments (75%) completed by a co-financing by each Member State
- introduction of a generalised mechanism of correction when the net contribution is too high.

The second option would introduce a partial renationalisation of CAP, which would implicate one of the main principles of the CAP, the financial solidarity. The justification of this renationalisation is that direct payments should be considered as direct income support and not specific sectoral measures. They could be compared to structural funds which require national contributions. The co-financing of the CAP would increase the national budgets. The national contribution is all the more important since the return from the EU budget through direct payments is high. This is in particular the case for France which was strongly opposed to the co-financing. Germany, on the contrary, handed in favour of this measure. A Franco-German compromise appeared necessary again to reach a global agreement on Agenda 2000 and the CAP reform.

The negotiation turned to a stabilisation of EU spending for both CAP and structural measures. The Council of Economy and Finance proposed to stabilise agricultural spending at their 1999 level, 40.5 billion euros (at 1999 prices). France proposed a degression of direct payments, taking into account the productivity growth and the restructuring of farms. The effect would have been a reduction of the global EU budget, part of the savings being employed for rural development. The degression which was proposed (3% per year) not being enough to reduce the German contribution, the Commission proposed to stabilise the structural funds (a ceiling of 200 billion euros over the period 2000-2006, instead of the initial proposal of 240 billion). Southern countries, (Spain, Greece and Portugal), feared that the Franco-German compromise was made at their expense. On principle, they refused a stabilisation of EU budget.

The final agreement taken by the Berlin European Council rejects all substantial modifications of budget rules, in particular the co-financing and the degression of payments or a generalised mechanism of correction of net contributions. Some minor modifications of the national contributions are introduced to slightly reduce the contribution of Germany, Austria, Sweden and the Netherlands. For the period 2000-2006, the objective is to restrain the Union's expenditure. “The Union’s expenditure must respect both the imperative of budgetary discipline and efficient expenditure, and the need to ensure that the Union has sufficient resources at its disposal to ensure the orderly development of its policies for the benefit of its citizens and to cope effectively with the process of enlargement” (Presidency Conclusions).

The agricultural guideline will remain unchanged. It will be reviewed, “on the basis of a report to be submitted to the Council by the Commission, before the first enlargement of the Union takes place in order to make any adjustment deemed necessary”. The European Council considers that the reform can be implemented within a financial framework of an average level of 40.5 billion euros plus 14 billion euros over the period for rural development as well as veterinary and plant health measures. The budget for structural funds is 213 billion euros plus 18 billion euros for cohesion funds over the period.
The novelty of the financial perspective is due to its presentation. It is established for a duration of seven years covering the period 2000-2006. It is drawn up on the basis of the working assumptions of the accession of new Member States starting from 2002. Two tables are presented: financial perspective for EU-15 (table A) and financial framework for EU-21 (table B).

**TABLE 6. FINANCIAL PERSPECTIVES ACCORDING TO THE BERLIN EUROPEAN COUNCIL MEETING OF MARCH 1999, IN MILLION EUROS**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<td><strong>Table A</strong></td>
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<td></td>
<td></td>
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</tr>
<tr>
<td><strong>FINANCIAL PERSPECTIVE EU-15</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Agriculture</td>
<td>40920</td>
<td>42800</td>
<td>43900</td>
<td>43770</td>
<td>42760</td>
<td>41930</td>
<td>41660</td>
</tr>
<tr>
<td>CAP expenditure (excl rural dev.)</td>
<td>36620</td>
<td>38480</td>
<td>39570</td>
<td>39430</td>
<td>38410</td>
<td>37570</td>
<td>37290</td>
</tr>
<tr>
<td>Rural dev. and accomp. measures</td>
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<td>4320</td>
<td>4330</td>
<td>4340</td>
<td>4350</td>
<td>4360</td>
<td>4370</td>
</tr>
<tr>
<td>2. Structural operations</td>
<td>32045</td>
<td>31455</td>
<td>30865</td>
<td>30285</td>
<td>29595</td>
<td>29595</td>
<td>29170</td>
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A new loi d’orientation agricole in France calls for modulation and conditionality of payments

France is concerned by different objectives: the defence of its potentiality of production and export; the protection of its environment and landscapes; the preservation of agricultural activities and employment in rural areas; the satisfaction of consumers in the field of quality and good sanitary products. The diversity of products, types of farming and natural resources creates a richness which needs to be protected in the same way as biodiversity and products obtained by specific regional methods of production. Traditionally the French Government has given greater importance to productivity, production and exports in some sectors of economic importance (main crops). This has created some negative effects as indicated above. French policy was largely supported by CAP measures. In front of new constraints and requirements, under social and budget pressures the Government has decided to re-orientate its agricultural policy within the framework of a renewed CAP.

The French Government has proposed a new loi d’orientation agricole (“agricultural guidance law”), which is currently in discussion in the French Parliament. Its objective is, among others, to introduce more equity and more conditionality in the distribution of direct payments. It creates a new instrument, the contrat territorial d’exploitation (“farm territory contract”, CTE). The objective is, through contracts between farmers and the authorities, to take into account the objectives of production of goods and services in a way to protect the environment, to rationalise the management of land and to create or maintain employment. The contract will put a conditionality for public payments linking the farms and their territory. With the CTE, the French Government follows an old tradition of intervention which embraces both markets and structures.

The success of this policy relies upon the capacity of the government to impose a budget transfer. The biggest and most productive farms in main crops, which benefit largely from the 1992 reform, will have to accept a reduction of the direct payments or a conditionality, for instance in terms of pollution reduction. To be successful, the transfer must be substantial and come from the EU budget which represents the major part of the payments to the farms. Through this loi d’orientation agricole, there is a clear will to shift the debate at the CAP level. We therefore have greater understanding of the insistence of France to refuse the co-financing proposed by the Commission and supported by
Germany, and to defend the modulation and conditionality of direct payments. The outcome of the negotiation of the CAP reform within Agenda 2000 appears therefore to be a condition of the success for the CTE and the French policy.

**The negotiation for a revision of the Common market organisations and the final agreement**

53 Since the Commission proposals in March 1998, the political objective to reach an agreement in 1999 had been drawn. The Agricultural Council named a special working group formed with high civil servants in order to define technical agreements in the different CMOs. Ministers of Agriculture reached an agreement taken at a qualified majority on 11 March 1999. The European Council proposed the final agreement in Berlin (24 and 25 March 1999).

**Arable crops**

54 The negotiation:

- Large agreement among Member States for a reduction of price intervention
- Disagreements on the level of reduction and the level of compensation
- Important opposition to align oilseed on cereal regime (oilseeds are not competitive compared with cereals).

55 What is at stake for the biggest farms, largely represented in France, is to limit the decline of the direct payments and to become more competitive on world market through innovation (GMOs, genetically modified organisms) and scale economies (dimension of farms, yields, better return for inputs).

56 The outcome:

- Reduction of intervention prices by 15% (Commission proposal: 30%) in two steps in the marketing years 2000/2001 and 2001/2002
- 50% of this reduction is compensated with direct payments
- Grass for ensilage enters into “main crops” where there is no corn (Northern countries)
- The base rate of compulsory set aside is fixed at 10% (Commission proposal: 0%) for the period 2000-2006.

**Bovine meat**

57 The negotiation:

58 Agreement for a reduction of intervention prices, but disagreements on the amount.

59 The biggest reduction of prices is wished by Member States with more industrialised production (Germany, Italy, the Netherlands); on the contrary, this reduction would create more difficulties for more extensive productions as in France or Ireland.

60 The outcome:

- Reduction of intervention prices by 20% (Commission proposal: 30%) in 3 steps (2000/2001-2002/2003), with a system of safety net
- 85% of the price reduction is compensated with premiums
- More premiums for extensive production (suckler cows).
Dairy products

The negotiation:
- Member States are in their majority in favour of the quota system; nevertheless, the most intensive regions (the UK, Denmark) would benefit directly from a removal of the quotas, being the more productive in the EU.

The outcome:
• Maintaining of the milk quota until 2006
• New premiums based upon quota levels (instead of premiums per milk cow proposed by the Commission).

Horizontal regulation
• Cross compliance and modulation of payments: it is the strict responsibility of each Member State (subsidiarity principle), without the possibility for the Commission to intervene
• No ceiling for direct payments: this is a concession given to big farms in compensation of land set aside and price reduction.

In conclusion, the agreement goes towards more market-oriented policies in the agricultural sector, in the spirit of the Commission proposal (a more competitive agriculture, more subsidiarity for cross compliance and national priorities). Nevertheless, it does not really break with the previous CAP, regarding distribution of payments and the need to transfer more payments into rural development and environment. In particular this reform does not bring the financing that was really needed for the French CTEs (contrats territoriaux d’exploitation).

This reform underlines the major difficulties the EU faces to reach an agreement for a supranational policy under dominant national interests.

NOTES
2. For the prospects for agricultural markets, the assumption is that the 1992 CAP reform and the GATT constraints are applied.
4. OECD, AGR/CA/MIN (98) 2: Agricultural policy: the need for further reform.

6. "Arable crops" are cereals, pulses and oilseeds.

7. In France, in 1997 the spending to the agricultural productive activity add up to 73 billion Francs, 60 being financed by the EAGGF (Guarantee Section).
5. WTO and Indian Agriculture: Beyond Trade Related Policies

Bhupat M. Desai

Introduction

Three reasons justify the theme of this paper. One, the new economic policies since mid-1991 and much of the research that has followed have not recognised the positive features of GATT’s provisions for agriculture. Instead, they have pinned much emphasis and optimism on its trade related provisions that have much less promise for this sector (see, for example, Singh, 1994; Gulati and Sharma, 1994; Ahluwalia, 1996; two significant early exceptions are: Bhalla, 1992; and Nayyar and Sen, 1994; and more recently Debroy 1997). Two, most trade related reforms under GATT impinge on agricultural growth objective through improvement in its barter terms of trade (i.e. prices received to prices paid by farmers) which is a “misconceived” instrument for this objective since it has an ambiguous impact as will be shown later. Three, trade is not an imperative route for agricultural growth in India, since being a large developing country, India does not have demand as a binding constraint. Moreover, agricultural growth is consistent with import-substituting as well as export-led overall development strategies with their consequent
contributions to foreign exchange earnings. And historical experience of agriculture world over suggests that both these can and do coexist.

With this background, this paper critically but constructively discusses three types of public policies that are identified from the WTO provisions for agriculture in developing countries. These are termed as:

a. Positive but “misconceived”

b. Positive and “rightly” conceived

c. Positive but “inappropriate and ill-conceived”

These are all discussed with a view to turning the last two in more desirable directions to combine the role of the State and the market for agriculture’s contributions to economic growth and poverty alleviation. Such directions of public policies for agriculture are strongly advocated because this sector has an altogether different role at an early as against later stage of economic development. Agriculture, in the early stages of economic development, has to generate surplus commodities for relaxing wages goods constraint to accelerate employment-led economic growth and poverty alleviation, besides containing inflation. These contributions of agriculture in a developing country are relatively more important than its other contributions like providing market, labour and capital for non-agricultural sectors. It is this differential role of agriculture that requires correcting the misconceived uniformity of GATT’s approach towards developing and developed countries (Shukla 1992).

### Positive but “misconceived” policies

Reducing undue protection to trade and industry through such policies as lower export and import restrictions, freer and improved market access, delicensing, dereservation, etc., is a step in the right direction. It is claimed that this will reduce prices paid by agriculture and inefficiencies in institutions serving agriculture. This, in turn, would make the barter terms of trade for agriculture more favourable. Better barter terms of trade will encourage technical change, investment and growth in agriculture (Singh, 1994; Ahluwalia, 1996). But this relative price has an ambiguous impact on aggregate agricultural supply, technical change, and private and government expenditure on agriculture (Desai and D'Souza 1999, Desai 1997, Rao 1989, Desai and Namboodiri 1997a, 1998a, 1999a). This is because it has impacts that work in opposite directions.

When the barter terms of trade improve, it has income, wealth, and substitution effects on aggregate agricultural supply (Desai and D'Souza, 1999; besides, some earlier literature like Mathur and Ezekiel, 1961; Krishnan, 1965; Narain, 1988; and Behrman, 1968, though the discussion in these studies is about the marketed surplus and relative price of subsistence crops). The income effect is that better barter terms of trade increases income and hence consumption increases with consequent decline in saving/investment and output (i.e. negative impact). Similarly, the wealth effect is that improved income encourages leisure and hence reduces labour supply which in turn reduces output (i.e. negative impact). Substitution effects are two-fold. One is that better barter terms of trade improve incentives to save/invest and hence consumption declines and saving/investment improves which results in increased output (i.e. positive impact). The other is that with the improved barter terms of trade incentives to increase labour supply improve with consequent rise in this supply that results in increased output (i.e. positive
Thus, the aggregate impact of a rise in barter terms of trade is two-fold – consumption/saving may rise or fall, and labour supply/leisure may rise or fall. A priori, therefore, we cannot say whether aggregate supply will increase or decrease with an improvement in the barter terms of trade for a decision-making unit and level at which consumption, investment, labour supply, and production are all intertwined.

On the empirical evidence for whether aggregate agricultural supply response is positive or negative, past studies on India show that about 30 per cent of the cases reveals that the barter term of trade has a “net” impact that reduces aggregate output (i.e. a negative impact). This suggests that the negative income and wealth effects have more than offset the positive substitution effects. The corresponding number for aggregate effective supply (i.e. marketed surplus), which is what matters for trade is as high as 75 per cent. For high-income countries this number is 33 per cent for aggregate output. And from cross-country aggregate output studies it is found to be close to 36 per cent. Furthermore, a recent study by Desai and Namboodiri (1999a) on India which considers the post-Green Revolution period shows that both aggregate output and marketed surplus of foodgrains which still occupy two-thirds of the cultivated land are negatively associated with their barter terms of trade. All these findings are highly significant to question the positive price response of aggregate output that studies on agricultural trade liberalization assume (Martin and Waters, 1996; Anderson and Tyres, 1990; Binswanger, 1989; Gulati and Sharma, 1991; Chibber, 1988). Agricultural policy-making thus cannot rely on price as an instrument since it has a potentially powerful but uncertain impact.

Yet another reason why price is a “misconceived” instrument is that the price response of aggregate supply is feeble even when it is positive (Bhalla, 1992; Desai and Namboodiri, 1997a and 1999a; Ghosh, 1997). This is because land supply is fixed, cropping patterns are governed by agro-climatic and other factors, and initial input intensities are low (Mellor, 1966 and 1976; Narain, 1988). The short run positive elasticity for India ranges from a low of 0.02 to 0.36, while the long run elasticity ranges from 0.02 to 0.83. But the modal range for the short run elasticity is 0.11 to 0.25; while for long run the range is 0.26 to 0.50. Even for a high income country like the United States of America the range was 0.05 to 0.17 in the short run and 0.07 to 0.23 in the long run during 1920-1957 (Grilichies, 1960). Cross-country studies for developed agriculture based on time-series data reveal an elasticity of 0.34 to 2.96 though a similar such study for developing agriculture shows the range to be 0.13 to 0.78 only (Chibber 1988). This suggests that for developing countries the supply response elasticities are no more than a little over one-third of what they are for the developed countries.

Finally, several studies on aggregate and crop-specific supply responses in developing countries show that non-price factors like irrigation, technology, weather, etc. have a “relatively” much more powerful impact than the relative prices (Krishna, 1963 and 1982; Chibber, 1988; Palanivel, 1995; Rao, 1989; Mungekar, 1992 and 1997). Moreover, Desai and Namboodiri (1999a) show that in India non-price factors like technical change, capital stock, and conducive institutional structure are more potent in influencing the aggregate agricultural output, while the relative prices are least important. This is so even in the post-1965 era since when a positive agricultural price policy has been pursued.

Our contention of relative farm prices being a “misconceived” instrument for agricultural growth is also supported from what the earlier noted reforms of reducing protection to trade and industry in India have accomplished for agriculture. In the post-reform period till around mid-1990’s, barter terms of trade for agriculture have further become
favourable and yet neither the growth of non-price factors like new technological inputs or government expenditure on agriculture has improved. Nor has agricultural growth or the (rural) poverty ratio improved. On the contrary, all of these have deteriorated (see Table 1). This is despite a further shift in favour of high-value crop-mix and output-mix and more favourable weather conditions in post-reform period (Desai, 1998). What has truly improved growth rates are HYV area, real plan expenditure on rural development and rural credit flow, output of a few commodities like wheat, condiments, spices, fruits and vegetables, inland fish, some agro-exports and some food processing industries like that of fruit and vegetables, beverages, fisheries, spices and to an extent rice which has already improved India’s share in world agro-exports (Desai, 1998). But, they have not wielded better growth rate of new technological inputs or that of agriculture and its mainstream products that have a large share in acreages, output, and value added.

11 Why then are these reforms positive? They are positive in the sense that they will improve the market structure with consequent efficiency in the supply of farm inputs and marketing services. Price reforms for canal-irrigation, fertilizers, and farm electricity are also imminent for similar reasons, besides for improving farmers X-efficiency (i.e. use as distinct from allocative efficiency, a concept coined by Leibenstein, 1976 and 1980). Improving efficiency of institutions serving agriculture as well as that of farmers may be accomplished by more appropriate pricing of these inputs that is regularly changed and enforced, besides by improving the present extension worker to farmer ratio of 1:800/1000, which is highly inadequate.

12 To conclude, what GATT provisions suggest for trade and price reforms for agriculture have their rationale in making the market structure and institutions supplying various services and inputs more competitive, efficient, and effective. But for accomplishing the objective of rapid technology-led agricultural growth they are “misconceived”. It is in realizing such sectoral growth, however, that GATT has provisions, except for TRIPS, that are both positive and “rightly” conceived. Before we turn to discuss them, options available for accelerated agricultural growth may be briefly sketched so that what we discuss next is more clearly appreciated.

13 Extensive farming, intensive agriculture, and technical change are the three “strategic” options for growth in agriculture (Dantwala, 1986). Extensive farming in India is no longer feasible because most land frontiers have been exhausted. Intensive agriculture is agro-economically unsustainable for it increases production at diminishing rate and creates pressure on natural resources. Thus, the most preferred option is technical change, i.e. scientific-knowledge based farming (including product innovations) along with new inputs in which this change is embodied.

14 Such a “strategy” is imperative for it enables overcoming a trap into Ricardo’s Law of Diminishing Returns to which agriculture, unlike other sectors, is more prone. Besides being a necessary “strategy”, it is also sufficient for it increases production at reduced unit cost/price in real terms, thus benefiting the poor who spend a large part of their budget on agricultural commodities (Kahlon and Tyagi, 1983; Sidhu and Byerlee, 1992; Rao, 1994; Singh, Pal and Morris, 1995; Acharya, 1997; Desai and Namboodiri, 1998b).

15 Technical change in the post-1965 period accounted for as much as 43 per cent of agricultural growth in India though in the United States it claimed as much as 67 per cent (Desai, 1994; Ball, 1985). In the latter part of this period, total factor productivity has significantly decelerated despite significant increases in the use of new technological inputs. Even land productivity has decelerated in these years (Desai and Namboodiri,
This suggests that the distinction between intensive agriculture and scientific knowledge based farming that was much in evidence when the Green Revolution got initiated has become blurred.

Restoring this distinction requires another round of the Green Revolution. But it has to have a technical change that is both seed and resource centred rather than only seed or only resource-centred to more fully harness its potential in a sustainable manner. This requires government expenditure on agricultural R&D, extension service, soil testing laboratories, irrigation and watersheds, electricity, seeds, selective input subsidies and marketing infrastructure like roads and communication. This is because most of these are merit/public and quasi-public goods in whose case the market fails as benefits to private investors including farmers are lower than to society at large (Rao, 1989; Desai and Namboodiri 1997a; Desai, 1998; Rao 1998). It is in this context that the WTO's provisions for government budgetary support for agriculture being exempted are both positive and in the right direction. But the literature in India or elsewhere has not recognised it (Gulati and Sharma, 1994; Pursell and Gulati, 1993; Ahluwalia, 1996; Goldin and Knudson, 1990; two exceptions are: Bhalla and Singh, 1994; and Nayyar and Sen, 1994).

Positive and “rightly” conceived policies

From the viewpoint of a developing country like India, positive and “rightly” conceived policies include the following of the GATT provisions on domestic support assistance that is exempted under the “Green Box” and non-exempted agricultural subsidies as part of AMS (Aggregate Measure of Support) allowed up to 10 per cent of agricultural production to encourage agriculture and rural development that are an integral part of development (Oza, the exempted measures are: 1995; Bhalla and Singh, 1994; Nayyar and Sen, 1994; Debroy, 1996).

a. General government assistance for research, pests and disease control, training services, extension services, inspection services, infrastructure services, and direct payments to producers for environmental programmes
b. Public support of farm input and credit subsidies for marginal and small farmers that are excluded/exempted from non-product specific assistance
c. Public support of farm input and credit subsidies for farmers other than marginal and small farmers being allowed as a part of AMS to the extent of 10 per cent of agricultural production
d. Equivalent measure of support for agricultural products in whose case calculation of product-specific support is impracticable such as for non-tradables

e. Assistance for public stock holding for “food security” and domestic food aid such as food subsidy given under the Public Distribution System (PDS) as long as it is based on clearly defined criteria related to “nutritional” objectives.

How has India used these opportunities both before and after macro-reforms? Excepting the equivalent measure of support (i.e. item 4), all others have been part of agricultural policy in India. What GATT provisions offer for public support for agriculture was better harnessed prior to their emergence. But in the wake of macro-reforms it was frittered away under the exclusive reliance on “markets” and “setting prices right”.

Firstly most of the purposes and especially those related to agricultural research, training and extension, infrastructure (like irrigation, rural electricity, rural roads, cooperatives,
etc.), and environmental protection (like that for drought-prone areas, hill areas, etc.) have been part of the government expenditure “on” and “for” agriculture as will be soon shown. Yet the new policies have not fully harnessed these opportunities; both the absolute and relative (i.e. per cent) shares of government’s planned expenditure “on” agriculture in real terms are lower in the post-reform period as was shown earlier. What gained most is the government’s planned expenditure on target-group specific rural development programmes (like the Integrated Rural Development Programme (IRDP) and Jawahar Rozgar Yojana) even though they have had limited success. In the post-reform period even government plan expenditure on infrastructure like power, ports, communication, etc. has declined (Ghosh, 1997).

Table 2 shows that the central government’s planned expenditure “on” and “for” agriculture and rural development that was realized and budgeted respectively for 1996-97 and 1997-98 had increased inadequately compared to the inflation, besides being lowered/kept constant as a per cent of total plan expenditure. Moreover, the pattern of this expenditure also shifted from technological and economic resources to programmes like storage and warehousing, IRDP and rural employment (see Table 2). These trends are also likely to hold for the state government budgets for two reasons. One is that the central budget acts like a “budget leader”. Two, and more important, net transfer of resources from the central government to the state governments has significantly declined in the wake of macro-reforms with a consequent resource crunch (Ghosh, 1997).

These have all largely resulted from the structural adjustment and liberalization that have emphasized the earlier discussed misconceived public policies for agricultural growth (Ghosh, 1997; Desai, 1997). Even the increased emphasis on target-group specific rural development programmes is short-sighted as such individual beneficiary-oriented programmes fructify little without being integrated with technology and infrastructure-led growth in agriculture where most poor are engaged.

A recent redeeming feature is that the central government budget for 1998-99 has corrected most of the earlier discussed deficiencies of the previous budgets (compare Table 2 and Column 2 of Table 3). This may be because India has now a government and political coalition that have for the first time since Independence explicitly stated that economic growth is influenced by both industrialization and agricultural performance.

But even this government failed to sustain this correction in its second budget of 1999-2000 (see Table 3). The only exception is the better allocation for economic programmes. Notwithstanding the importance of this exception the government’s failure in its agriculture related second budget is indicative of lack of sustained planning to translate its better appreciation of this sector’s contribution to economic growth in reality.

While correcting for this failure, the government also needs to recognize that it needs to improve net resource transfer to the state governments, since agriculture is a state subject and since the states have limited powers to raise resources. Additionally, the government also must play a leadership role in inducing the states to provide equity-support to the credit cooperatives, besides undertaking land reforms that emphasize selective legitimisation of tenancy, consolidation of land fragments, and enforcement of existing ceilings on land ownership to fully realize the potential of technology and infrastructure-led rural growth induced by the new government expenditure policy. Indeed, such pro-active roles of the government will greatly facilitate in realizing the potential of long-run response of agricultural output/supply to the first set of rightly but
“misconceived” policies discussed earlier. To put it differently, sustained shift from the “misconceived” policy of relying on relative prices to non-price factors for agricultural growth will, in the long run, make the aggregate supply response both positive and elastic (Rao and Gulati, 1994; Rao, 1989; Binswanger, 1989).

The government policies on farm input subsidies are misconceived, ad-hoc, and suffer from some conceptual inconsistencies. This is disconcerting as such subsidies are estimated to be well below the 10 per cent permitted under GATT (Oza, 1995; Bhalla and Singh, 1994; Gulati and Sharma, 1994). Such policies seem to have resulted from an obsession with fiscal deficit rather than viewing it as a larger issue of public finance and trade policies. Three points need to be stressed.

One, subsidy is justified when society benefits more than the private enterprise including farmers. Two, indiscriminate and unilateral cut in subsidies would adversely affect agriculture’s comparative advantage as it would then raise farm prices vis-à-vis world market prices (Nayyar and Sen, 1994). Three, controlling fiscal deficit requires a more integrated sectoral perspective on tax concessions, tariff reductions, etc. that are a part of liberalization to avoid causing loss of revenue which reduces public expenditure. One such policy measure of the budget for 1997-98 was the reduction in corporate and personal direct tax rates under the plea that it would improve the compliance of tax with consequent better revenue collection. But this has not been realized. Given that the present tax to GDP ratio is quite low, compared to many other developing countries, such tax concessions can have serious ramifications (Ghosh, 1997).

The fertilizer subsidy policy has also been ad-hoc and characterized by uncertainty about this subsidy and also about inducing adverse parity in prices of NPK fertilizers. This has led to lack of a level playing field for the manufacturers of these fertilizers. It has also led to adverse NPK ratio in the use of fertilizers by farmers with consequent environmental stress. Again, this policy is an outcome of excessive faith in liberalization and “setting prices right” as a source of improving allocative efficiency, a concept that is restrictive compared to the concept of X-efficiency. We have more to say on this later when the third type of public policies implied by GATT is considered.

Yet another problem is that the government proposes to consider agricultural research and education as merit goods but not agricultural extension services (GOI, 1997). The free-rider problem for such services is as true as it is for agricultural education. Similarly, such problems for irrigation and flood control are not recognized though for soil and water conservation and flood control is recognized (GOI, 1997). Since government expenditure on all these is part of public support that is exempted under the “Green Box”, these are unwarranted for the commitments under GATT.

However, GATT’s implicit definition of credit subsidy has some serious problems. This subsidy is defined as the difference between the interest rate on agricultural credit and that on trade and industry credit considering the concept of opportunity foregone (Bhalla and Singh, 1994; Gulati and Sharma, 1991). Such a concept implies credit market is perfectly competitive with consequent inter-sectoral interest rates being same. But this market is inherently imperfect dealing as it does in future transactions (Stiglitz, 1994; Desai and Mellor, 1993). Further, the literature on financial liberalization defines this subsidy as nominal interest rate being lower than some measure of inflation (Shaw, 1973; McKinnon, 1973). Considering this definition, Indian agriculture was not subsidised for as many as 36 out of 46 years since 1950 (Desai and Namboodiri, 1999b). Subsidy in these ten years resulted not because nominal rates were reduced but because inflation shot up due
to exogenous shocks like oil crisis and severe droughts. Thus, neither the deregulation of interest rates which is normally justified when there is subsidy nor the raising of interest rates in post-reform period was required. The latter was unwarranted also because institutional lenders have scale economies and/or constant returns to scale in their costs suggesting thereby that cost-based pricing does not require them to raise interest rates (Desai 1994b; Bhattacharjee, Desai and Naik, 1999).

On the fifth type of public assistance for “food security”, GATT provisions would require PDS to be targeted since it at present serves the non-poor also. Policies are being fine tuned for this by identifying the poor based on income criterion and the poor backward areas. However, this could be further improved as identification based on income alone is not full proof. It could be improved by a process of elimination of say taxpayers. For the rural sector, it could be done by weeding out those owning a *pukka* house of certain size and type, tractor, TV, phone, etc. Making PDS a genuine entitlement would turn it into transparent public support of pride and could reduce the government expenditure on food subsidy.

But GATT’s provision of buying (and selling) food (for PDS) at open market price is inappropriate for more than one reason. One, it would increase the food subsidy burden with consequent pressure on government’s resources. Two, when a large buyer like India enters the market to purchase for food security, sellers tend to take advantage by holding up the stocks until prices skyrocket. Such market sentiment not only enhances government’s costs but also hinders discharging its social responsibility that is implicit in food security related objectives of the developing countries (Dantwala, 1993). Three, government purchases are at the support/procurement price which is a full-cost-based pricing. Four, farmers are free to sell to government and other agencies. Only in the case of rice and sugar is there a levy on the millers/processors. Over time, this levy has been reduced. But its complete elimination at this stage may result in inadequate purchases by the government with consequent problem of insufficient supplies for PDS and bufferstocks.

Nonetheless, there seems to be room to reduce the total quantity of foodgrains procured by the government. It is estimated that this could be in the range of 15-20 million tonnes considering the requirements for both PDS and bufferstocks needed to meet the short supplies in the event of droughts (Tyagi, 1990). This should be possible to achieve with a better targeted PDS on the lines suggested earlier, besides better planning and implementation by the Food Corporation of India and state governments. Before we conclude it must be stated that the present policies of selling food under PDS and bufferstocks assist the government in maintaining lower prices for wages goods with consequent restraint on wage increases that would hurt the profitability in various sectors. Such food price policy is accomplished without hurting much the surplus producing farmers as the pricing is full-cost-based. Indeed, such a price policy has been one of the important factors behind the successes that the East and South-East Asian countries have achieved for their growth and poverty reduction (Ghosh, 1997).

To conclude, most provisions of the “Green Box” and non-product specific public support for agriculture under the WTO are sound and in the right direction for accelerating this sector’s growth as also its contribution to alleviating poverty. The only modifications required relate to redefining the credit subsidy as negative real interest rate and not requiring the government to make purchases for food security at open market prices. The government needs to change its mindset of viewing input subsidies as a fiscal deficit
problem to that of public finance issue and opportunity. Moreover, it must treat public support for extension service, irrigation, and flood control, like that for agricultural research and education, soil and water conservation, and flood control as merit goods. The government also needs to formulate a better-targeted PDS and bufferstock operations.

**Positive but “inappropriate and ill-conceived” policies**

34 Positive but “inappropriate and ill-conceived” policies relate to GATT’s provisions on product-specific market price support (MPS), defining non-product specific support of farm input subsidies, and TRIPS. All these three provisions are positive in more than one sense.

35 One, these provisions legitimise such policy support and thereby provide an “assured” policy environment which is critical for farmers who, unlike others, encounter more and varied risks and uncertainty. The East Asian countries have pursued such policy environment for agriculture even under liberalization (Ghosh, 1997). Two, these provisions also provide incentives for sustained technological transformation of agriculture. In the early stage of this process in a developing country like India, farm input subsidy may be a better option than product price support though it may be mildly regressive (Mellor, 1966 and 1976; Krishna, 1967; Barker and Hayami, 1976). This is perhaps because the prevailing market environment for farm commodities tends to fulfil its incentive function on its own, besides the fact that product price support benefits larger farmers much more than the smaller ones who are net purchasers of marketed surplus. And yet product price support is needed to ensure some price stability, which is not always inherent in agriculture. Three, TRIPS would provide incentives to discover and innovate new technologies. Moreover, it would induce better accountability of the agricultural R&D system.

36 But there are certain features of all these three provisions which have “inappropriate and ill-conceived” implications for agricultural policy in a developing country. We discuss them for MPS first followed by a discussion on input subsidies and lastly TRIPS. In so doing we also consider how these are being practised in India.

**Product-specific MPS**

37 GATT defines market price support as administered domestic price minus reference price of CIF/FOB depending on whether the product is net importable/exportable (Bhalla and Singh, 1994; Debroy, 1996). There are several serious problems with this definition.

38 While reference price is market price, administered domestic price is “presumed” to be the price that represents market price rather than the market price itself. There is thus an inherent contradiction. Two, not all production is sold at this administered price even though it is eligible and hence to that extent MPS is understated if this price is lower than the domestic market price and the border price which often is the case. Three, a more serious inherent contradiction follows from this formula. That is, its negative value is inferred as disincentive/tax as is the case for most crops in India and yet in the same breadth it is also considered to have a comparative advantage in its agriculture (Gulati and Sharma, 1991). India’s lower prices (either procurement or market price) are an
indication of its lower unit costs which in turn suggests its revealed comparative
advantage in agriculture. This is because of agriculture’s different resource endowments
and technology that is less capital-intensive compared to that in the high-income
countries that determine the border prices. Four, GATT’s formula implies consideration
of an additional criterion of parity principle in determining domestic support/
procurement price which is based on full cost-pricing as was stated earlier. While this
would improve (net) producers’ incentives and gains, it would hurt net purchasers and
consumers in general. The latter is estimated to be larger than the former (Rao, 1989;
Anderson and Tyres, 1990; Sandoulet and de Janvry, 1990; Parikh, 1992; Nayyar and Sen,
1994). To top it all, it would imply additional inflationary tendencies which would hurt
industrialization and growth in general (Mellor, 1966 and 1976; Rangarajan, 1982; Rao,
1989). Five, border prices of agricultural commodities are notoriously volatile with
consequent MPS measured to swing quite widely (Singh and Brar, 1996). It has, therefore,
built-in limitations to serve the earlier stated objective of stabilizing farm prices. Lastly,
border prices are justified on the ground that they represent perfectly competitive
international markets for agricultural commodities. But this market is more of an
oligopoly dominated by a few large players (Gill and Brar, 1996).

How may MPS be measured so that the valid idea of product-specific support could be
ascertained for policy commitments? Our suggestion is as follows:

\[
\text{MPS} = [\alpha \text{DSP} + \alpha (1-\alpha) \text{DMP}] - \text{DUTC}
\]

where

\[
\alpha = \text{product-specific percentage of production eligible to receive domestic support price (DSP)}
\]

\[
\text{DSP} = \text{product-specific domestic support price}
\]

\[
\text{DMP} = \text{product-specific domestic market price}
\]

\[
\text{DUTC} = \text{product-specific domestic unit total costs of production}
\]

The rationale for this is three-fold. One, the administered support price of the
government has an avowed objective of making the market price that is incentive-
oriented. Hence, the market price support (MPS) should be the weighted average of the
government support price and the open market price. Two, MPS so measured has its
merits in that it enables finding the competitive advantage. Three, it is based on a method
of full-cost based pricing principle rather than both this cost and parity principle which
has highly complex implications for serving the interests of farmers, consumers,
industries and economy as was stated above. Such a principle is also advocated on the
ground of being simple (Krishna, 1967), and is commonly used in developed countries like
the United States and South Korea (Johnson, 1967; Ghosh, 1997).

One problem with this formula is that data requirements are quite large, complex, time
consuming, and costly, especially for a large and diverse agriculture as in India and China.
Moreover, it is likely to unduly politicise support price determination as variation in unit
cost is very large (Krishna, 1967; Johnson 1967).

It is for these among other reasons that we also prefer the product price support policy
that should be highly selective. The selection could be guided by choosing products that
have sustained and broad-based increases in per hectare yields and/or total factor
productivity. This is because in such crops once the supply curve shifts, prices crash with
the consequent need to guarantee price support by the government to sustain
technological change for future. This also implies that product price support must “follow rather than precede” technical change, i.e. earlier discussed non-price factors related policies that are positive and “rightly” conceived under GATT. The goal of ensuring price stability may be served by determining a minimum support price rather than market price support (MPS)/procurement price. This may be determined on the basis of variable costs (or approximately cost A2 in the parlance of Commission on Agricultural Costs and Prices in India). This is because farmers would find it profitable to continue as long as their variable costs are covered.

In India, the distinction between minimum support price and procurement price (i.e. MPS), which was in force at one time, needs to be restored on the lines suggested above. Moreover, government procurement price is based on full unit cost plus something to account for price parity. Various types of parities such as open market prices, output-input price parity, inter-sectoral price parity, etc., are considered. While the earlier discussion on undesirable implications of border-price parity need not be repeated, it is worth recalling the discussion on barter terms of trade that it has both an ambiguous and inelastic impact on (aggregate) output/supply. Even other parities may be ignored as they are implicitly considered in the option that is suggested earlier (Krishna, 1967).

**Defining farm input subsidies**

GATT provisions on this are much less specific which makes our task incomplete and perhaps unwarranted. But in the case of an input like fertilizers (i.e. a traded input) it appears that a similar definition as for product-specific market price support is perhaps implied. In other words, fertilizer subsidy is measured as reference price minus domestic price, where the former is cif/fob depending on whether it is net importable/exportable adjusted for delivery at farm gate and the latter is the price paid by farmers (Bhalla and Singh, 1994; Gulati and Sharma, 1991 and 1994). But the government treats entire budgetary expenditure for fertilizers as this subsidy. And it broadly represents this input being sold to farmers at prices below the cost of its manufacturing/import and marketing. In a sense this suggests the same principle of cost-based product-specific market price support proposed earlier. Many of the reasons that guided this proposal may be applicable in this case also. The only modification required is to consider the weighted averages of both costs and the farmer’s price where the weights are the shares of domestic and imported supplies. But this is the case only for nitrogenous and phosphatic fertilizers as potash is totally imported into India.

Considering subsidy/tax as the difference between what it costs to produce/supply and farmer’s price seems quite convincing. Such principle is even implied in the government’s approach paper on subsidies which covers other such farm inputs as canal irrigation water and farm electricity (GOI, 1997). Adoption of this cost-based principle would approximate the real nature of subsidy unlike the formula of GATT that portrays it to be a notional number. Perhaps the former measurement is more transparent and overcomes answering a counter-factual question implicit in the latter. Incidentally, most available estimates of farm input subsidies referred to earlier are well within what GATT permits, and use this more transparent measure.
Trade related intellectual property rights

Provisions required under trade related intellectual property rights (TRIPS) for agriculture tantamount to “negative and wrong” policies, if not unfair, for India and developing countries in general. This is because under a sui generis system, those countries like India which have process patenting for agriculture will have to switch over to product patenting. This together with other provisions on TRIPS would severely constrain three aspects of the process of technological transformation of agriculture. These are:

- Supply of inventions and discoveries
- Access to this supply to those who want to produce patented products like seeds (including hybrids), pesticides and fertilizers (including bio-material based)
- Farmers’ cost of adopting the patented new technologies (Nayyar and Sen, 1994; Oza, 1995).

The first two will be constrained by the requirements of royalty and licensing and the fee to be paid for any patent without any ceiling. They are also constrained by the monopoly rights of patentees being fully protected even from the objective of development of indigenous technological capability in a manner that would subserve the wider public interest by requiring not only commercial producers but also scientists and labs to pay for the royalty for the protected (patented) varieties of seeds, bio-technology and genetic engineering based inventions (Oza, 1995). Furthermore, they would be constrained from the patent being considered “working” even when the patented product is only imported but not locally produced, as well as from the barriers to entry that will result from enhancing the patent expiry period from 5-7 years until 1998, to 20 years from 1999 (Oza, 1995).

All this will constrain the supply with consequent increase in prices of patented products, which in any case will go up due to royalty and licence fees. Both of these in turn would make farmers’ adoption of new technology costlier with consequent slower diffusion and rate of growth in productivity (Nayyar and Sen, 1994; Oza, 1995). What all this implies for agriculture in India and developing countries in general, is a dynamic comparative disadvantage which counts far more than the static comparative advantage (Nayyar and Sen, 1994).

How can this be contained, if not eliminated? Two of the three desirable public policies required for this can, however, be considered as part of GATT’s provisions. One of these is that at least the royalty and licence fees to be paid for the patented new technologies could be an integral and explicit part of the earlier discussed exempted public support under the “Green Box” for agriculture. This is because “knowledge” is more of a “public good”. Second, the permissible limit of AMS, and non-product specific public support of input subsidies in particular, may be raised for developing countries from 10 per cent of agricultural production proposed under the GATT. Three, plant breeders’ rights to supply of and/or access to patented new technology must be explicitly exempted from the requirements of patenting and from patentees’ monopoly over the new technologies as was conceived under UPOV conventions of 1991 but not under the Uruguay Round of agreement (Nayyar and Sen, 1994; Debroy, 1996).

Our plea is that the government may play a pro-active role on all these policies with WTO to make them a part of GATT. We also plea that both central and state governments must adopt the first and third type of changes as part of public support for agriculture and
allied agricultural activities irrespective of how the WTO may respond, since these are legitimate under the GATT provisions in general.

Concluding observations

WTO provisions for agriculture are a means to an end. Those provisions that have “misconceived” policy implications for agricultural growth seem to have been prioritised in India. They largely relate to reducing protection to trade and industry that may improve relative farm prices. Moreover, they seem to visualize more optimistic export-led agricultural growth which has an underlying assumption of domestic demand being a binding constraint rather than supply-side bottlenecks to this very end. This may be an outcome of conditionalities of structural adjustment and liberalization that has emphasized “markets” and “setting prices right”, which has underneath neoclassical economics framework and small country assumptions. But the provisions that are both “positive and right” and those that are “positive but ill-conceived” have remained at the bottom.

What this has accomplished for agriculture is lower growth rate that is not even broad-based, besides higher (rural) poverty. Overcoming these would, however, require making a clear distinction between policy “strategy” and “instruments” which has been lost in the wake of macro-reforms. This, in turn, requires prioritising those provisions of GATT that are both right and in the desirable directions. They include in particular the public support for agriculture that is exempted as part of the “Green Box”. They moreover include the public support of farm input subsidies and price support that is non-exempted but allowed up to 10 per cent of agricultural production.

Harnessing both of these must imply that agricultural growth is led more by “technology and infrastructure” rather than (relative) prices. Indeed, the long-run response of prices itself is influenced by the choice of this “strategy” and by changing the sequence of policy “instruments” from relative prices to government expenditure “on” and “for” agricultural development, and such other non-price policies as agricultural research and extension, irrigation, farm power, seed and fertilizers, credit and land reforms like selectively legitimising tenancy and consolidation of land fragments.

It is this sequence, as well as the “sustained priority for and commitment to” these non-price policies besides input subsidies, which have led to what the East Asian countries have achieved in their agriculture and for the economy at large (Ghosh, 1997).

While this must be emulated by India, it also requires solving the problems of TRIPS by financing higher prices of new technology evolution and transfer under the public domain of the “Green Box”, besides enhancing the 10 per cent of AMS including non-product specific support of farm input subsidies, and protecting the plant breeders’rights. Equally important is to appropriately price canal-irrigation water, farm electricity, and fertilizers. Improving farmers’X-efficiency also requires enhancing the present extension worker to farmer ratio to promote “knowledge” as an input.

There is also an urgent need for better governance and accountability of institutions related to agricultural R&D, extension service, irrigation, power, credit, etc., besides making them farmer-friendly and collaborative.
The place that may be assigned to the product price policy in this package of policy “instruments” is to let the market work except for the selective price supports together with the Public Distribution System and bufferstocks that are better targeted.

To conclude, there is no short cut to agricultural growth and poverty alleviation. But what the non-price policies for “technology and infrastructure” can achieve for agriculture is to serve better the complex interests of farmers, consumers, industries and economy than what the product price and agro-trade related policies can achieve in the early stage of economic development.

### BIBLIOGRAPHY

**Table 1 Agricultural Performance in Pre and Post Reform period in India**

**Details**

**Pre-Reform 1985-86 to 1990-91**

**Post-Reform 1991-92 to 1996-97**

**Barter Terms of Trade** (BTOT-index of wholesale prices of agriculture to index of wholesale prices of manufacturing-Base 1981-82)

1. Average Index

<table>
<thead>
<tr>
<th>Details</th>
<th>Pre-Reform 1985-86 to 1990-91</th>
<th>Post-Reform 1991-92 to 1996-97</th>
</tr>
</thead>
<tbody>
<tr>
<td>BTOT-Index of wholesale prices of agriculture to index of wholesale prices of manufacturing-Base 1981-82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Average Index</td>
<td>109.31</td>
<td>114.32</td>
</tr>
<tr>
<td>2. Annual Compound Growth Rate in BTOT (%)</td>
<td>-0.03</td>
<td>0.17</td>
</tr>
</tbody>
</table>

**Percentage of GOI's Plan Expenditure on Agriculture to Total Plan Expenditure**

<table>
<thead>
<tr>
<th>Details</th>
<th>Pre-Reform 1985-86 to 1990-91</th>
<th>Post-Reform 1991-92 to 1996-97</th>
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</thead>
<tbody>
<tr>
<td>Percentage of GOI's Plan Expenditure on Agriculture to Total Plan Expenditure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.24</td>
<td>11.53</td>
<td></td>
</tr>
</tbody>
</table>

**Annual Compound Growth Rates in Non-Price Factors (%)**

<table>
<thead>
<tr>
<th>Details</th>
<th>Pre-Reform 1985-86 to 1990-91</th>
<th>Post-Reform 1991-92 to 1996-97</th>
</tr>
</thead>
<tbody>
<tr>
<td>HYV Area (Mn.ha)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.96</td>
<td>3.90</td>
<td></td>
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<table>
<thead>
<tr>
<th>Details</th>
<th>Pre-Reform 1985-86 to 1990-91</th>
<th>Post-Reform 1991-92 to 1996-97</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilisers Use (Mn.tons of NPK)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Gross Irrigated Area (Mn.ha)*

Electricity Use in Agriculture (Bn.kwh)*

Real Plan Expenditure on Agriculture and Rural Development in 1980-81

Prices (Rs.Bn)

Real Plan Expenditure on Agriculture alone in 1980-81

Prices (Rs.Bn)

Real Total Institutional Rural Credit issued during the year in 1980-81

Prices (Rs.Bn)

Real Total Institutional Rural Credit Outstanding in 1980-81 Prices (Rs.Bn)

Agricultural Growth: Annual Compound Growth Rates (%)
<table>
<thead>
<tr>
<th>Product</th>
<th>1980-81 Prices (Rs.Bn)**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foodgrains Production Index</td>
<td>4.38</td>
</tr>
<tr>
<td>Non-foodgrains Production Index</td>
<td>2.46</td>
</tr>
<tr>
<td>Agricultural Production Index</td>
<td>7.18</td>
</tr>
<tr>
<td>Paddy/Rice Output in 1980-81 Prices</td>
<td>8.64</td>
</tr>
<tr>
<td>Wheat Output in 1980-81 Prices</td>
<td>4.90</td>
</tr>
<tr>
<td>Oilseeds Output in 1980-81 Prices</td>
<td>10.78</td>
</tr>
<tr>
<td>Sugarcane Output in 1980-81 Prices</td>
<td>7.56</td>
</tr>
<tr>
<td>Cotton Output in 1980-81 Prices</td>
<td>17.84</td>
</tr>
<tr>
<td>Fruits and Vegetables Output in 1980-81 Prices</td>
<td>4.53</td>
</tr>
<tr>
<td></td>
<td>6.47</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------</td>
</tr>
<tr>
<td>Condiments and Spices Output in 1980-81 Prices (Rs. Bn)**</td>
<td>2.73</td>
</tr>
<tr>
<td>Milk and Milk Products Output in 1980-81 Prices (Rs. Bn)**</td>
<td>5.13</td>
</tr>
<tr>
<td>Eggs Output in 1980-81 Prices (Rs. Bn)**</td>
<td>6.67</td>
</tr>
<tr>
<td>Marine Fish Output in 1980-81 Prices (Rs. Bn)**</td>
<td>14.24</td>
</tr>
<tr>
<td>Coarse Cereals Output in 1980-81 Prices (Rs. Bn)**</td>
<td>9.28</td>
</tr>
<tr>
<td>Pulses Output in 1980-81 Prices (Rs. Bn)**</td>
<td>7.57</td>
</tr>
<tr>
<td>Inland Fish Output in 1980-81 Prices (Rs. Bn)**</td>
<td>7.42</td>
</tr>
<tr>
<td>Gross Real Value Added (GDP) from Agriculture in 1980-81 Prices (Rs. Bn)**</td>
<td>6.32</td>
</tr>
<tr>
<td></td>
<td>1980-81 Prices (Rs.Bn)*</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>NDP from Agriculture</td>
<td>6.51</td>
</tr>
<tr>
<td>Poverty Ratios (%)***</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>36.60</td>
</tr>
<tr>
<td>Urban</td>
<td>35.22</td>
</tr>
<tr>
<td>Agro-processing Industries Growth: Annual Compound Growth Rates (%)</td>
<td></td>
</tr>
<tr>
<td>Agro-processing Industries Output in 1981-82 Prices (Rs.Bn)***</td>
<td>21.90</td>
</tr>
<tr>
<td>Agro-processing Industries Value Added in 1981-82 Prices (Rs.Bn)***</td>
<td>21.61</td>
</tr>
<tr>
<td>All Food-processing Industries Output in 1981-82 Prices (Rs.Bn)***</td>
<td>10.30</td>
</tr>
<tr>
<td>All Food-processing Industries Value Added in 1981-82 Prices (Rs.Bn)***</td>
<td>4.93</td>
</tr>
</tbody>
</table>

Growth in Agro-Trade: Annual Compound Growth Rates (%)
Food Exports ($ Mn. in 1980-81 Unit Values)

0.84
0.18

Beverages and Tobacco Exports ($ Mn. in 1980-81 Unit Values)

7.66
4.31

Oilseeds and Oilcakes Exports ($ Mn. in 1980-81 Unit Values)

22.74
4.87

Cotton, Cotton Apparel, Jute, etc. Exports ($ Mn. in 1980-81 Unit Values)

-0.99
10.79

All Agro-Exports ($ Mn. in 1980-81 Unit Values)

-0.72
8.81

Trade Balance on Agricultural A/c ($ Mn. in 1980-81 Unit Values)

4.90
6.38

India's Agro-Exports as a Percentage of World Agro-Exports

1.18
1.45

* For Pre-Reform 1986-87 to 1990-91, and Post-Reform 1991-92 to 1995-96 as data for other post-reform years are not available.

** For Pre-Reform 1987-88 to 1990-91, and Post-Reform 1991-92 to 1994-95 as data for other post-reform years are not available. Paddy/rice, wheat, oilseeds, sugarcane, cotton, coarse cereals, and pulses account for as much as 92 per cent of total cropped area, and 56 per cent of agricultural production. These crops, plus milk and milk products, eggs and fisheries account for over 75 per cent of agricultural output. In all these major crops yields per hectare in post-reform years have lower growth rates, despite more favourable weather conditions (Desai 1998).

*** These are for 3 years each as data for other years are not available. But these poverty ratios must have worsened after 1993 as average consumer price index for food for agricultural labourers and industrial workers has increased respectively by 6.41 and 23.88 per cent, while the
average wholesale price index for foodgrains has increased by 11.84 per cent in post-reform period of 1991-92 to 1996-97 when agricultural growth worsened with consequent lower employment growth opportunities.

**** Includes spices, sugar, rice, fish, meat, fruits, and other processed foods.

@ For five years each of pre and post-reform periods of 1986-87 to 1990-91 and 1991-92 to 1995-96, respectively. Sources:


Table 2 Growth in Government Expenditure in Current Prices “on” and “for” Agricultural and Rural Development, its Percentage Share in Total Government Expenditure and its Pattern under the Central/Union Budgets for 1996-97 and 1997-98

<table>
<thead>
<tr>
<th>Budget Periods</th>
<th>% Change in Government Expenditure</th>
<th>% Share of Govt. Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>1</strong> “On” Agriculture and Rural Development (a)</td>
<td>1996-97 (BE)</td>
</tr>
<tr>
<td></td>
<td>+12.35</td>
<td>1996-97</td>
</tr>
<tr>
<td></td>
<td>+4.73</td>
<td>1997-98 (BE)</td>
</tr>
<tr>
<td></td>
<td>+7.88</td>
<td>Over</td>
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<td></td>
<td>(RE) over</td>
<td>(RE) over</td>
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<tr>
<td></td>
<td>1995-96 (RE)</td>
<td>1995-96 (RE)</td>
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<tr>
<td></td>
<td>1996-97 (BE)</td>
<td>1996-97 (BE)</td>
</tr>
</tbody>
</table>

<p>|                | <strong>2</strong> “For” Agriculture and Rural Development (b) | 1996-97 (BE) |
|                | +15.60 | 1996-97 (BE) |
|                | +2.31 | 1997-98 (BE) |
|                | +3.32 | Over |
|                | (RE) over | (RE) over |
|                | 1995-96 (RE) | 1995-96 (RE) |
|                | 1996-97 (BE) | 1996-97 (BE) |</p>
<table>
<thead>
<tr>
<th>Year</th>
<th>&quot;On&quot; Agriculture and Rural Development (a)</th>
<th>&quot;For&quot; Agriculture and Rural Development (b)</th>
<th>Pattern (% to total) of this Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10.06</td>
<td>20.85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.88</td>
<td>19.45</td>
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</tr>
<tr>
<td></td>
<td>9.84</td>
<td>19.53</td>
<td></td>
</tr>
</tbody>
</table>

"On" Agriculture and Rural Development through:

- Technological Programmes (c)
  - 5.31
  - 5.47
  - 5.07

- Economic Programmes (d)
  - 43.80
  - 41.79
  - 40.23

- Institutional Programmes (e)
  - 50.89
  - 52.74
  - 54.69

"For" Agriculture and Rural Development through:

- Technological Programmes (f)
  - 2.56
  - 2.78
  - 2.56

- Economic Programmes (g)
  - 71.95
  - 69.50
(c). This includes plan expenditure on agriculture and allied activities, rural development, irrigation and flood control plus non-plan expenditure on fertiliser and food subsidies.

(b). This includes plan expenditure on fertiliser industry, power, petroleum, roads and bridges, foreign trade and export promotion, and export market development, besides what is stated in the above note.

(c). This comprises plan expenditure on agricultural research and education and on crops.

(d). This includes fertiliser subsidy, plan expenditure on major and medium irrigation, minor irrigation, command area development, soil and water conservation, animal husbandry, dairy development, fisheries, forestry, plantations, other agricultural programmes, and flood control and drainage.

(e). This includes food subsidy and plan expenditure on food, storage and warehousing, agricultural finance institutions, co-operatives, special programmes for rural development, rural employment, land reforms, other rural development programmes, and other special area programmes.

(f). Same as in Note 3.

(g). Same as in Note 4, plus fertiliser industry, power, petroleum, roads and bridges, and foreign trade and export.

(h). Same as in Note 5, plus export promotion and market development.

Source: Adapted from Desai, 1997.

Abbreviations in Tables 1 and 2: Mn = millions, Bn = billions, T.E = triennium ending, R.E. = revised estimates, B.E = budget estimates.

Table 3

<table>
<thead>
<tr>
<th>Budget Periods</th>
<th>Details</th>
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<tr>
<td>1998-99 (BE)</td>
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<td>1999-2000 (BE)</td>
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<td>1997-98 (BE)</td>
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<td>1998-99 (BE)</td>
<td></td>
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</tbody>
</table>

% Change in Government Expenditure

“On” Agriculture and Rural Development (a)

+12.52
For Agriculture and Rural Development (b)
+24.58
-2.04

% Share of Govt. Expenditure
1998-99(BE)
1999-2000(BE)

On Agriculture and Rural Development (a)
9.67
9.96

For Agriculture and Rural Development (b)
20.05
19.04

Pattern (% to total) of this Expenditure

On Agriculture and Rural Development through:
Technological Programmes (c)
6.84
6.34

Economic Programmes (d)
39.16
47.37

Institutional Programmes (e)
54.00
46.27

For Agriculture and Rural Development through:
Technological Programmes (c)
3.30
3.33

Economic Programmes (d)
70.32
Institutional Programmes (e)

(a) This includes plan expenditure on agriculture and allied activities, rural development, irrigation and flood control plus non-plan expenditure on fertiliser and food subsidies.

(b) This includes plan expenditure on fertiliser industry, power, petroleum, roads and bridges, foreign trade and export promotion, and export market development, besides what is stated in the above note.

(c) This comprises plan expenditure on agricultural research and education and on crop husbandry.

(d) This includes fertiliser subsidy, plan expenditure on major and medium irrigation, minor irrigation, command area development, soil and water conservation, animal husbandry, dairy development, fisheries, forestry, plantations, other agricultural programmes, and flood control and drainage. Plus fertiliser industry, power, petroleum, roads and bridges, and foreign trade and export.

(e) This includes food subsidy and plan expenditure on food, storage and warehousing, agricultural finance institutions, co-operatives, special programmes for rural development, rural employment, land reforms, other rural development programmes, and other special area programmes. Plus export promotion and market development.


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NOTES

1. The improvement in the growth rate of real plan expenditure on agriculture is more of a statistical illusion, the base being smaller.

2. Following Ricardo, trade literature argues that international trade like technical change can also shift the production possibility frontier. But one of the two commodities considered for trade being agricultural it is also subject to Ricardo’s Law of Diminishing Returns. This is in direct conflict with the perfectly competitive framework (under which there is always constant returns to scale) that the trade theory assumes. Moreover, international trade relaxes the constraint of comparative cost through an exchange relationship which follows rather than precedes production process. Hence it cannot be relied upon to overcome the inherent Law of Diminishing Returns that the production process has in agriculture. It is thus not a substitute for technical change in agriculture which directly overcomes a trap into this Law. And such a change must precede trade to enable the latter to become a source of mutual gains to the trading partners.

3. While official definition of such farmers considers those with up to 2 hectares of land, some studies consider them to be those with up to 10 hectares of land presumably because in semi-arid and arid areas and some agro-climatically difficult areas farmers with even more than 2 hectares may have very low income and productivity. In 1992, at an all-India level, farmers owning up to 2 hectares of land constituted 82 per cent with about 36 per cent of land, while those owning 2.01 to 10 hectares constituted about 17 per cent with 51 per cent of land.(Desai, 1998).

4. This holds only when GATT formula is considered to measure the product-specific support. But the alternative method suggested later in the paper does not create this problem, besides being consistent with the concept of competitive advantage.

5. Desai & Namboodiri, (1999a), show that inflation is relatively more accounted for by the composition of real output that emphasises agricultural growth rather than overall output. It is also compared to the monetary, fiscal & trade variables. Both of these findings hold even after considering the post-reform period.
6. Common Agricultural Policy and Regional Changes in France

Jean-Paul Charvet

1 Thanks to the Common Agricultural Policy (CAP) the European Community (EC) became the fourth or the third cereal producer in the world, just behind or just before India depending on the choice for taking into account rice production: paddy or milled rice. At the end of the 1990’s, the Indian cereal production was 225 million tonnes on a paddy basis and 183 million tonnes on a milled rice basis. If the EU is growing more wheat (98 M t versus 68 M t) and more coarse grains (105 M t versus 31 M t) than India, the Indian paddy production (125 M t) is far more important than the European one (2.5 M t only). In this context, France is now, behind the USA, the second exporter of agricultural products in the world.

2 Since the beginning of the CAP in the 1960’s, the means for supporting farmers’ incomes have changed a lot. New components were progressively added to the original economic and social policy that was mainly based upon a price policy. Since the 1970’s, steps were taken in favour of “Less Favoured Areas” or LFAs and mountainous areas. In 1992, a new CAP was settled, with new means (direct payments) for supporting the farmers’ incomes. Lastly, in 1999, within the context of the so-called “Agenda 2000 “, the stress was put on a more rural-oriented policy. We will deal here with the spatial consequences or geographical projections of the CAP main components through the French example, but they should not be very different in most of the other countries of the EU.

3 The policies implemented from the 1960’s for supporting the European farmers’ incomes strengthened production belts that are now highly specialized: cereal basins or cash grain farming areas, milk belts, belts of pork production or and of poultry production, etc. From the 1970’s, the steps taken through zonings in favour of the LFAs and mountainous areas allowed the survival of specific types of agriculture. More recently, from the 1980’s and mainly from the 1990’s, agro-environmental steps strengthened the existing geographical differentiations, the reason being that these steps were primarily targeted at areas with poor agronomic conditions. Adding all these successive and parallel policies sharpened the social and spatial differences that already existed in the
French (and European) countryside. This countryside is presently made of agricultural and rural areas differing more and more from each other, for economical and social reasons, but also for agricultural and rural policy reasons. These evolutions are linked to the fact that the CAP became a more and more territorialized policy.

The emergence and strengthening of highly specialised production basins

4 The means for supporting the farmers’ incomes in the CAP of the 1960’s were mainly prices settled at levels much higher than the average levels of prices on the world markets. On the contrary, the means for supporting the farmers’ incomes in the present CAP are mainly based upon compensatory or deficiency payments and this type of agricultural subsidy is for the moment placed, with the direct payments that are given to US farmers, into the “blue box” of the WTO. But when one looks at the geographical or spatial consequences of these two CAPs, they are not so different. Looking at cereal production, the subsidy that was previously proportional to the amount of grain produced is now proportional to a factor of production: the amount of arable land, at the farm level as well as at the agricultural region level. In spite of the change of agricultural policy, we still have the same territorial or spatial consequences: the main part of the grain production subsidy is directed to a rather limited number of farms and areas.

5 In France, the major cash grain farming area is the Parisian Basin: 13 out of the 14 French départements that are producing together more than 50% of the French wheat production are located in the Parisian basin (fig. 1). (A département is the equivalent of an Indian district). For sugar beet production, the EC market organisation is different, with a system of quotas, organised on a geographical basis, by country and by sugar factory, with guaranteed prices. This leads to a higher spatial concentration: more than 50% of the French sugar beet production comes from only four départements. They are all located in the Parisian Basin, north of Paris (fig. 1).

6 In the same way, a rather limited number of French départements (14 out of 90) produce together more than 50% of the French milk production. Since 1984 the EC has organised a system of milk quotas which in France are strongly linked to territories, namely the different French départements. To a large extent, the French map of milk production was frozen by the quotas: today, about 50% of the French milk production is coming from the so-called “Great West” that gathers Normandy, Brittany and Vendée (fig.2). As in France more than 50% of beef meat production is coming from former milk cows, an important part of this production is coming from the Great West. The only main exception to this location is the beef production of the northeastern parts of the Massif Central where Charolais cattle (providing high quality beef), are raised on meadows. But 16 départements produce together more than 50% of the French beef meat production (fig. 2).
For hog and poultry production, the market organisation is far lighter. On one hand, the European subsidies are limited for these productions and quite often the exports toward
countries that are not members of the EC do not need any subsidy. On the other hand, hog and poultry breeding are using different feedstuffs like corn gluten feed, oil meals or oilcakes (mainly soyabean meal) that are coming directly from the world market. We have to remember that since the 1960’s and the true beginning of the CAP there have been neither taxes nor duties on these feedstuff imports or on the oilseed imports. This particular situation explains to a large extent the location of the hog and poultry breeding industries and intensive animal factories in the EC: they are today mainly located close to the coasts and to the harbour facilities in the Netherlands, in the northern parts of Germany, in the north-east of Spain near Barcelona and, in France, in Brittany (fig. 3).

The main factors of agricultural regional specialisation are well known even if their combinations are different from one place to another (Charvet, 1997). Some comparative advantages are linked to agronomic conditions: a good way of reducing production costs is to select the agricultural productions that present the best adjustment to the local agronomic conditions. For example, the Parisian basin with its often thick silty soils and flat tablelands is very well suited for highly mechanised grain production.

The farm sizes are also playing an important role in the regional agricultural specialisations. When the sizes in hectares are limited, the farmers have to intensity their operations as they have done in Brittany. On the contrary, they can extensify their productions when they can use large acreages like in different parts of the Parisian basin.

Lastly, the geographical location of the farms and agricultural regions is important for understanding their specialisations. The nearness to harbours that are able to import and/or to export agricultural products, the closeness to factories where agricultural products are processed, play an important role in the processes of specialisation.

All in all, the free-trade economy within the EC allows strong competition between farms and between agricultural regions. Agricultural specialization presents economical advantages: it allows the setting up of efficient agrobusiness channels. But it is also generating economical, social and environmental problems.

The zonings in favour of less favoured agricultural areas

These zonings have been settled only since the mid 1970’s and the different subsidies that are linked to them can be filed into the WTO “green box”. They were settled according to different criterions (fig.4).
For the less favoured agricultural areas (LFAs) that are not located in mountainous areas, delimitation is based upon demographic and economic criterions. In these areas,
population is declining and getting older and older. Moreover, the economic activities are not very varied and employment in agriculture remains important. Access to these areas is not as easy as to those where the transport networks are more dense and efficient, such as in the centre of the Parisan Basin or the Rhône valley.

For the mountainous areas, the zonings have been decided according to physical criterions: altitudes, slopes, and climatic conditions. A French commune (the commune is the smallest territorial division in France, and is often a past mediaeval parish) is classified into a “mountain” zone when located above an altitude of 600 meters. The gradient of the slopes is also taken into account, more exactly the area where the gradient is above 20%. Within the mountainous zones are distinguished the “high mountain areas” where altitudes are above 1200 metres. Surrounding the mountainous areas, “submountain” zones are also defined. Lastly, in the southern parts of France dry zones, with specific subsidies, have been delimited.

The main subsidy granted to the mountain areas is the “Compensatory Indemnity for Physical Handicaps”. It is paid by head of cattle or by hectare. In 1999, the average payment was 940 FF per hectare. For beef cattle the special subsidy reaches 1000 FF per animal in the high mountain zones, 740 Francs per animal in the mountain zones themselves, 280 FF per animal in the submountain zones and 200 FF per animal in the LFAs that are located outside the mountain and submountain areas.

However, there are ceilings for these subsidies. The total number of animals should remain under 120 per hectare; these subsidies are aimed at “family farms” (according to French criterions). The number of beef cattle should also remain under 1.4 per hectare. These payments are aimed at extensive types of agriculture and are granted for the maintenance of landscapes.

Other payments are helping the settlement of young farmers or the promotion of quality products: milk, different kinds of cheese, pork meat, etc., in the mountain areas. European and French rules are promoting special kinds of agriculture in the mountains and thanks to them these particular agricultural areas are becoming more and more specific within the European agricultural map.

**Particular agro-environmental steps**

The geographical location of areas where particular agro-environmental steps are applied inside or outside the LFAs emphasises to a large extent the existence of different kinds of agriculture and different agronomic conditions. The corresponding measures can be filed into the WTO “green box” and have a good chance of staying there in the future.

The first basis of these agro-environmental steps was Article 19 of the European rule 797 established in 1985. But in France it was only at the tail end of the 1980’s that the first experiences were organised. In 1994 only 2% of the French agricultural subsidies were aimed at agro-environmental purposes and the round figures were still at the same level in 1998, even if they are supposed to increase in the years to come.

Different agro-environmental steps were successively set:

- the first ones, the OLAEs (“Opérations Locales Agri-Environnementales” or “Local agro-environmental steps”) were settled before the new 1992 CAP
- the MAEs (“Mesures Agri-Environnementales” or “Agro-environmental steps”) were settled by the new 1992 CAP itself
• lastly, from 1995 and only in France, were settled the PDDs ("Plans de Développement Durable" or "Sustainable Development Plans") and, at the end of the 1990's the CTEs ("Contrats Territoriaux d'Exploitation" or "Farm Management Contracts") that are the continuation of the PDDs.

It would be too long to describe here in detail all these steps (Charvet, 1996 and 1998; Fruit, 1998). Their common point of all these steps is to try to encourage a better management of the agricultural environment. Here we will only deal briefly with the territorial or spatial projections of these particular steps.

Their very pronounced geographical dispersion remains true at different geographical scales. At the national level, it is easy to point out that the OLAIE or Local agro-environmental steps are far more numerous in the southern half of France than in the northern half and that their precise locations are largely scattered across the countryside (Fruit, 1998).

At the regional level, it is clear that two main types of areas are included in these agro-environmental steps:

• the extensive pasture lands of various mountains, particularly in the Mediterranean mountains
• various wetlands located in the interior, like Sologne just south of the city of Orleans, or along the valleys and the coasts like the Seine estuary downstream from Rouen.

In both cases farmers have to cope with poor or even very poor agronomic conditions. The areas where farming activities benefit from good agronomic conditions are seldom included into the zones where these particular agro-environmental steps have been developed.

At the level of each watershed, the contracts are concluded on an individual basis and the farmers always have the choice to participate or not in the agro-environmental programs. This situation raises the question of the efficiency of steps that are only developed by some farmers and on scattered plots of farmland. It is even possible to participate in the agro-environmental programs for some parts of the farm and not for the others. We have examples of this kind of situation in the Seine valley, downstream from Rouen. Often farmers are contracting for some meadows that are located in the flood plain and not for the fields lying a little higher on the river terraces where they are still using important quantities of fertilisers, pesticides, etc. (Fruit, 1998). One good reason is that the subsidies obtained by hectare from agro-environmental steps are, on average, two or three times lower than the ones coming from cereal or oilseed growing on arable lands.

The global territorial result is for the moment a patchwork map on which are juxtaposed, at different scales, areas that are more and more different from each other and that are managed in very different ways. This is not an efficient management of environmental problems. This situation could be only improved by raising the "eco-conditionnality" of the direct or compensatory payments that are given to the farmers.

Conclusion

The adding and/or juxtaposition of the different and successive agricultural and agro-environmental policies sharpened the social and spatial differences, which already existed in the French countryside. This countryside is presently made of different scales
of juxtaposed agricultural areas differing more and more from each other. One can consider that the territorial differences are reinforced and even “institutionalized” by the various elements of more and more complex legislations creating official zonings.

Considering the different coloured boxes in which the agricultural subsidies are distributed since the Uruguay Round negotiations, a wide majority of the present European agricultural subsidies are classified into the blue and the green boxes. This could evolve through the next WTO negotiations, with a “greening” of the payments. For the moment, EU agricultures work with different means and steps according to the different areas in which they are located. The more and more territorialized CAP that we are experiencing now shows that it is possible to raise specific policies for specific agricultural areas inside a general framework, but its management is becoming more and more intricate.

BIBLIOGRAPHY

Bibliography


III. Food security and food safety
The main objective of this paper is to review the current status of food security and insecurity in India and identify the key emerging issues that have potential to significantly affect food security in the next decade or two. It also reviews the kind of policy instruments pursued in the past and identifies implications of new international trade agreements for food security. The paper has been divided into seven sections. The first section presents the concept of food security or food insecurity. A brief review of India’s agricultural and food policy is presented in section two. The current status of food security/insecurity in India is discussed in section three. Some aspects of emerging food security scenario are presented in section four. The implications of new international trade agreements for food security in India are discussed in section five. Emerging global food security issues are presented in section six and some concluding observations are given in the last section.

**Concept of food security**

A commonly accepted definition of food security is that “all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life” (USAID, 1992). Food security also connotes freedom from famine and chronic malnutrition which requires provision of means with the individual or family or a country for adequately meeting the nutritional needs on a daily and annual basis. In this sense, achieving food security is a broad concept and implies not only producing sufficient food but also making food accessible to the entire population throughout the year on a sustainable basis. There are three important dimensions of food security which need attention. These are availability of food on a sustainable basis, accessibility of food and utilization of available food. An individual, family, community or
A nation which has lost or is at the risk of losing any of these dimensions, is food insecure. The food insecurity may be transient or chronic and mild or acute. The essential requirements for the achievement of food security can be summed up as follows:

A. Availability of Food:
   (i) Satisfactory level and growth of food production
   (ii) Sustainability of growth of food production
   (iii) Stability of aggregate supply, i.e., minimum fluctuations in production levels or availability from year to year

B. Access to Food:
   (iv) Physical access to food, i.e., availability of food in all the regions and villages and to all families
   (v) Economic access to food, i.e., availability of food to individual family at affordable prices

(C) Food Utilization
   (vi) Intra-family allocation of food to ensure its availability to individual members as per their needs
   (vii) Maintenance of standard of health for all individuals to enable them to consume and absorb minimum food.

Each of these components of food security are influenced by several factors relating to both the national as well as the household socio-economic environment. The experience suggests that adequate food availability is a necessary, but not sufficient, condition to achieve adequate food access. Food access, in turn, is a necessary, but not sufficient, condition for adequate food utilization. A conceptual framework of major components of food security and factors influencing these are shown in Figure 1.

Given this framework, while the long term solution to the problem of food security lies in evolving a development strategy which includes adequate increases in food production; growth in employment and incomes of the masses; and improvement in access to education and primary health care; in the short run, market intervention and targeted distribution of subsidised food can improve food security and reduce hunger. However, it needs to be recognised that averting hunger may prevent starvation deaths but will not eradicate malnutrition. Hence, food security must look at hunger, poverty and malnutrition as an integrated whole. The nutritional status is influenced not only by food but also by non-food factors, such as clean water, sanitation and health care. Food security will result in good nutrition only if non-food factors are effectively dealt with (Anderson, 1996).

Agricultural and food policy in India

In most of the developing countries, the evolution of agricultural policies was mainly guided by the concern for food security for rapidly rising populations. In many of the developing countries, the necessity for the governments to assume a leading role in improving food security arose from the low level of production, particularly of foodgrains, perceived inadequacy of normal market forces to generate surpluses at a rapid rate and low purchasing power of the masses. The policy framework which
emphasised foodgrains production has been instrumental in not only accelerating agricultural growth rate but also in achieving reasonable successes in reducing food insecurity in many Asian countries like India, China, Indonesia, Malaysia, Thailand, and Pakistan. However, the policies which accorded priority to export crops rather than foodgrains, led to acute shortfalls in domestic cereal production and food shortages in many African countries (Bhalla, 1994).

**FIGURE 1 A CONCEPTUAL FRAMEWORK OF NATIONAL AND HOUSEHOLD FOOD SECURITY**

<table>
<thead>
<tr>
<th>Major Components of Food Security</th>
<th>Factors influencing National Food Security</th>
<th>Factors influencing Individual or Household Food Security</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of Food</td>
<td>i] Availability of Resources: Natural, man-made, human</td>
<td>i] Resources commanded by the household to produce food or access it from outside;</td>
</tr>
<tr>
<td></td>
<td>ii] Use of resources and levels of domestic production of food;</td>
<td>ii] Actual on-farm production of food.</td>
</tr>
<tr>
<td></td>
<td>iii] Availability of food outside the country</td>
<td>iii] Availability of food in the neighbourhood.</td>
</tr>
<tr>
<td>Access to Food</td>
<td>i] Capacity to access food from outside the country - both physical and economic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ii] Prices of food in the international market</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii] Infrastructure and marketing system to distribute and transfer food in all the areas.</td>
<td></td>
</tr>
<tr>
<td>Utilization of Available Food</td>
<td>i] Wastage of food at different stages of marketing chain.</td>
<td>i] Education and social status which influence spending behaviour and intra-household allocation of food among members of the family particularly women and children</td>
</tr>
<tr>
<td></td>
<td>ii] Socio-economic factors including educational levels which influence dietary habits and consumption patterns</td>
<td>ii] Place of women in the family</td>
</tr>
<tr>
<td></td>
<td>iii] Health status of the masses.</td>
<td>iii] Health status of members of the family to absorb minimum nutritional needs</td>
</tr>
</tbody>
</table>

In India, before independence, the policies were aimed at maintenance of popular support for the colonial rule rather than the long range development of the food production base (Knight, 1954). The government’s active involvement in the matter of food was acutely
felt after the Bengal Famine of 1943. The emphasis of the policy, however, revolved around controlling the foodgrain prices. Even after independence, for about a decade, the main objective of food policy revolved around keeping the cost of living in check. Several committees were appointed and, as recommended by them, measures aimed at controlling the food prices were initiated¹.

In the fifties and up to the mid-sixties, as the main concern of the food policy was to ensure that the gap between demand and supply did not result in the excessive rise in consumer prices, considerable quantities of cereals were imported by India. During the mid-sixties, India was importing about 16 percent of the net availability of foodgrains. This period was a turning point in the approach to food security in India. Apart from the increased dependence on imports for meeting the food needs, it was two severe consecutive drought years, which led to the launch of a new strategy of agricultural development for increasing the output of foodgrains. The strategy was based on the recognition that for building a sound agricultural economy, there are three foundations viz: (a) provision of an improved technology package for the farmers, (b) creation of an efficient system of delivery of inputs and services including credit, (c) assurance of quick market clearance and a remunerative price environment for the farmers. As a part of this strategy, apart from investment in irrigation and infrastructure, the Food Corporation of India (FCI) was established as the sole agency of the state for the purchase, storage, transport and distribution of foodgrains. Simultaneously, the Agricultural Prices Commission was set up to advise the government on matters relating to agricultural price policy in the context of the need to raise production of agricultural commodities particularly of foodgrains and give relief to the consumers.

A large number of policy instruments were used to achieve the stated objectives. The policy and instruments were reviewed from time to time. The main instruments of food management policy in India currently in vogue include the following.

i. Fixation of minimum support prices for all major cereals and pulses. The support prices are announced before the sowing season for 24 farm products including paddy, maize, sorghum, pearl millet, ragi, wheat, barley, pigeon pea, green gram, black gram and chick pea

ii. Arrangements for purchase of the produce offered by the farmers at guaranteed prices. The designated nodal agency for undertaking price support operations is the Food Corporation of India (FCI) for cereals and the National Agricultural Cooperative Marketing Federation (NAFED) for pulses

iii. Building up of a buffer stock of cereals through price support operations and imports

iv. Distribution of cereals at prices lower than the economic cost under public distribution system and through anti-poverty, employment generation and nutrition programmes

v. Control and/or restrictions on the activities of private trade through a series of legal and other instruments like levy on rice millers, limits on stocks with traders and millers and mandatory quality standards

vi. Regulation of imports and exports through canalization, quantitative ceilings or tariffs

vii. Creation of physical and institutional infrastructure for improved performance of the marketing system which include primary market yards, roads and communication facilities

viii. Provision of food and input subsidies to reconcile the objectives of foodgrain producers and consumers.

It may be mentioned here that one of the main objectives of the policy has been to assure a remunerative and relatively stable price environment for the farmers for inducing them to adopt new technology and modern inputs and thereby augment the availability of
foodgrains. Further, the policy also sought to make available foodgrains to the masses at reasonable prices.

Current status of food security or insecurity in India

The new strategy adopted by India since the mid-sixties to reduce food insecurity paid rich dividends. The change in the status of food security can be measured from several angles.

i. The most significant change has been the increase in the domestic output of foodgrains, particularly cereals. The production of cereals went up from 72.0 million tonnes during the triennium ending (TE) 1964-65, to 90.5 million tonnes during TE 1974-75, 130.2 million tonnes during TE 1984-85, 171.5 million tonnes during TE 1994-95 and further to 176.8 million tonnes during TE 1996-97. Between TE 1974-75 and TE 1994-95, the average incremental output of cereals in the country was around 4 million tonnes per year (Table 1).

ii. Owing to the increases recorded in the output of foodgrains, the dependence on imports for meeting the food needs of the population went down considerably. The net imports as a proportion of net availability which during the quinquennium ending (QE) 1955 to QE 1975 ranged from 4.0 to 7.7 percent, declined to negligible levels in the subsequent period. During the last two decades, India has been, at the margin, importing as well as exporting foodgrains, with net imports averaging at less than 0.17 million tonnes per year (Table 2).

TABLE 1: PRODUCTION OF FOODGRAINS IN INDIA (MILLION TONNES)

<table>
<thead>
<tr>
<th>Period</th>
<th>Rice</th>
<th>Wheat</th>
<th>Coarse Cereals</th>
<th>Total Cereals</th>
<th>Pulses</th>
<th>Total Food-grains</th>
</tr>
</thead>
<tbody>
<tr>
<td>TE 1951-52</td>
<td>21.81</td>
<td>6.31</td>
<td>16.10</td>
<td>44.22</td>
<td>8.32</td>
<td>52.55</td>
</tr>
<tr>
<td>TE 1964-65</td>
<td>36.51</td>
<td>10.96</td>
<td>24.57</td>
<td>72.04</td>
<td>11.34</td>
<td>83.38</td>
</tr>
<tr>
<td>TE 1974-75</td>
<td>40.96</td>
<td>23.54</td>
<td>26.03</td>
<td>90.53</td>
<td>9.98</td>
<td>100.51</td>
</tr>
<tr>
<td>TE 1984-85</td>
<td>55.18</td>
<td>44.11</td>
<td>30.94</td>
<td>130.23</td>
<td>12.24</td>
<td>142.47</td>
</tr>
<tr>
<td>TE 1994-95</td>
<td>78.11</td>
<td>60.84</td>
<td>32.59</td>
<td>171.54</td>
<td>13.39</td>
<td>184.93</td>
</tr>
<tr>
<td>TE 1996-97</td>
<td>88.03</td>
<td>65.71</td>
<td>31.06</td>
<td>176.80</td>
<td>13.60</td>
<td>190.40</td>
</tr>
</tbody>
</table>

SOURCE: COMPILED FROM GOVERNMENT OF INDIA, 1998A

TABLE 2: NET IMPORTS OF FoodGrains (MILLION TONNES)

<table>
<thead>
<tr>
<th>Year (Average)</th>
<th>Net Production</th>
<th>Net Imports</th>
<th>Net Imports + Net Production</th>
<th>Net Imports as % of Net Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1951-55</td>
<td>55.2</td>
<td>2.4</td>
<td>57.6</td>
<td>4.2</td>
</tr>
<tr>
<td>1956-60</td>
<td>63.8</td>
<td>3.4</td>
<td>67.2</td>
<td>5.1</td>
</tr>
</tbody>
</table>
1961-65 72.6 5.0 77.6 6.4
1966-70 76.2 6.4 82.6 7.7
1971-75 90.2 3.8 94.0 4.0
1976-80 105.0 * 105.0 0.0
1981-85 120.8 1.7 122.5 1.4
1986-90 135.6 1.3 136.9 0.9
1991-95 157.6 0.8 158.4 0.5
1996-97 166.1 * 166.1 0.0

*LESS THAN 0.1

i. The increase in output of cereals has kept pace with the increase in population. Per capita net output of cereals which had increased from 110.4 kg per year in 1951 to 130.9 per kg per year in 1964, went up to 170.6 kg per year in 1997 (Table 3). Between 1949-50 and 1996-97, the production of foodgrains increased at the rate of 2.51 percent per annum (Table 4). The growth rate of output of cereals during this period at 2.90 per cent per annum was considerably higher than that of pulses. During the nineties, though the growth rate has decelerated compared to that during the eighties, it continues to be higher than the growth of population. The production of foodgrains during the period 1991-92 to 1996-97 increased at the rate of 2.60 percent per annum.

TABLE 3: PER CAPITA NET PRODUCTION OF FOODGRAINS

<table>
<thead>
<tr>
<th>Year (Million)</th>
<th>Net Production (Million Tonnes)</th>
<th>(Million Kg per year)</th>
<th>Per Capita Net Production (Kg per year)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cereals</td>
<td>Pulses</td>
<td>Total</td>
</tr>
<tr>
<td>1951</td>
<td>363.2</td>
<td>40.1</td>
<td>8.0</td>
</tr>
<tr>
<td>1964</td>
<td>472.1</td>
<td>61.8</td>
<td>8.8</td>
</tr>
<tr>
<td>1974</td>
<td>590.0</td>
<td>82.8</td>
<td>8.8</td>
</tr>
<tr>
<td>1984</td>
<td>734.5</td>
<td>122.0</td>
<td>11.3</td>
</tr>
<tr>
<td>1994</td>
<td>899.9</td>
<td>149.6</td>
<td>11.6</td>
</tr>
<tr>
<td>1997</td>
<td>948.0</td>
<td>161.7</td>
<td>12.7</td>
</tr>
</tbody>
</table>
TABLE 4: ALL INDIA COMPOUND GROWTH RATES OF PRODUCTION OF FOODGRAINS

<table>
<thead>
<tr>
<th>Period</th>
<th>Rice</th>
<th>Wheat</th>
<th>Coarse Cereals</th>
<th>All Cereals</th>
<th>Pulses</th>
<th>All Foodgrains</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949-50 to 1996-97</td>
<td>2.67</td>
<td>5.53</td>
<td>1.10</td>
<td>2.90</td>
<td>0.56</td>
<td>2.51</td>
</tr>
<tr>
<td>1949-50 to 1964-65</td>
<td>3.50</td>
<td>3.98</td>
<td>2.25</td>
<td>3.21</td>
<td>1.41</td>
<td>2.82</td>
</tr>
<tr>
<td>1967-68 to 1980-81</td>
<td>2.21</td>
<td>5.65</td>
<td>0.67</td>
<td>2.61</td>
<td>-0.40</td>
<td>2.15</td>
</tr>
<tr>
<td>1980-81 to 1991-92</td>
<td>3.69</td>
<td>3.59</td>
<td>0.06</td>
<td>3.09</td>
<td>1.42</td>
<td>2.95</td>
</tr>
<tr>
<td>1991-92 to 1996-97</td>
<td>1.75</td>
<td>4.18</td>
<td>1.90</td>
<td>2.61</td>
<td>2.47</td>
<td>2.60</td>
</tr>
</tbody>
</table>

**SOURCE: GOVERNMENT OF INDIA (1998a).**

i. Apart from the increase in level of output of cereals, the instability in the availability of cereals from domestic sources went down considerably. Between TE 1964-65 and TE 1996-97, the output of cereals increased by 104.8 million tonnes, in which the contribution of wheat and rice was as much as 98.3 million tonnes. With rice and wheat contributing the bulk of additional output, the share of coarse cereals, a component subject to wide inter-year fluctuations in the total output of cereals, decreased from 34 percent during TE 1964-65 to 18 percent during TE 1996-97.

ii. Further, a more dispersed growth of cereals, during the last decade, helped in increasing physical access to food in different regions. The contribution of rice, the production of which is more dispersed to the incremental production of cereals during the last decade was considerably higher than that of wheat. Moreover, the growth of production of rice itself was more dispersed geographically. Between TE 1984-85 and TE 1994-95, the contribution of West-Bengal, Tamil Nadu, Orissa, Madhya Pradesh, Karnataka and Bihar, taken together, in the incremental output of rice, was as much as 13.2 million tonnes whereas these states had contributed only 2.1 million tonnes to incremental production between TE 1974-75 and TE 1984-85 (Acharya, 1997a).

iii. Another important development contributing to the food security has been the increase in economic access of masses to cereals. With the retail prices of rice and wheat increasing at a rate lower than the increase in average per capita income in the country, the proportion of average per capita per day income required to buy a kg of wheat declined from 57 percent in 1973-74 to 20 percent in 1994-95, and that of rice from 75 percent to 30 percent during this period (Acharya, 1997a). Stated differently, the percentage of average per capita income required to buy a quintal of wheat and rice declined from 15-22 percent during 1973-74 to 5-10 percent during 1994-95 (Table 5).

TABLE 5: PERCENTAGE OF AVERAGE PER CAPITA INCOME REQUIRED TO BUY A QUINTAL OF WHEAT AND RICE (AT CURRENT PRICES)

<table>
<thead>
<tr>
<th>Cereals/Area</th>
<th>1973-74</th>
<th>1981-84</th>
<th>1990-91</th>
<th>1994-95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>15.4</td>
<td>8.7</td>
<td>5.9</td>
<td>5.0</td>
</tr>
</tbody>
</table>
i. A related development which needs to be noted is, that while the availability of cereals increased and their relative prices decreased, per capita consumption of cereals has tended to decline in recent years (Kumar, 1996). It declined from 176 kg in 1987-88 to 163 kg in 1993-94 in rural areas, and from 136 kg to 129 kg in urban areas during this period. This can be interpreted as shifts in tastes and preferences towards livestock products, fruits and vegetables. A longer term analysis based on data from NSS surveys also reveals a declining trend in per capita consumption of cereals in both rural and urban areas from early seventies to 1993-94, which is accompanied by the decline in the proportion of expenditure on foodgrains and cereals and increase in milk and milk products, meat, eggs, fruits and vegetables (Selvarajan and Ravishanker, 1996).

ii. An important development related to the improvement in the nutritional security is that with improved availability of staple cereals at declining real prices, the subsistence and small farmers in several regions diverted the resources from low yielding coarse cereals to other crops which inter alia helped in increasing the output of oilseeds/edible oils, sugarcane, vegetables, fruits, spices and condiments, thereby stepping up the availability of other food items. As shown in table 6, there has been considerable increase in the per capita availability of food items other than foodgrains.

### TABLE 6: PER CAPITA AVAILABILITY OF FOOD ITEMS OTHER THAN FOODGRAINS (PER YEAR)

<table>
<thead>
<tr>
<th>Items</th>
<th>1980-81</th>
<th>1990-91</th>
<th>1996-97</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edible Oils* (kg)</td>
<td>5.0</td>
<td>6.5</td>
<td>8.2</td>
</tr>
<tr>
<td>Sugar (kg)</td>
<td>7.3</td>
<td>12.7</td>
<td>14.1</td>
</tr>
<tr>
<td>Milk (kg)</td>
<td>46.7</td>
<td>64.2</td>
<td>73.3</td>
</tr>
<tr>
<td>Eggs (No.)</td>
<td>16.7</td>
<td>24.8</td>
<td>29.7</td>
</tr>
<tr>
<td>Fishes (kg.)</td>
<td>3.4</td>
<td>4.5</td>
<td>5.6</td>
</tr>
<tr>
<td>Fruits (kg.)</td>
<td></td>
<td></td>
<td>49.5</td>
</tr>
<tr>
<td>Vegetables (kg.)</td>
<td></td>
<td>65.2</td>
<td></td>
</tr>
</tbody>
</table>

* Includes vegetable fats.

i. Another important development relating to food security is the buffer stocks of foodgrains with the public agencies and the public distribution system created in the country which helped in not only reducing the inter-year fluctuations in supply but also in checking the starvation deaths during the periods of severe droughts or floods.
ii. Along with these positive developments on the food production front there have been some failures also. These relate mainly to the output of pulses and nutritional levels of the masses in the country. The production of pulses, which is an important source of protein for the majority of the population, increased from around 10 million tonnes during TE 1974-75 to 13.60 million tonnes during TE 1996-97. However, the growth rate was considerably lower than the growth of population. The production of pulses increased at a modest rate of only 0.56 percent per annum between 1949-50 and 1996-97. The growth rate which was 1.41 percent per annum up to 1964-65, turned negative during the period 1967-68 to 1980-81. However, it recovered to 1.42 percent during the period 1980-81 to 1991-92 and accelerated to 2.47 percent per annum during the nineties. Per capita net output of pulses which was 22 kg in 1951 came down to around 15 kg during 1974 and 1984 and further to around 13 kg per annum during the nineties. As a consequence, the dependence on imports to meet the domestic demand for pulses has continued to be large.

iii. Another area of concern relates to the number of hungry people. According to National Sample Survey, during 1993-94, 6.4 million people were starkly hungry (without two square meals a day) and 44.8 million were partially hungry in the country (NSSO, 1997). In percentage terms, figures may be small, yet, the number is substantial.

iv. As regards the level of nutrition, the average per capita calorie intake is closer to the accepted norm, food intake of even the poorest sections has improved somewhat (Kumar, 1996), the average life expectancy has gone up and the infant mortality rate (IMR) has decreased. However, the situation is far from satisfactory. The IMR at 80 per thousand live births is quite high. Nearly 63 percent of the under-5 children are still malnourished. Under-5 mortality rate is as high as 122 per thousand live births. Further, the maternal mortality rate (MMR) at 420 per hundred thousand live-births is also high.

Some emerging issues in food security

Apart from the concerns relating to the level of nutrition and intra-household allocation of available food in families, there are several issues which need to be kept in view while analysing the implications of new trade agreement under the WTO. These issues mainly pertain to the emerging demand and supply scenario, the need for continuing with some of the existing instruments of food management policy and unilateral liberalization of the Indian economy.

Emerging demand and supply scenario

As already mentioned, the growth of production of cereals has decelerated from around 3.1 percent per annum during the eighties to 2.6 percent per annum during the nineties so far. In this context, it needs to be recognised that despite the anticipation of a deceleration in the growth of population, the growth in demand for cereals may not slow down if the growth of income is accompanied by redistribution in favour of the poor. Further, with the rise in income, the consumption pattern of some households is shifting away from cereals to livestock products which is increasing the demand for foodgrains as feed. Several scholars have projected the demand for foodgrains. Even the most conservative estimates of demand for cereals suggest that the incremental output of foodgrains would need to be higher than that achieved so far since the early eighties.

Apart from foodgrains, the growth of production of other food items like oilseeds, fruits and vegetables would also need to be stepped up. In this connection, it needs to be noted
that there has been considerable diversification of area from low yielding coarse cereals to non-foodgrain crops during the last one and half decades (Acharya 1997a). While the diversification of cropping pattern needs to be encouraged for several considerations, given the limits to expansion of net sown area, unless efforts for technological developments, water resource augmentation and improvement in the methods of water use are stepped up, the food security situation could become quite serious.

The acceleration of the growth of agricultural production is also warranted owing to its linkages with reduction in poverty at a rapid rate and thereby increasing the economic access to food. It is in this context that investment in the farm sector, particularly in hitherto left out regions needs to be stepped up. While, there is a need for additional investment in agriculture, a disquieting feature has been the decline in the investment in agriculture by both the public and private sector during the eighties. In recent years, while the investment by the public sector has continued to decline, that by the private sector has shown some recovery. However, there is a need for strengthening the incentive framework for agriculture with a view to attracting more private investment in agriculture. This assumes added importance in areas where the levels of agricultural production continue to be considerably lower than the potential.

Approach to agricultural reforms

It is in the context of strengthening the incentive framework for agriculture that the stipulated agenda for agricultural reforms needs a careful analysis. It may be mentioned that after the launch of economic reforms programme in India in 1991 and India becoming a signatory to the new world trade arrangement, the agricultural sector policies have been subjected to a rigorous review. Though the programme of economic reforms did not initially cover agriculture, it was recognised that the economic reforms may not succeed in their objective of broad based growth in incomes and productive employment without sustained development of this sector. The reforms package for Indian agriculture suggested by pro-liberalisers is based on the diagnosis that while the sector remained net unprotected, the subsidies arising out of inappropriate pricing of inputs and outputs led to inefficient resource use, eroded the capacity of the government to finance public investment in agriculture and benefited only the producers of few crops, and that too in some regions. The suggested agenda for the agricultural sector, therefore, revolved on setting the prices right and included withdrawal of subsidies on farm inputs, liberalization of trade in agricultural commodities, abolition of food management system and its attendant costs and targeting of Public Distribution System (PDS) to only the poor. The essence of the package was that the subsidies on farm inputs and food be phased out and adjustment in agricultural prices be made for arresting the deterioration in the terms of trade for the agricultural sector. Owing to the serious implications of these reforms for food security, a cautious and gradual approach to reforms has been preferred.

Withdrawal of input subsidies

The basis on which the reduction/withdrawal of input subsidies is being suggested in certain quarters are as follows:

a. The bulk of benefits of these subsidies have gone to the farmers of irrigated areas with serious implications for inter-regional and inter-farm disparities in development.
b. Farm input subsidies have placed an unsustainable burden on central and state government finances which have severely limited the public sector’s capacity for financing investment in agriculture and irrigation.

c. The subsidies led to adverse environmental effects. Over-irrigation by farmers led to water logging and salinity in certain areas. Similarly, under-pricing of electricity has led to overdrafts and depletion of ground water in some areas.

Each of these arguments for withdrawal of subsidies needs careful scrutiny. It may be recalled that the input subsidies enabled the country to keep the prices of foodgrains low and yet provided reasonable return to the farmers to motivate them to adopt new technology and increase production. The low foodgrain prices not only increased the economic access to food but also enabled the industry and the governments to keep the wage bills low. Marginal and small farmers, with very low or negligible marketed surplus, account for 40 percent of the area irrigated by canals and 39 percent of that by tubewells. These farmers account for 42 percent of electrified wells and 35 percent of tube-wells with electric pump-sets. As regards fertilizers, nearly 40 percent of the unirrigated lands also receive fertilizer application. Thus the benefits of input subsidies have been shared by all the sections of the society. The implications of raising the prices of critical inputs for agricultural growth, incomes of small and marginal farmers and food security of the masses are quite serious.

As regards the burden of subsidies on finances of the government, agricultural subsidies need to be considered along with the subsidies and revenues foregone in other sectors of the economy. Both official and unofficial estimates of the subsidies in the non-farm sector put these at many times more than the farm input subsidies. Moreover, the subsidies on power for agriculture and canal irrigation are over-estimates and all of the so-called subsidies in agriculture are not the subsidies to the farm sector. There is a need for more analytical scrutiny of subsidies including revenues foregone in the non-farm sector as the pains of their withdrawal may be much less.

As far as environmental impact of subsidies is concerned, it needs to be recognised that over-irrigation by farmers from canals and withdrawal of groundwater in excess of recharge depend on several other factors. In some cases, it is the uncertainty of availability of canal water in the second round and in others, it is the shortage of labour compelling the farmers to do early sowing of paddy requiring more water for irrigation in summer months. There are several approaches including farmers’education to address these problems. Raising input prices or user charges is not the panacea to solve all these problems.

**Unilateral liberalization of trade**

The trade in agricultural commodities has been considerably liberalized and duties on imports brought down. For example: (i) basmati rice is freely allowed for export without MEP (minimum export price), (ii) ceiling on exports of other cereals have been raised, (iii) even pulses, edible oils and oilseeds are allowed for export, (iv) exports of fresh fruits and vegetables and processed and packaged foods including livestock products are being encouraged, (v) imports of pulses, edible oils and some oilseeds are allowed under OGL (open general license), (vi) import duties on pulses and edible oils have been brought down to levels as low as 5 percent and 15 percent respectively. The changes in trade policy for agriculture already effected, represent a fundamental departure from the past
The impact of liberalized trade on the food security of small and marginal farmers and farm families of dryland and rainfed regions needs to be carefully considered.

The world market price structure continues to be distorted. The recent experience with raw cotton, edible oils, pulses and wheat show that the freeing of trade or increased linkage with the world market has increased price instability in the domestic market. One important factor leading to price instability is that the demand-supply for most of these commodities is very delicately balanced in the domestic market and the Indian domestic market is quite a significant part of the world market. Recognising that the small country assumption does not hold good for India, the move towards liberal trade regime should be accompanied by safeguards like appropriate levels of tariffs in the interest of both domestic consumers and producers. The tariff regime which is now in place is very different to the commitment made by India while signing the new trade agreement.

There is considerable evidence to show that the opening up of the trade in agricultural commodities would raise the prices of staple cereals like rice and wheat. Unrestricted trade in staple cereals has serious implications for economic access of masses to food and poverty levels. The prices of staple cereals cannot be detached from the average income level of masses. For household food security, it may require larger outgo on food subsidy. Further, this has serious implications for the diversification of land use pattern from food to non-food crops. In the past, this was facilitated by a regime of declining prices of staple cereals in real terms. For several reasons, the diversification has to be encouraged. The marginal and small farmers would continue to be unviable unless they switch over to higher value crops and could buy the needed cereals at reasonable prices. While in some areas, it is the resource use efficiency consideration, in others, it is the demand for labour which calls for diversification. An increase in the prices of staple cereals would reverse the ongoing process of diversification, which could be quite serious for food and nutrition security of the masses in different regions.

Price support

For sustained growth of agricultural and food production, greater attention in future would need to be given to hitherto left out regions like Bihar, Orissa, West Bengal, Eastern Uttar Pradesh and parts of Assam, Madhya Pradesh and Rajasthan where the gap between potential and existing yields are quite considerable. For inducing the farmers in these regions, apart from stepping up of the efforts to transfer modem inputs and increasing the availability of credit, adequate investment in yield-raising infrastructure would need to be encouraged. An important inducement in this connection would be to strengthen the marketing infrastructure and effective implementation of the price support policy. As price support policy would need to be in place even in a liberalized environment in all the areas of the country, an agency would be needed to undertake price support purchases as also to maintain foodgrain buffer stocks and undertake public distribution of foodgrains at least for the vulnerable sections of the society.

Food management system

So long as a policy of minimum support price is pursued, an agency is needed to implement the policy. The agency is expected to intervene in the market and purchase all
the quantities offered at the minimum support price. In the case of cereals, the FCI is performing this role since its inception in 1965. But a case for abolition of this agency is being made in certain quarters on the basis of the high cost of its operations and consequent increase in the food subsidy. The total food subsidy reimbursed by the government to the FCI in a year includes the subsidy on sugar, preceding years arrears and carrying cost of the stocks from one year to the other. Further, as the quantity handled by the FCI varies from year to year, the figures of budgeted subsidy needs to be interpreted with care. For an objective assessment of the cost incurred by the FCI vis-à-vis the private trade in handling of the foodgrains what is relevant is the cost of procurement and distribution of a unit of grains.

35 The latest estimates of procurement incidentals and distribution costs incurred by FCI for wheat pertain to the year 1994-95 (Table 7). Out of the total procurement incidentals of Rs.75.78 per quintal, mandi charges, purchase/sales tax and gunny cost, taken together, a component over which the FCI has no control, account for as much as 67 percent. In the total cost of distribution, interest and freight, a component which depends on the rate at which credit and transport facility is made available to it by the financial institutions and the railways as also the average distance the grains are transported, account for as much as 69 percent. During 1994-95, FCI incurred an expenditure of Rs. 181.29 per quintal on procurement and distribution of wheat. Out of this, 71.6 percent was on items over which the Corporation has no control whatsoever. The implication is that private trade would also have to incur an expenditure of this magnitude if it operates in the formal marketing channel, carries grains to the distance equivalent to the average lead of FCI, and concessional transport, as provided to the FCI, is also made available to it. Even the shortages during storage and transit are not unduly high. Considering both wheat and rice together, the losses or shortages during storage and transit are estimated at 0.98 percent during 1994-95. It is doubtful whether the losses in the private channel could be lower than this. Keeping aside the ideological arguments against a public sector organization, the only basis of criticism of FCI’s cost could be the establishment charges and administrative overheads which aggregate to Rs. 14.99 per quintal accounting for 2.8 percent of the economic cost of wheat. But even these are considerably lower than the net margins of the private trade (DMI, 1985; Acharya, 1985). Studies have shown that the wholesale prices of rice and wheat in the urban centers have not been lower than the economic cost of cereals handled by the FCI (Jharwal, 1994).

36 A related aspect is the carrying cost of grains, i.e., the cost incurred by the FCI in carrying the inventory of grains from one year to the other. The carrying cost of FCI during 1993-94 and 1994-95 was around 29 percent of the economic cost at the godown (Table 8). The most important item of carrying cost is interest charges, which work out to around 56 percent of the total carrying cost. In the absence of public agency, private trade is expected to carry the inventory from a year of bumper harvest to a lean production year and it would undertake this operation if a return at least equivalent to the carrying cost is anticipated. Considering the interest and other costs, it has been shown (Tyagi, 1990) that private trade would undertake this operation only when it would be assured of a return of more than 35 percent. Even if the difference in the rate of interest, at which the credit is available to the FCI and that to private trade, is taken into account, the carrying cost incurred by the FCI cannot be considered to be higher than that of the private trade. These observations are not to suggest that there is no scope for improvement in the
efficiency of the food management system but only to emphasise that food subsidy is not the subsidy to the FCI.

TABLE 7: PROCUREMENT INCIDENTALS AND DISTRIBUTION COSTS INCURRED ON WHEAT BY FCI

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1994-95 (Rs)</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>(A) Procurement incidentals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Obligatory charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandi Charges</td>
<td>17.78</td>
<td>23.5</td>
</tr>
<tr>
<td>Purchase/Sales Tax</td>
<td>13.84</td>
<td>18.3</td>
</tr>
<tr>
<td>Gunny cost</td>
<td>19.35</td>
<td>25.5</td>
</tr>
<tr>
<td>Sub-total (a)</td>
<td>50.97</td>
<td>67.3</td>
</tr>
<tr>
<td>(b) Handling charges</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mandi Labour</td>
<td>3.06</td>
<td>4.0</td>
</tr>
<tr>
<td>Internal movement</td>
<td>6.96</td>
<td>9.2</td>
</tr>
<tr>
<td>Forwarding charges</td>
<td>1.03</td>
<td>1.4</td>
</tr>
<tr>
<td>Sub-total (b)</td>
<td>11.05</td>
<td>14.6</td>
</tr>
<tr>
<td>(c) Storage &amp; interest</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage shortage</td>
<td>1.28</td>
<td>1.7</td>
</tr>
<tr>
<td>Interest charges</td>
<td>4.89</td>
<td>6.4</td>
</tr>
<tr>
<td>Sub-total (c)</td>
<td>6.17</td>
<td>8.1</td>
</tr>
<tr>
<td>(d) Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Establishment charges</td>
<td>5.78</td>
<td>7.6</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>7.59</td>
<td>10.0</td>
</tr>
<tr>
<td>Sub-total (d)</td>
<td>75.78</td>
<td>100.0</td>
</tr>
<tr>
<td>Total (A)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>(B) Distribution Cost</strong></td>
<td>11.64</td>
<td>11.0</td>
</tr>
</tbody>
</table>
## TABLE 8: COST OF CARRYING FOODGRAINS BY FOOD CORPORATION OF INDIA

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1993-94</th>
<th>1994-95</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Minimum Support Price</td>
<td>330.0</td>
<td>350.00</td>
<td>340.00</td>
</tr>
<tr>
<td>(b) Procurement incidentals</td>
<td>63.95</td>
<td>75.78</td>
<td>69.86</td>
</tr>
<tr>
<td>Economic cost in godown (a+b)</td>
<td>393.95</td>
<td>425.78</td>
<td>409.86</td>
</tr>
<tr>
<td>(c) Carrying cost</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Handling expenses</td>
<td>8.02</td>
<td>8.73</td>
<td>8.37</td>
</tr>
<tr>
<td>Storage charges</td>
<td>24.32</td>
<td>23.83</td>
<td>24.08</td>
</tr>
<tr>
<td>interest charges</td>
<td>62.97</td>
<td>72.06</td>
<td>67.52</td>
</tr>
<tr>
<td>Freight</td>
<td>6.99</td>
<td>7.66</td>
<td>7.32</td>
</tr>
<tr>
<td>Adm. overheads</td>
<td>8.21</td>
<td>6.91</td>
<td>7.56</td>
</tr>
<tr>
<td>Transit shortages</td>
<td>1.13</td>
<td>1.31</td>
<td>1.22</td>
</tr>
<tr>
<td>Storage shortages</td>
<td>5.52</td>
<td>4.96</td>
<td>5.24</td>
</tr>
<tr>
<td>Total (c)</td>
<td>117.16</td>
<td>125.46</td>
<td>121.31</td>
</tr>
<tr>
<td></td>
<td>(29.7)</td>
<td>(29.5)</td>
<td>(29.6)</td>
</tr>
</tbody>
</table>

Source: Food Corporation of India. Quoted in Acharya (1997a)

Note: Figures in parentheses are percentages of economic cost in godown.
Market structure, costs and margins

Another important issue relates to the nature of structure, conduct and performance of the food markets. Several characteristics of market structure for foodgrains need to be noted. First, contrary to general belief, the structure of markets for foodgrains and other food products is dominated by the private sector. Out of the total marketed surplus of agricultural commodities, the quantity handled by the private sector is as much as 83 percent. The cooperatives handle nine percent and public agencies handle only eight percent of the total marketed surplus (Acharya, 1994). In the case of cereals also, the quantity handled by public agencies is considerably less than that by the private sector. During triennium ending (TE) 1984-85, nearly 32.4 percent of the marketed surplus of rice and wheat was procured by the public agencies. It decreased to 27.5 percent during TE 1996-97. The marketed surplus of rice and wheat increased from 54.1 million tonnes during TE 1984-85 to 80.5 million tonnes during TE 1996-97, whereas the procurement by public agencies increased by only 4.6 million tonnes during this period. Thus increasing share of the marketed surplus is now being handled by the private trade (Table 9).

Second, with the increase in production coupled with the changes in cropping patterns according to the comparative advantage of various regions, not only the marketed surplus increased at a rapid rate but the demand for various marketing services has also expanded. For example, the average distance to which food products now move is much larger than ever before. As a consequence, the price spread, i.e., the difference between the price paid by the consumers and that received by the farmers has tended to increase. Third, the trade in food products is dominated by the unorganised sector. The retail trade in foodgrains is handled by around five million retailers, 90 percent of them being family-owned micro-business units. Though these units provide livelihoods to a large section of the population, the losses in handling of products are considerably large. In the existing system of marketing of food products, the handling losses have been estimated at Rs.50,000 crores annually. Fourth, the processors constitute an important segment of the market structure for many food commodities as these enter the market as bulk buyers and sellers. A common feature of many food products is the dominance of the private unorganised processing segment. Fifth, with the increasing urbanization and rise in average income levels, the processing segment of food market is growing rapidly and projected to increase by 200 percent by the year 2005 with a very high investment potential. Finally, though the market for food products is so far dominated by the unorganised sector, the share of organised-corporate sector is increasing and, as has happened in other countries, is bound to go up further. This will happen because the large scale food marketing chains are able to reduce the cost of marketing owing to both the economies of scale and deployment of improved technology for handling the products. However, this may not automatically increase the farmer’s share in the consumers rupee and economic access of masses to food. Therefore, the challenge today is to find the options which while reducing the marketing costs, also increase the real incomes of the growers. This can happen if the farmer-controlled, professionally-managed trade and business enterprises are able to capture a greater share of the market for food products.
Given the dominance of the private sector in food markets, the prices received by the farmers for their surpluses depend on *inter alia* the capacity of the consumers to pay and the size of gross marketing margins. The gross marketing margin is the sum total of three parts viz: (a) the cost of performing the needed marketing functions like handling, storage, transportation, processing, packing, and risk-bearing, (b) the statutory charges payable at different stages of marketing like mandi fees, purchase/sales tax and other cesses, (c) net margins retained by the intermediaries. While the size of the first component is determined by the kind of technology deployed in performing various marketing functions, the statutory charges are beyond the control of market intermediaries. The third component of the gross marketing margins *i.e.*, the net margins of intermediaries depends on several factors including the nature of market structure and market conduct.

The framework within which food markets in India function can be divided into six components. The first is the regulatory framework which consists of two distinct sets of measures viz: the development and regulation of primary markets, popularly called “Market Regulation Programme” and regulation of market conduct through a series of legal instruments like the Essential Commodities Act, Agricultural Produce (Grading and Marking) Act and several orders promulgated from time to time in this regard. The second component relates to the creation of physical and institutional infrastructure which not only affects the size and structure but also the conduct and performance of the market. The third set of instruments consists of fixation and announcement of administered prices and making arrangements for their implementation. The fourth set of measures consists of direct entry of public agencies in the market with a view to influencing its structure, conduct and performance. The fifth set of instruments relates to the policy of imports and exports of agricultural and related commodities. Finally, fiscal and monetary policies exert considerable influence on the performance of food markets. The prices of diesel and rail freight fixed by the government affect the cost of transportation of food products. In addition, the taxes imposed by the government affect
the cost of performing various marketing functions. For example, the *mandi* fee, purchase/sales tax, rural development cess and other taxes become important components of marketing cost. The rates of such levies have positive effects on the returns to evasion of formal marketing channels. As the public or cooperative agencies are not able to evade these, the comparison of cost of marketing or selling price in the alternative channels becomes distorted. Further, with the increase in evasion, even the statistics on quantities of various commodities marketed by the farmers becomes unreliable.

**Some implications of new international trade agreement for food security**

There are six main provisions of international trade agreements under the World Trade Organization which relate to agriculture. Out of these, the provisions which have an impact on food security are related to (a) market access commitment, (b) aggregate measure of support, (c) level of export subsidies, (d) sanitary and phyto-sanitary measures, (e) trade related intellectual property rights (TRIPs).

**Market access commitment**

As per market access commitment:

a. all non-tariff barriers (like quantitative restrictions) are to be converted into tariffs and after tariffication, these are to be reduced by 36 percent by developed countries within six years and 24 percent by developing countries within 10 years. The least developed countries and those with adverse balance of payments (BOP) position are exempted from these provisions

b. each country would allow a minimum access of 3 percent of their domestic consumption to the foreign exporters and increase it to 5 percent in the stipulated period

c. if imports in a country surge due to unfair trade practices, additional anti-dumping duty can be imposed.

India was considered as out of the purview of this provision owing to the adverse BOP situation, but with the situation of BOP turning to be favourable, the exemption may not be applicable to India. However, allowing imports into a country does not mean compulsory imports. It is the level of relative prices in the domestic and the international market which would determine the level of actual imports into the country. In the case of oilseeds and pulses, the trade regime is already open and tariff levels have been brought down substantially. For other food commodities, the protection is not positive. This provision, therefore, does not pose any great challenge. However, there is one contentious issue which needs to be resolved. This pertains to 3 percent access to domestic consumption. In pre-dominantly agricultural countries like India, a substantial part of the domestic production is retained by the farmers for self consumption. In the case of cereals, it is more than 50 percent. By implication only half of the produce is marketed. Contrarily, in developed countries, almost the entire produce is marketed and a substantial part is internationally traded. In such countries, the domestic consumption is a small proportion of total output. For the same level of output, the binding of 3 percent market access means substantially different quantities because the minimum...
level has been linked to the domestic consumption rather than the marketed quantity. This issue needs to be taken up for discussion in the WTO.

Some other provisions related to the food and foodstuff security pertain to the food management system. In this connection, the provision of foodstuffs at subsidized prices is allowed with the objective of meeting food requirements of the poor. However, the purchases must be made at current market prices. Further, the public stocks of foodgrains for food and foodstuff security should correspond to pre-determined targets. The present food management system in India meets all these requirements excepting that the PDS caters to all the ration-card holders. What is required to meet the obligations of this provision is to target the PDS to only the poor. In fact, during the last decade, several initiatives were taken by the governments of all political parties who came to power at the center or the states, to modify and revamp the PDS to target it to the poor families.

**Aggregate measure of support (AMS)**

The support to agriculture provided by various governments varies across countries. The developed countries support their agricultural sector substantially. Under the provisions of WTO, the aggregate support to the farmers is to be reduced if it exceeds 5 percent for developed countries. However, in the case of developing countries, the exemption limit is 10 percent. Resource poor and low-income farmers are exempted from reduction commitment. As far as India is concerned, the AMS during the reference period was not only less than the cut off point of 10 percent but even negative. In fact, India can and should raise the level of aggregate support to its agricultural sector for improved food security.

This provision would affect the developing countries in one other form also. The agreement stipulates that the developed countries would reduce the level of subsidies to their producers and if this happens, the level of prices in the world market is likely to go up. The rise in the prices of staple cereals may favour cereal exporting countries, but importing countries would lose.

**Level of export subsidies**

It is well known that the developed countries provide huge export subsidies, which distort the world market. Under this clause, signatory countries have an obligation to reduce these subsidies both on value and quantity basis. On value basis, the developed countries are required to reduce the subsidies by 36 percent in six years and developing countries by 24 percent in ten years. In India, there is no explicit export subsidy on food articles. But India has to be careful as its competitors may adversely affect its exports by continuing or granting export subsidies to their producers.

**Sanitary and phyto-sanitary measures**

These measures are aimed at enforcing the health safety regulations on traded goods. Every exporter is required to abide by the international quality standards. If importing countries feel that the imported goods are harmful to human, animal or plant health, they can invoke these provisions to refuse imports from a particular country.
These measures are critically important for India which is trying to increase its share in the international trade. The chemical residues in several exportable items have been reported to be substantially higher than the prescribed standards. Exports of sesame were often affected by excessive chemical residues. Exports of HPS groundnut have been suffering due to the problem of aflatoxin. Even in the case of Indian rice and wheat such difficulties were encountered in the past. It has now become important that both exporters and government initiate action for establishing mechanisms to maintain necessary quality standards because these provisions, if not strictly adhered to, could become a serious constraint in increasing exports.

Assessment of the implications of liberalized international trade for food security depends *inter alia* on the response of various countries in terms of implementation of provisions of trade agreement and on the relative changes in the level of food prices in the world market and different economies. Several scholars and organizations have analysed and projected the impact of new trade agreements. The general consensus is that (a) the actual changes and the commodities which are going to be affected more would be known only at the end of the implementation period (FAO, 1994) (b) as developed countries reduce subsidies on agriculture, food prices in the world market would go up (Gulati and Sharma, 1994) (c) though the new agreement will result in expansion in total trade and would add substantially to the world economy, food importing countries would suffer a net trade loss. One other important aspect on which there is general consensus is that despite signing of the new trade agreement, the trade in agricultural commodities would continue to be restricted due to several reasons. Some of these are: (i) the international market for agricultural commodities is residual in nature and is a small proportion of total production. The world trade as proportion of total output is 4 percent in rice, 6 percent in groundnut and coconut kernel (copra), 10 percent in sugar, 20 percent in wheat and 22 percent in soybean (ii) each country tends to protect the interests of its agricultural producers (iii) the trade in foodgrains has been traditionally controlled by a few multi-national corporations which even now have considerable dominance in the world trade in foodgrains.

Although recent changes in trade policy for farm products in India represent a fundamental departure from the erstwhile policy regime for agriculture, yet a policy of complete free trade in farm products has not been adopted. Given that India accounts for a significant share of world output and that a relatively small proportion of world output enters into world trade for most agricultural commodities, a large participation by India in world trade is bound to worsen its terms of trade. Realization from its exports may decline and prices of imports increase. Further, free trade would accentuate regional inequalities. The trade policy for farm products would have to be selective and flexible. In this context, it would be important to keep in view that even from the point of view of global food security, the situation in India along with China is of particular interest because policy decisions made, or not made, in these countries affect not only their large populations but also the rest of the world.
Global food security and food prices

For assessing the prospects of global food security over the next quarter century, the following developments need to be noted:

i. Dietary patterns are rapidly changing in many countries in response to income increases, urbanization, changing preferences and government policy

ii. Rapid urbanization in low income developing countries is placing increasing stress on food marketing and processing systems

iii. Growing scarcity and improper allocation of water, as well as declining soil fertility in many regions of the world, are beginning to constrain food production. Farm yields in parts of Asia are approaching economically optimum levels and yield growth rates are slowing

iv. The policy induced slow-down in grain production and draw-down of cereal stocks in North America and Western Europe, combined with greater variability in agricultural production caused by weather changes, are likely to cause greater food price swings in the future

v. Future food production in Eastern Europe and the former Soviet Union remains uncertain and sub-Saharan Africa faces a precarious food security situation

vi. Widespread conflicts and instability are further adding to food insecurity in a number of countries.

These developments suggest potentially larger fluctuations in food production and prices and higher associated risks of food insecurity for the world’s most vulnerable countries and the people (IFPRI, 1997).

As regards the prices of food in the world market, there are three aspects which need attention. One is the trend in world prices of foodgrains. Though there has been a sharp increase in prices of cereals during 1995-96, it ought to be considered as only a short-term phenomenon. In this connection, the IFPRI (1997) has projected a declining long-term trend for cereal prices, although at slower rates than in the past. According to these projections, until 2010, real prices of wheat will decrease only slightly, maize prices are expected to stagnate and rice prices are projected to increase. But after 2010, cereal prices in general would drop by 11 percent. The second important aspect of prices which has attracted attention is the instability in prices of cereals. The concerns are growing that cereal prices in future may be more volatile than in the past. This is because reduced stocks and uncertainties associated with developments in China and the former Soviet Union could increase price instability. These have serious implications for food insecure people the world over. In addition to price fluctuations in the international market, many low-income food insecure developing countries suffer from large domestic price fluctuations owing to inadequate markets, poor roads and other infrastructure, and inappropriate policies and institutions. In these countries, even small changes in food production resulting from better or poor growing conditions cause large fluctuations in food prices.

FAO has also made projections about trade and food security situation during the next two decades. Some significant points emerging from these are as follows:

a. The number of food insecure people in the world will decline from 840 million in 1990-92 to 680 million (12 percent of total) by 2010. However, the regional differences are quite conspicuous. The decline in food insecurity will be rapid in East Asia and to a lesser extent in South Asia and Latin America. In Sub-Saharan Africa and West Asia, the food insecurity will
By 2010, food insecure people will be 33 percent of total population in Sub-Saharan Africa, 12 percent in South Asia and 20 percent in West Asia.

World wide the per capita availability of food per day will increase by 7 percent from 2700 calories in 1993 to 2900 calories by 2020.

The gap between food demand and production would increase in several areas, particularly in developing countries.

The trade in wheat would go up from 60 million tonnes in 1993 to 140 million tonnes by 2020. Similarly in maize, the trade would increase from 20 million tonnes to 55 million tonnes and of other cereals from 10 to 20 million tonnes.

The imports of cereals, mostly of wheat and also of maize, would almost double in developing countries by 2020. The USA and Australia will capture a large share of export demand.

Concluding observations

A brief review presented in earlier sections provides quite a few lessons to learn for reducing food insecurity. Food security must look at hunger, poverty and malnutrition as an integral whole. These cause environmental degradation and lie at the root of conflict in many societies. As these conflicts become a major cause of food insecurity, abundance of food and its wide sharing are considered as primary conditions of a civilised society. It is in this context that every national government ought to do all it can to improve food security for its people. For achieving national and household food security, attention to all the three dimensions, viz: food availability, food access and food utilization is necessary. In this context, the long term solution to the problem of food security lies in evolving a development strategy which includes, apart from sustained increases in food and food stuffs production, growth in employment and incomes of the masses and improving their access to education, clean water, sanitation and primary health care. At the national level, food self-sufficiency is neither a necessary nor a sufficient condition for food security. However, self-sufficiency is being considered a part of the national security system.

With a view to reducing food insecurity, India in the mid-sixties launched a new strategy of agricultural development. This helped the country in several ways:

- the production of cereals increased at a rapid rate
- the dependence on imports of cereals to meet domestic food needs went down considerably
- the growth of production of cereals was generally above the growth of population
- the inter-year instability in the availability of foodgrains went down
- the physical access of masses to food in various regions increased
- economic access of masses to food went up
- availability of other food stuffs considerably increased
- the average per capita calorie intake has come closer to the accepted norm, food intake of even the poorest sections has improved, the average life expectancy has gone up and IMR has decreased. However, in quite a few areas success could not be achieved. The increase in the output of pulses could not keep pace with the growth of demand. In 1993-94, nearly 51.2 million people did not get two square meals a day. The IMR, number of mal-nourished children and MMR are still very high.
The emerging scenario for India suggests that for improved food security, there is a need for accelerating the growth of production of foodgrains, other foodstuffs and agricultural commodities. This would *inter alia* require upgradation of technologies in both irrigated and unirrigated areas and a step up of investment in agriculture. In this connection, special attention needs to be given to hitherto left out regions where the gap between potential and existing yields is quite large. However, this requires further strengthening of the incentive framework for agriculture. It is in this context that a gradual and cautious approach to withdrawal of input subsidies and liberalization of trade in agricultural commodities is necessary.

The emerging scenario of global food security suggests that until 2010, food prices would rise and fluctuate more. The trade in foodgrains would increase but a larger share will be captured by USA and Australia. Participation of India in world trade for food products may worsen its terms of trade. Considering this and keeping in view the size of Indian population and consequently the food demand for reducing food insecurity in India:

a. self-sufficiency in cereals should continue to be the strategic objective from the point of view of efficiency, equity and national security
b. the policy of minimum guaranteed prices for foodgrains needs to be continued and effectively implemented in hitherto left out regions also
c. a mix of input and food subsidies should remain an integral part of strategy for assured food security
d. a policy of buffer stocking and public distribution of cereals must continue for stabilising prices
e. an agency like the FCI needs to be retained for providing price support to the farmers and for reaching the grains to the remotest areas
f. the production of oilseeds and pulses be encouraged by improving the incentive framework for the growers of these crops
g. the trade policy for cereals, pulses, oilseeds/edible oils and sugar be dovetailed with domestic price policy
h. one to two million tonnes of rice and wheat be allowed for export on a regular basis
i. marketing infrastructure need to be strengthened
j. farmers' groups and organizations be promoted to increasingly take up a larger share of trade in foodgrains and other food products
k. with a view to improving the efficiency of the functioning of domestic market for food articles, domestic marketing system for food items must be liberalized.

These apart, attention to primary health and primary education along with the creation of opportunities for employment and augmentation of incomes would need to be given for improving food and nutrition security. The women could play an important role in reducing food insecurity.
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NOTES

1. For a detailed summary of evolution of Agricultural Price Policy in India, see Acharya & Agarwal (1994).
2. In the context of assessing self-sufficiency over a longer period, net production plus net imports is a better indicator than the concept of net availability which also includes changes in government stocks.
3. Taken from World Bank (1995).
4. For example, see Bhalla, 1994; Bhalla, 1995; Kumar and Mathur, 1996; Rosegrant et al., 1995.
5. For more details see Acharya (1997b).
6. This paragraph has been taken from my earlier paper (Acharya 1997a).
7. It has been separately argued that input subsidies in the context of Indian agriculture should be treated as investment in food security (Acharya, 1997b).
8. For implications of liberalization of trade in agricultural commodities, see Nayyar and Sen (1994); FAO (1994); Bhalla (1995); Ramesh Chand (1997); and Acharya (1997a).
9. For a comprehensive commentary on emerging world food situation, see Anderson et al. (1997).
8. Food Safety, Consumers’Preferences and International Trade Rules¹

Jean-Christophe Bureau and Stephan Marette

Sanitary and technical barriers

National regulations as trade barriers

¹ The Uruguay Round has led to a substantial reduction in tariff protection. As traditional trade barriers tend to come down, non-tariff trade barriers are becoming a more important issue in the agriculture and food sector. This includes sanitary regulations, and more generally, a larger set of technical rules embedded in national regulations. A few years ago, little was known on the trade effect of domestic regulations, but this issue is now getting more and more documented. The listing of barriers to US exports by the Economic Research Service of the United States Department of Agriculture is one of the most detailed works in this area (Roberts and DeRemer, 1997; Thornsbury et al, 1997). To our knowledge, it is so far the only large scaled attempt to quantify the effect of foreign sanitary and technical regulation on trade. Other agencies, such as the US International Trade Commission, the Office of the US Trade Representative, have also investigated the impact of many national regulations on exports. Both the European Union (EU) and the Canadian government publish an annual report on US trade barriers. The European Commission has also set up a database on market access for a large number of countries. This database describes many foreign regulations that European exporters consider as unnecessary barriers to trade.

² These efforts show that domestic regulations impede imports in almost all countries. Regulatory barriers in the European Union are often pointed out by US agencies. The EU ban on hormone-treated meat is one of the most quoted examples. In the EU Commission’s market access database, the pages relative to Japan are particularly impressive. Many regulations, from the list of authorized additives to the technical requirements on meat products and the conditions of fumigation of flowers and...
vegetables at the Narita airport, are described as exceeding reasonable requirements. Even Australia, a country known for low tariffs, has technical standards which often preclude imports. The US conditions of sanitary inspection, with long and somewhat random delays, open lists for insects which make import authorizations difficult and unpredictable, complex quarantine rules, are also accused of making it unnecessarily difficult to export food products to the United States.

International rules have been strengthened in order to address these problems. The Uruguay Round provides a framework for solving disputes, through the WTO’s Dispute Settlement Body, it tackles the problem of nontariff trade barriers through the Sanitary and Phytosanitary (SPS) Agreement and a strengthened Technical Barriers to Trade (TBT) Agreement; and it gives greater importance to international bodies, especially Codex Alimentarius, an international code of standards for human health protection under the auspice of the Food and Agriculture Organization (FAO) and World Health Organization (WHO). The SPS Agreement recognizes the right of governments to restrict trade in order to protect human, animal or plant health, but such measures must be transparent, consistent, and based on international standards or scientific risk assessment. There must be equal treatment for all nations and between imports and domestic products. The SPS Agreement covers health risks (food safety) arising from additives, contaminants, toxins and pathogens contained in food products. The TBT is much broader, covering all technical regulations, voluntary standards, conformity assessment procedures and any other measures not covered by the SPS Agreement. It seeks to ensure that national measures are transparent, have a legitimate purpose and minimize restrictions on trade. Compliance with relevant international standards is encouraged. Recently, at the Singapore conference, the World Trade Organization (WTO) has raised the issue of simplifying the import procedures which are often complex and act as trade barriers. Finally, in addition to the measures taken at the WTO level, the Regulatory reform proposed by the Organization for Economic Cooperation and Development also aims at limiting the negative trade effects of national regulations (OECD, 1997a).

**International effects of national regulations**

There is no doubt that many of the regulatory barriers mentioned previously, in particular sanitary and phytosanitary ones, have been erected in order to protect local producers. Anecdotal evidence shows that special groups have often persuaded public authorities to back their case and erect barriers to protect vested interests, and that governments have sometimes “compensated” the decrease in tariffs by stricter sanitary and phytosanitary regulations, in order to prevent a surge in imports. The shorter shelf-life for food products in Korea was a famous example, but many other cases have been reported (see Hillman, 1997 and, more generally, different papers in Orden and Roberts eds, 1997).

However, governments have also often set up regulations in order to address consumers’ concerns. Such regulations often have a negative impact on trade, although this was not their primary purpose. This is the case, for example, when various options exist for ensuring a given level of consumer protection. In order to ensure that a product is safe, a government may consider banning certain techniques or laying down maximum tolerance levels for residual pathogens. If one country’s standards are based on the first
option and another country’s are based on the second, exports come up against technical barriers and additional control costs.

Differing incomes and tastes may lead to differing regulations. Developing countries cannot allow themselves the same standards as developed countries, with the result that their firms come up against regulations which constitute a de facto barrier to exports. Even in developed countries, in economic terms, it is possible to determine an optimum standard for each country, reflecting in particular a trade-off between cost and demand for food safety (Antle, 1995; Viscusi et al., 1995). It depends on the distribution of consumers’ willingness to pay, and there is no reason why such an optimum standard should be the same in all countries. But different standards, albeit entirely justified in economic terms, can hamper international trade.

More generally, regulations which affect trade, may come from genuine technical, geographical, cultural and sometimes religious differences. The concept of product quality is multi-dimensional, and is not limited to product safety (Hooker and Caswell, 1996). The perception of which attributes are essential when defining quality differs greatly among countries. Differing tastes, incomes and willingness to pay for a particular attribute are reflected in dissimilar regulations. In many countries, there is a public debate over regulation of the food industry. This includes safety of food, how it is produced, i.e. social conditions, animal welfare, the use of genetically modified organisms, hormones and growth promotors, cultural preferences, resource sustainability and protection of the environment. New production and processing methods driven by technology have added to consumer unease. The resulting national regulations can pose problems for exporters. The complexity of the issues make the right policy response difficult, especially in the absence of convincing evidence of health risk, but when consumers concerns look nevertheless genuine. The following sections present a few examples of such controversial issues.

Technical and cultural differences and domestic regulations

Disagreement on quality attributes

There is considerable disagreement on quality attributes, such as the nutritional content, taste, production methods and authenticity of products, that are relevant and on the extent to which they may legitimately be the subject of regulation. Some countries consider that the soil, climate and traditional knowhow that exist in a region have a decisive influence on product quality, others do not. There is considerable disagreement on the meaning of “authenticity” which has inspired the 1992 EU legislation on food quality labeling (the term “authenticity” is used to translate the concept of typicité, which is the basis of all French and Italian quality labeling system, meaning that a product must be “typical” -i.e. representative- of a particular area, in addition to be produced with premium raw materials and, often, traditional techniques). Definitions based on taste or traditional know-how receive little support at an international level. These notions of product quality are ill-matched to the more restrictive approach adopted internationally⁴. The stance of the SPS Agreement is to take into consideration only a single quality attribute, namely sanitary quality. International Standardization Office (ISO) labels, which could become de facto standards regulating international trade, do not include all
the quality dimensions of European regulations, which are based to a considerable extent on a product’s organoleptic qualities (taste) and authenticity.

**Different conceptions of risk**

It is seldom possible nor economically feasible to achieve zero risk with respect to food safety. The SPS Agreement explicitly requires risk analysis to be carried out if a country adopts different standards from those of the Codex Alimentarius (Article 5.1). However, there is no agreement on what constitutes justifiable risk or “acceptable risk” as mentioned in the SPS Agreement (Annex A.5). Nor is there any agreement on the importance to be given to risk analysis, or on what is meant by the term “risk”, or on methodology. Officially, risk analysis is a three-stage process. The first stage, risk assessment, consists in identifying hazards, in particular their forms, thresholds and probabilities. The second phase is risk management and the third phase is communication concerning the risk. Approaches may differ widely from one country to another, especially concerning the importance to be placed on risk management (Mazurek, 1996). Some countries prefer to emphasize risk elimination (e.g. sterilization of mineral waters, ban on cheese made from unpasteurized milk, etc.). Others emphasize the possibility of risk control (in the above mentioned examples by bottling at source, Hazard Analysis at Critical Control Points, HACCP- controls, etc.), which is sometimes less costly and alters the product less, and point to the inconsistency of seeking to achieve zero risk in one area while tolerating high risk in others.

The diverging conceptions of risk management are particularly obvious in many debates within Codex committees, such as the one on food hygiene, or on dairy products. The case of cheese made from unpasteurized milk provides an illustration of the fundamental differences that exist with regard to food safety thresholds between the European Union and the United States (note that this is also the case within the European Union itself). Cheese made from unpasteurized milk is more likely to contain pathogenic bacteria (Campylobacter, Salmonella, Listeria) than cheese made from pasteurized milk. Raw milk cheeses are however widespread in countries like France, Switzerland and Italy. In France, consumers clearly find that the hazard is minimum, compared to other types of risk, including the risk of infection of pasteurized cheese when improperly stored, and that there is basically no danger. Risk management (control of dairy processing plants) and risk communication (warning of elder people and those with a weak immune system, systematic warning of pregnant women by doctors about possible abortions) is seen as being preferable to mandatory pasteurization. That is, risks are given media coverage and people clearly accept them. Any attempt to restrict the sales of even the most potentially dangerous soft cheeses is considered as completely unacceptable, and this issue clearly becomes a quasi-religious one every time it is raised at the European Union level. French, Italian and Swiss consumers point out the inconsistency of the banning of raw milk cheese and not, say, raw oysters or hamburgers in other countries. However, it is clear that consumers in other countries are not willing to accept the level of risk associated to raw milk cheese, possibly because they are less sensitive to quality attributes such as “taste” and “authenticity”.
Technical regulations and local conditions

National regulations on authorized pesticide residues, for example, differ widely. However, the fact that it is difficult to measure the risks in this area makes any attempt to define standards highly controversial (Mazurek, 1996). Even national regulations applied even-handedly to domestic and imported products can have an effect on trade, especially if the chemical substances are not used in the country concerned. This is the case with procymidone, for example, a fungicide that is the subject of controversy in the wine-making industry. As the fungus against which procymidone is effective does not pose a problem in Californian vineyards, mainly for climatic reasons, there is no reason to use procymidone there. But low tolerance levels for residues would indirectly limit imports of wine from other countries, which need to use the product because of their climate. This issue, and more generally the “Delaney clause” in the US legislation was a bone of contention between the EU and the US. This highlights the possible trade effects of national regulations, even when they are applied to imported products in a non-discriminatory way.

Some techniques used to control bacteriological risk are more adapted to certain countries than others. Bottling mineral water at source, for example, may be more expensive than bulk transportation and sterilization in some cases. HACCP techniques requires sophisticated technology and qualified labor at all stages of the production, transformation and marketing chain, which may be difficult to find in all countries. Irradiation techniques require a lot of capital, and it is overall very costly to transport products with low unit value to the adequate plant, especially in countries where production is scattered over very large areas. In many cases, different techniques, e.g. controlling processes or sterilizing can give equivalent results at the end product, but not all of them are adapted to the domestic conditions. Again, if one country picks an option and a second country picks another one, this will de facto result in technical barriers for exporters.

The role that should be left to private operators in devising workable standards is a source of disagreements between countries. Producers want to be given greater freedom in the way they produce high quality food and point to the costs that highly specific regulations impose on the production process. They find it hard to understand why consumers and public authorities interfere so much in the definition of standards which in other (non-food) sectors is left much more up to the industry. Consumers do not see things in the same light and criticize what they regard as industry’s over-representation on the scientific committees of standards bodies, such as the Joint FAO/WHO Expert Committee on Food Additives, the Joint FAO/WHO Meeting on Pesticide Residues and the Codex committees. This highlights the difficulties of finding the right mix between highly detailed and restrictive regulations and consumers’ concern at the latitude accorded to manufacturers. It affects trade issues because the “right mix” is not seen as being the same in all countries, an issue raised in numerous disputes on the list of permitted food additives (Vogel, 1995).
Legal differences

Domestic regulations are defined in relation to the legal system prevailing in each country. This framework differs a lot across countries. Punitive damages in product liability action are very different in the United States and in European countries. In the United States, ex post liability clearly plays an important role in deterring firms from marketing unsafe products. Because of the potential outcome of tort law, firms often set up standards that exceed those required for passing government approval process. Antle (1995) shows that this reduces the need for “command and control” type of government intervention. In some EU countries, economic sanctions are very limited in the case of food safety problems. In France, liability is limited, and in non-lethal food poisoning problems, plaintiffs seldom take legal action. When an unsafe product is marketed, resulting in consumers’ death, this most of the time results in penal sanctions for the manager rather than in large economic sanctions for the firm. (For example, to our knowledge, the fatal poisoning of hundreds of people with tainted cooking oil in Spain has not resulted in any significant monetary compensation for the plaintiffs 16 years later). That is, the incentive for supplying safe products would be perhaps lesser than in the United States, in the absence of a command and control regulation. Fundamental differences in the legal system for protecting consumers from health hazards provide some justification for diverging conceptions on the role of government in setting standards. More generally, differences in the legal environment, such as ex ante regulation vs. ex post litigation as a basis for law, may provide justifications for differences in governmental standards between countries.

Cultural differences

Arguably, the fact that Islamic countries tend to erect barriers to pig meat imports is not seen as an unfair non-tariff barrier. One may wonder why the Egyptian ban on genetically modified organisms (GMOs) should not also be considered as legitimate, since it also had some religious connotations (the ban was announced but actually never enforced). This raises the question of how far one should go in this area, and whether the concerns of consumers in Luxembourg and Austria on GMOs (which look genuine) can also legitimate an import ban. A recent survey measured consumer acceptance of GMOs in nineteen countries, and showed that only 22% of Austrian consumers seem willing to buy genetically modified products, against 74% in the United States (Hoban, 1997). Even in Britain, one of the most permissive countries in the EU in this area, a poll shows that only 14% of consumers were happy with the introduction of genetically modified foodstuffs, and 96% wanted labels on food made of genetically modified seeds (The Economist, 1998). This reluctance cannot be completely explained by a lack of information, since Hoban’s survey reported that a higher proportion of consumers than in the United States said they had read or heard information about biotechnologies. Part of the explanation seems to lie in cultural factors. Most of the consumers’ concerns actually seem to be linked to the possible spread of unwanted genes in the environment, rather than concerns about their own health.

The case of genetically modified organisms is an illustration of the impact that consumers’ cultural values can have on trade, regardless of scientific considerations. It is not the only one. Consumers in some countries remain opposed to irradiation, which is
seldom used as a result (except for specific products such as spices, onions and some poultry in certain countries), even though since 1980 the International Atomic Energy Agency and the WHO have concluded that irradiated food presents no toxicological risk. Dissimilar consumer preferences have an impact on trade, as for example if one country requires ground meats offered for sale on its territory to be irradiated and another refuses to use the technology. Here again, despite scientific considerations, even very subjective quality considerations can have an indirect effect on trade.

**Ethical concerns**

Animal welfare regulations, introduced under pressure from animal rights activists, are becoming a very important topic in Europe. This may also have large consequences for international trade. In some cases, imports of products that do not comply with certain rules may be prohibited. The European Union, for example, has banned imports of furs of thirteen types of animals that may be caught using leghold traps, even though not all of them are listed by the International Convention on Trade in Endangered Species and some species are farmed commercially. National regulations may also distort competition. The European Union has adopted directives banning the battery farming (i.e. rearing in individual boxes) of milk-fed veal calves and has imposed collective rearing including cellulose feedstuffs which considerably increases production costs. This measure, still in the transitional phase, has little impact on trade, since there is little international trade in veal. Similar measures are being prepared for poultry, however, which could have a very considerable impact on the competitiveness of European poultry and egg producers, not only on export markets but also within the EU, if third countries do not adopt similar measures. The planned increase in the size of cages (in egg production) and the possible animal density limitation (in poultry meat production) would cause a substantial rise in heating and feeding costs and hence in the cost of European poultry, in relation to countries not under the same obligations. Substantial trade flows could be affected. Farmers, especially in England and Sweden, where the regulations are already stricter than in the rest of the EU, claim that consumers' concerns should lead to similar requirements for imported products.

Growing numbers of consumers are also concerned about the possible adverse effects of their purchases, on the destruction of natural resources in other countries, for example, or on child labor (Mahé and Ortalo-Magné, 1998). There is growing pressure from public opinion for the imposition of more environment-friendly practices in third countries, especially in order to protect the “common resources of humanity” such as tropical rainforest. Some governments support a ban on timber products from countries where forests are threatened (Vogel, 1995). Consumers are also concerned about the importation of goods which they reject for cultural or religious reasons. But the fact that consumers' ethical values are not the same in all countries is bound to affect trade.

**Mistrust in science**

In some countries, there has been a growing mistrust in science over the last decade. France is a typical example where the government has minimized the effect of major accidents, which have fueled suspicion and eroded public confidence in science. The importance of asbestos related cancers has been largely hidden under the pressure of the
industry, and, when disclosed, past responsibility of mandated doctors in spreading wrong information has had a very negative effect on public opinion. Involvement of scientists in hiding information from the public in the nuclear sector has had a similar effect. (Scientists from government agencies claimed that the Chernobyl radioactive cloud had stopped exactly at the French border, something that nobody has actually believed). So has the continuous denying of public agencies involvement in spreading HIV contaminated blood, until journalists disclosed evidence. In France, as well as in most EU countries, the poor management of information about possible links between Bovine spongiform encephalopaty (BSE) and Creutzfeld-Jakob disease, and assurances from government appointed scientists made the mistrust of science a very sensitive issue in the food sector. Consumers concerns about genetically modified organisms and growth activators cannot be understood without taking this into account. While educating consumers is one of the government’s tasks in this area, the situation is such that any government information is considered as suspect.

The poor management of information on past accidents by scientists and politicians is not the only reason for consumers’ unease with science in some countries. One cannot blame only consumers’ ignorance when they are not satisfied with the assurances given by biologists concerning the level of the Codex standards. Powell (1997) highlights the difficulties of obtaining reliable scientific assessments of the hazards present in food, because of genetic mutations, for example, or combinations of pathogens with uncertain effects, or the influence of exogenous and unforeseeable factors on microorganisms. The standards accepted by scientists do not always have an indisputable scientific foundation. Some have had to be completely revised at various times, and scientific “certainty” is sometimes fragile, especially with regard to the carcinogenic properties of products (Mazurek, 1996).

In addition, consumers assert the right to entertain fears that scientists regard as “irrational”, especially concerning genetically modified organisms and irradiated food. Controlling short-term risks does not mean that longterm risks or uncertainties do not exist. In Europe, environmental and consumer groups have recently campaigned for the inclusion in multilateral agreements of a “precautionary principle”, which would allow exceptions to the regulations in cases where scientific proof does not go far enough (Godard, 1997). This does not seem to be as much of an issue in the United States and in the rest of the world, except perhaps on some environment related issues (Rege, 1994).

**Accounting for consumers concerns**

**Consumers’values matter**

Governments and international agencies should not dismiss consumer concerns about food safety, nor about ethical, environmental or cultural values, and even perhaps about imagined health risks. This could significantly erode public support to the trade liberalization process. Mandatory compliance to ill-accepted standards may result in consumers’ rejection of freer trade (Olson, 1998). The 1991 GATT panel on tuna, which basically ruled that a country could not ban imports for environmental reasons outside its territory, dragged into anti-GATT movements hundreds of thousands of people who would never had join such organizations otherwise (The Economist, 1993). Threats from the European Commission to restrict the sale of unpasteurized cheese are said to be
“responsible for 5 out of 6 French votes against Maastricht”. The figure, quoted by Vogel (1995) may not be completely statistically exact, but it truly reflects how anti-European populist groups exploited fears of being “condemned to eat standardized, aseptic, industrialized cheese”. The 1997 panel on hormone treated beef also had a strong negative impact in European public opinion. Because of this panel, the WTO is now often perceived as an international agency whose goal is to overcome countries’rights to protect their consumers and more generally to undermine national sovereignty. Both issues contribute to fuel the isolationist propaganda of far right wing political parties in France and several other EU countries.

23 Clearly, ignoring consumers’concerns could lead to a severe rejection of “globalization”, which already has a poor record in public opinion in many countries. Food is a sensitive topic, and few things are likelier to give trade liberalization a bad name than to have it associated with foisting on consumers mediocre or even potentially unsafe food. This aspect should not be underestimated, when consumer groups find in the Internet a powerful soundboard. The international co-ordination of the opponents to the OECD’s proposal on Multilateral Agreement on Investment shows that decisions can no longer be taken without consumers’approval. The list of Internet web pages gathering protests against the WTO, and even the SPS agreement is becoming very large.

24 Even when they do not sign petitions, demonstrate, or protest in the polling booth, consumers can react by changing their consumption patterns. If consumers consider the way in which children are exploited, cosmetics tested, foxes killed or cattle reared to be an integral component of the quality of a food product, lipstick, coat or piece of meat, their demand for such products is altered by the presence or absence on the market of goods which do not comply with their ethical values. This is the case, for example, if it is difficult for consumers to identify goods produced under such conditions.

“Bad” products driving out “good” products

25 Another reason for taking consumer’s concerns into considerations is that there are some externalities between unsafe (or non-politically correct goods) and the safe (virtuous) ones. When consumers are not able to distinguish the specific quality of different products, they are not willing to pay as high a price as they would if they were sure that the product was of high quality. Akerlof (1970) has shown that imperfect consumer information about product quality could even result in total close-down of the market (absence of trade) if, because of a lack of information, buyers’willingness to pay was insufficient to cover production costs. If buyers’willingness to pay is less than the cost of producing high quality goods, only low quality goods (less costly to produce) are traded and high quality is frozen out of the market. Akerlof quoted second-hand cars as a famous example of poor quality chasing away high quality, but in the food sector too, the workings of the market may cause vendors to offer an inadequate level of quality or safety when information is imperfect.

26 Consumer goods may be divided into search, experience and credence goods. A good is a search good when the consumer is capable of assessing its quality before buying it, an experience good when the consumer discovers the quality only after consuming it, and a credence good when the consumer never discovers the quality of the good (or does so only in the very long term). Many agro-food goods fall into the “credence” category (Caswell and Mojduska, 1996). This is the case, for example, when the “safety” component
of quality or the nutritional composition of a product are at issue. It is also the case with the ethical, cultural or environmental components of quality. The economic mechanisms at work in these three categories are different. With experience goods, for example, the incentives for quality fraud are limited by consumer sanctions on the occasion of repeat purchases. With credence goods, there is no spontaneous mechanism for market regulation and it is more difficult to indicate quality in a credible way. The market failures highlighted by Akerlof may extend into the long term.

Opening up markets can result in the coexistence alongside local products of foreign products whose quality is less familiar to domestic consumers. The imported goods may be perceived as being of lower quality because of doubts as to foreign control procedures or the different importance attached to each component of the overall quality of the good. Consumer uncertainty as to the type of products on the market (which might result, for example, from imports of goods like hormone-treated meat or genetically modified seeds) could affect demand, decrease consumer’s willingness to pay and raise adverse selection problem (Bureau et al., 1998). It is theoretically possible for the welfare loss resulting from reduced consumer willingness to pay to outweigh the welfare gain resulting from cheaper imports. For example, the EU commission suggested that lifting the ban on imports of hormone-treated beef, right after the “mad cow” crisis, could lead to a 20% decrease in beef consumption in the EU (Hannrahan, 1997). We are not aware of any rigorous study which supports this particular figure, which clearly seems to be upper bound. However, most observers agree that this would cause an extra decrease in consumption in this market. Although the magnitude of the fall in willingness to pay is difficult to assess, it is possible that the losses for the European economy could be large, in comparison to the gains for US exporters. In such a case, one may consider that opening preferential access quotas to US meat from certified producers who do not use hormones might be a better solution, from the viewpoint of overall welfare.

What are the solutions for reconciling consumers’concerns and international trade rules?

Consumers’concerns in the United States and Europe

Different consumers’organizations have expressed their displeasure with international trade rules about food safety and quality. Several US organizations, such as the “Center for Science in the Public Interest” (CSPI), “Safe Tables Our Priority” (STOP), or “Public Citizen Inc” have complained that Codex standards are less protective of consumers than some domestic standards. These organizations are concerned that the SPS Agreement, because it facilitates trade and (allegedly) results in a “downward harmonization” of health and safety standards, could contribute to an increase in pathogens outbreaks (Fox, 1998; Public Citizen Global Trade Watch, 1998). Some of these groups are for example pressing for a revision of Article 10 of the SPS Agreement, which recommends taking account of the special needs of developing countries in the definition of standards (Silverglade, 1998). It is worth noticing that the food safety issues raised by such organizations seem to have played a role in the refusal of the “fast track” negotiation procedure by the US Congress. During the 1998 debate on the “Safe food Act”, government representatives have announced on many occasions that they would
reinforce inspection procedures and that imports would meet stricter controls, showing that consumers’protests are increasingly affecting international trade arrangements.

29 In Europe, consumers’concerns focus perhaps less on food safety than in the United States. According to consumers’representatives, a major concern is that standards should reflect what consumers want in a product, not what the industry wants to put into it. That is, European consumers concerns include more and more cultural and environmental attributes of quality. Organizations such as “Greenpeace” argue that WTO rules should be amended in order to cope with consumers’values and such views meet strong support in some EU countries. Consumers and environmentalist groups have been rather successful in lobbying the European Parliament in some areas. Bowing to the pressure of public opinion, the EU Commission as well as some national governments have introduced regulations in areas such as animal welfare, the protection of fauna and flora and genetically modified organisms. It is noteworthy that some of these regulations considerably increase the cost of producing food. As a result these governments point out that the SPS and TBT Agreements put them in an uncomfortable position by forcing them to authorize imports of goods produced using methods which they have had to ban at home. The European Union is unhappy at being obliged to authorize imports of food produced under less restrictive livestock farming conditions than its own (e.g. animal welfare), or using biotechnologies that consumer pressure prevents its own farmers from using (e.g. BST, or bovine somatotropin, a hormone used to increase milk yields in some countries).

30 Although one cannot ignore consumers’concerns, fears about food safety give trade protectionists a wonderful opportunity to cheat, and trade restrictions motivated by social, cultural, ethical or environmental considerations can be a form of protectionism in disguise. There is often convergence between consumer demands for stricter standards than those recommended by scientists and the economic attraction of strengthening non-tariff barriers. The true motives of a government saying that it is barring is imports in order to stop people feasting on unclean fowl, or on meat stuffed with synthetic growth hormones, or maize that has been modified by frightening new technologies (each case being the subject of a quarrel between the United States and Europe) are hard to discern (The Economist, 1997). Since this problem is likely to be a major area of contention in coming years, it is worth exploring possible ways to address it.

More “sound science” in the SPS agreement

31 After the Uruguay Round, there were large hopes that the reference to “sound science”, and in practice, the provisions of the SPS agreement which make a clear reference to international standards, would solve any potential conflict on sanitary and phystosanitary issues. However, things have proved more complex in practice.

32 The idea of objective science serving to guide trade practice, which prevails in the SPS Agreement, is debatable. In practice, economic and political considerations are very much intermingled. In many cases thresholds have been set not only on the basis of medical effects but also on the basis of what is technically and economically feasible, and many scientists acknowledge off the record that some standards are defined “after the event” (radioactivity thresholds, for example). Ever since scientists’recommendations acquired the status of potentially mandatory standards, with considerable economic interests at stake, it has been difficult for them to ignore economic considerations. Salter (1988),
Powell (1997) and Hillman (1997) have given numerous examples of “mandated science” or “negotiated science”. Manufacturers are also strongly represented on Codex and joint FAO/WHO committees, and economic interactions with standard setting are obvious.

More generally, a trade-off between costs and benefits is sometimes implicit behind the scientific criteria, in the form of the setting of standards which take economic factors into consideration and reference to risk analysis in the settlement of disputes. Risk analysis includes a risk management component; this corresponds to the ways in which risk may be reduced to an “acceptable” level, which includes economic considerations, and in the last resort the decisions taken are often of a political nature.

**Science is not always completely conclusive**

Many scientists express their doubts about the way standards for chemical residues are defined. (According to Antle 1995: 5, US Environment Protection Agency estimates for cancer risk from pesticide residues are approximately 1000 times higher than equivalent risk estimates using other methods). In many cases standards have been established on the basis of experiments on mice and rats and extrapolated to humans. Even with a considerable safety margin, the basis for such standards seems relatively arbitrary. (In France, some scientists have recently disclosed how fragile were the basis used for defining standards on dioxin, for example, which may be found in dairy products and accumulate in organisms and in mothers’ milk when breastfeeding). International standards are now put to the vote at the Codex, and some are passed by a small majority. Not all countries are willing to acknowledge the legitimacy of risk thresholds imposed on them in this way.

“Sound science”, and the reference to “available scientific evidence” in the SPS agreement may in practice conflict with the precautionary principle, which is more and more referred to by consumers'organizations. This problem is of particular importance, since it has recently led to a very controversial situation on the issue of Genetically Modified Organisms (GMOs) in the European Union. According to the precautionary principle, precautionary measures should be taken in absence of certainty according to the state of scientific knowledge at the time. Although it is not a legal principle, it can be reflected in regulations. The preliminary decision of the French Conseil d'Etat (a kind of Administrative Supreme Court) in September 1998, in favor of non-governmental organizations which asked for a ban on GMOs, partly relied on the fact that the precautionary principle was embedded in the 1995 environmental law. Article 5.7 of the SPS Agreement indicates that if relevant scientific evidence is “insufficient”, members may adopt SPS measures, on a provisional basis, while seeking additional information about the risks posed by a recently identified hazard. However, provisions of the SPS Agreement regarding precaution, are much more restrictive than what some consumer groups often mean when they invoke the “precautionary principle”, suggesting that there may be a fundamental ambiguity between the expectations of certain groups in society and practical measures.

For all these reasons, the reference to sound science is not the panacea that is often described by international organizations. Other ways of reconciling consumers’concerns should be taken into consideration.
Labeling

Labeling is economists’ favorite solution. The idea is that one should “give consumers the choice”. Beales et al (1981) have shown that segmenting the market, and allowing for each group of consumer to buy the products corresponding to their willingness to pay, is, in theory, a much better solution than mandatory uniform standards. As a result, labeling and consumer information policies are often portrayed by international organizations as preferable alternatives to regulation because they are cheaper for producers, leave the choice to consumers and are less likely to constitute trade barriers (OECD, 1997).

However, in practice, labeling does not solve all problems either. First, labeling is not always possible, or, when it is, it can be very expensive. The proposals for a strict labeling of GMOs in Europe, require complete traceability, that is, that the whole chain be segmented, from the producer to the final processed product. According to the industry, this would generate very large costs (a Canadian study into segregating modified wheat products found this would require separate facilities at 15 different points from farm to market). In addition, pollen is known for spreading between controlled and uncontrolled areas (some pollen was found at several kilometers in altitude), and the segmentation of the two markets can hardly be perfect. In some other cases, labeling is simply not the solution that consumers are willing to accept. For example, animal welfare activists have clearly stated that labeling was not an issue and that they wanted an interdiction of certain rearing practices.

Another reason why labeling is not the panacea described by some economists, is that the conflicts about the appropriate level of standards are sometimes simply displaced toward the issue of the appropriate label, which is equally complex. There are diverging opinions, for example, on the relevance of labels on clothing certifying low levels of pesticide use in the production of cotton, or on the specifications for labels certifying that wood products do not harm tropical rainforests. Mutual recognition of labeling for organically farmed products is difficult to achieve because countries apply the relevant criteria more or less strictly, or because some countries are considering granting such labels to genetically engineered or irradiated products. In November 1998, this was a bone of contention between EU member countries, and the adoption of an EU-wide definition of “organic” (“biologique” in French) food was postponed. Basically, the need for international harmonization/recognition of labels and of the underlying certification procedures raises difficulties that are comparable to the ones raised by the harmonization/recognition of mandatory standards.

Finally, economic theory suggests that, if agents are rational, a label on credence goods should not be sustainable. The idea is that rational consumers know that they cannot verify that producers fill their commitments, while rational producers have no reason to do so. Labels on credence goods require a third party certification, and, in spite of that, are not always trusted by consumers. In particular, it is difficult to monitor the production process of imported credence goods, which is the sole means for acquiring information about their quality. Foreign firms are also less exposed to judicial sanctions (liability), which may encourage fraud when the consumer is unable to verify the quality of the good in question directly.
Expanding GATT criteria

Some consumer values may well be out of step with GATT principles. In the environmental sphere, rulings in disputes brought within the framework of GATT and the WTO hold that a country is not entitled to use trade measures restricting imports to protect natural resources outside its territory, even in the case of resources which some consider to be “common to humanity”. In the cultural sphere, a country may introduce regulations that are more stringent than international standards on ethical, moral or religious grounds only under very limited conditions. Recently, the 1998 appellate body on the Shrimp-Turtle case ruled that the Article XX exceptions are “limited and conditional”, a confirmation of the first GATT tuna panel conclusion, but which could prove important in future challenges to domestic health, safety and environmental regulations. The SPS Agreement does not recognize the validity of consumer concerns in cultural, ethical and environmental areas (though under the TBT Agreement they may be taken into consideration by authorizing different labeling). Because of the mismatch of GATT rules and some consumers’ concerns, many environmentalist and consumerist organizations claim that one should include other factors than sanitary and phytosanitary risks in the Codex and the SPS agreement, or that one should give a broader scope to Article XX, so that it embeds a larger set of consumer values.

A number of arguments can be made for including ethical and cultural values as grounds for trade restrictions. Reluctance to consume goods produced in unethical conditions can affect demand for all goods, including those produced “virtuously”, as for example with animals caught in traps and animals reared on farms. Externalities between goods may arise if ethical and cultural values are acknowledged. Trade is also one of the most effective means for obliging countries to respect human or children’s rights or to protect natural resources and endangered species. Socially aware consumers who would like to be able to wield such a weapon find it hard to understand why international trade rules should prevent them from doing so. Vogel (1995) gives several examples where trade restrictions and a desire for access to greener markets have had an impact on a country’s attempts to improve social and environmental regulation. Moreover, it may be paradoxical to reject trade restrictions for cultural reasons when they are admitted for nonfood products such as medicines. The case of RU 486, the “morning after” contraceptive pill, is an extreme example of a product which may not be imported into certain countries, including the United States, solely for cultural reasons in spite of evidence showing large reductions in hazards for women, linked to pregnancy interruption at a later stage. Lastly, thresholds and standards are sometimes adopted in line with what is socially acceptable, and reference to an acceptable risk introduces cultural considerations into the SPS Agreement (the acceptability of a given risk is subjective although required to be scientifically justified if different from international standards), raising the question of whether this type of consideration should be included explicitly in the agreements.

However, giving consideration to ethical, cultural or moral arguments could open a Pandora’s box. For some countries, risk may be social as well as biological, including factors such as bankruptcy among farmers and rural desertification. Cultural or ethical arguments could be used to cover a potentially unlimited number of exceptions to free trade. A laxist interpretation of the TBT Agreement in this sphere would provide
justification for a whole host of trade barriers. In practice, this debate has already been raised within the Codex. The legitimacy of socio-economic and cultural factors has been a bone of contention for years in Codex committees, namely on the issue of BST. Some countries argued that economic and social factors and consumer reluctance should be taken into account. But if a decision has been taken at the Codex to defer and reconsider the BST case, it is not on account of these arguments

More generally, there is no agreement on the consideration that should be given to arguments other than “objective” medical risk when sanitary regulations are being defined seems difficult to reach. Discussions on the item on “the role of science and the extent to which other factors are taken into account” at 13th Session of the Codex Committee on General Principles (September 1998, Paris) have been largely inconclusive. A similar problem exists within the dispute settlement procedure of the WTO. Decisions taken on the basis of purely scientific considerations simply seem unacceptable to consumers’ organizations who expect that international standards reflect what they want to eat, not only what is safe to eat. When WTO rules conflict with decisions of a democratically elected parliament (as in the EU-US hormone treated beef issue), things get even more difficult.

Can economics help?

When cultures differ, economic analysis may perhaps help finding a common playing field. This issue has progressively been accepted in the area of environmental disputes, and it is progressing, albeit slowly, in the phytosanitary area, and, to a lesser extent, in the sanitary area. Here, we consider the possibility of a broader use of economic assessment in food quality regulations as well as in disputes settlement on non-tariff barriers.

Cost-benefit analysis is already used to enable public authorities to take decisions concerning national regulations. It is already an important stage in the framing of regulations in the United States. Arrow et al., (1996), recommend that the method should be used systematically, since they observed considerable differences between the cost of public health measures and their real impact on health (they give estimates where, within the same agency, the cost per life saved varies between US$200,000 and US$10,000,000 depending on the program, which means that more lives could be saved at the same cost to society; see also Magat et al., 1986). Even though society does not accept all risks in the same way, and even though social choices cannot be reduced to the equalization of a statistical cost between programs, cost benefit analysis should take a more important place.

Box 1 describes a few possible techniques in order to introduce more economic assessment in the sanitary and phytosanitary regulations. There are clearly many technical difficulties. Measuring the benefits procured by regulations designed to guarantee certain subjective aspects of product quality is not easy, and the problem of the valuation of imagined risks is a difficult one (Pollak, 1995, 1998). Estimates of cancer risk from pesticide residues contain a substantial degree of uncertainty as to the risk, making any economic estimate particularly difficult. Sometimes, it is not possible to calculate the probability of a risk that is too uncertain, making it difficult to carry out analysis with conventional tools. This is the case, for example, with the risk of genetically modified organisms propagating genes, or the risk of long-term epidemics such as Bovine
Spongiform Encephalopathy and Creutzfeld Jakob Disease, or environmental risks. However, similar problems exist in traditional risk assessment procedures. With an economic approach, it is possible to use approaches based on the measurement of changes in the consumer utility function when consumers have access to a product with attributes to which they are attached (Kopp et al., 1997).

Box 1: Methods for estimating the benefits of sanitary and technical regulations

Where food safety and the spread of plant and animal diseases are concerned, cost benefit analysis involves quantifying the level of risk and estimating its economic impact. This approach is widely used, though very unevenly from one country to another, not only in order to assess the interest of a regulation but also to compare the advantages and disadvantages of several possible means of government intervention. In particular, it can be used to rationalize the strengthening of sanitary and phytosanitary controls in relation to the dissemination of information and the raising of consumer awareness, or to inform decisions about the introduction of regulatory standards (Kopp et al., 1997).

Although there are still some technical difficulties, there are few major obstacles (except the lack of economic culture of the administrations in some countries such as France) to complementing classical risk analysis by cost benefit analysis in the phytosanitary and animal health area. Things are more complex, however when cultural values are at stake, and when one deals with human health issues. Several methods exist for estimating the cost of mortality and morbidity and evaluating in money terms the benefits of government action resulting in a reduction of sanitary risk. With the human capital method, a value is placed on the reduced risk of premature death based on an evaluation of discounted labor flow. For an individual of a given age, the value of the life prolonged (statistically) by a regulation corresponds to the discounted sum of the mathematical expectation of the person’s revenues (Freeman, 1993). Some extensions of this method have been proposed, in particular by integrating non-merchant aspects and the value of the individual’s descendants (Viscusi, 1993). With the cost of illness method, a value is placed on the reduced morbidity resulting from sanitary or regulatory methods, based on an estimate of medical costs and productivity losses due to illness (Buzby et al., 1996; Crutchfield et al., 1997). Opportunity costs from investing in activities that reduce the risk are included in the value of reduced illness (Landelfeld and Seskin, 1982). As with the human capital method, statistical methods have to be used to estimate the risk, especially dose-effect relationships.

Methods based on estimates of willingness to pay, although more difficult to apply, are wider reaching, since they make it possible to include quality-related aspects that cannot be translated into identifiable short-term illness. The preventive expenditure method seeks to measure agents’willingness to pay by observing the efforts made to avoid illness. With this method, a money evaluation of the disutility of being ill is added to the estimated cost of illness, together with an estimate of the preventive expenditure that an individual is willing to commit according to a given pathogen level (Harrington and Portney, 1987). Contingent evaluation methods involve asking individuals directly about their willingness to pay in order to reduce the risk of an illness, or more generally to obtain higher quality in a good. By
directly revealing willingness to pay, this method theoretically makes it possible to gain a money estimate of all the benefits arising from a given measure. However, answers have to be corrected for statistical bias due to respondents’ incentives to over- or underestimate their willingness to pay (which depends in particular on whether they anticipate having to pay the disclosed sum or not). As these methods are widely applied to environmental issues, efforts have been made recently to harmonize survey methodologies (see, in the United States, NOAA panel, Federal Register 58,10). Another method being used increasingly widely at present is the experimental economics method, which involves getting a group of individuals in a situation where their real behavior is simulated to reveal their willingness to pay for particular qualities. Such methods are relatively onerous to put in place, but they make it possible to obtain a precise measurement of the value that a sample of individuals places on different sanitary thresholds, according to information received, for example (Hayes et al., 1995).

The methods described above are used to evaluate the benefits of drawing up a regulation to protect consumers’ health or to ensure that they acquire the quality they desire. Methods for evaluating the cost of regulations are generally based on estimates of the welfare loss of the agents concerned when they have to comply with a regulation. This includes, for example, the cost to firms of acquiring suitable equipment and many other direct and indirect costs. Kopp et al., (1997) provide illustrations of such estimates. One method involves valuing them as opportunities that had to be foregone. This includes the diversion of resources, the value of specific inputs that become useless, the excess cost of substitution technologies and the price differentials with replacement products borne by the consumer.

48 When human health is at stake, the topic is more sensitive since giving a value to illness avoided or even a human life saved is not always well accepted, especially in some EU countries. However, it is worth noticing that in the same countries, transportation and energy departments use such calculations on a daily basis when they decide priority investment in road safety or thresholds in dam buildings. Economic assessment would simply make choices more explicit, although concepts such as “the value of life” (actually, the value of life saved) can still be shocking for many people (Viscusi, 1993).

49 Cost-benefit analysis can be of particular interest as far as ethical or cultural values are concerned. If for example consumers place particular value on the fact that a good is produced without the use of biotechnology or irradiation techniques, estimating their willingness to pay means that the variation in consumer satisfaction resulting from a regulation prohibiting the technique in question can be quantified in money terms (Viscusi et al., 1995; Magat and Viscusi, 1993). One application could be the animal welfare issue, an awkward case where public opinion is being represented by vociferous consumer lobbies in Europe, and where scientists have proved being of little help. More economic assessment would make it possible to assess the real importance of this concern throughout the entire population.
Economic analyses and the settlement of disputes

Scientific and economic criteria

Present arrangements for the settlement of international disputes relating to technical and sanitary barriers have put economic analysis second to risk assessment. The SPS Agreement recognizes that governments may set higher sanitary standards than the ones used in other Member countries. In practice, this means that one can restrict imports on sanitary grounds, when a hazard is scientifically proved to exist, and that one cannot implement such import restrictions in the absence of proof of significant hazard. Although Article 5.3. of the SPS Agreement (and Article 2.2 of the TBT Agreement) mention economic assessment, such considerations only have a limited place in the settlement of sanitary and technical disputes, and cost-benefit analysis is far less central than risk analysis.

International agreements on sanitary and technical measures do not oblige countries to adopt only those regulations whose benefits exceed their costs (Roberts, 1997). In practice, many countries introduce import restrictions on sanitary grounds, to avoid the spread of pests for example, without making any prior estimate of potential losses. These may sometimes be very small in comparison with the cost to consumers caused by the regulation in question. If economic methods of calculation were used more systematically, the welfare gains resulting from the import restrictions could be compared with the welfare gains resulting from freer trade (James and Anderson, 1998; OECD, 1997b).

Assessing consumers’ concerns

In addition to helping decision-makers when choosing between different risk management options and when reviewing quarantine policies, cost-benefit analysis can also provide a sounder basis for discussing the role of “other legitimate factors” than health hazards, a problem that remains a live issue.

It is often argued that Codex standards and texts express policy choices and that such policy choices could extend to national policies in such areas as the environment, consumer concerns, animal welfare, and societal values. If these values were considered from an economic standpoint, the debate might lead to more convergence in the different points of view. Since it is based on a revelation of individual preferences, cost-benefit analysis can be seen as a tool for organizing many different pieces of information and points of views in a consistent framework.

Up to a certain extent, willingness to pay is a defendable measure of people’s concerns. Genuine consumer aversion for certain sanitary as well as cultural reasons, is reflected in a willingness to pay in order to avoid the products. Although there are still some technical difficulties and conceptual obstacles, contingent valuation techniques or experimental economics may help people from different cultures to find a common “metrication” for defining more objectively how genuine the concerns of their consumers are, and for finding solutions to complex issues which largely reflect cultural differences. In this respect, microeconomics can be seen as a useful negotiation language.
More economics in the settlement of disputes?

The procedure for settling sanitary and technical disputes under the auspices of the WTO could draw on the experience of competition policy. One accepted principle, including in international disputes, in competition policy is that certain forms of co-ordination between producers, which may indeed restrict competition, are not necessarily undesirable from a social standpoint. In most developed countries, as in most international organizations, public regulators (competition councils, anti-trust commissions, etc.) weigh up their advantages and disadvantages (Viscusi et al., 1995). Infringements of competition rules are permitted after an economic cost benefit analysis, and non-competitive arrangements are often accepted if it can be proved that they bring economic benefits and that the benefits are fairly distributed between agents. Regulators tend to take such decisions on a case by case basis, weighing the pros and cons and carrying out a mainly economic cost-benefit analysis, rather than applying immutable general principles. Less consideration is given to such principles in the settlement of sanitary and technical disputes, especially in the international arena.

All regulatory measures likely to hinder imports are sometimes classified as non-tariff barriers. Some particular studies in the agro-food sector use a broad definition of the term non-tariff trade barriers (Hillman, 1991, Roberts and DeRemer, 1997). However, Baldwin (1970) has suggested that non-tariff barriers should be defined as policies which reduce potential world revenue. According to this definition, policies which in practice restrict trade flows would not be regarded as non-tariff barriers if their effect was to correct market inefficiencies and increase world revenue. Mahé (1997) proposes extending the definition to include non-merchant effects. He suggests that measures whose elimination would cause welfare losses in some countries that are greater than welfare gains in other countries should be classified as non-tariff barriers. This definition is in line with both economic theory and the idea of using cost benefit analysis to arbitrate disputes.

When trade liberalization calls into question national regulations whose effect is also to reduce market inefficiencies, the welfare effects may be analytically ambiguous (Thilmany and Barrett, 1997; Bureau et al., 1998). If a WTO panel, for example, results in an obligation to import products that do not satisfy consumers’ethical, environmental or cultural concerns, antiselection mechanisms could cause substantial welfare losses. In practice, this could involve consumer boycotts or rejections, which would affect demand for all the goods concerned, both imported and domestic. Estimating overall costs and benefits would involve quantifying the different variations in welfare, raising awkward technical problems. Nonetheless, it is possible for welfare losses to be greater than welfare gains at a global level. It would be paradoxical if trade liberalization, introduced by an international organization in the framework of the settlement of disputes, were to result in more trade but less welfare. In such cases, Baldwin’s criterion could serve as a basis for settling disputes (Mahé 1997). Practical implementation could be based on a cost-benefit analysis which would seem to be more in line with the maximization of collective welfare than are rigid principles derived from uniform scientific standards.
Conclusion

58 Americans may wonder how come Europeans chose to ban hormone-treated beef and not tobacco, a far more hazardous substance. Yet, French consumers find it difficult to understand why Americans support a ban on “camembert” cheese, while they tolerate the risks linked to legal possession of handguns. Both American and French consumers will nevertheless look aghast at the Japanese who willingly pays an extraordinarily high price for eating the dangerous “fugu” fish, which regularly leads to death. Coping with such differences in the perception of risk within a uniform international code of standards and a “one size fits all” SPS agreement is bound to raise a lot of difficulties and frustrations. The issue is even more complicated when attributes of food quality other than safety are involved, i.e. cultural, environmental or ethical values.

59 Since the 1994 SPS Agreement, the reference to “sound science”, has helped make legislation more consistent across countries. However, it is unlikely to solve all the problems. Science is not always conclusive, scientists’recommendations are not always trusted nor well accepted by consumers, and scientific risk assessment do not make it possible to account for the genuine concerns of consumers on other aspects than health risk (i.e. cultural, environmental and ethical concerns) which are becoming a major area of contention in international trade (Bhagwati and Hudec, 1996). In any case, measuring the risk gives no indication of the loss of utility for consumers. When focusing on risk analysis as the SPS agreement presently does, one may run into the problem that although there is a very slight risk that a product is dangerous, the mere fact of knowing this to be the case could result in a very high proportion of consumers refusing to buy the product, and therefore high welfare losses (Josling, 1998).

60 Accounting for consumers’values, including factors other than health risks, could prove necessary in the future, if one wishes to avoid weakening support for trade. Food is a sensitive issue and free trade will be given a bad name if it is associated with the foisting on consumers of unwanted food. Genuine consumer aversion for certain imported products, for sanitary or cultural reasons, is normally reflected in a willingness to pay in order to buy other goods with which satisfies their concerns. Giving this willingness to pay greater importance in the settlement of disputes, by comparing it with the costs to other economic agents, would help take account of consumer preferences. This could also help to prevent detractors of a more open trading environment from linking trade liberalization with an obligation to consume products that do not correspond to consumers’aspirations.

61 Economic analysis raises a number of technical difficulties. However, the methodologies described in Box 1 have raised similar difficulties in the evaluation of environmental costs and benefits, though agreements on evaluation procedures have progressed. What was considered as not feasible 20 years ago (e.g. the use of contingent valuation for assessing environmental damages and calculating fines in a trial) is now widely accepted. One may think that economic analysis in the SPS area is at a stage comparable to that of economics in the environmental area two decades ago. In many cases, cost-benefit analysis can already be a useful negotiation tool. It will not solve everything, but given its potential contribution in the settlement of disputes, it deserves a more important role in the sanitary and phytosanitary area.
BIBLIOGRAPHY

Bibliography


NOTES


2. According the EU Commission, “the fervor with which sanitary and phytosanitary rules are applied in Australia suggests that the system operates as a trade barrier”. For example canned tomatoes which have failed a case pressure test are banned; it is nearly impossible for cereals to enter Australia even at times of severe drought (when domestic prices are very high) due to disease fears. Import permits are required for over 150 agricultural products, without which they are prohibited, and the significant financial costs of product control and testing, as well as the slowness of the monitoring process, serve to deter trade of chocolate, canned meat, olives, wine, herbs, poultry or pork meat. Quarantine regulations de facto prohibit the importation of a whole range of meat, dairy and other products.

3. The OECD noticed that there are eleven US agencies involved in import regulations, many of them with different methods of assessments, imposing an unnecessary administrative burden on would-be exporters to the United States. For example, imported foods are treated differently depending on whether they are regulated by the FDA or the USDA (the US data inspects meat and poultry products), and as a result, different processed products exported by the same firm are sometimes treated differently.

4. Chen (1997) highlights the incompatibility of European quality marks, which emphasize authenticity, with US legislation, and the difficulty of achieving international recognition for this type of mark.

5. The SPS agreement states that countries should have the objective of “consistency”. If, on the basis of a risk assessment, there is one in a million chance of a certain product causing a certain level of damage, the product should not be subject to greater restrictions than other products presenting a similar level of risk. The level of risk may be acceptable or not, the objective is that
the acceptable risk should not be different according to the product concerned (see Doussin, 1995).

6. According to the Ministère de la Santé (i.e. the Health Department), milk products were responsible of 5% of alimentary toxico-infections, that is 5% of 0.00016% of the meals served in 1995 (only a share of them being raw-milk products); unpasteurized cheese was however clearly involved in the death of one person in 1997 (to our knowledge, none in 1996 and 1998).

7. Simulations with the MISS model of INRA and ENSAR in Rennes (France) suggest that EU poultry meat exports could fall by 70% if the limitation of density asked by animal right activists (16-18 chickens per square meter instead of the present density of around 23-26) was adopted. The competition of cheap US chicken cuts on the EU market would also increase dramatically.

8. The precautionary principle is recognized in several international agreements (e.g. International Convention on the Protection of the North Sea, Rio Declaration, Framework Convention on Climate Change), in European law (Maastricht Treaty) and in national laws (French 1995 law on environment, US law on pharmaceutical approval). However, in many cases, European consumers' organizations give a much broader scope to this principle than the somewhat restricted version mentioned in international agreements. The Rio Declaration for example, only states that “in order to protect the environment, the precautionary approach shall be applied by a State, according to its capabilities. Where there are threats of serious or irreversible damages, lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation” (Principle 15 of the Declaration of the United Nations Conference on the Environment and Development, adopted in 1992).

9. In December 1998, the Conseil d'Etat postponed the final decision, because the legal consequences of this principle were unclear and contradicted other legal texts (i.e. the EU Directive 90/220 which regulates the approval of deliberate releases of genetically modified organisms into the environment). It temporarily upheld its preliminary ban on Novartis genetically engineered maize and asked the European Court of Justice to give its advice on the legality of the initial approval.

10. Article XXa allows import restrictions when they are “necessary for the protection of public morals”.

11. In 1990, the EU imposed a moratorium on the use of BST until the end of 1999 (though without banning imports of dairy products from countries where BST is allowed). The Codex Alimentarius approached the problem of BST and growth hormones from the standpoint not of fanning practice but of measurable residues, which proved to be low in both case. The consumer representatives and several countries argued that consumers were opposed to the use of BST and that BST improved neither the quality nor the health characteristics of milk, and asked to be allowed to ban it. The European Union asked for “legitimate factors other than scientific analysis” to be taken into consideration. But the vote to defer the decision was taken because some delegations had contributed scientific evidence which raised questions about the weakening of the immune systems of animals treated with BST and argued that this could increase the risk of infection, the need for treatment and hence levels of antibiotic residues.

12. The French Institut National de la Recherche Agronomique (INRA) has recently started several academic studies involving either contingent evaluation (the measurement of willingness to pay for guaranteed prion-free meat, for “animal welfare correct” food, at INRA-Rennes) or experimental economics (organic food, GMO-free products, etc., at INRA-Ivry).

13. The economist Claude Henry defended such a position some 15 years ago in environmental-related issues. On the basis of examples in the United Kingdom, he showed how cost-benefit analysis could be a constructive language for expressing public concerns. This paper was an important step in convincing environmentalists that serious economic evaluation could be in their interest, and the public in general that economics was not the evil science that many
believed it was (Henry, 1984; we do not know whether this seminal paper has ever been published in English).
9. Food Security in India
The Role of Public Distribution System

M.L. Chhipa

1 The paper is an attempt to review the working of food security system in India. According to Chhipa, although policy makers were concerned about food scarcity since the early fifties, a comprehensive policy of food management consisting of procurement, buffer-stocks and public distribution through fair price shops was only formulated in 1965 with the setting up of Food Corporation of India and the Agricultural Prices Commission.

2 The setting up of an widespread PDS of specified quantities of rice, wheat, sugar and edible oil at special prices, was supplemented during the Fourth Five Year Plan (1969-1974) by many measures like restriction on foodgrains movement; regulation of private trade; regulation of bank advances against foodgrains and ban on forward trading.

3 The Fifth Five Year Plan (1974-1979) emphasized the need for reaching all parts of the country and rural areas. This policy of widespread PDS continued up to the end of the Seventh Plan period, in 1990. At the end of the Sixth Plan (1980-1985) was initiated the “Integrated Tribal Development Project” (ITDP) where wheat and rice were made available at 33 per cent below the PDS prices. Another scheme, the mobile “fair price shops”, was introduced in 1986-1987. PDS was also made a part of a Minimum Needs Programme. The minimum levels of stocks that should be kept at different periods were worked with expert groups. It was only during the Eight Five Year Plan that the need for proper targeting of the weaker sections and exclusion of non-poor and making FCI more efficient was emphasized. Consequently, in 1997, a “targeted public distribution system” (TPDS) was introduced, which distinguished between those below the poverty line and those above it.

4 In addition to the Central government, many states like Andhra Pradesh, Gujarat and Himachal Pradesh, Tripura, Madhya Pradesh have introduced their own food security schemes. The most important state scheme is in Andhra Pradesh, under which subsidised rice is sold to all persons who have annual income of up to Rs 6000. The PDS system has
become quite large and nearly 10% of total foodgrains production is procured each 
season.

5 Chhipa then undertakes a review of various studies on public distribution system in India. In particular, he is in agreement with findings of the recent study of PDS by Jharwal. This study brings out firstly that there is no urban bias in PDS and secondly that for purchase of rice, 40 per cent of rural poor and 46 per cent of the urban poor use “fair price shops” – the distribution outlets of the PDS –, the proportion being slightly lower in wheat. In addition, foodgrains are being made available under the anti-poverty programmes. Jharwal brings out that the number of beneficiaries has increased and the rural areas have an overwhelming predominant share in the PDS. It is further estimated that PDS beneficiaries received about 90 per cent calories from the purchased quantities of wheat and rice and 44.31 per cent of that was contributed by the PDS. Finally, PDS has led to an income transfer, for it generates additional purchasing power for the poor as they could make some saving from lower prices through the fair price shops.

6 The next issue discussed by Chhipa deals with WTO and food security. Chhipa points out that the liberalisation of the economy has led to increased poverty and had an adverse impact on food security. In India, growth of food production has been ahead of its population growth since independence. However, the liberalisation of the economy since the nineties has led to diversification from food to non-food crops. Poverty ratio has increased in the post-reforms period and the percentage share of expenditure on food for poor families has increased from 64.01 per cent to 65 per cent in 1992 in rural areas (Jharwal, op. cit.).

7 Chhipa is therefore not very optimistic about the impact of WTO on Indian agriculture. He agrees with the findings of the Centre for the World Food Studies that trade liberalisation would fail to solve the hunger problem in developing countries. Significant reduction in the poverty would not be possible, and considerable sections of the world population would remain exposed to food insecurity. The impact on food security would depend upon the extent to which the new policies promote economic growth and domestic availability of foodgrains. For the time being, the main rationale of Public Distribution System remains valid, for as many as 30 per cent of the people in India today are poor and more than two thirds of their income is spent on food.

8 Coming to policy implications, Chhipa favours targeting of PDS but would like targeted PDS scheme to give much more than 10 kg per month per household. He would like the Food Corporation of India to improve its buffer stocking operations, and improve its functioning especially in the tribal areas. Finally, he would like the locally elected Panchayati Raj System to be associated with the responsibility of planning and implementing poverty alleviation programmes.

9 In conclusion, Chhipa feels that the likely impact of the WTO regime on price volatility is expected to be taken care of by the well spread out system of public distribution. As the PDS is serving the poor and vulnerable sections of the society, and with targeting being done by government, the subsidy being provided to meet their minimum needs has no scope for being tempered with.
NOTES

1. Professor Chhipa has prepared for the seminar a very comprehensive paper on the Public Distribution System, the core of the food security Indian policy, enriched by an extremely large collection of tabulated data. The paper was too long for being incorporated to this volume. We are therefore offering here an abstract of the study, which helps to locate the traditional fundamentals of the food policy in India, a key parameter when Indian agriculture is opening to the world (The editors).

10. Food Safety and WTO: a Scientific Perspective?

Jean-Pierre Doussin

Preliminary remarks

For a better understanding of the issues debated in this paper, two rounds of observations might be useful. The first one deals with the definition of “food safety”, which must not be confused with the broader concept of health. The second one would like to clarify what is the international approach of the food safety issue, as observed through two key institutions in this field: the World Trade Organization and the Codex Alimentarius Commission.

The concept of food safety

As close to each other they could be, the two concepts of food safety and health through food must not be confused.

According to the WHO, health could be defined as what sustains the physical and mental well being of people. Once this concept is applied to food, two ways to address the health issue are to be distinguished:

• the “negative” approach: food must not compromise the health of consumers by any chemical, biological or microbiological element or substance it might contain.
• the “positive” approach: food is perceived as per its nutritional qualities, and as far as it helps to be in form, sustains physical performance, slows down ageing, prevents sickness, and, more generally, obstructs the accidents of life.

The first approach alone refers to food safety, and defines the field of the standard studies of risks related to food additives, pesticides residues, veterinary medicines, microbial germs and their toxins, and other contaminants.
The international approach of food safety: WTO and the Codex Alimentarius Commission (CAC)

5 The world over, the protection of the consumers' safety is an integral part of the major duties of public authorities, which elaborate in this regard regulations and official controls. This is not such an easy task, and the FAO and the WHO had decided to set up, in 1962, a body able to guide the national governments in this field: the Codex Alimentarius Commission.

6 In the nineties, the international community interfered a second time, when the World Trade Organization was set up, and when the issue of the Sanitary and Phyto-Sanitary measures (SPS Agreement) was discussed. The order of the day was no more to promote food safety as such, but to avoid that government regulations and controls impede the liberalization of international trade. In other words, the first policy, while recognizing the benefits generated by a facilitated international trade, was basically concerned with the protection of consumers. The second approach, on the other hand, was essentially focussed on trade: the rights of the States to work for the protection of consumers and to place the level of such a protection at the level they wish were recognized, as far as these concerns were not going astray, and used as a tool for hindering trade.

7 Beyond these different approaches, a consensus emerged: any safety regulation enacted by any government was supposed to be scientifically based, on acknowledged procedures of risk analysis.

8 To agree on principles does not however elicit an agreement on implementation. In the diverse realm of government policies on food safety, consensus and disagreements coexist in various ways. We shall address this issue in the next two sections devoted to the key concept of risk analysis, presenting, by the way, the French positions in this regard.

Food safety and risk analysis: principles

9 The idea was not new, but has been really acknowledged only recently: as far as food safety is concerned, public authorities and private companies act rationally only if they define risk management as their goal, in order to totally do away with the risk, or in order to reduce it to an acceptable level – a more realistic hypothesis. Any policy, any implementation, which fails to pay attention to this basic truth will most probably be inefficient – which would be a serious failure – or useless – which is not acceptable in economic terms. Resources are by definition limited. The art of governance requires them to be used at their best: where needed, and only there. Risk management presupposes that the risk is assessed, and its parameters identified. One has to know where the danger lies (microbial germ, chemical element, biological substance...), which doses might be insecure, and what would be the effects on the consumers if the line is crossed; which implies that one knows the level of contamination, the ingested quantities related to food habits of the consumers, etc... This alone determines accurately what is the effective risk for a given population.

10 “Risk assessment” and “risk management” have hence become the key words defining the present approach of consumer safety in general, and food safety in particular. Risk
assessment is to be conducted by scientists, who must be granted full autonomy at work, while risk management is to be left in the hands of political decision-makers.

The SPS agreement set up in the WTO frame and mentioned here above defines the scientific rationale of regulations as an absolute compulsion, which therefore calls for a risk analysis methodology.

On its side, the Codex Alimentarius Commission has strongly relied upon risk analysis for preparing the texts distributed to governments. The two “god-mothers” of this overall policy, the FAO and the WHO, have organized several rounds of consultation of experts from all over the world, in order to define with them clear procedures helping both CAC and governments to carry on their responsibility on practical issues, in what may be defined, on many accounts, as a new area. Furthermore, the CAC has been recognized, under the SPS agreement, as the reference body judging the acceptability—or the non-acceptability—of government decisions in relation to international trade.

The role of the two scientific bodies working in this area: the Joint Expert Committee on Food Additives and Contaminants (JECFA) and the Joint Expert Meeting on Pesticides Residues (JMPR) is being reassessed, in order to offer a better balance and to improve the complementarity of the expert committees in charge of risk assessment and the CAC office in charge of risk management. In the meantime other bodies are under consideration, or to be set up: the proposal to create an expert committee on hygiene, similar to the JECFA, has been approved.

France has followed these issues very closely, and has established two key institutions in this regard: the Food Consumption Observatory (Observatoire des Consommations Alimentaires: OCA) and the Food Sanitary Safety French Agency (Agence Française de Sécurité Sanitaire des Aliments: AFSSA).

The Food Consumption Observatory has been set up about ten years ago by three Ministries of the French Government having a say in food quality, in order to be able to conduct an evaluation of the exposition of consumers to risks, a key parameter of the risk analysis. It is not enough to identify and to characterize a danger: one has to know also if the consumption of the food vector of this danger is really exposing the French consumer to risk. The FCO collects all national data on two grounds:

1. evaluation of the extent of danger in different food categories, i.e. the level of contamination by any type of residue and contaminant, or the presence of any additive in a given food category (for instance, the cadmium content of cereals)
2. level of consumption of these food categories by 97.5% of the consumers.

As a result, it has been possible to evaluate, for instance, the maximal consumption of aflatoxines by French consumers (4 μg per capita per day) and to show that, except for sulphites, the consumption of additives was not a problem. It has also been demonstrated that, out of 167 pesticides tested, 8 of them called for an additional study of the possible impact of consuming more than the acceptable daily intake.

Created by an Act of July 1998, the Food Sanitary Safety Agency has started effective work in 1999. It is the umbrella agency regrouping all the scientific bodies in charge of risk assessment, including the FCO. It is expected to improve the efficiency of the French system of risk assessment by pooling resources presently disseminated in various agencies which sometimes have overlapping goals. The new set-up gives due attention to the necessary independence of scientific experts. In other words, these experts have to enjoy greater resources without losing their autonomy.
All these developments underline how all governments, unanimously, wish to give themselves the means and the tools to protect efficiently the health of consumers. However, agreements on principles do not prevent strong divergences on modes of action to surface.

Food safety and risk analysis: practical issues

At the level of risk assessment, divergences are manifest in the behaviour of various states. These differences are much greater as far as risk management is concerned.

a) During the assessment procedures, divergences are mostly noted in the field of risk assessment policies. The following questions do not receive the same answers everywhere:

- Are the expert bodies endowed with required resources?
- Are these experts used at their best? (see for instance the French answer: the Food Sanitary Safety Agency).
- What is the field of action open to scientists?
- Which risk level is defined for their expertise?
- What is the target population: risky groups, or the whole population? (the French Government asked the FCO to cover 97.5% of the whole population: a high level of protection, which is furthermore complemented by occasional studies conducted on specific target groups, such as children, diabetics, etc.).
- Which risks are defined as top priority? For instance, which risk up the priority scale must be given the utmost attention, and the highest resource allocation: salmonella in food; genetically modified organisms; the impact of bovine spongiform encephalopathy?
- What must be considered as most important: objective criteria related to the seriousness, the probability and the frequency of the risk, or the consumer public opinion about the said risk?

In such a field, the perceptions of social groups are not irrelevant to business companies and to the governments, and may vary a lot. In France as well as in Europe, for instance, the wishes of the consumers impel governments to strongly restrict the use of hormones as growth promoters or favouring milk production. For answering a public demand distrusting the use of such substances, expert analyses on hormones will therefore be conducted very often.

b) As far as risk management is concerned, differences turn out to be ditches, if not precipices.

In the field of risk management techniques, radical oppositions are noted. In international negotiations, a classic polarity opposes those who believe, as Indians and French do, that food safety, whatever the difficulties faced, must be maintained all along the transformation line, for food deserves a permanent respect; to those who plead for a final aseptisation, by a physical or a chemical process. More than divergent scientific approaches, these positions reflect a struggle between two philosophies, between two cultures, one of them focussed on food as an object, the other one seeing in food a subject.

Radical oppositions appear as well when the relevance of “science” is discussed, partly linked to what has been mentioned above.
For some experts, science (understand the key sciences as biology, chemistry or sciences derived from them) is the only factor to be taken into account. Science determinism is clear: when science (through the techniques of risk assessment already mentioned) detects no noticeable or unacceptable risk, there is no room left for justifying any restriction.

For other experts, in France and in most European countries, science must obviously be taken into account as often as possible, for the scientific knowledge of risk is a preliminary to action. But this being said, other parameters must also be considered, such as the preferences or the concerns of the consumers. There is absolutely no scientific justification for opposing food irradiation in the name of food safety. Moreover, this technique is an extremely efficient way to guarantee the safety of food (for instance against the microbial contamination of some animal items by salmonella). This process is no doubt much safer than chemical treatments (such as those used for the debacterisation of spices for instance). However, some groups of people may oppose food irradiation with such virulence than the political authority may be unable to authorize it, as Germany testifies till date. At the global level, the Codex Alimentarius itself has been driven to discriminate in a way against this technique: on food labels mention of irradiation has been made compulsory, while other equivalent chemical processes (such as fumigation) are not to be indicated.

In countries not believing in scientific determinism, the principle of utility governs the decision to authorize or not the treatment of plants, animals and food, or the use of any additive. Why take a risk, potential or even unknown as it may be, if there is a way to do without it? In French law, the first criterion considered for authorizing the use of an additive stands is its recognized utility. The same principle is adhered to by the Codex Alimentarius, but its application is constantly questioned, as the research work conducted by the Commission sustains regular reassessments. However, it is not easy to define with full objectivity the criterion of utility. How to evaluate utility when colouring substances are added to milk for preparing some cheeses, and discolouring ones are needed for elaborating other types of cheeses, in India for instance, a process that some states, such as Malta, do oppose? Whatever experts may think about it, the utility criterion is more and more advanced by consumers (and in France by producers as well, who have adjusted, more than producers from other countries, their process of fabrication to the long established and imperious consumer’s will).

Such a case would legitimate, I believe, the application of what is called the principle of precaution. As a matter of fact, if this principle is undoubtedly bounding in front of a danger science is not yet able to understand totally, but known to be serious (the consequences of the bovine spongiform encephalopathy for instance), it could as well be followed in less serious cases, or in front of mere potential risks, when the origin of the danger could be suppressed easily. The best example here is undoubtedly the use of bovine somatotropine (a “milky” hormone pushing highly productive milk cows to increase by 10 to 15% their milk production). JECFA has determined that this hormone is harmless to human beings. A few dissident voices have however argued that risks, as low as they could be, are never non-existent: indirect risks may occur, as the cattle so treated received more antibiotics, or their milk may possibly contain more retroviruses. As only highly productive milk cows may be usefully treated that way, one cannot consider using...
this hormone outside developed countries and intensive agriculture. The consequences of
this hormone treatment are clear in various fields:
• it pushes up milk production in countries which are already producing more milk than
needed
• it increases the imbalance of agricultural land use, for it benefits intensive agriculture in
areas which are already forward
• it requests special protein-enriched cattle food for cows having to adjust to their hormone-
backed increased milk production, a process costly in terms of energy and non-renewable
resources, and detrimental to the use of grass-land natural resources
• it does not bring a clear benefit to consumers, because it is not sure that the price of milk is
going down despite an increased production.

Therefore, it seems legitimate for a state, or a group of states (the European Union
for instance), adhering to the utility criterion and to the principle of precaution to ban the
use of bovine somatotropine on its territory, and to forbid the import of produces
originating from treated cattle. The WTO, however, has condemned the European Union
for supporting the ban of growth hormones in animal husbandry without offering a
credible risk analysis.

This debate is now running on the forefront of the international stage, more acute than it
ever was. What is at stake is well known: free circulation of food, and the conquest of
international markets.

Conclusion

I would like to conclude by giving emphasis to a point dear to Frenchmen: the quality
approach and the safety approach are fully interlocked.

The way food safety is operated is not without consequences upon other parameters, and
particularly upon the taste of food (see the effect of chlorinated water on chicken meat).
Consequently, the WTO position arguing that all equivalent means are acceptable (as
advanced in the SPS Agreement) seems to be rather debatable. This issue is indeed one of
the noticeable points obstructing the search for mutual recognition between the USA and
the European Union in the field of food safety and food trade.

It must be noted in this regard that the willingness of some countries (such as France and,
I believe, India) to “respect” food, to urge for taste quality, and to select consequently
safety control relying upon the implementation of risk prevention procedures all along
the line of production pay very high dividends sometimes in the field of risk management
as well. An example has to be constantly recalled here: the extraordinary quality control
of spring and mineral water in France (soil analysis in the spring surroundings, bottling
at the stream emergence itself and permanent analysis of chemical and microbiological
particulars of the water at the spring) made any sanitizing treatment useless. The public
authorities may therefore recommend this spring and mineral water to babies and young
children, and to immune deficient people. On the contrary, in countries not mastering
spring and mineral water control and production, treatments defined as necessary, such
as ozonisation or chlorination, are unable to eradicate very toxic germs, Cryptosporidium
for instance. Such countries must therefore prepare special products for target
populations particularly exposed to risk, who are recommended “sterile” water.
Countries which believe in the “subject” food are accustomed to use “the good living” against the bad one, i.e. to use positive microbial germs against the presence or the expansion of negative germs. Clearly, studies focussed on the concept of “barrier flora” have a future...

One has therefore to question the concept, dear to the WTO and to the SPS Agreement, of equivalence of means, and equivalence of results. Debates upon such a topic are indeed not supposed to come to a close very soon!
IV. Trade in agriculture and WTO: benefits and problems
11. Trade and Agriculture: Potential Benefits and Problems. A Reading from India’s Perspective

Ashok Gulati

Introduction

This paper dwells basically on two issues: (1) will India gain from opening up its agriculture to the world economy as envisioned under the Uruguay Round Agreement (URA) on agriculture; and (2) what should be India’s negotiating stand with respect to agriculture in the coming round of WTO 2000? To respond to these issues, we first quickly run through India’s commitments under URA with respect to market access, domestic support and export subsidies in agriculture, and where does India stand vis-a-vis its commitments (section II). In section III we discuss what would be the probable gains or losses if India completely opens up its agriculture, unilaterally, to the world markets. And finally, in section IV, we take up the issues that India may like to negotiate in the WTO 2000 round.

The agreement on agriculture and India’s commitments

It is well known that the Agreement on Agriculture, under the URA, is an attempt to reform world trade and production of agriculture, which is highly distorted by large-scale subsidies being extended to the agricultural sector in most countries. Studies reveal that these direct and indirect agriculture-related subsidies manifest themselves into distorted world prices of commodities. The domestic and export subsidies coupled with the complex protective measures such as quotas, variable levies and minimum import prices have depressed and de-stabilized world prices. Distorted world prices, in turn, resulted in
a situation of “deceptive comparative advantage” preventing efficient producers around the world from realising the benefits of their true competitiveness. The objective of the URA, therefore, is to limit these distortions and hopefully eliminate them in due course.

3 The Uruguay Round commitments in the area of agriculture fall under three main categories, namely, market access, domestic supports and exports competition, which are described below.

**Market access**

4 Under market access commitments, all member countries of the GATT are required to (i) replace all types of non-tariff barriers with tariff barriers, and (ii) reduce the levels of tariffs under a time-bound programme. These levels are to be reduced by 36 per cent in the case of developed countries and by 24 per cent in the case of developing countries. The period during which these reductions are to be made varies from 6 years in the case of developed countries to 10 years in the case of developing countries. The least developed countries are not required to undertake these reductions. In addition to these commitments, this measure also calls for maintaining current access opportunities and the establishment of minimum access tariff quota. This minimum access tariff quota is to be established at reduced tariff rates for those basic products where the current market access is less than 3 per cent of domestic consumption. During the implementation period this minimum access tariff quota has to rise gradually to 5 per cent of domestic consumption. However, if there is a surge of imports due to unfair trade practices when these steps are being implemented, the special provisions of the agreement allow any country to impose additional duties. The extent of these additional duties will depend upon the difference between the import price and the trigger price.

5 Where does India stand with respect to market access? India has bound all her tariff lines of agricultural commodities. As a result, it is not obliged to provide minimum access of 3 per cent (or 5 per cent in due course) of domestic consumption. India has submitted high tariff bindings of 100,200 and 300 per cent for most of its agricultural commodities (see Table 1 for commodity specific details). Most of these tariff bindings appear to be prohibitive if they are compared with actual tariffs or with current and past implicit rates of protection. It is important to note, however, that in the past, domestic prices of some products have occasionally exceeded border prices by even higher margins than these high ceiling bindings. Examples are copra and coconut oil (tariff binding 300 per cent), sugar (tariff binding 150 per cent), and some oilseeds (tariff binding 100 per cent). Nonetheless, not all the agricultural tariffs were bound at these prohibitive levels. The exceptions are rice, maize, sorghum, millet, and skimmed milk powder for which ceiling binding were zero; soya oil, olive oil, rapeseed, colza and mustard oil for which the ceiling bindings are 45 per cent (compared with 300 per cent for other major oils); dairy products (0 to 40 per cent); natural rubber (25 per cent). So far, a zero ceiling binding in the case of rice, maize, sorghum and millet has been of very little relevance as India has been maintaining quantitative restrictions on the imports of these from other countries. The reason underlying this is the Article XVI E-B, which permits a country to impose quantitative restrictions on imports up to the end of the implementation period if there is a problem with her balance of payments account. And India has been seeking cover under this special provision. But this is not likely to continue for long. A tough stand has already been taken by her various trading partners on this issue. The USA has taken India
to the Dispute Settlement Body of the WTO over this issue and the case is under consideration. In early 1998, agriculture provided about 800 items out of a total number of 2700 items being covered under quantitative restrictions. Thus the removal of BOP cover can have some consequences on imports of agricultural commodities.

In view of the imminent removal of QRs, India has now re-negotiated tariff for those commodities in which the tariff bindings were low or even zero to reasonable levels ranging between 60 per cent to 80 per cent.

But how big that would be depends upon how high the domestic prices are in comparison to import parity prices, which we shall take up a little later. At this stage, it is worth noting that India did start opening up her agricultural sector to world markets partly in response to its commitments to the WTO but largely as a part of her own economic liberalization program. Steps to liberalize agricultural trade were initiated in early 1994 followed by a number of bolder reforms during 1995 and 1996 (Table 1).

In January 1994, for example, government abolished the minimum export price (MEP) of basmati rice; in March 1994 the import controls on sugar and cotton were removed; in October 1994 the MEP (export controls) of common rice was lifted, and controls over private sector exports of durum wheat were removed. Far bolder steps in 1994 were in the edible oil sector, which hitherto was highly protected through quantitative restrictions on imports and exports. Imports of palmolein were brought under open general license (OGL) policy with 65 per cent import duty in April 1994, while simultaneously allowing exports of vegetable oils in consumer packs up to 5 kgs.

In February 1995, a major decision was taken to put almost all-edible oils (with a notable exception of coconut oil) under OGL, attracting an import duty of 30 per cent. In the case of palmolein, this meant a massive reduction from 65 per cent to 0 per cent. In March 1995, imports of butter-oil and skimmed milk powder were decanalised and delicensed. In May 1995, exports of non-durum wheat were allowed subject to a quantitative ceiling. In May 1995, the scope of controls exercised over the coffee industry by the Coffee Board was also reduced and the bulk imports of roasted coffee were delicensed. In June 1995, import duty on pulses was reduced from 10 per cent to 5 per cent.

In July 1996, import duty on edible oils (except for coconut oil) was reduced from 30 per cent to 20 per cent and in July 1998, the basic import duty was reduced to 10 per cent.

These reforms were to some extent motivated by the long delayed recognition of the considerable export potential of India’s major crops and in part by the widening gaps between domestic and international prices due to the devaluation of the Indian rupee. In addition, some of the trade policy reforms have also been in response to the short-term exigencies such as building up of stocks (foodgrains) and meeting domestic shortages (cotton, sugar and edible oils). Thus the reason for abolishing and relaxing export controls on rice and wheat was that the country had surplus stocks and the FCI was finding it difficult to handle these surplus stocks. Similarly, decanalisation of cotton, sugar and edible oil imports was to deal with shortages of these commodities in the domestic market and to control inflation. It might be said that the trade policy reforms initiated since 1994 were perhaps more in response to short term exigencies than as a part of the exercise to comply with India’s obligation to URA. To that extent, even doubts about their likely permanency can be raised. Nevertheless, Indian agriculture was exposed to world markets of some major commodities, and in the years to come, while...
granting some hiccups in the process, the direction seems to be towards a relatively freer economy.

**Aggregate measure of support**

12 Aggregate measure of support (AMS) is the annual aggregate value of market price support, non-exempt direct payments and any other subsidy not exempted from the reduction commitment expressed in monetary terms. Thus, to estimate AMS for Indian agriculture, one would have to first work out the level of support for each basic product (like rice, wheat, cotton and so on) through (a) market price support, (b) non-exempt direct payments, (c) other subsidies not exempted from reduction commitments. Support, which falls under the purview of non-product specific (subsidies on various inputs which go to many crops) is totalled into one non-product specific AMS expressed in monetary terms. Policies which have been excluded from reduction commitments are government spending on research, disease control infrastructure and food security. These also include structural adjustment assistance, direct payments under environmental programmes and regional assistance programmes.

13 Non-exempt direct payments are to be computed by using the gap between external reference price and administered price or by using budgetary outlays.\(^4\) Input subsidies and other policies like marketing cost reduction measures are to be determined by using budgetary outlays. However, if budgetary outlays do not reflect the full extent of a subsidy, the subsidy has to be worked out by using the gap between the subsidised price of input in question and a representative market price multiplied by the quantity of that input which is used.

14 If the product specific and non-product specific AMS does not exceed 10 per cent of the total value of agricultural product in the case of a developing country (5 per cent in the case of a developed country), the country is not required to reduce the product specific and non-product specific support. However, if the AMS exceeds 10 per cent of the total value of agricultural production, it is required to be reduced by 13.3 per cent in the case of a developing country (20 per cent in the case of a developed country) of the value that does not qualify for exemption during the implementation period. The period given for implementing this reduction is 6 years for developed and 10 years for developing countries. The least developed countries have been exempted from these reductions.

15 Where does India stand with respect to AMS? India has basically two types of support operations for farmers. First, market price support, which is in the form of minimum support prices announced by the government for different commodities, based on the recommendations of the Commission for Agricultural Costs and Prices (CACP). Second, the supports in the form of input subsidies, which are on inputs like fertilisers, irrigation, electricity, credit and seeds. The third type of support, which falls under the head of non-exempt direct payment, is not given to farmers in India. By adding up the product specific and non-product specific AMS, one gets the total AMS. The calculations for India show that AMS for 17 major commodities for which India maintains market support programme is negative (Table 2). This negative support (or net ‘implicit’ taxation) is due to the fact that prices of different crops are fixed by the government below their international levels (barring rapeseed, mustard and sugarcane).

16 The AMS in India has remained negative over the years and hovered within a narrow range during the period 1986-1994. The estimates of AMS, as given in Table 2, show that
there is no significant change in the AMS over the triennium ending TE 1988-89 and TE 1994-95.\textsuperscript{9} But in terms of percentage to gross domestic product (GDP) from agriculture, the extent of taxation (negative support) has come down from minus 23 per cent to about minus 18 per cent during this period.\textsuperscript{10} The reduction in taxation during TE 1994-95 reflects the sharp increases in prices of commodities such as wheat and rice announced during 1992-93 and 1993-94.\textsuperscript{11} This taxation of the agricultural sector reflects the fact that negative support of some crops such as rice, wheat and cotton outweighs the positive support received by crops such as oilseeds and sugarcane and the subsidies on inputs such as fertilisers, irrigation water, electricity and credit. The result has been that agriculture in net terms remains taxed through trade policy.

17 The latest review of India’s trade policy by the GATT secretariat (WTO, 1998) also reveals that the product specific AMS to Indian agriculture, based on calculations of 19 commodities,\textsuperscript{12} in the year 1995-96, was -38.47 per cent of the value of these commodities. The non-product specific AMS was 7.52 per cent, thereby providing a total product and non-product specific AMS to the tune of US $23746 million, which comprises almost-31\% of the value of these 19 commodities. A negative AMS exempts India from reducing its domestic support levels either in aggregate terms or for any individual crops.

Export competition

18 In the area of export competition, the GATT agreement calls for reducing direct export subsidies by 36 per cent from their 1986-88 level in case of developed countries over a period of six years. The quantity of subsidised exports by the developed countries is to be reduced by 21 per cent during the same period. In the case of developing countries direct export subsidies are to be reduced by 24 per cent and the quantity of subsidised exports is to be reduced by 14 per cent. These reductions in the case of developing countries are to be carried over a period of 10 years as against six years in the case of developed countries. The least developed countries are exempted from these reduction obligations. Export subsidies included in reduction commitments are direct subsidies paid by the government or any other agency, including payments in kind; payments that are made from the proceeds of levy imposed on agricultural products; subsidies given to reduce the costs of marketing including internal handling, processing, international transport and freight subsidy on export shipments.

19 Where does India stand in this regard? Indian exporters of agricultural commodities do not get direct export subsidy. The only subsidies available to exporters of agricultural commodities are in the form of: (i) income tax exemption on profits from export sales and, (ii) subsidies on costs of freight (export shipments) of certain products like fruits, vegetables and floricultural products.

20 Since these payments by developing countries are exempt from the reduction commitments during the implementation period, these will not cause any adverse impact on agricultural exports from India, at least during this period. In order to encourage exports of agricultural products these subsidies can be continued for the time being. Once the export supplies become self-sustaining during the adjustment period, these will need to be withdrawn.

21 It is well documented in literature that most of the developed countries operate export subsidy programmes to enhance their exports. According to one estimate (GATT Secretariat, 1993) developed country export subsidies amounted to $16.4 billion during
the base period. These countries would be required to gradually reduce their export assistance programmes. This will open up new markets for developing countries like India, which are not subsidising their agricultural exports. Therefore, reductions in export subsidies and subsidised exports of developed countries will have greater implications for developing country exports. Countries like India could benefit not only from improved market access opportunities in the developed and developing countries, but also from the reduction of subsidised exports and trade distorting production, incentives prevailing in developed countries.

## Potential gains and losses in trade

This brings us to our next question: will India gain from opening up its agriculture unilaterally? There is a large grey area about how different countries would react to commitments under URA, and how changes in the trade policies of each country would affect world markets. Although there have been attempts in studies to model the changes in world agriculture in response to URA, they suffer from severe limitations. A review of this literature reveals that changes in world prices of different agricultural commodities are going to be rather slow in response to the commitments under URA (Sharma, Konandreas and Greenfield, 1996; Goldin and Mensbrugheee, 1996). One of the reasons behind this slow change is the “dirty tariffication” done by some developed countries such as the European Union (Ingco, 1995). It is, therefore, giving rise to a widely shared belief that, as far as agriculture is concerned, URA has achieved a great deal by defining rules for world trade in agriculture, but rather little in terms of the immediate opening up of markets (Martin and Winters, 1996). For this reason, it would be safer to presume that world agriculture would not change dramatically, at least for the next 5 to 8 years, and then work out the potential gains and losses resulting from India's unilateral decision to open up completely its agriculture.

Elsewhere (Gulati and Kelley, 1999), we have worked out in detail the implications of India’s opening up her agriculture through a multi-market model, here we briefly present our results. We first provide a brief review of the price wedge between domestic and world prices of major agricultural commodities, as prevalent in early 1990’s (Table 3). This offers an idea about the direction and degree of change that Indian agriculture can experience with liberalization of her agriculture. This is followed by the estimates of potential gains (or losses) in production and exports and imports under some alternative assumptions, including those relating to rationalization of input subsidies such as on fertilisers or irrigation.

The price wedge as shown in Table 3 indicates that the production basket of the agricultural sector is likely to witness a change with trade liberalization. Commodities such as rice, wheat and cotton are likely to expand at the margin while some others, especially oilseeds will shrink (or stop expanding). Commodities likely to experience significant reduction in their domestic prices are edible oils and pulses, as their prices are much lower in the international market than in the domestic market. These changes in the production basket will be accompanied by contrasting changes in the consumption basket, i.e., increase in the consumption of those commodities whose prices fall and vice versa. The changes in production and consumption will ultimately affect the country’s exports and imports of these commodities. This is what is presented in Table 4.
The methodology used is that of multi-market model. Rice, wheat and cotton are treated as exportable and pulses and edible oils as importables. Rice, coarse cereals, and sugar, are endogenized taking into account the limited size of the world market. Four scenarios are created assuming external trade liberalization and different degrees of rationalization of input subsidies. The results of simulation exercises under four scenarios (Table 4) suggest that with opening up of imports and exports of agricultural commodities at zero duty (scenario 1), rice exports are likely to go up to 3.76 million tonnes, wheat exports to 5.1 million tonnes, sugar to about 0.34 million tonnes and cotton to 0.55 million tonnes (more than 3 million bales) (Table 4). However, there would be imports of edible oils to the tune of 1.25 million tonnes and of pulses by about 0.97 million tonnes. As the subsidies on irrigation and fertilizers are rationalized, the exports of wheat may somewhat reduce, but still would be within the region of 2 to 3 million tonnes.

Of course these results are based on the assumed supply response (for details, see Gulati and Kelley, 1999) of different commodities to price changes, and we feel that the results under alternative scenarios are reasonably robust. This suggests that overall, there is a potential gain to Indian agriculture resulting from trade liberalization. There are issues regarding the impact of all this on the cost of living of the poor and so on, which is not taken up here, but has been analysed in Gulati and Kelley (1999), which also is not very adverse.

Agriculture in WTO 2000: negotiating issues for India

Given the results that India has potential gains from the liberalization of agriculture, it is but obvious that India should play an active role in supporting faster liberalization of agriculture and rationalization of the subsidy regime being practised in several developed countries. India need not be ‘defensive’ in opening up her own agriculture. If at all, it needs to be somewhat ‘aggressive’ in negotiating faster liberalization. There is enough scope for India to gain the agricultural markets, in several developed and developing countries. The constraints are likely to come from her own supplies rather than from world markets.

Some of the issues that may come up for negotiations in the WTO 2000 round are discussed briefly, and also what India’s stand could be in that context.

One of the issues that is likely to come up, which is of special interest to India, is the residual protection of rice markets in Japan, Korea and Philippines. These countries were given an exception in the last round. Rice exports clearly are of particular interest to India, and it is in her interest to press these three countries to open up their markets.

The other issue that may come up for negotiations is the monopoly power of state trading enterprises (STEs). These STEs are a disguised form of insulating the domestic economy from the world markets. This is because they are often given monopoly power to import or export. In India these are termed as canalising agencies. More often than not, these agencies get instructions from the government to import or export, more as a ‘residual’ activity between demand and supply of a product than as a business activity resulting from price differentials and with a view to gain from trade. Thus, these STEs do not let the price signals come from world markets, and domestic allocation of resources remains oblivious to the price vector prevailing in the international markets. This must go, and India should press for the removal of monopoly rights of STEs over imports or exports,
instead of opposing it, if India wants to capture the markets in other countries. These STEs exist in several countries like Japan, Canada, Soviet Union, China, and even India.

Monopoly rights of Indian canalising agencies such as FCI, NAFED, STC, MMTC, etc. must also go because of the inefficiency in their operations. The track record of many of these agencies shows that they buy when prices are on the rising part of the swing in world markets and sell when the prices are ruling low. The lags in decision making, due to bureaucratic and political interference, often do not lead to buying and selling decisions that are economically optimal. If these inefficiencies have to be cut, the monopoly power of these STEs must go.

Another issue is of export subsidies, the EU and the USA have been using export subsidies to promote their exports. This distorts the world markets most, and sends wrong pricing signals leading to distortions in the production baskets around the world. This must come to a halt at the earliest, and India should take an aggressive stand on this. In fact it would be in India’s interest to join the Cairns group in pushing for a faster elimination of export subsidies. India has nothing to lose but only to gain out of this issue.

Similarly, another area in which India needs to take an aggressive posture is the reduction in domestic support to agriculture. Since India’s net aggregate measure of support is negative, and is likely to remain so in the near future, it has nothing to lose. But if countries like Japan, Korea, and even the EU or the USA bring down their support to agriculture at a faster rate, India can be a gainer and so would be the world at large in terms of more efficient use of global resources. Again, India should join hands with the Cairns group in this regard.

India must ask for a ceiling on the product-specific domestic support, say at 50 per cent and their reduction on product-specific basis. At present, it is the AMS of all commodities that is counted in aggregate terms. This leaves enough scope for a country to have abnormally high levels of support in some commodity or the other. This leads to large-scale distortions in that commodity market. This is particularly true of the dairy sector in the EU. This must go. The maximum support for any commodity must not be more than 50 per cent, and that too should be brought down at the earliest. India should seek the support of the Cairns group in this matter. This would open some markets for India’s dairy products in particular.

India should negotiate revision in the maximum tariff bindings of those commodities that are bound at zero import duty or 5 per cent import duty as a result of earlier rounds of GATT. Of special importance are the skimmed milk powder, rice, sorghum, maize, millet and urea. Even a maximum tariff binding of 40 per cent would be sufficient (for other agricultural commodities like wheat, India has 100 per cent tariff binding). India may open its imports of these commodities at zero duty but having a maximum tariff binding of 40 per cent would give her policy makers, enough leverage to liberalise their agricultural markets with reasonable stability. This is especially true for skimmed milk powder, whose market is quite volatile. (India has in the meantime re-negotiated its tariff bindings and has succeeded in revising its maximum tariff bindings in the above commodities to a reasonable level ranging between 60 per cent to 80 per cent).

There is a feeling in some quarters in India that India, being a large and populous country, should seek a special treatment in WTO 2000 for her food security needs. There seems to be reluctance on their part to rely on world trade for food security beyond a point. While there is some weight in this argument, India need not really push for this in
any big way. The reason is that Indian agriculture does not happen to be highly protected or subsidised that there is a danger of a sudden deluge of imports of agricultural commodities threatening her food security. This is especially true with respect to cereals, which is considered critical for food security. If anything, India is likely to gain in cereals. And the best strategy to ensure food security, therefore, would be to lobby for faster reduction of support to agriculture by the developed countries. It is the distortions in those exporting countries that have adversely affected the incentives of cultivators in the developing world, which affected investments in agriculture and thereby created uncertainty on the food security front.

One major challenge that a country like India will have to face with the opening up of agriculture is containing wide fluctuations in prices within some acceptable price band. International prices of agricultural commodities are quite volatile, and there is a legitimate concern in poor economies that such wide gyrations in essential commodities hurt the poor more than the rich. Therefore, countries with a large population below or near the poverty line prefer relative stability in prices of essential agricultural commodities. One of the instruments that has been tried earlier to ensure that domestic prices do not fluctuate with world prices is variable import duty. This duty acts as a buffer between domestic and international prices. Use of this instrument leads to fluctuations in the revenues of custom duty, but leaves the domestic prices more or less stable at a pre-determined level. Under the URA, it appears that the use of this variable import duty is not permitted. It may not be a bad idea to negotiate for variable duty with an overall ceiling given by the bound rates of duty.

### TABLE 1: MAJOR AGRICULTURAL PRODUCTS, IMPORTS TARIFFS AND TRADE POLICY STATUS

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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fresh, chilled, frozen</td>
<td>10</td>
<td>150</td>
<td>Mostly rtd</td>
<td>Restricted</td>
<td>Mostly rtd</td>
</tr>
<tr>
<td>Processed</td>
<td>50</td>
<td>150</td>
<td>Mostly rtd</td>
<td>Restricted</td>
<td>Mostly rtd</td>
</tr>
<tr>
<td>Processed-homog, meats, hams</td>
<td>50</td>
<td>55</td>
<td>Mostly rtd</td>
<td>Restricted</td>
<td>Mostly rtd</td>
</tr>
<tr>
<td>Hides &amp; skins incl. leather</td>
<td>0</td>
<td>25</td>
<td>Restricted</td>
<td>Free</td>
<td>Restricted</td>
</tr>
<tr>
<td>Food Group</td>
<td>Max. Hours</td>
<td>Min. Hours</td>
<td>Safe</td>
<td>Restricted</td>
<td>Mostly rtd</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------</td>
<td>------------</td>
<td>------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>Fish and crustaceans</td>
<td>10</td>
<td>150</td>
<td>Free</td>
<td>Mostly rtd</td>
<td>Mostly rtd</td>
</tr>
<tr>
<td>Dairy products</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Milk and cream</td>
<td>40</td>
<td>100</td>
<td>Restricted</td>
<td>Restricted</td>
<td>Restricted</td>
</tr>
<tr>
<td>Yogurt</td>
<td>40</td>
<td>150</td>
<td>Canalised</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Powdered Milk (≤1.5%)</td>
<td>0</td>
<td>0</td>
<td>Canalised</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Powdered Milk (&gt;1.5%)</td>
<td>0</td>
<td>0</td>
<td>Canalised</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Powdered Milk (&gt;1.5% sweet)</td>
<td>40</td>
<td>40</td>
<td>Canalised</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Butter</td>
<td>40</td>
<td>40</td>
<td>Canalised</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Butter oil</td>
<td>40</td>
<td>40</td>
<td>Canalised</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Cheeses</td>
<td>40</td>
<td>40</td>
<td>Canalised</td>
<td>Canalised</td>
<td>Free</td>
</tr>
<tr>
<td>Rice</td>
<td>0</td>
<td>0</td>
<td>Mostly rtd</td>
<td>Canalised</td>
<td>Free</td>
</tr>
<tr>
<td>Wheat and wheat flour</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Durum (hard) wheat</td>
<td>0</td>
<td>100</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Free</td>
</tr>
<tr>
<td>Other wheats</td>
<td>0</td>
<td>100</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Coarse grains &amp; Hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maize</td>
<td>0</td>
<td>0</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Sorghum</td>
<td>0</td>
<td>0</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Millet</td>
<td>0</td>
<td>0</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Barley</td>
<td>0</td>
<td>100</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Rye</td>
<td>0</td>
<td>100</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Oats</td>
<td>0</td>
<td>100</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>100</td>
<td>Restricted</td>
<td>Canalised</td>
<td>Restricted</td>
</tr>
<tr>
<td>Processed Cereals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Range 1</td>
<td>Range 2</td>
<td>Status 1</td>
<td>Status 2</td>
<td>Status 3</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>---------</td>
<td>---------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
</tr>
<tr>
<td>Baby foods</td>
<td>15</td>
<td>17.5</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Bakers dough</td>
<td>50</td>
<td>55</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Breakfast cereals</td>
<td>50</td>
<td>55</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>All other</td>
<td>50</td>
<td></td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Pulses</td>
<td>5</td>
<td>150</td>
<td>Restricted</td>
<td>Free</td>
<td>Restricted</td>
</tr>
<tr>
<td>Vegetables</td>
<td>10</td>
<td>100</td>
<td>Mostly free</td>
<td>Free</td>
<td>Mostly free</td>
</tr>
<tr>
<td>Dried mushrooms, onions and potatoes</td>
<td>10</td>
<td>100</td>
<td>Mostly free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Fruits</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grapes and plums</td>
<td>50</td>
<td>35</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Dried prunes</td>
<td>50</td>
<td>100</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Preparations of fruits and vegetables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>About vegetables</td>
<td>13</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orange juice</td>
<td>50</td>
<td>100</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Other fruit juices</td>
<td>50</td>
<td>55</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td></td>
<td>50</td>
<td>85</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
<tr>
<td>Coffee (unprocessed)</td>
<td>10</td>
<td>85</td>
<td>Restricted</td>
<td>Restricted</td>
<td>Restricted</td>
</tr>
<tr>
<td>Roasted &amp; decaf, coffee in bulk</td>
<td>10</td>
<td>100</td>
<td>Restricted</td>
<td>Restricted</td>
<td>Mostly free</td>
</tr>
<tr>
<td>Tea</td>
<td>10</td>
<td>150</td>
<td>Restricted</td>
<td>Restricted</td>
<td>Mostly free</td>
</tr>
<tr>
<td>Spices</td>
<td>50</td>
<td>150</td>
<td>Mostly free</td>
<td>Restricted</td>
<td>Mostly free</td>
</tr>
<tr>
<td>Caraway seeds</td>
<td>35</td>
<td>100-150</td>
<td>Mostly free</td>
<td>Restricted</td>
<td>Mostly free</td>
</tr>
<tr>
<td>Thyme, bay leaves</td>
<td>35</td>
<td>35</td>
<td>Free</td>
<td>Restricted</td>
<td>Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Oilseeds etc</td>
<td>35</td>
<td>Free</td>
<td>Restricted</td>
</tr>
<tr>
<td>Oilseeds</td>
<td>40/50</td>
<td>100</td>
<td>Restricted</td>
</tr>
<tr>
<td>Oil cakes, meals and flours</td>
<td>50</td>
<td>150</td>
<td>Mostly free</td>
</tr>
<tr>
<td>Soya, rapeseed, mustered, olive &amp; colza oils</td>
<td>20</td>
<td>45</td>
<td>Restricted</td>
</tr>
<tr>
<td>Other edible oils incl. Coconut &amp; palm oils</td>
<td>20</td>
<td>300</td>
<td>Restricted</td>
</tr>
<tr>
<td>Raw Cotton</td>
<td>0</td>
<td>150</td>
<td>Restricted</td>
</tr>
<tr>
<td>Greasy wool</td>
<td>10</td>
<td>25</td>
<td>Free</td>
</tr>
<tr>
<td>Jute, sisal etc.</td>
<td>0</td>
<td>40</td>
<td>Free</td>
</tr>
<tr>
<td>Sugar</td>
<td>0</td>
<td>150</td>
<td>Canalised</td>
</tr>
<tr>
<td>Natural rubber</td>
<td>25</td>
<td>25</td>
<td>Free</td>
</tr>
<tr>
<td>Raw tobacco</td>
<td>50</td>
<td>100</td>
<td>Restricted</td>
</tr>
<tr>
<td>Wood and Wood Products</td>
<td>25-50</td>
<td>25-40</td>
<td>Restricted</td>
</tr>
</tbody>
</table>

Source: Compiled from India’s Tariff bindings submitted to the WTO and the latest EXIM policy.

Note: "Mostly restricted" means that most products or product varieties in the category are subject to licensing or other non-tariff controls.

**TABLE 2: PRODUCT SPECIFIC AND NON-PRODUCT SPECIFIC AGGREGATE MEASURE OF SUPPORT (RS. BILLION)**

<table>
<thead>
<tr>
<th>Support Type</th>
<th>TE 1988-89</th>
<th>TE 1992-93</th>
<th>TE 1994-95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Specific AMS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) Based on support prices</td>
<td>-242.25</td>
<td>-427.89</td>
<td>-48.31</td>
</tr>
<tr>
<td></td>
<td>(-27.74)</td>
<td>(-26.33)</td>
<td>(-23.09)</td>
</tr>
<tr>
<td>(b) Based on farm harvest prices</td>
<td>-151.03</td>
<td>-295.21</td>
<td>-295.94</td>
</tr>
<tr>
<td></td>
<td>(-17.29)</td>
<td>(-18.17)</td>
<td>(-14.14)</td>
</tr>
</tbody>
</table>
Non-product specific AMS | 45.77 | 86.45 | 114.71
| (5.24) | (5.32) | (5.48) |

Total product specific and non-product specific AMS

(a) Based on support

prices

(b) Based on farm

harvest prices


Notes:
1. TE = Triennium Ending.
2. The product specific AMS is the aggregate value of market price support for 17 commodities which is calculated by multiplying the difference between the world reference price and domestic price with the total production. The crops include rice, wheat, sorghum (jowar), pearl millet (bajra), maize, barley, chickpea (gram), pigeonpea (arhar), black gram (masur), green gram (moong), groundnut, rapeseed mustard, soyabean, cotton, jute, sugarcane and tobacco.
3. The non-product specific AMS is the aggregate value of input subsidies such as electricity, irrigation, fertilisers, credit and seeds.
4. Figures in parentheses are percentages to the total value of agricultural production (excluding forestry and fishery).

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Importable</th>
<th>Exportable</th>
<th>Importable</th>
<th>Exportable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scenario</td>
<td>Scenario</td>
<td>Scenario</td>
<td>Scenario</td>
<td>Scenario</td>
</tr>
<tr>
<td>Rice</td>
<td>0.50</td>
<td>0.62</td>
<td>100.00</td>
<td>61.29</td>
</tr>
<tr>
<td>Wheat</td>
<td>0.56</td>
<td>0.94</td>
<td>78.57</td>
<td>6.38</td>
</tr>
<tr>
<td>Sorghum</td>
<td>0.83</td>
<td>1.23</td>
<td>20.48</td>
<td>-18.70</td>
</tr>
<tr>
<td>Maize</td>
<td>0.76</td>
<td>1.21</td>
<td>31.58</td>
<td>-17.36</td>
</tr>
<tr>
<td>Chickpea</td>
<td>0.82</td>
<td>-</td>
<td>21.95</td>
<td></td>
</tr>
<tr>
<td>Pigeon pea</td>
<td>1.20</td>
<td>-</td>
<td>-16.67</td>
<td></td>
</tr>
<tr>
<td>Groundnut oil</td>
<td>1.40</td>
<td>-</td>
<td>-28.57</td>
<td></td>
</tr>
<tr>
<td>Mustard oil</td>
<td>1.96</td>
<td>-</td>
<td>-48.98</td>
<td></td>
</tr>
<tr>
<td>Coconut oil</td>
<td>2.29</td>
<td>-</td>
<td>-56.33</td>
<td></td>
</tr>
</tbody>
</table>

TABLE 3: PRICE WEDGES BETWEEN DOMESTIC AND INTERNATIONAL PRICES (TE 1993-94)
<table>
<thead>
<tr>
<th>Commodity</th>
<th>Scenario</th>
<th>Percentage change in Price demand</th>
<th>Supply demand</th>
<th>Urban demand</th>
<th>Rural demand</th>
<th>Exports (m tons)</th>
<th>Imports (m tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sunflower oil</td>
<td>1.95</td>
<td>-</td>
<td>-48.72</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soybean oil</td>
<td>1.98</td>
<td>-</td>
<td>-49.49</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cotton</td>
<td>0.70</td>
<td>0.94</td>
<td>42.86</td>
<td>6.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar</td>
<td>0.81</td>
<td>0.87</td>
<td>23.46</td>
<td>14.94</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes:
1. Importable scenario = Domestic price/Import parity price.
2. Exportable scenario = Domestic price/Export parity price.
3. Normally, the extent of price wedge is gauged by the tariff for tax rates. However, when there are non-tariff barriers on international trade the implicit protection rates are used to find out the wedges (tariff or tax rate = [(1-NPC)/NPC] x 100).
4. The suggested changes in prices implied by the implicit rates of protection do not take into account the impact of India’s entry into the world markets as an importer or exporter.

**TABLE 4: CHANGES IN SUPPLY AND DEMAND AND EXPORTS AND IMPORTS OF SELECTED COMMODITIES**

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Scenario</th>
<th>Percentage change in</th>
<th>Exports (m tons)</th>
<th>Imports (m tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>I 6.61</td>
<td>0.78</td>
<td>-5.10</td>
<td>-4.01</td>
</tr>
<tr>
<td></td>
<td>II 7.15</td>
<td>0.38</td>
<td>-5.37</td>
<td>-4.51</td>
</tr>
<tr>
<td></td>
<td>III 10.33</td>
<td>-1.19</td>
<td>-6.97</td>
<td>-6.36</td>
</tr>
<tr>
<td></td>
<td>IV 13.52</td>
<td>-2.76</td>
<td>-8.58</td>
<td>-8.20</td>
</tr>
<tr>
<td>Wheat</td>
<td>I 6.38</td>
<td>4.95</td>
<td>-5.22</td>
<td>-3.64</td>
</tr>
<tr>
<td></td>
<td>II 6.38</td>
<td>4.80</td>
<td>-5.13</td>
<td>-3.78</td>
</tr>
<tr>
<td></td>
<td>III 6.38</td>
<td>2.88</td>
<td>-4.62</td>
<td>-3.33</td>
</tr>
<tr>
<td></td>
<td>IV 6.39</td>
<td>0.95</td>
<td>-4.11</td>
<td>-2.87</td>
</tr>
<tr>
<td>Coarse</td>
<td>I -10.16</td>
<td>1.06</td>
<td>-1.82</td>
<td>1.37</td>
</tr>
<tr>
<td>Cereals</td>
<td>II -9.61</td>
<td>1.12</td>
<td>-1.78</td>
<td>1.43</td>
</tr>
<tr>
<td></td>
<td>III -9.66</td>
<td>1.72</td>
<td>-1.27</td>
<td>2.04</td>
</tr>
<tr>
<td></td>
<td>IV -9.72</td>
<td>2.32</td>
<td>-0.77</td>
<td>2.65</td>
</tr>
<tr>
<td>Pulses</td>
<td>I -9.09</td>
<td>1.09</td>
<td>2.76</td>
<td>5.72</td>
</tr>
<tr>
<td></td>
<td>II -9.09</td>
<td>1.19</td>
<td>2.91</td>
<td>5.50</td>
</tr>
</tbody>
</table>
III -9.09 2.14 3.05 5.73 - 0.85
IV -9.09 3.09 3.29 5.95 - 0.76

Oilseeds/
I -37.64 -9.96 19.88 24.19 - 1.25
II -37.64 -10.09 19.91 23.76 - 1.24
III -37.64 -11.35 20.06 23.88 - 1.33
IV -37.64 -12.61 20.21 24.00 - 1.42

Edible oils
Sugarcane/
I 4.50 -0.73 -2.14 -0.12 0.34 -
II 4.90 -1.10 -2.28 -0.67 0.35 -
III 10.10 -2.97 -4.02 -2.96 0.36 -
IV 15.22 -4.83 -5.76 -5.24 0.38 -

Sugar
I 4.50 -0.73 -2.14 -0.12 0.34 -
II 4.90 -1.10 -2.28 -0.67 0.35 -
III 10.10 -2.97 -4.02 -2.96 0.36 -
IV 15.22 -4.83 -5.76 -5.24 0.38 -

Cotton
I 6.39 9.58 -15.02 -13.51 0.55 -
II 6.38 9.44 -15.06 -13.51 0.56 -
III 6.38 6.60 15.12 -14.00 0.51 -
IV 6.38 3.77 -15.19 -13.70 0.45 -

Notes:
Scenario I = Reducing excess demand of rice and aligning domestic prices of wheat, pulses and cotton to their border-price equivalents (export parity price in case of wheat and cotton and import parity price in case of pulses and edible oils).
Scenario II = Scenario I plus 50 percent increase in irrigation water charges.
Scenario III = Scenario II plus 29 percent increase in fertiliser prices (reducing fertiliser subsidies by 50 per cent).
Scenario IV = Scenario II plus 58 percent increase in fertiliser prices (reducing fertiliser subsidies by 100 per cent).

BIBLIOGRAPHY

Bibliography


Islam, N and A. Valdes (eds), (1990): The GATT, Agriculture and Developing Countries, International Food Policy Research Institute, Washington, D.C.


NOTES

1. This paper drew heavily from the book Trade Liberalization and Indian Agriculture by Ashok Gulati and Tim Kelley published later on by Oxford University Press (1999).
3. These zero tariff bindings have been agreed upon in earlier protocols of the General Agreement on Tariffs and Trade (GATT). For example, rice, plums, fresh grapes, and dried skimmed milk were committed to zero tariff binding in 1947 (Geneva Protocol, 1947). Some other commodities like maize, millet, spelt were bound at zero import duty in Torquay Protocol of 1951. Sorghum was bound at zero import duty in Geneva Protocol of 1962 (Dillon Round).
4. Australia, Canada, the European Community, New Zealand, Switzerland and the United States requested dispute settlement consultations with India. Pursuant to these consultations, bilateral, mutually agreed solutions were reached with Australia, Canada, the European Community, New Zealand and Switzerland as well as with Japan, which had third party interests. But at the request of United States, a panel was constituted in November 1997 to examine the allegation that continued maintenance of quantitative restrictions by India is inconsistent with its obligations under the WTO Agreement (WTO. 1998. 1 p.82).
5. The exports were opened up in May, but since bulk of the procurement had already taken place, the FCI did not release wheat to exporters till October, 1995. In 1996, first the export quota
of wheat was reduced to 1.5 million tonnes from 2.5 million tonnes and in late 1996 exports of wheat and wheat products were completely banned.

6. During 1996-97 and 1997-98, there were special custom duties imposed across the board, 2 per cent for infrastructure and 3 per cent for covering oil pool deficit. In 1998-99, there was an additional 4 per cent duty, to provide a level playing field to domestic producers, but edible oils were exempted from this. Thus the effective duty on edible oils in 1998-99 still works to 15 per cent. The import duty on coconut oil, however, was 45 per cent in 1998-99.

7. Doubts about the permanency of these reforms are evident from the recent bans on wheat exports in late 1996 followed by some restrictions on rice exports as well.

8. The external reference price could be (free on board (f.o.b) unit value in a net exporting country and cost, insurance and freight (c.i.f.) unit value in a net importing country) and administered price could be domestic support price. The difference between the external price and domestic support price is multiplied by the quantity eligible to receive the administered price. The reference price shall be based on the years 1986-87 to 1988-89. The external reference price needs to be adjusted as necessary for quality differences in order to make it comparable with the domestically produced product.

9. The calculations of product specific AMS for these commodities at farm harvest prices are also somewhat in line with those obtained on the basis of support prices, except in relative magnitudes. The farm harvest prices have been used as an alternative set of prices because support prices have no meaning in the case of those commodities where no support operations are carried on by the Government. Besides, farm harvest prices are supposed to be closer to the prices which farmers get for their produce. As per GATT methodology there is some lack of clarity on two things:

(i) Whether to use the prices that farmers actually get or support prices as announced by the government;

(ii) Whether in proceeding beyond TE 1988-89, as the domestic prices change, the border prices for comparison should be of corresponding years or of the ones that prevailed during TE 1988-89. Economic logic suggests the use of border prices of the corresponding years.

10. If one works out AMS as a percentage of the value of only those crops for which AMS has been calculated, the taxation would turn out to be even higher. According to Joshi (1994), AMS based on this method stood at 68.88 per cent during TE 1988-89. Joshi has used support prices to work out the value of these crops. However, if one works out the value of these crops using farm harvest prices, the taxation turns out to be -42 per cent for the same period. Although there is a downward bias in our calculations, if one uses world reference prices of rice, wheat and cotton at their export parity levels (rather than import parity levels) the bias is not so great. For example, we calculated the AMS for the TE 1994-95 based on support prices and export parity prices of rice, wheat and cotton (import parity prices of other crops). The calculations show that the AMS is -11.54 per cent of the value of GDP in agriculture and -22.03 per cent if we take the value of only those crops for which the AMS has been calculated. Further, if we compare the external reference prices with farm harvest prices of these crops, the AMS works out to be -2.55 per cent of the GDP in agriculture and -4.87 per cent if we take the value of only those crops for which the AMS has been calculated. Clearly, interpretations will vary depending on which format of calculation one chooses.

11. In nominal terms, the increase in the support price of rice works out to be 54.55 per cent 1991-92 and 1994-95. For wheat it is 55.55 percent.

12. These 19 commodities are: rice, wheat, pearl millet, sorghum, maize, barley, gram, groundnut, rapeseed, toria, cotton, soyabean, urad, moong, tur, tobacco, jute, sugarcane and mustard.

13. The word “dirty tarification” implies that some developed countries bound their tariffs much above the price difference between their domestic prices and world prices, which prevailed
during the base period. As a result, the effective reductions in their tariffs, at least for the first 6 years, are going to be almost negligible.

14. FCI = Food Corporation of India; NAFED = National Agriculture Cooperative Marketing Cooperation; STC = State Trading Corporation; MMTC = Minerals and Metal Trading Corporation of India.
According to a now well established practice, the next round of WTO negotiation will soon increase the pressure for more trade liberalization. Since food and agriculture are the almost last sectors to get liberalized, they will be the main focus of discussions. The continuation of the tendencies observed during the Uruguay Round is likely.

In fact, despite advertised results, the Marrakech treaty looks more like a cartel agreement between Europe and USA than a true move toward the abolishment of all protections (Delorme, 1994). But the ideological pressure for liberalization is so great that many will not openly question the desirability of liberalizing the agricultural sector. They will rather try to find escape routes such as, for instance, imposing fake sanitary or environmental regulations, instead of frankly admitting that they are not in favor of tariff and other trade barriers abolition. Such behaviour is discussible, and dangerous, because lying to people, while a frequent short cut in delicate matters, is never a long run solution. In effect, under such an arrangement, the experts in charge of sanitary and environmental problems will bear a responsibility they are not prepared to assume. As a consequence, they will idly reach designed agreements, admitting imports when they should not, and refusing others without serious reasons.

It would certainly be a more responsible and scientific attitude to tackle the true problem. From a pure economic point of view, are protectionism and trade restrictions justified or not? This is actually the subject of this paper. Of course, the answer cannot be yes or no. There exist very serious reasons to reject protectionism and trade intervention, especially when viewed from a static point of view. These reasons extend themselves to dynamic situations, but only under certain circumstances: we shall investigate these circumstances, and find that agriculture and food are not likely to belong to the set of industries to be liberalized.
Comparative advantage and trade liberalization, from static to dynamic

Comparative advantage is at the origin of the trade liberalization idea. Any undergraduate student in economics knows the story of Portuguese wine and English cloth, as told by David Ricardo two hundred years ago. Here, the existence of a comparative advantage for wine in Portugal allows trade with Britain to expand the production possibility set of both wine and cloth. Notice that the core of the Ricardian analysis is much more subtle than many people think, even nowadays. The advantage of Portugal is not only in producing wine. Adam Smith, and before him Galiani (1776) and other authors, had already pointed out that trade is useful each time one of the partners is more gifted in producing one of the commodities. This is the case of “absolute” advantage. What is new, in the case of the Ricardian analysis, is that Portugal is more efficient in producing both commodities (80 men for wine and 90 for cloth in Portugal, against 120 and 100, respectively for the same quantities, in England). Hence, Ricardo’s argument is not only designed to convince Portuguese to trade with Englishmen. It is also targeted on those Englishmen who were afraid to trade with Portuguese on the grounds that “low salaries in Portugal would kill employment in England”. But because Englishmen have some comparative (and not absolute) advantage somewhere, they should not be afraid of trade.

In effect, because the joint production possibility set for the two countries is expanded, it is always possible with trade to find at least one (in the Ricardian example, an infinite number of) situation where nobody is worse off, and some are better off than without trade. Under such circumstances, one would simply be masochist not to trade!

Yet, the Ricardo analysis has been criticized. Its main flaw is that it does not give any indication on where comparative advantage comes from. This is why further developments of economic analysis were oriented toward this question. Two main sources of absolute or comparative advantage have been identified: nature and factor endowments. More recently, the question of economy of scale and externalities has also drawn attention.

Nature

This is apparently what Ricardo himself had in mind. As anybody knows, it is much easier to grow grape in Portugal than in England. In that case, trade is the only reasonable manner by which the consumer of certain countries can be supplied some commodities. Nobody ever advocated taxing bananas at Greenland’s gate, on the grounds that, in this way, Eskimos would be induced to grow bananas by themselves. In effect, an Eskimo who wants to eat bananas, had better trade seal oil against bananas with some Caribbean (or Indian) citizen.

Yet, even in this simple case, the introduction of time considerations into the reasoning can lead to difficulties. Just imagine our Eskimo, being of the highest cleverness, because he knows that contacts with Caribbeans are virtually impossible using 19th century technologies, develops banana production in heated glasshouses along the southern Greenland coast. He makes huge profits from that industry, and develops the taste for...
bananas among Greenlanders. Then, in the 20th century, steamboats do permit the importing of Caribbean bananas. Clearly, he is ruined. Then, although importing low price bananas is obviously in the interest of most his compatriots, yet, equity-and not only equity, but also interest, as indicated below—command to have him compensated for the loss of his job.

This line of reasoning somewhat widens the traditional static approach of similar questions. Let us forget it temporarily now, and examine the second rationale for trade.

Factor endowment

This is a more recent, but powerful argument in favor of trade. According to Heckscher and Ohlin, trade between two nations allows for a more efficient use of factors, when one is deprived of labour, while the other is deprived of capital. Actually, this argument is not so new, and can be traced back to Adam Smith and his analysis of the pin factory with different skills.

Notice that this factor endowments argument, at least in its most recent version, has a basically dynamic component, for capital endowment is a matter of time. Since, according to old writers, capital is simply accumulated labor, because the capital per worker in the more capital intensive country would be increased by savings and accumulation, waiting a sufficiently long time would suppress all incentive to trade. In addition, because of the convexity of production possibility sets, and the law of decreasing returns, the marginal productivity of capital in the labor intensive is greater than in the capital intensive country. Therefore, there is an incentive to move capital from one country to the other, thus again creating the conditions of trade diversion.

In that way, the factor endowment linked comparative advantage is a temporary phenomenon, which should not last for long. Yet, most analysts are sceptical about the reality, and, above all, the generality of such mechanisms. So that capital accumulation and capital displacement could occur, surplus should actually be shared between parties. This is not always the case, and perhaps the exception rather than rule. Other dynamic considerations in applying the Heckscher-Ohlin model raise true problems. When comparing a situation “with” and a situation “without” trade, it is clear that prices are not the same, especially for factors. In that circumstance, it may happen that some factor prices decrease, even if general theorems ensure that the total value of factors will increase. Consequently, the owners of price decreasing factors will lose from liberalization, while other will gain, just as the “clever Eskimo” alluded to above.

In that case, there does not exist much ground to force the owners of price decreasing factors to accept the new situation, unless it is possible to compensate them. But to give them compensations implies the creation of redistribution institutions which are not easy to set up. Finally, well known facts contradict the main conclusion of this too optimistic theory: firstly, the persistent backwardness of many underdeveloped countries, where capital accumulation and migration are still to be expected, despite years of patience, and, secondly, the fact that trade is expanding more rapidly between countries with comparable levels of economic development and resources endowment. Similarly, the Leontief paradox casts doubt on the relevance of such theories, even if the real sources of the paradox remain somewhat mysterious. For these reasons, recently, after nature and factor endowment, another source of comparative advantage has been identified, namely: economies of scale and externalities.
Economies of scale and externalities

14 This is the new, up to date, fascinating paradigm of international trade (Krugman, 1992). Here, an advantage is a consequence of the fact that, in presence of economies of scale or of externalities, it is possible that some “lumpy” production capacity be partially unused. For instance, with one research center and Internet, I can provide the whole world with word processors. Then, the cost of one copy of the word processor program is extremely low. It is all the more so since, by making use of trade, I can sell more copies to more people in more nations. In addition, this is the only way for me to cover my fixed costs. Thus, trade is all nice. Yet, because my marginal cost is low, I can always sell it at a price sufficiently low to deter any possible competitor from entering the branch. Therefore, I have a monopoly, which allows me to make profit (which is bad from the collectivity point of view), and to sell large quantities at low price (which is undisputedly good, and justifies the profit). The latter will remain unchallenged until a radically new mode of communication emerges from some research originally not targeted at word processing.

15 Since discoveries occur more or less randomly anywhere in the world, although preferably in nations having big research and development budgets, some of them (among those which pay for research) get some comparative advantages in some domain. And this is sufficient to feed the trade upsurge that we observe now between developed nations. Again, time is implicitly present into this analysis. Otherwise, the first beneficiary of this process would keep the corresponding rent forever. But this is not the case, quite the contrary. The renewal of techniques imposes a continuous motion of creation and destruction of temporary monopolies, thus contribution to the building of a sort of evolutionary economic geography. At the same time, this motion should not be too rapid. Otherwise, even Bill Gates would not invest in word processing. For that reason, he is given a copyright by the State. In many respects, copyrights, patents and similar institutions play exactly the same role as custom duties.

16 This story, obviously, makes a lot of sense. It has inspired a number of models which reproduce reality quite accurately. It is not contradictory with the preceding Ricardo and Heckscher-Ohlin analysis. Rather, it completes and encompasses them - just like the theory of relativity encompasses the Newtonian theory of gravitation. Considered within a static framework, at a given instant, it does not imply any departure from the conclusion already described: trade is always “good”, whatever the value scale used to bear a judgment, simply because relaxing constraints cannot make an optimum worse.

17 Firstly, despite the fact that we are here in the core of modern trade and growth theory, the essence of the argument was presented 150 years ago by Friedrich List, observing that “infant industries” should be protected, otherwise they would never be adult. Although the proponents of liberalism ironically observed that “some industries take very long to grow up”, the argument should certainly be taken seriously.

18 Secondly, the above developed theory implies that “trade is good”. But it says nothing about how it can be implemented. Once the Kings of England and Portugal have met, and decided to trade, the rate of exchange between cloth and wine is still uncertain. The main advantage of the Heckscher and Ohlin approach is, by relying upon smooth and convex production functions and preferences, to unambiguously determine that price. But, the validity of the approach itself is challenged by the subsequent observations of Krugman on monopolistic competition. It must be clear, and Krugman himself strongly points it
out, that in this case, the key problem is not with trade stricto sensu, which is always desirable, but with the functioning of markets, which may prevent the benefit of trade to materialize. Such a situation is particularly likely in the case of agriculture. This idea will be developed now.

The case of agriculture

How specific is agriculture?

The considerations just developed apply straightforwardly to agriculture. The “natural” comparative advantage is obviously an unambiguous reason to trade, a reason, the strength of which is especially clear in this activity. Again, it is out of question to grow bananas outside tropical areas. On the other hand, the infant industry argument is obviously weak in agriculture. This industry is almost free of any economy of scale because (with perhaps the exception of a few luxury wine productions) no agricultural technique is applicable for a production so great as being capable of influencing the market. Even if I am the owner of a very large, say 1,000 or 10,000 ha farm, I can double my production without the least reaction from the market. This is quite in contrast with most industrial firms. Just imagine Volkswagen doubling its production, and you will consider the consequences on car prices! But if no firm can have any monopoly power in agriculture, then the infant industry and similar arguments no longer apply. They would only be relevant for food processing industries, where, curiously, they are seldom invoked.

Finally, the factor endowment argument in favor of trade is probably less valid in agriculture than in any other situation. This is a consequence of the flexibility of the agricultural production function. The same commodity, for instance rice, can be produced almost without capital (in Senegal, in addition to seed, many rice growers do not possess any more capital than a burned rod for a light ploughing) or almost without labour (in Texas, one man can harvest 300 ha, against less than 2 in Senegal). Yet, these different production processes give out the same product sold on international markets. Obviously, such a situation makes the comparative advantage argument weaker. Methods of production may vary from country to country, but no international specialization emerges from these variations.

The above discussion suggests that the situation is quite different from one agricultural commodity to another. Absolute and comparative advantages are frequently found, and are enormous in vegetable or fruit production, especially when the climate differences between the Northern and Southern hemispheres are taken into account. At the same time, they are almost absent for many animal productions. In the case of grains, in particular, they are much smaller than what people think in general.

The most optimistic estimates of the benefits of agricultural trade liberalization, even if they represent a large number of million dollars, are in fact only a very low percent of the world income. Then, one may be puzzled by the anxiety of many economists to impose these relatively moderate gains at the expense of tremendous changes in all rural societies, while one has the impression that a few improvements in industrial organization—for instance, reducing the number of idle workers in developed countries would produce much larger gains for the world national income.
Insurance: another rationale for trade

Now, one must notice that comparative advantage *stricto sensu*, as defined above, is far from being the only rationale for agricultural trade. Another reason to trade in agriculture (and in agriculture only) is linked with insurance, as pointed out very early in the literature. Thus, Galiani (1770), discussing the question of trade between French provinces, after having observed that grain can be produced “anywhere”, emphasizes the most important aspect of agricultural trade: when not founded on natural advantage, agricultural commodity trading is a risky business, that only wealthy merchants can undertake, some making fortunes, and others loosing their shirts.

In effect, because production can be unexpectedly large or small in one specific province, trade plays a role in helping over-producing to relieve under-producing regions. In this way, trade is a substitute to stockpiling, replacing inter-temporal by geographical arbitraging. As pointed out, especially by Bale and Lutz (1979), in presence of independently distributed random shocks across the geographical space, trade is stabilizing. And since many authors, from Waugh (1994) to Just *et al.*, (1978) (also Massel, 1969, Oi, 1961, and many others) have shown the detrimental effect of price fluctuation, this means that trade, even in the absence of comparative advantage, is highly beneficial.

Yet, for this geographical insurance scheme to be feasible, one more condition is necessary. No insurance scheme is workable without relying on the Law of Large Numbers - which says that many independently distributed small shocks cancel each other. But the question is then: are random shocks affecting agriculture really small and independently distributed, in such a way that the law of large number can be invoked in this matter? The answer depends upon the source of these shocks, which depends itself upon other specificities of agricultural production.

The most natural and frequent assumption with respect to the origin of supply and demand shocks in agriculture is related to climate. Anybody knows that agriculture is climate sensitive (this is obviously true for wheat, less so for milk, probably completely false for hogs), so that the explanation does not seem to require further investigations. Yet, if one relates the magnitude of areas likely to be submitted to one agronomically significant meteorological event with the surface large enough for the reduction or increase of yield to be noticed by markets, then, questions arise. Given that the correlation\(^8\) distance between such events is of an order of magnitude of 100 km, it is not surprising that food markets of the 19th century were highly weather sensitive. But this is no more true in the 20th century, when market basins are commonly larger than 1 000 x 1 000 km. In any case, few studies have been made on this subject, which could be an interesting topic for further research\(^9\).

In any case, if the volatility of agricultural prices is caused by climate, then the Bale and Lutz argument for trade is perfectly valid. But one can imagine other and wider sources of volatility. They deserve to be studied.

Can market kill trade?

As pointed out by the Swedish school of economics at the beginning of the 19th century, a striking fact about markets (agricultural or not) is that they equate instantaneous supply
and demand, without the equilibrium being warranted \textit{ex ante}. Yet, the consequences of this observation are far from having been fully exploited in economic theory.

The fact is especially important in the case of agriculture, where there exists a cascade of decisions with different time horizons. If I intend to be a cereal grower, I shall make that decision early in my career, and stay in it for many years. If, as a cereal grower, I decide what to produce, I have to take the decision between six months and one year before selling the output. If I have to decide whether I’m stocking or selling my harvest, the planning horizon is a matter of days. Finally, the trader who operates on virtual markets from his computer terminal, buys or sells millions tonnes in a matter of minutes. Since nobody has any real control on grain and commodity markets, the law of supply and demand is extremely efficient in regulating the instant traders market. It is far less clear that it is just as efficient in regulating yearly and decennial production decisions.

The old Ezekiel (1938) argument still holds in that respect. When in 1935, President Roosevelt decided to save American agriculture (and the American banking system, which was highly dependent upon the capacity of American agriculture to repay its debt), to replace market by administered prices, many traditional Americans spoke against this move toward “socialism” (Lindley, 1934). Ezekiel, one of Roosevelt’s advisors, could convince them of the rationality of the approach, by making use of the “cobweb model”\footnote{The later demonstrated the possibility that a supply and demand system, under the influence of “naïve” expectations, can lead to situations where market never converges toward equilibrium. The chance of such a situation to occur depends exclusively upon the ratio: “slope of demand curve” over “slope of supply curve”, both taken as absolute values. If the absolute value of the demand curve is greater than the supply curve slope, then the market cannot reach its equilibrium. This is a situation which justifies State intervention. State should correct market failures, and if possible establish the situation which the market should have generated if it had functioned normally.}

Now, in the specific case of agricultural markets, it turns out that the demand curve has all the chances to have a large slope, simply because demand is not elastic: large changes in prices do not change demand very much, for at least three reasons. Firstly, agricultural products are mainly used as food, and people are ready to make all kinds of sacrifices to keep their level of food consumption constant. Secondly, as people become wealthier, the price of food is less and less important for them, and, thirdly, as more people live in town, agricultural product prices are less important in determining the final price of food. At the same time, the slope of the supply curve is more or less constant, and relatively small, because, in view of the importance of fixed factors in agricultural production, the marginal cost is normally small\footnote{Thus, there is a need for state intervention in agriculture, and in agriculture only (of course, the argument is not valid for “luxury” agricultural commodities, such as for instance goose livers, that Frenchmen like so much, which can find their market equilibrium by themselves).

The weakness of Ezekiel’s analysis - a weakness which jeopardized the validity of his conclusion in the eyes of professional economists - was the “naïve expectation scheme”. Firstly, nobody would admit that farmers are stupid enough not to observe that the price two years ago is a better predictor of this year’s price than last year’s price. Secondly, it is clear that nobody ever saw an “exploding” market - which means that something is wrong with the analysis.
In the 60’s and 70’s, many alternatives to naïve expectation scheme were proposed, among which Nerlove’s “adaptive expectation scheme” (Nerlove, 1958). None were fully satisfactory (Nerlove, 1979). The least satisfactory of all is certainly Muth’s “rational expectation scheme”\(^\text{12}\), which results in assuming that farmers, much more skilled than economists, know the market equilibrium point, and make their plans in accordance. I suggested recently (Boussard, 1996) a scheme which keeps the basic simplicity of naïve expectations (although it works with any other “moving average” formula) while explaining “turning points” and the fact that the market cannot “explode”. The key ingredient of the theory is that expectations pertain not only on average price values, but also on their dispersions. Then, while the market is always “locally” unstable (because of the demand/supply curve slopes ratio), with a tendency to explode, it is systematically brought back to “under supply” when it appears that operators are taking too much risk\(^\text{13}\).

In that way, it can be shown that agricultural markets are likely to be “chaotic”, that is, price and quantities are apparently random, with no periodicity (although certain values may be more frequent or “probable” that another), but confined within a “box” (they cannot grow to infinity), and unpredictable. The corresponding series are somewhat peculiar, with autocorrelation at all ranks, thus forbidding any attempt to make use of them in any “classical” econometric study (figure 1).

Although Boussard’s model may be considered as “special” or “ad hoc”, other authors suggested slightly different but similar analysis. Many tried to check the chaotic character of agricultural price series, often with positive results\(^\text{14}\). As a consequence of these studies, the chaotic character of many commodity prices and quantity time series is by now widely admitted.

FIGURE 1: A RISK GENERATED COBWEB

But if agricultural commodity price series are chaotic, in addition to being mostly unpredictable, they display very unpleasant characteristics. In particular, the “law of large numbers” cannot be invoked to expect trade functioning as an insurance scheme. The reason is apparent on figure 2a and b, where two independent Boussard’s chaos have been represented. They are identical, with the same A, a, b, α, and β, but not the same starting point. In both case, a given proportion, c, of the market A commodity production is sold on market B2, (and vice versa), thus perturbing the price formation on this market.
In figure 2a, \( c = 0.1 \), meaning that 10% of the production of market 1 is sold on market 2, and vice versa. In figure b, this proportion is increased up to 40%. One sees clearly that in experiment a, the two chaos are performing independently one from the other. As a consequence, they “diverge”, each series being different from the other, as expected from two identical chaotic maps starting at different points. But what is striking is the situation of figure b. Then, the motions are quickly synchronized, with the result that the two trajectories are now indistinguishable. This is actually a common behavior for this kind of chaotic functions. The main lesson to be drawn from this experiment is that if agricultural price fluctuations are endogenously chaotic, then one should not expect any alleviation of these fluctuations as a consequence of trade. The Bale and Lutz scheme of insurance simply does not work, and is, indeed, very dangerous.

In turn, this circumstance implies a considerable departure from the standard assumptions about the optimality of markets. Because, in a risky business, any rational operator requires risk premium and safety nets of all kind, production stays in the strict interior of the production possibility set. It presents thus all the characteristics of “inefficiency”, in such a way that production “with” is always far smaller than production “without risk” for the same expected level of price.

**FIGURE 2A: RELATIONS BETWEEN TWO CHAOTIC COBWEBS: WEAK LINKS BETWEEN MARKETS**

**FIGURE 2B: RELATIONS BETWEEN TWO CHAOTIC COBWEBS: STRONG LINKS BETWEEN MARKETS**

Depending upon the characteristics of the price probability law, the slopes of the demand and supply curves, and other circumstances, producer or consumer can lose or gain from price instability. However, there is a consensus for saying that, since the gains of the
winner are always smaller than the loss of the loser, society as a whole is losing when playing this game (Waugh, 1944; Oi, 1961; Just, Schmitz and Turnowski, 1978). In effect, in such context, there is a definite possibility that risk actually plays the role of a negative technical progress, shrinking down the production possibility set, just at the same time as trade expands it. Here is probably the core of the reasons why, apart from vested interests and rent seeking parasites, there are very serious reasons for being prudent in accepting uncontrolled trade liberalization when the benefits of trade (as measured by comparative advantages) are not as obvious as it is for tropical commodities.

Which remedies?

41 We are thus led to the apparently preposterous conclusion that trade would be really nice if it did not rely on markets and market dynamics. Yet, the conclusion is perhaps not as absurd as it seems. The basic source of difficulty lies in the fact that nobody knows where the equilibrium point is. This is the main flaw of the rational expectation hypothesis to assume such knowledge, although even the most skilled of econometricians is not capable of finding it. Yet, the progress of statistics, modeling, and economic studies, is so large, that the uncertainty about the true equilibrium price of, say, starch, is considerably smaller than the actual interval within which starch price varies on international markets. Would it be possible to mobilize that knowledge in order to reduce uncertainty on this market, and, in this way, to increase by an enormous factor the efficiency of the world starch production system?

42 Figure 3 traces out one possibility for doing that. The upper part shows the chaotic motion of a price series generated according to the above described Boussard (1996) model. The lower part shows the same series, in a different situation, where production quotas are imposed on the producer. The level of quotas is determined to be 10% lower than the equilibrium through a deficiency payment from the government. All the production under quota is guaranteed a price which is 10% above equilibrium. If a producer produces more than the quota, he must sell the extra quantity on free market. But for these rules, the two models are identical, with the same naïve expectation, risk aversion, supply and demand curves.
It is fairly obvious that, in this case, the social benefit from the stabilization policy is large. It has been computed, along standard rules for determining producer and consumer surplus, and found to be important and mainly benefiting to producer.\textsuperscript{17} The figure is illustrative of what can be expected from wise policies of stabilization. Of course, the difficulty is with the assumption according to which the parameters of the policy (quota levels, and guaranteed prices) are defined by reference to the equilibrium point. This assumption is absurd, since, by construction, one ignores the exact position of the equilibrium. Yet it is given here just in order to demonstrate that a very approximate guess of the equilibrium point is sufficient to set up a very sound policy.
On the other hand, such kind of market intervention can be, in the long run, extremely beneficial. In their famous book on agriculture and development, Hayami and Ruttan (1985) show a set of series of long run US productions and prices for maize and wheat. A striking fact when looking at the series is the break in the 40's: before that time, prices are high, in average, and volatile. Production growth is slow, mainly ascribable to increase in cropped areas. After 1940, surfaces are shrinking but yields increasing, thus resulting in a rapid growth of production. Guaranteed prices are decreasing slowly, but thanks to the deficiency payment system, market prices are decreasing very rapidly, and smoothly.

The reasons for these phenomena are multiple. It is nevertheless possible to assume that the most important of them is the “New Deal” policy, which, in agriculture, consisted mainly in sheltering farmers from market uncertainty. Because of its apparent cost, this policy caused concern in the US and elsewhere. Yet, when taking account of the magnitude of the fall in the real prices of cereals during this period, one may be rather confident that the American taxpayer was largely rewarded from his investments, through an enormous decrease in food costs. Actually, by now, food is almost negligible in the budget of many American families. Certainly, they pay high taxes for agriculture. But would they prefer pay less taxes and pay food at the price level it reached in the 50's?

**Conclusion**

This paper began by an apology for trade, which, just like technical progress, cannot be bad. Yet, also just like technical progress, trade can be harmful by preventing decision makers from investing their savings, thus creating a Keynesian wedge between savings and investment. It is the responsibility of State to compensate the loser for their losses to the benefit of the community. This is a strong justification for State intervention in trade.
But more importantly, we found that markets (and not trade) may cause very unpleasant
effects under certain circumstances. In effect, when demand is rigid, markets cannot
easily reach an equilibrium. When left to themselves, they create fluctuations which play
the role of a negative technical progress - just the opposite of trade. There is a strong
suspicion that the agricultural sector, because of its special characteristics, stands among
the most likely sectors where such phenomenon are found. This is why State intervention
in agricultural market is almost as old as agriculture itself. Such a situation implies that
trade issues should not be envisaged in terms of static comparisons between the
situations “with” or “without” trade as it is now. With such an approach, trade is
unambiguously “good”, but all difficulties are masked, and facts are forgotten. Only a
more dynamic approach can provide the hints which are necessary before trade can be
established on sound and safe rules, for the benefit of mankind.

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NOTES

1. This condition is sufficient, in elementary optimization mathematics, for any objective function to be greater with than without trade. Thus, this argument is much stronger than the
"classical one" (see Bale and Lutz, 1981), which relies on market maximizing the joint surplus of consumers and producers. Market actually maximizes this special social utility function, but the argument is valid for any other one.

2. And despite the famous spy novel by John Le Carré!

3. The classical answer to this problem is that he will now find an employment as a seal hunter. In addition, because everybody’s productivity is increased by progress, seal hunters’ salaries will rise, thus leaving him with an increased income. This may be true. Yet, there is not the least reason for the personal benefit the owner of the glasshouse will derive from the increased salaries to be sufficient to compensate for the loss of his capital. At the same time, viewed from a dynamic point of view, it is in the interest of the community to encourage audacious ideas such as the building of the glasshouse, which did permit eating bananas even when transportation was not feasible. Now, if no compensation is paid to the owner of the glass house, there are all the reasons for, when confronted with the opportunity of investing in another endeavor such as, say, micro-computers, his comrades to be prudent in breaking their money boxes.

4. Such situations actually occur. When Spain entered the European Common Market, great concerns were expressed by southern French farmers, because, since wages were much lower in Spain than in France, Spain had a definitive comparative advantage in fruits and vegetable productions, which were the main source of income for them. The French government and the EC commission rightfully decided to ignore these complaints. Ten years after the full realization of the custom union, it turned out that wages in Spain had jumped to the EC level, with the consequence that the comparative advantage of this country, if any, had vanished. Recently, during a journey in southern France, I realized that, on the contrary, some Spanish preserve makers were buying tomatoes from Basque country French farmers... Notice that in face of such a situation, in fact, trade was not necessary.

5. A good example of this problem is provided by a recent work about trade liberalization, Hertel’s global trade analysis (Hertel, 1997). It is based on a computable general equilibrium model of the world economy which is much more complicated than the Heckscher and Ohlin’s model, although it is based on essentially the same argument. It has the main advantage of producing estimates of the surplus to be expected from a trade liberalization, based on data which are probably the most possibly accurate to get on the subject. In a recent paper (Elberhi et al, 1997), the model is made use of to see who loses and who gains in a trade liberalization round, with the outcome that gains are enormous in Southern Asia, while relatively moderate losses are expected in sub-Saharan Africa. Is it possible, from such an experiment, to infer that "liberalization is good", the gains from Asia largely over compensating the losses of Africa? For such conclusion to be drawn, the elementary welfare theory teaches that a tax should be levied on the Asians, in order to compensate Africans, and that it is the interest of the Asians, who would remain with a positive surplus once the tax paid to set up such a compensatory system. In the absence of such a levy, there are no reasons why the Africans would accept suffering losses for the benefit of the Asians.

6. From that point of view, the rapid growth of South-East and East Asian economies in the last 15 years could be viewed as a confirmation of the theory. But the crisis they suffered from after 1997 reinforces the skepticism of many analysts.

7. To be precise, almost the same product, since there are slight differences in the “qualities” of the rice from different methods of production.

8. The distance of correlation is the maximum geographical distance between two points for the correlation between the probability laws of random events to be non negligible.

9. Roll (1984) is an outstanding exception. This author demonstrates that if weather undoubtedly influences the price of orange juice in Florida, on the other hand, it is far from being the only explanation for orange juice price fluctuations in this country.
10. The "cobweb model" is a set of three equations which describe the functioning of a market:

\[ P_t = \alpha q_t + \beta \text{(demand)} \]
\[ P_t = a q_t + b \text{(supply)} \]
\[ P_t = P_{t-1} \text{(expectations)} \]

\( P_t \) is the actual equilibrium price at time \( t \), \( P_{t-1} \) is the expected price, \( q_t \) is supply at time \( t \), \( \alpha, \beta, a, b \) are coefficients (\( \alpha < 0, a > 0 \)). When solved recursively, prices and quantities move up and down in opposite direction. Yet, the behavior of these swinging movements, is governed by the value of \( c = \left| \frac{\alpha}{a} \right| \). If \( c < 1 \), the waves are of decreasing magnitude. They are damped out, in such a way that the system, whatever the starting point, converges toward equilibrium. On the contrary, when \( c > 1 \), the wave magnitude is constantly growing, so that the system becomes quickly unsustainable, with negative prices and quantities. If \( c = 1 \), the motion is periodic, but the actual observation of such a situation is unlikely, because any small change in \( c \) will turn the system into "exploding" or "converging".

11. It must be recalled that the supply curve and the marginal cost are two closely related notions.

12. Muth (1961); see Malinvaud (1994) for details.

13. Specifically, the model suggested by Boussard was:

\[ P_t = \alpha q_t + \beta \text{(demand)} \]
\[ P_t - A \sigma_t q_t = a q_t + b \text{(supply)} \]
\[ P_t = P^* \text{(average price expectation)} \]
\[ \sigma_t^2 = (P_t - P_t^*)^2 \text{(average price expectation)} \]

Here, \( P_t \) and \( q_t \) are actual price and quantity at time \( t \). \( P_t \) and \( \sigma_t^2 \) are average and variance price expectation at time \( t \). \( \alpha, \beta, a, b \) are "technical" coefficients. \( P^* \) is a constant. \( A \) is a "risk aversion coefficient". Thus, producers consider the average price as a constant. Only the expected variance of price is subject to change from period to period (modifying this expectation scheme, and replacing \( P^* \) by some sort of moving average is easy, and does not change results significantly). Producers maximize the certainty equivalent of their revenues, which, after transformation, yields the supply equation.


16. Again, this idea has been developed by a large number of authors. Let us only quote Just and Zilberman (1986) among the most famous such colleagues.

17. On figure 3, Sc stands for consumer and Sp for producer surplus while G represents government expenses. In the situation "without quotas", the collective surplus is 149.9 - 166.7 = 19.8. In the situation "with", it is given by: 109.5 + 45.49 - 44.39 = 110.6.

18. Displayed pp. 262-263 of the French edition, fig. 81.a and 8.16.

19. Obviously, cost lowering is due to technical progress, not directly to stability. But is it possible to think that this technical progress would have been so large under the price fluctuations observed during the 100 preceding years? Especially, is it possible to admit that American farmers, under such conditions, would have borrowed so much, and replaced labour by capital to that extent?

20. In any case, the Bible traces back such intervention up to antique Egypt, about 2 000 years BC, with Joseph's story, at the end of the Book of Genesis. It is striking to read in this episode that the political legitimacy of the King of Egypt at that time relied on his ability to guarantee a certain degree of food security in the region.
V. Trade in agriculture and WTO: property rights issues
13. Trade and Agriculture: Implications of trips

Pushpa M. Savadatti

The General Agreement on Tariffs and Trade (GATT) was an international forum established in 1948. It was one of the three institutions set up in post Second World War with the noble intention to work for peace, equality and progress in the world at large. One of these institutions, namely, the World Bank was to contribute to a reduction in the inequality in the international distribution of wealth and income. Likewise, the aim of the International Monetary Fund (IMF) was to ensure monetary stability that was essential for the growth and prosperity of countries. The need for a similar mechanism was felt to oversee the smooth conduct of world trade and to prevent the kind of trade conflicts prevalent in the pre-war years. The GATT was therefore set up in 1947 with 23 countries including India acting as the initial signatories. Legally it was an international treaty and hence its rules were binding on all its member countries, two-thirds of which were developing nations. The main advantages of GATT were: firstly, it provided a stable and predictable system in which international trade was to be carried out; secondly, it provided the means of settling disputes between countries on trade matters and thirdly, through periodic rounds of negotiations, it encouraged reduction in tariffs so that expansion in world trade became possible. The GATT later had 110 members, who among themselves shared more than 90% of world trade. Ever since GATT was set up, eight rounds of negotiations have been held on trade matters. The first seven rounds of negotiations had a profound impact on the world economy. The eighth round known as the Uruguay Round covered seven years from 1986 to 1993. This round sought to rectify the low growth in world trade by cutting down tariffs, and making the objectives of the GATT more effective by covering new trade aspects. It included agriculture and emerging protocols like Trade Related Intellectual Property Rights (TRIPs), Trade Related Investment Measures (TRIMs) and General Agreement on Trade in Services (GATS).
Trade related intellectual property rights (TRIPS)

The agreement on Trade Related aspects of Intellectual Property Rights (TRIPs) is an integral part of the WTO Agreement. The underlying theme of TRIPs being free trade as provided in the WTO/GATT, the countries are required to prepare necessary legal framework spelling out the scope and standards of protection for rights in regard to intellectual property. The WTO covers nine types of intellectual property, viz: copyright, trademarks, trade secrets, geographical indications, industrial designs, integrated circuits, plants, micro-organisms and plant varieties. It has also envisaged another form of Intellectual Property Rights (IPRs), known as Plant Breeders’ Rights (PBRs). The PBRs have introduced less stringent conditions for seeking patent for seed plants. The WTO provides for patenting of micro-organisms, which are of immense importance for medicine, industry, ecology and environment.

The deliberations of the Uruguay Round witnessed a marked polarisation of views on TRIPs. The final outcome represents a definite victory for the industrialised countries, and the Less Developed Countries (LDCs) will have to go through a prolonged and painful period of adjustment in their national IPRs systems in the coming decades.

Agriculture and intellectual property rights issues in India

The issues of IPRs protection in the field of agriculture are of relatively recent origin. The two main forms of IPRs recognition in this area are patents and Plant Breeders’ Rights (PBRs). Patenting of seeds and naturally occurring genes is one of the controversial provisions of the GATT agreement which has been widely discussed and debated amongst researchers, activists and policy makers. The provisions contained in the agreement in this regard are summarised below:

i. Patents shall be available for any inventions, whether products or processes, in all the fields of technology, provided that they are new, involve an inventive step and are capable of industrial application. The patent rights obtained are enjoyable without discrimination as to the place of invention, the field of technology and irrespective of whether the products are imported or locally produced.

ii. Members have been given the freedom to exclude from patentability inventions which may be necessary to protect public order or morality, including protection of human, animal or plant life or health or to avoid serious prejudice to the environment.

iii. Members may also exclude from patentability:
   a. Diagnostic, therapeutic and surgical methods for the treatment of humans or animals
   b. Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non biological and microbiological processes. However, members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by a combination thereof. This provision had to be reviewed four years after the date of coming into force of this Agreement.

The Indian Patents Act 1970 excludes inventions which are frivolous, which would be contrary to law or morality or injurious to public health, etc. Inventions relating to atomic energy are also not patentable. In the case of inventions claiming substances
intended for use of food, or as medicine or drugs, or substances prepared by chemical process, no patent shall be granted in respect of claims for the substance themselves. Thus it can be observed that the GATT agreement, for the first time in history of mankind, proposes the covering of plants under the scope of patents. The agreement has proposed three major changes vis-à-vis the existing patent laws in India.

i. It has suggested patenting of all life forms including plants and micro-organisms which were not earlier covered by the Indian Patent Act.

ii. The existing Indian Patent laws, under the Act of 1970, protect processes and not products. The agreement requires that India switch on to patenting of products.

iii. The GATT agreement has also reversed the onus of burden of proof. Earlier the onus for providing patent infringement was on the complainant. However, according to the new provision suggested, the person charged with the offence, that is the ‘defendant’, has to prove his innocence.

The TRIPs demand that either patents or another form of IPR known as Plant Breeders’ Rights (PBRs) should be made applicable to plants. PBRs are granted for plant varieties which exhibit the following characteristics:

i. Stability (over repeated propagations)

ii. Homogeneity (uniformity of salient characteristics over a single patenting)

iii. Distinguishability, i.e., the variety for which PBRs are sought should be distinguished from existing varieties.

A landmark in the evolution of plant patent protection was the adoption of the International Convention of New Varieties of Plants (commonly known as UPOV) in 1960. UPOV has currently about 17 signatories mainly from the Organisation for Economic Cooperation and Development (OECD) countries (no LDC is a subscriber to the Convention). UPOV covers plant varieties only and confers PBRs as described above. In the wake of UPOV, several OECD countries introduced or modernised legislation relating to PBRs. The US legislated the Plant Variety Protection Act in 1970, and in 1980 the US Supreme Court, in the famous Diamond vs Chakraborty case, for the first time extended patent protection to living organisms. Plants and seeds patenting was recognised in the US only in 1985. Whereas the US provides a very broad scope of patent protection for living organisms, this scope is considered narrower in other industrialised countries, and virtually non-existent in the LDCs (where most plant breeding work is under the aegis of public research institutions).

**Plant breeders rights and innovative activity**

As discussed above, seeds patenting is a very recent phenomenon and so it is too early to predict what impact patents have on innovative activity. PBRs, on the other hand, have been in existence for a long time (especially in the US) and hence substantial evidence of their impact on research in agriculture technology has accumulated. The consensus emerging from several studies on the US (Sasson 1988, Lesser 1983) indicates that the PBRs stimulate private sector research, as measured both by the number of breeders as well as by the number of new varieties introduced.

The potential impact of PBRs and seed patenting on private sector innovative activity in LDCs is very difficult to assess, because very few LDCs, at the moment, provide any form of plant variety protection. In India, an additional complication arises from the fact that
until very recently private sector breeding activity has been discouraged officially for the fear of displacing the public sector’s commanding presence in the commercial seed market. The various criticisms of PBRs have been grouped under the following broad headings.

i. Narrowing the genetic base: The narrowing of the genetic base increases the vulnerability of the crop to single-gene-based pathogens. Genetic uniformity therefore increases the danger of famines. PBRs aggravate this risk in two ways. Firstly, the homogeneity provision encourages uniformity and secondly, as the protected varieties have higher yields, producers are tempted to switch from more genetically varied crops to these protected varieties.

ii. Freezing the exchange of genetic base: breeding activity depends on the availability of novel germplasm and the economic value imparted to germplasm by PBRs may act as a dampener on the free exchange of protected material and thus jeopardise further research. There is already evidence in the US that PBRs have slowed the flow of information from private breeders to universities.

iii. Germplasm conservation: Germplasm conservation has raised an important issue in the North-South Context. The South is the source of the most bio-diversity, but most international collections are under Northern control. The genetic resources are flowing freely from South to North. The collection is being undertaken with a view that genetic resources are the “common heritage of mankind”. However, beneficiaries of these collections will not be guided by the “common heritage” logic, but by private property logic. The rights of the original donors of genetic resources – the farmers – do not figure anywhere in the exchange.

**Biotechnology and TRIPs**

10 Biotechnology connotes the use of bioprocesses to develop the new technologies. The bioprocesses may be modifications or intensification of known processes or manipulation of living organisms for new processes leading to new products. It is a new and fast developing technology which is by its very nature expected to be bio-friendly. The application of these techniques could be grouped under four headings:

i. Plant genetic manipulation and breeding

ii. Industrial tissue culture

iii. Application in dairying and animal husbandry

iv. Use of genetically manipulated microorganisms to produce new and displace old agricultural products.

11 Biotechnology has immense potentials for raising the productivity of agriculture in both industrialised countries as well as the Third World. Specific improvements relate to:

i. Yield growth

ii. Nitrogen fixation (in non-leguminous crops)

iii. Enhancement of photosynthetic activity

iv. Better tolerance to soil conditions (such as moisture, salinity, etc.)

v. Pest and pathogen resistance

vi. Plant architecture.

12 Even though the long-run impacts of biotechnology are likely to be favourable, in the short run, the LDCs are likely to make several adjustments. It has been argued that the most distinct feature of the ongoing bio-revolution is its essentially private character. But
from the LDCs perspective, this has the critical implication that unlike during the Green Revolution (where the leading players in the developed world were public-sector research institutions) when the technology was on government to government basis at very low cost, the technology transfer under the bio-revolution is likely to entail substantial costs with joint ventures as the favoured medium for the transfer. The issue of IPRs is likely to loom large as a pre-condition for the effective transfer of technology. Since India has accepted the Final Text of the Uruguay Round and the IPR regime implied therein, the necessary conditions for the transfer of biotechnology from the advanced countries have been met. But still, because of the specialised nature of the IPRs in this area, enforcement problems will be manifold: firstly, it could be difficult to identify a patented plant of seed because both are subject to natural genetic drift and mutation; secondly, agricultural innovations can give rise to derivative or dependent inventions, with the result that multiple royalties could occur on a single product; and thirdly, very often infringement can only be proved by comparing entire genetic make ups. All these mean that mechanism to prove infringement can prove to be quite costly for LDCs.

**Biodiversity and TRIPs**

Biodiversity is one of the vital issues that affect the survival of the large majority of people in Third World countries whose livelihood depends on agriculture, fisheries, animal husbandry, sponsored health care, etc. Therefore the IPRs as related to biodiversity will determine the rights to and the control over biological resources as well as the rights and access to knowledge and innovation. Unlike mechanical artefacts, innovation and knowledge related to utilisation of living resources have been a highly evolved tradition in all cultures. Innovations for which patents are being given often only build on prior knowledge and the use of existing biological systems for food and medicine. IPRs particularly as being imposed worldwide through the new GATT agreement, pose restrictions at three levels:

i. The first restriction is the shift from common rights to private rights. This excludes all kinds of knowledge, ideas and innovations that take place in the intellectual communes, in villages among farmers, in forests among tribals and even in Universities among scientists. TRIPs is therefore a mechanism for the privatisation of the intellectual communes, and a de-intellectualisation of civil society

ii. The restriction of intellectual property rights is that they are recognised only when knowledge and innovation generate profits, not necessarily when it may meet social needs

iii. The most significant restriction that IPRs achieve is by the prefix ‘trade related’. Since most innovation in the public domain is for domestic, local, and public use and not for international trade, the multinational corporations (MNCs) are innovating for the sole purpose of increasing their share in global markets and international trade. So TRIPs in multi-lateral trade organisations will only be an enforcement of the rights of MNCs to monopolise all production, all distribution and all profits at the cost of all citizens, small producers world-wide, and the Third World countries in particular.

**TRIPs and bio-substitutes**

The use of chemical fertilisers and pesticides generally leads to impoverishment of soil and degradation of environment. These factors are compelling the agricultural sector to move away from the use of chemicals to their bio-substitutes (bio-fertilisers and bio-
pesticides). This is expected to reduce the cost of cultivation in the long run and also promote sustainable agricultural development. Research has already started in which India is also taking part.

15 It is very clear that there is going to be a revolutionary change in agricultural technology in which living micro-organisms are going to play an important role. If TRIPs is going to patent all these, the control over the entire range of seeds, fertiliser and pesticides will be with the multinationals which not only have a lead in bio-technology but also command enormous capital to invest. This will, no doubt, render all research into the hands of multinationals which would make all inputs costly because of their monopoly.

**Plant breeders’ rights and farmers’ rights**

16 The UPOV Convention included two very important exemptions, namely farmers’ exemption and breeders’ exemption. Farmers’ exemption allowed the farmers to multiply their proprietary seeds for sowing their own fields. Even if India accepts the milder form of IPRs represented by PBRs it is opined that the consequences would be negative. Further, it is argued that under the PBRs regime, other seed companies will not be allowed to multiply the protected seeds thereby preventing the development of a widely dispersed seed industry, which could affect the supply of seeds. It will even prevent the farmers from selling the seeds to their neighbours. It has been shown that the practice of the farmers of obtaining the new varieties from agricultural universities, multiplying them and supplying them to their neighbours, plays a very important role in the spread of new varieties. It is the lifeline of development which is sought to be cut by the PBRs system in the interest of the multinational companies.

17 Even farmers’ organisations and leaders are divided over the implications arising out of the TRIPs. One section of farmers argues that once the seed is patented, the farmers lose the right to modify, retain or use his seeds. They also fear that a large number of small seed companies will be simply swallowed up by large MNCs. So TRIPs would be nothing but a way of promoting ‘legalised monopoly’ of MNCs in India and the world. Another fear is that the implementation of TRIPs as contained in the WTO would stop farmer-to-farmer sale of seeds, hence a huge volume of sale in the informal sector which is the lifeline of Indian agriculture will be choked.

18 The other side of the story is presented by leaders like Sharad Joshi and activists like Gail Omvedt of the Shetkari Sanghatana. For instance, Omvedt (1993) calls the above prediction as an “alarmist and exaggerated fear of the market”. According to her, patenting of seeds will not make any difference to traditional varieties as agricultural processes deem it necessary for farmers to buy fresh seeds every year. That farmers will buy at a high price the low yielding seed is an insult to the common sense of Indian farmers. MNCs cannot force farmers to get into such agreements. Farmers will buy only if the seeds yield higher productivity and better results. If more seed companies come in the market including the MNCs, farmers will have more seed varieties to choose from. What is required is the motivation which pushes scientists and researchers to innovate and to do original research which is rewarded appropriately.
Conclusion

This paper has ranged over a wide spectrum of issues relating to IPRs in the context of LDCs, with special reference to India. The economic impacts will depend not only on the IPRs regime itself, but also on several associated factors such as the official Indian Policy on Foreign Collaboration and Foreign Direct Investment, as also on fiscal concessions for R & D in firms, etc. It is also important to note that impact of the new IPRs regime will vary from sector to sector. Two of the most important sectors likely to be affected vitally are the pharmaceutical and agricultural sectors, and the latter (in the Indian context) has been analysed at some length in this paper. This paper has given a serious examination to populist views, advocated by several academicians and politicians in India, to renege on the new GATT agreements. The WTO is a Hobson's choice for India and most other LDCs.

The opt-out strategy advocated by LDCs critics of the TRIPs agreement may not be a feasible strategy at the current stage of development of most LDCs. The cost of an opt-out strategy would be enormous and consequences would be unpredictable.

The feeling is that it is possible for India to comply with provisions of the TRIPs Agreements while retaining a balance between public interest and the private interest of the holders of IPRs. The new Bill passed in 1999 for amending the 1970 Patent Act is said to be a step in this direction. The future will tell us if this current adjustment to TRIPs agreement will really safeguard the interests of Indian farmers and consumers, in the larger framework of the liberalisation of India's economy.

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In its few years of existence, controversial judgments on trade barriers have been rendered by the World Trade Organization. One of the first decisions on synthetic hormones was related to food safety issues: in 1996 the European Parliament voted in favor of reauthorizing the ban on imports of hormone-treated beef and its trade within Europe already into effect since January 1989. This decision formally backed citizens’ and scientists’ position that hormones used in meat production increase cancer rates and may contribute to reductions in male fertility. But the United States argued that the health concerns of the European Union (EU) were not based on sound science and acted as a barrier to trade. Less than four months after the European Parliament’s vote the United States requested that the WTO determine whether the hormone ban complies with WTO rules. In early 1998 the WTO ruled in favor of the United States, forcing the EU to either remove its ban on imports or face severe economic sanctions.

This decision gave a strong signal in favor of efficient trade: no barriers to imports, no national preferences. Same decisions were made against the United States’ restrictions on importing shrimp from Asian countries that have inadequate conservation policies for endangered sea turtles; and against the EU’s preference for Caribbean banana producers.

Free trade and efficiency are the key words. The Agreements on Trade-Related Intellectual Property rights (TRIPS Agreement) are part of WTO: after the Dunkel Draft proposal, TRIPS agreements came into effect on 1 January 1995. The objective is to protect commodity trade from piracy and to increase innovation investments. The countries are required to prepare the necessary legal framework in order to fulfill commercial rules including standards of protection for intellectual property.
This general harmonization is focused on patenting. Countries gradually comply with provisions of the TRIPS. Recently India, which led opposition to the patenting of life forms, has aligned Indian law. In April 1999 the Indian Parliament amended the Patents Act in order to fulfill the TRIPS agreement. According to the Bharatiya Janata Party (BJP) government, a strengthened patent regime was necessary in order to help Indian scientists and protect their inventions. In Parliament, opposition came solely from the communist and left-leaning parties which staged walkouts to record their protest against the “recolonisation” of India by transnationals. The NGO Gene Campaign has been carrying out a series of meetings on Intellectual Property Rights (IPRs) in major towns of southern Kerala which has a high, ninety percent literacy rate. Similar meetings have been held in Northern Haryana, Uttar Pradesh and Bihar states and concluded with mass signature campaigns as a means of giving voice to the poor who are likely to be most hit by the new laws: “New laws should facilitate rather than hinder the people’s ability to access basic resources and enable and protect food and health security”, said Suman Sahai, the leader of Gene Campaign. More than 1,500 groups across the country have also started a Gandhian-style bija satyagraha (rightful demand for seeds) calling for civil disobedience of laws which “threaten livelihoods, biodiversity, food security and health security”.

This conflictual situation cannot be underestimated as it clearly shows contradictions between industrial innovation, competitive markets and long-term common goods protection. Intellectual property rights, control, access to the resources and benefit sharing are a major source of conflict. The opposition between industrial countries and under-developed countries is strong and has also clearly been expressed during the biodiversity convention negotiations: high-technology countries want free access to the resources in order to add a new character to the resource which can then be patented; groups of low-income countries claim national sovereignty in order to limit bioprospection and to negotiate benefit sharing.

Efficiency, innovation protection, equity, solidarity are major conflicting key words. Experts, NGOs, scientists, bureaucrats and farmers’ groups are lobbying at different levels, whether international, national and local. According to the rhythm of negotiation, an agenda is being pushed forward. Renegotiations of agriculture and TRIPS are scheduled under the WTO’s built-in agenda. Reviews enable countries to comply with its provisions. The extension of the review period has been requested and implementation of the TRIPS agreement by developing countries depends in part on the technical and financial assistance available to them. It depends also on the possibility of finding an internal political agreement. The original deadline was 1st January 2000, but an extension of the five-year moratorium has been asked for, based on the fact that the TRIPS Council has not been able to define either the scope or the modalities for non-violation complaints, as required by article 64.3.

This review of the TRIPS agreements can play an important role in the balance between fair trade and equity: if all the bargaining parties are negotiating freely in order to improve fair trade mechanisms, which of them are well informed enough in order to negotiate counterpart conditions? In other words, are voluntary agreements feasible if part of the agenda is hidden or if agendas interfere from one international convention to another? Which player is able to attend at the same time different organizations in order to be aware of the debates? Which player is able to set the calendar, rhythm and rules? How far can common good be preserved, if fair and clear identifications of products are
not transparent? Could the interactions between institutions (the WTO, the Biodiversity Convention and its biosecurity protocol as well as the FAO commitment for genetic resources) be articulated in a global architecture, which would allow the players to act with a clear understanding of each party?

**TRIPS and WTO: a tight framework in which players are bound**

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8 The WTO assumes the power to require each member to “ensure the conformity of its laws, regulations and administrative proceedings with its obligations as provided” in the Uruguay Round agreement. Under these rules, the WTO can oblige members to enforce the revision of certain national, state and local laws—such as regulations for pesticides, use of public lands, or nutrition labeling. According to the Office of the U.S. Trade Representative, even “Indigenous Tribes” recognized through a century of treaties negotiated according to the U.S. Constitution, will be considered “sub-federal jurisdictions” under the WTO.

9 Self-exclusion is almost unthinkable, especially for developing countries involved in structural adjustment policies. The WTO uses voting and dispute resolution procedures backed by economic sanctions to enforce its decisions. It is a permanent political body and can, with a three-fourths majority, establish new obligations at any time; under the old GATT, the principle of non-discrimination gave every country an implicit veto toward any new obligations that might be proposed.

10 Disputes resulting over implementation of the Uruguay Round are decided by panels of trade experts appointed by governments; the rules prohibit the members of a dispute panel from releasing documents and from disclosing their opinions to the public. When a dispute panel judges that a country’s trading behavior or domestic law does not comply with the rules of the Uruguay Round agreement, the country may bring an appeal to another panel of appointed appellate judges. A losing country must change the offending practices, laws or administrative procedures within a reasonable period of time. If it fails to do so, the winning country can retaliate by asking the WTO for permission to suspend a certain amount of its trade with the loser.

11 Intellectual property rights do work in this general framework. The dispute between India and the US arose in 1996 essentially from the following facts. Section 5 of the Indian Patents Act, 1970, does not permit product patents to be granted in respect of “substances intended for use, or capable of being used, as food or as medicine or drug”. Only “claims for the methods or processes of manufacture shall be patentable” in respect of those substances. Thus, India did not make available patent protection for pharmaceutical and agricultural chemical products commensurate with the obligations of Article 27 of the Agreement on TRIPS, which requires that “patents shall be available for any inventions, whether products or processes, in all fields of technology...”.

12 In December 1994, the President of India promulgated the Patents Amendment Ordinance, 1994, with a view to meeting India’s obligations of the TRIPS Agreement. The ordinance explicitly allowed the filing of patent applications and a system for the grant of exclusive marketing rights. However the ordinance lapsed because of the dissolution of Parliament on May 1996. Between January 1995 and February 1997, a total of 1339 applications for pharmaceutical and agricultural chemical products have been received.
All these applications have been stored for future action but there is no legal basis for the grant of exclusive marketing rights.

On July 1996, the United States requested a mutual understanding from India and then turned towards the Dispute Settlement Body. The panel terms of reference were established in 1997. The US essentially claim before the panel that:

1. India has failed to implement its obligation under Article 70.8 of the TRIPS Agreement to establish a mechanism that preserves the novelty of applications for pharmaceutical and agricultural chemical product patents during the TRIPS transition period.

2. Such mechanism must allow inventors to file patent applications from 1 January 1995, even though the decision on whether or not to grant any patent itself needs to be taken. This “mailbox” provision is there to receive and store the applications. The date of filing is used for assessing whether the application meets the criteria for patenting, including novelty.

3. India has failed to comply with its transparency obligations under Article 63 of the TRIPS Agreement in respect of a mechanism for filing patent applications pursuant to Article 70.8.

4. India has failed to implement its obligations under Article 70.9 of the TRIPS Agreement, which arose on 1 January 1995, to establish a system for the grant of exclusive marketing rights.

5. Under a system for the grant of exclusive marketing rights under Article 70.9, competitors of the owner of such rights should not be permitted on the market in the absence of the owner’s consent.

The United States requested the Panel to recommend that India brings its measures in conformity with its obligations. On the basis of the findings set above, the Panel concluded that India has not complied with its obligations and has failed to establish a mechanism that adequately preserves novelty and priority in respect of applications for product patents regarding pharmaceutical and agricultural chemical inventions. The dispute settlement body requested India to bring its transitional regime into conformity with its obligations under the TRIPS Agreement for April 1999. The Indian Parliament decision of March 1999 is a positive answer to the WTO. Sanctions and cross-retaliation are avoided. However, national consensus might be difficult to obtain as the Gene Campaign indicates.

The extremely tight timetables for panel work and the working procedures accelerate the agenda. Little time is left for national debates and consensus building. The threat of economic sanctions has pressured countries to adapt their domestic law to the international calendar. Because of its enforcement abilities, the TRIPS in the WTO are becoming an international norm protecting information and innovation investment. The USA plays a major role, as India as well as a number of developing countries have been placed on the priority watch list of the Special 301 provision of the United States Trade Act for denying effective intellectual property protection or market access to United States’ firms. These include Argentina, the Dominican Republic, Egypt, Guatemala, India, Indonesia, Kuwait and Peru.

**TRIPS and importance of patents: biotechnology industry strategy**

Efficiency of patenting has never been proved: many industries such as the automobile prefer the trademark strategy. However, patents on specific genetic sequences are a
specific strategy for biotechnology firms in order to lock the market. Accesses to the market and information control are the key. In order to obtain a bargaining position, transnational companies are both merging and depositing patents.

The small start-up firms in the biotechnology industry that had been created early (in the 1980’s) have been taken up by multinational companies. Merging is current and new life industry giants control the market. In 1997, merging between US firms has been estimated at 745 billion dollars. A firm such as Monsanto, the second largest agrochemical firm after Novartis, has invested over 8 billion dollars in seed purchasing over the last 5 years in order to control over 85% of the grain market and 33% of the soya market. This dominant position is being consolidated by patents which are being taken on key products such as Monsanto RoundUp resistant seeds. Transnational companies are seeking patents to control crops giving sole access to their products through dependency licenses.

Narrow markets for biotechnology globally estimated to 13 billions dollars altogether in 1998 explain partly merging and patenting strategy. In a competitive global market, which takes a long time to take off (2 billion dollars in 1988) and which takes lots of investments, information and access to the market have to be controlled in order to limit competition. Patenting is also a usual practice for the chemical and pharmaceutical industry. Monopoly rights are a way to negotiate a position in the market which is slow to start up, even if the American Office of Technological Assessment (OTA) had expected a biotechnology boom since 1988.

<table>
<thead>
<tr>
<th>World market</th>
<th>All processes</th>
<th>Biotechnology</th>
<th>Transnational</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sectors</td>
<td>2 billion $ in 1988</td>
<td>13 billions $ in 1998</td>
<td></td>
</tr>
<tr>
<td>Pharmacy</td>
<td>Estimates in 1988 for 36% of the market</td>
<td>136 billion $</td>
<td>57% by &quot;top 20&quot;</td>
</tr>
<tr>
<td>1988</td>
<td>1998: 25% of the market</td>
<td>hold by &quot;top 10&quot; &amp;</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>251 billion $</td>
<td>6 billion $</td>
<td></td>
</tr>
<tr>
<td>Agrochimics</td>
<td>Estimates in 1988 for 30% of the market</td>
<td>20 billion $</td>
<td></td>
</tr>
<tr>
<td>1988</td>
<td>1998: ?</td>
<td>87% of the market hold by the &quot;top 10&quot;</td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>31 billion $</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Industry</td>
<td></td>
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</tbody>
</table>
Control of market and information are a way to limit competition: market shares access and control are the only way to handle the absence of market take-off. Patent is an anti-risk reflex which is now systematic for any actors whether public or private. All the products actually commercialized are patented. Over 70% of patents are USA patents and 90% are private patents. The agricultural sector is the first trading experiment for the biotechnology industry. Since 1994, when the first genetic plants had been commercialized (Mac Gregor tomato and virus-resistant tobacco), 48 new agricultural products are on the market. Those products are mostly covering the basic commodity production, which is: corn, soya, tomato and cotton. This fast take-off has been expected for over ten years, a period in which biotechnology has been tested in 15,000 places and distributed in 34 countries all over the world.

The countries mostly involved in biotechnology are the USA, China, Australia, Canada, Japan, and Europe. The USA is by far the first country which has chosen this production model. European moratorium on Bt corn in England, Austria and France has been slowing down the commercial distribution. This moratorium period is a trial for this industry which has already invested over 2 billions in agricultural research and development biotechnology and has only made 100 million dollars in agricultural products sales. Losses for the industry are significant, and even if legal framework allows commercial distribution, the industry may prefer to wait in order not to loose the consumers’confidence. In the USA, production have been mixed and over 27 million hectares are estimated to have been planted with transgenetic crops in 1997. Now, costs for segregation are high. Products have to find other destinations (CARE has been dealing with Monsanto in order to distribute GMOs products in micro-credit aid programs).

Future potentialities of biotechnology should emerge once the functions and interactions are fully known. That might take a certain number of years. According to a 2001 calculation, the human genome is supposed to contain around 30,000 genes. Until now, only around 100 genes have an established relationship with a disease or a specific function. The function of all the other genes is still unknown. Ability to develop large-scale biological test systems controlling access to information libraries as well as the technical process and the product being used could open huge markets. Competition between innovative technological systems is openly launched. The European directive on the protection of biotechnological invention which has been adopted in 1998 after ten years of discussions is an example of the alignment of countries on a model based on high technology. A new area with protected trade including the USA and Europe has been created.

Under such circumstances, TRIPS renegotiations are central for biotechnology transnational corporations as they give a strong possibility to claim and maintain a

<table>
<thead>
<tr>
<th>Year</th>
<th>Estimate</th>
<th>Estimate</th>
<th>Market Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>15 billion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1998</td>
<td>20 billion</td>
<td>1.8 billion</td>
<td>40% of the market</td>
</tr>
</tbody>
</table>

Source: H. Ilbert, tabulated from OTA, ISAA and RAFI sources.
dominant position. They are also central for countries which have chosen biotechnology as a development motor. Possibilities to affirm another development model in which farmers’ rights or environmental protection would be taken into consideration are being discussed in other international fora.

**Biodiversity Convention and FAO commitment: common goods conservation and indigenous rights**

23 Those global conventions do not have the same enforcement power as the TRIPS. However, their logics and principles may play an important role if they happened to be coordinated in a fair trade transparency system.

24 The Biodiversity Convention has been adopted in Rio in 1992. After the Bruntland Report (1987) in which the necessity to find multilateral agreements for conservation and exploitation of the common heritage of mankind had been recognized, the Biodiversity Convention confirms the need of preservation and usage of biological diversity. Equitable sharing of benefits is a major principle which is leading to build procedures in order to evaluate resources and possible counterparts. The second major principle is the national sovereignty. The nature of the common good to preserve has led government to ban common heritage: access to genes and direct industrial or scientific uses are progressively under national control.

25 Conflicts between the TRIPS provisions and the Convention on Biological Diversity are open. Countries are focusing on Article 27 of the TRIPS agreement to introduce in WTO the traditional rights, or the indigenous and local communities rights, according to the Biodiversity Convention. Traditional knowledge recognition is now central in the negotiation and any benefits derived from the use of local knowledge needs to be approved and shared. For example, the so-called Biopiracy Acts has led countries to deposit claims against industries that are patenting indigenous resources. The neem controversial patenting by American firms is a typical example. Actors such as governments, NGOs, scientific bodies are now organizing defensible sui generis instruments that preserve the public interest - defining the collective rights of indigenous peoples, strengthening the definition of Farmers’ Rights with the FAO International Undertaking on Plant Genetic Resources, building up Farmers’ Rights and biosafety protocols which could become a legally-binding protocol.

26 In 1983, the FAO adopted the “International Undertaking on Plant Genetic Resources” to promote the availability of plant genetic resources for the purposes of scientific research, plant breeding and genetic resource conservation. In 1989, the FAO endorsed a concept of Farmers’ Rights as an annex to the Undertaking that specifically recognized farmers’ contributions to developing biodiversity and the obligation to share with them the benefits of their work - the exact opposite of patent restrictions. In fact, this resolution stipulates that “plant genetic resources are a common heritage of mankind to be preserved, and to be freely available for use, for the benefit of present and future generations.” Another FAO resolution in 1991 proposed implementing Farmers’ Rights through an international fund to support plant genetic conservation and utilization, particularly in developing countries. Governments agreed that the resources of the fund should be substantial, and sustainable, and that the donors of genetic resources would determine and oversee its management. A 1993 resolution requested the Undertaking to
be revised as a binding international law in harmony with the Convention on Biological Diversity, a process that is presently underway.

The Commission on Genetic Resources for Food and Agriculture is the only intergovernmental body where member countries, both donors of funds and technology, and users of genetic resources, discuss matters specifically related to agricultural biological diversity. Its relation with the CGIAR is important to define statute of genetic collections. About 600,000 collections are being stored as public good. For now, efforts are being made to improve the user-responsiveness of the system and to provide access to a wider range of information on the ex situ collections, that will meet the requirements of different users (breeders, curators, researchers, policy makers). In the medium term, links will be developed with the databases of key partner (NARS, gene banks) and an information system (SINGER) in order to provide access to the full range of genetic resources information available within the CGIAR. Issues of access and control of gene banks are now under consideration. The possibility for an enterprise to use one item of this collection in order to introduce an innovation and patent the variety is a danger that has occurred already once or maybe more. Issues of control protection, innovation and counterparts are also being discussed. Even if the CGIAR has recently condemned the Terminator technology patenting, pressures for strong classical patenting also exist among the scientific innovative sector.

According to market principle, issues of information access and risks have to be constantly evaluated. The biosafety protocol, which is being supported by a large majority of countries including the EU, could also modify the TRIPS agreement by introducing the precaution principle which is not taken into consideration by the WTO.

Clarifying the statutes of common goods threatened to be destroyed, clarifying the products to be distributed through clear labeling, are conditions for fair markets. Agreements on different types of property rights or negotiation in order to limit actual binding exclusive rights on living cells are on their way. The refusal to identify clearly a product such as a genetic engineered organism disrupts the fair trade rules: no transparency, no transaction cost in the negotiation. The coordination of the different international organizations in charge of ecological or economical risk assessments is necessary in order to facilitate information transparency between actors acting at different levels.

**Annexure**

What are intellectual property rights?

Intellectual property rights are the rights given to persons over the creations of their minds for a certain period of time. Intellectual property rights are customarily divided into two main areas:

1. Copyright and rights related to copyright
2. Industrial property divided in two main areas. One is characterized as the protection of distinctive signs, in particular trademarks and geographical indications. The other category is related to industrial innovation: patents, industrial designs and trade secrets are the major tools. It provides protection for the results of investment in the development of new technology, thus giving the incentive and means to finance research and development activities. The protection is usually given for a definite term: typically 20 years in the case of patents.
Patents give monopoly rights and exclude competitors. Scope and geographic expansion of patents are important factors. In the 1980 Chakraberty example of a bacteria eating up petroleum, not only the process was claimed, but the bacteria itself.

**What are the TRIPS agreements?**

Recognizing the need of a multilateral framework of principles, rules and disciplines dealing with international trade in counterfeit goods, recognizing that intellectual property rights are private rights, the agreement on Trade-Related aspects for Intellectual Property Rights follows one main objective: “The protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations.”

After those general principles, the agreement settles the scope and use of intellectual property rights. The protection applies to copyrights, trademarks of all products of mind including books, movies, graphic designs, geographical indications, industrial design, patents and other undisclosed information. One of the most controversial segments is related to patents on genetically engineered products and living organisms. The now famous article 27 allows countries to exclude from patentability inventions which could disturb the public order or morality, including prejudice to the environment. It also states that “members may also exclude from patentability:

1. diagnostic, therapeutic, and surgical methods for the treatment of humans and animals
2. plants and animals other than micro-organisms and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.”

The exclusive rights that must be conferred by a product patent are the ones of making, using, offering for sale, selling, and importing these purposes. Process patent protection must give rights not only over use of the process but also over products obtained directly by the process. Patent owners shall also have the right to assign, or transfer by succession, the patent and to conclude licensing contract (Article 28) and they are limited exceptions to the exclusive rights (Article 30). The term of protection available shall not end before the expiration of a period of 20 years counted from the filing date (Article 33).

General enforcement procedures are being explained on the basis of right of information, transparency, equity and fair trade. Institutional arrangements as well as dispute settlements oblige countries to publish information in order to enable government and right holder to become acquainted with them (Article 63 and 70).
1. Early 2002 the new Patent Bill was yet to be accepted by the Indian Parliament. In August 2001, however, the Protection of Plant Varieties and Farmers’ Right Act was passed. Breeders can claim intellectual property rights in spite of some restrictions (rights limited to 15 or 18 years, no protection allowed in areas that would harm public health nor for any genetic use restriction technology such as Terminator), but farmers can save, re-sow or sell seeds of the protected variety «in the same manner as before except ‘branded seeds’, i.e., seed in a package or container and labeled as a protected variety». See A. Ramanna, “India’s Policy on IPRs and Agriculture”, Economic and Political Weekly, 22.12.01, pp. 4689-4692 (Note of the Editors).
2. The genome can be defined as the whole of all existing genes containing all genetically inherited information.
3. Neem (Azadirachta indica A. Juss) is a tree with medical and pesticide uses.
4. CGIAR: Consultative Group on International Agricultural Research, including El Centro Internacional de Agriculture Tropical (CIAT), the Centre for International Forestry Research (CIFOR), the Centro Internacional de Mejoramiento de Maiz y Trigo (CIMMYT), the Centro Internacional de la Papa (CIP), the International Centre for Agricultural Research in Dry Areas (ICARDA), the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), the International Centre for Living Aquatic Resources Management (ICLARM), the International Centre for Research in Agroforestry (ICRAF), the International Food Policy Research Institute (IFPRI), the International Institute of Tropical Agriculture (IITA), the International Livestock Research Institute (ILRI), the International Plant Genetic Resources Institute (IPGRI), the International Service for National Agricultural Research (ISNAR), the National Agricultural Research System.
5. In theory, the WTO fosters negotiations among all of its members (multilaterally). In reality, many decisions are still made bilaterally (between two countries), principally between the United States and the European Union (EU). And the United States tends to impose trade sanctions on its own (unilaterally), although doing so is illegal under GATT. But only recently has the EU objected, while other countries lack the economic power to do so.
VI. After Seattle
15. Issues for the New Round of Negotiations: an India Perspective

G.S. Bhalla

Seattle and afterwards

1 The WTO meeting at Seattle during December 1999 was an eye opener for the World Trade Organisation. It was assumed earlier that in spite of some opposition, there exists an overwhelming support for the WTO objective of bringing about multilateral trade liberalisation.

2 Seattle proved that opposition to the WTO is not just marginal but quite overwhelming. One group, the anarchists, mainly middle class youth from developing countries who do not believe in markets, wanted to destroy the WTO as a symbol of a capitalist system they detest. They indulged in violent demonstrations.

3 There were four other groups along developing/developed and reformist/abolitionist dimensions. Further, the opposition was not merely from NGOs and small disgruntled anarchists, but also emanated from powerful trade unions in the USA.

4 The demonstrators from the USA and other developed countries created much of the noise of course. They consisted mainly of labour unions and a combination of consumers’ environmental and anti-globalisation groups. Some wanted stricter environmental and labour standards to be imposed. They were opposed to the entry of cheap goods produced by cheap labour from the developing countries, as this was likely to have an adverse impact on their jobs. Some of them felt that the WTO had become too powerful and encroached upon the sovereignty of different countries by forcing them to conform to the rules laid down by it. The free trade rules often resulted in overriding other legitimate concerns like food safety.

5 As against this, the participants from the developing countries had a completely different agenda. Most of them were not much concerned about cheap imports or child labour. Their major concern was to make the WTO more equitable between the developed and
developing countries. NGOs from developing countries criticised the WTO for quickly advancing causes in which developed countries were interested (such as intellectual property rights), while moving slowly, if at all, in areas of great importance to poorer countries (like agriculture and textiles). Most of them either opposed or did not actively support the introduction of labour and environmental standards for fear of tilting the WTO’s institutional power and agenda away from poorer countries. Some groups however also advocated the elimination of the WTO or the exclusion of agriculture from the WTO framework.

But most groups from the developing countries underlined the inequity built in the WTO which had given much more power to the developed countries by allowing them to maintain very high levels of tariffs and export subsidies thereby denying market access to the exports of developing countries. They advocated the removal of all trade and non-trade barriers and elimination of export subsidies.

In brief, while the agenda of developed countries NGOs and Trade Unions was against the very spirit of GATT and free trade, the agenda of developing countries was to reform the WTO with a view to making it more equitable between the developing and the developed world.

The lesson learned from Seattle is that the WTO cannot afford to appear to be working in the interest of only the developed world. It has to keep in mind the concerns of developing countries that because of being poor, do not have the same bargaining power as the developed countries.

Major issues for negotiations in the millennium round of Agreement on Agriculture (AoA):

India, like most other developing countries, is fully committed to the WTO’s objective of multilateral trade liberalisation, which is expected to increase international trade and benefit all the trading partners. There exists a general consensus among the Indian scholars that the Uruguay Round (UR) of GATT negotiations and the setting up of the WTO is a major landmark since it has, for the first time, provided the institutional framework for freeing multilateral trade in agriculture. The Agreement contains reduction commitments by both the developed and the developing countries of both domestic and export subsidies and their replacement by tariffs. It is expected that the hoped withdrawal of huge support to agriculture by the developed countries would result in providing a major incentive for agricultural exports from the developing countries.

But this notwithstanding, it is being increasingly realised that because of various trade and non-trade barriers imposed by the developed countries, the developing countries are unable to reap the potential of increased exports. Not only do they face the problem of market access in agricultural and agro-processing areas, huge export subsidies on many products makes their products non-competitive in the world market. The WTO Agreement has not fully succeeded in addressing these issues.

It is in this context that India has tried to articulate its views about various issues to be taken up in the Millennium round of negotiations on AoA. In India as in many other developing countries, a need is felt of more explicitly addressing the relevant tools which hinder market openness including protectionism tools such as high levels of tariffs,
export subsidies, trade related quotas and non-trade barriers. Some of these are outlined below.

High protection levels in the developed countries

12 The first major problem is very high level of tariffs on agricultural imports in developed countries. In practice, despite reduction commitments, the developed countries have been able to maintain very high tariff ceilings since their existing tariff levels in the base period 1986-88 of UR negotiations were already very high, sometimes well over 300%. Consequently, for several considerations, the levels of tariffs and actual tariff ceilings imposed are much higher in comparison to those prevailing in the developing countries. The average tariffs for the OECD countries for the first year of implementation of tariff reductions (i.e. 1995) was 214% for wheat (186% for wheat flour), 197% for barley, 154% for maize, and 11% for rice, respectively. On the other hand, in the developing countries, the average bound rates of duty for the three major cereals, namely wheat, maize and rice were about 90%.

13 The main suggestion for future negotiations is to bring down excessively high tariffs to some moderate levels. Tariff reductions for developing countries should be half the levels of developed countries. The ultimate aim should be to reduce the percentage of tariff levels for each commodity in all countries in the range of 50% to 75%. This tariff rate should not be calculated as an average for all commodities, but should apply to each and every commodity.

Export subsidies

14 The second major problem is that under Agreement on Agriculture, a relatively small number of developed countries, which have been using export subsidies, were given the opportunity to use these subsidies. These countries continue to give large export subsidies to agricultural commodities. Total support in the OECD countries in 1998 was about US$ 362 billion, higher than US$ 326 provided before the Uruguay Round began. The highest transfers are by the EU followed by Japan and US (OECD, 1998). Again, during 1996, per farmer transfer in the EU, USA and Japan were US$ 17474, US$ 27240 and US$ 30091, respectively.

15 The combination of high import tariffs and high export subsidies has dual ramification. First, developing countries are unable to get the desired share of the global market. Second, developed countries may encroach upon their markets through cheap imports.

16 Another issue related to export subsidies is that the current agreement does not include export credit schemes under the reduction commitments. Clearly, rich countries with large resources can afford to extend export credit to boost their exports. In the new agreement there is a need to include these in the reduction commitments.

17 In the next round of negotiations, there is a clear need for arguing for the abolition of all export subsidies including export credit within a certain specified time period of 2 to 4 years.
Other support

The subsidies given under “blue box” (payments under production limiting direct payment programmes, etc.) and “green box” (Research, Insurance etc.) also lead to increases in subsidised output in developed countries. The “blue box” is essentially an agreement between the US and the EU for giving certain support for decoupling and withdrawal from farming (Jostling, 1998).

The main suggestions in this regard are to empty and lock the “blue box” and to tighten the criteria for inclusion of support under the “green box”. There should be a ceiling on all forms of direct payments and these should be included in the calculation of the aggregate measure of support (AMS).

High import tariffs and high export subsidies imply that the problems faced by the developing countries arising from the implementation of AoA could be two-fold. One, they would not get the desirable share in the larger markets because of the continuing policies of protectionism. And, two, their own markets may be targeted by the subsidised products from the developed countries. In addressing these problems, there have been attempts to prioritise the twin issues of trimming the subsidies and market access. The suggested priorities appear to have been guided by the domestic compulsions of the countries. Thus, while countries with significant surpluses have been more inclined to pitch for better market access, domestic market considerations have driven others to argue for a rapid phasing out of export subsidies.

Sanitary and phytosanitary (SPS or quarantine) policies

The Agreement on Sanitary and Phyto-sanitary Measures is designed to address legitimate concerns of members to maintain certain levels of safety and protect human, animal or plant life or health. However, in practice, many developed countries use blunt quarantine instruments that restrict imports well beyond what is necessary, achieving the above objectives either through an outright ban on many products or by imposing tariff levels well beyond 100% in some cases (Anderson, 1998). Some of the new environmental and safety requirements also perform the same function.

In future negotiations there is a clear need to eliminate discretion in the application of sanitary and phyto-sanitary standards. All the countries should accept the standards specified by the Codex Alimentarius Commission.

Other barriers

Finally, there are several other areas that need consideration. One is special safeguard mechanisms which allow developed countries to trigger import restrictions, in case import quantities surge or prices plummet. This should be phased out, for example, by adjusting the trigger each year. The level of trigger price in the meantime could be set as the lowest external price in calculating the initial tariff equivalent.

Exception to tariffication is the second area. This applies mainly to rice in Japan and Korea. In order to protect their own highly high-cost producers, these two countries have
excluded rice from tariffication under the special safeguards. There is no justification for
the continuation of these safeguards.

25 The third area is the arbitrary administration of tariff related quotas (TRQ) by developed
countries which enables countries to lock in preferential access to traditional trading
partners and keep the new ones out.

26 The fourth area is export credits and export promotion. These are just export subsidies by
another name and should come under stronger discipline. The OECD has recommended
that the export credit be treated in the same way as those for other products. Export
credits add to export subsidies of developed countries and militate against the interests
of developing countries.

27 Finally, the fifth area is IPR and TRIPS issues. New plant varieties and animal breeds are
examples from agriculture of intellectual property rights. Access by poor farmers to
biotechnological innovations has food security implications. For example, the use of
‘terminator’ genes that prevent seeds from reproducing forces farmers to buy seeds
rather than grow their own seed stock. Similarly, the development of plant varieties that
rely on particular herbicides for weed control, locks farmers into using these herbicides.

28 In the next round of negotiations, there is a need for a total overhaul of the whole system
of import and export subsidies and the level of exemptions on the lines suggested above.
The negotiations have also to address the issues of non-tariff barriers like reasonable
levels of sanitary and phyto-sanitary requirements, and the implications of IPR and TRIPS
particularly on small farmers. Finally, the negotiations should keep in mind the impact of
liberalisation on small farmers, in terms of their ability to withstand competition and
benefit from trade liberalisation. Most important, the issue of food security remains of
fundamental importance for all the developing countries.

29 It is also important to realise that agricultural trade liberalisation under the WTO,
particularly for those countries with low levels of income, is not likely to provide tangible
benefits on its own. For these countries, it is necessary to increase productivity of
agricultural resources, develop human capital and skills, and ensure effective rural
infrastructure to realise the potential benefits of liberalisation. For success, the important
factor is to develop appropriate linkages to ensure price induced output expansion and
promote agro-processing for effective value additions.
16. A post-Seattle Updating: a French Perspective

Jacques Loyat

The failure of the Seattle conference emphasises major changes both in the comprehension of what is at stake in the negotiation and on the balance of power. Beyond the defence of pure commercial interests through liberalisation of markets, it conceals a more profound debate on the role of agriculture in the economy. In the first part, we will first recall some major events that have happened since the 1999 seminar. What European agriculture is aimed at is the question tackled in the second part. Some policy consequences are introduced in the third part.

Three major events with agricultural policy implications

The failure of the Seattle conference

The ministerial conference of Seattle (from 30 November to 3 December 1999) should have adopted a declaration launching a new round of negotiations. Two elements have characterised this conference.

The first one is the presence of the developing countries which consider that the Uruguay Round has not given to them the commercial benefits they expected, because of trade and non-trade barriers. Their demand of a reexamination of the agreements signed in Marrakech came up against a refusal by developed countries, especially the USA. It is likely that most of the 77 LDCs would not have accepted a mere agreement between the EU and the USA, as they did for the Uruguay Round agreement. The refusal of the industrialised countries to accept an exemption from duties for the products of the 48 less-developed countries is one of the reasons why negotiations broke down.

But, the concern of what is now commonly called the civil society with respect to globalisation has certainly counted for much in the failure of the Seattle conference. This
opposition to the WTO negotiation has not a unique signification. The effects of market liberalisation which reinforce the power of multinational companies; the effects on environment and health; the consequences on employment situation in developed countries were also matters of concern. What is at stake is the defence of environment and social standards in developed countries, which are considered as pure Western protectionists’ measures by less developed countries. In that respect, the opposition of India to the creation of a working group, proposed by the USA, on social standards during the WTO negotiation, reveals the will to benefit from comparative advantages due to low costs.

If one can consider that protectionism lies behind the intentions of some protestors in Seattle and elsewhere against globalisation, one has also to think of a profound change in the behaviour of most people with respect to health care and food and more generally to the risks of food consumption. This can be illustrated by the consequences of the Biosafety Convention and the mad cow disease in Europe.

The mad cow disease and its ultimate consequences for agricultural policies in the EU

In November 1986 a new disease, the bovine spongiform encephalopathy (BSE), is identified. The first cases appear in the United Kingdom between 1982 and 1985 and the development of the disease reaches its maximum in the nineties: more than 170,000 cases are registered in this country, but different European countries are hit, especially Portugal, Switzerland, France, Belgium, Ireland, and ultimately Germany, Spain, Denmark, the Netherlands and Italy.

The spreading of the disease is due to the consumption by the cattle of powder produced from animal carcasses. This powder has been used as protein feed for intensive farming at low costs. A change in the process of transformation of this powder in the eighties has introduced the mad cow disease.

The transmission of the disease to men has been proved in 1996 with the discovery of a new form of Creutzfeldt Jakob disease (a neuro-degenerative one). This was a proof that a crossing of species barriers was possible. Since then, important measures have been taken. It can be considered as the beginning of the importance given to the precautionary principle for public policies. The consumer requirement for safety measures and quality is not new, but it has taken a particular vigour since then. It has been aggravated these last years in the EU, especially in France, with the debate on GMOs and especially the insistence of the USA to impose on the EU, trade liberalisation of GMOs and exports of meat produced with growth hormones that are banned in the EU.

Now the demand to farmers in Europe covers not only food security but also food safety. On January 9th 2001, the German ministers of Agriculture and Health were dismissed for not having taken the right measures during the BSE crisis. The new minister of Agriculture is member of the Green Party and she is in charge of not only the agricultural sector but also the protection of consumers.

This is a sign that environment and health protection, which are demands of all the society, have become a major preoccupation for governments in the EU. In the future the agricultural policies must be defined to defend the interests of consumers and not only farmers.
The Convention on Biological Diversity and the Cartagena Protocol on Biosafety

11 Here is another example of a change in the behaviour with respect to the market and trade liberalisation as unique ways of welfare.

12 The Convention on Biological Diversity (CBD), negotiated under the auspices of the United Nations Environment Programme, was adopted in 1992. Article 19.3 of the CBD provides for parties to consider the need for and modalities of a protocol setting out procedures in the field of the safe transfer, handling and use of Living Modified Organisms (LMOs) that may have an adverse effect on biodiversity and its components.

13 After several years of debate, in January 2000 was adopted in Montreal the Cartagena Protocol on Biosafety (from the city in Colombia, Cartagena, which was in 1999 the seat of the first meeting on the prevention of biotechnological risks).

14 The protocol addresses the safe transfer, handling and use of LMOs that may have adverse effect on biodiversity, taking into account human health, with a specific focus on transboundary movements. It establishes procedures for import of LMOs for international introduction into the environment and calls for information sharing for LMOs about food, feed, processing, and contained use of transit. It also incorporates the precautionary principle and mechanisms for risk assessment and risk management. The protocol establishes a biosafety clearing-house to facilitate information exchange, and contains provisions on capacity building and financial resources with special attention to developing countries and those without domestic regulatory systems.

15 The first meeting of the Intergovernmental Committee for the Cartagena Protocol on Biosafety was held in Montpellier in December 2000. Six issues were discussed: capacity building, the roster of experts, decision-making procedures, handling, transport, packaging and identification, and compliance.

16 The Cartagena Protocol stipulates that States have the right to take, in situations of scientific uncertainty, specific precautionary measures, in order to protect the long-term interests of their citizens in the context of globalisation. Such a protocol provides public policy with the right to conflict with the general rules of the WTO. Like trade, environment is now part of international law.

The CAP and the French Agricultural law: in defence of an EU agricultural model?

17 After the Second World War, in Europe, farmers were asked to provide food security. This could be reached by increasing productivity in order to increase production and face food shortages. Research, development and education were focused on that objective. The CAP gave specific tools, such as intervention and guaranteed prices, to encourage production and productivity. The French agricultural laws (“lois d’orientation agricole”) were complementary to the CAP.

18 The consequences are well known in terms of surpluses and subsidisation of exports. This has been partially corrected in 1992 through a drastic reform to face the Uruguay Round. But, in spite of some marginal measures, the environmental consequences of agricultural
intensification were not really considered, while health and environment concerns became more and more a preoccupation of all the society.

**Agenda 2000**

19 In 1999 the European Council of Berlin reached an agreement on “Agenda 2000”, the new framework for CAP. The Council wanted to promote a multifunctional, sustainable, competitive agriculture, spread all over the European Union territory, including the less favoured areas, able to look after landscapes, to contribute to rural development, able to come up to consumers' demand in terms of quality and food safety, protection of environment and preservation of animal welfare.

20 The agreement, which stabilises market expenditure over the next seven years, incorporates the multifunctional dimension of agriculture through two major trends:

- it recognises the importance of rural development policy alongside market support policy, establishing it as “the second pillar of the Common Agricultural Policy”. Rural development is thus recognised as an integral and inseparable part of the CAP.
- it sets up an aid modulation system. This system, which is optional, allows EC members to decrease the amount of aid paid to farmers within a global limit of 20%.

21 But this reform does not really break with the previous CAP, from the point of view of distribution of payments and the need to transfer more payments into rural development and environment. These are precisely the measures which will in the near future be hotly discussed in view of the next reform of the CAP.

**The French Agricultural Orientation Law and the “Land management Contracts”**

22 The French Agricultural Orientation Law, adopted in 1999, represents a big step towards a new agricultural policy. It has the ambition to become a model for the EU in order to help agriculture to get adapted to changes in society at large. Agricultural multifunctionality is clearly identified as a vision of agriculture in which the environment, animal welfare and product identification are no longer perceived as burdens on farming, but as advantages enabling value to be added to farm produce in national, Community and world markets.

23 The Land Management Contract (*contrat territorial d'exploitation*: CTE) is a new tool to help farmers committed to implementing systems of production which are of social benefit but which cannot be fully remunerated by the market and require financial input from society in recognition of the commitments entered into.

24 The goal is to increase complementarity between an agricultural system organised in channels (the Common Market Organisations) and the development of land. For each farm, the CTE is based on a comprehensive farming project that combines an economic approach designed to preserve and develop the added value of farming, whilst promoting employment, with a land-based approach designed to adapt the farming system to durable environmental management and to local contexts.

25 CTEs allow agricultural policy to be more deeply rooted in an area - a region or local project. Support grants are awarded on this basis, after examination by a local commission made up of elected officials, farmers, environmental protection associations
and consumers. It is also the first phase in rebalancing the various instruments of support, towards the effective acknowledgement of the various functions of agriculture, within a contractual framework. Therefore, the objectives assigned to the CTEs cover two categories, to be combined on the farms:

- socio-economic objectives designed to create added value: they include operational objectives, the main ones being improvement of product quality, promotion of diversification, and the means to encourage employers to maintain jobs and create new ones
- environmental and land-oriented objectives: they include operational land management terms, such as improved qualitative and quantitative management of water, better use of grass lands, actions in favour of biodiversity and wetlands, landscape management, protection of the natural and cultural heritage, and prevention of natural hazards and forest fires.

Economic interpretation and policy consequences

26 During the Uruguay Round negotiation, the political priority of the governments to maintain agricultural policies entered in conflict with the recommendations of most economists. A way to justify policies was to argue on the peculiarity of the agricultural sector: its instability, its diversify, the use of fixed resources such as land, the importance of biological processes, the production of external effects and public goods. This situation has led to the emergence of a new concept: multifunctionality.

27 The multifunctionality of the agricultural sector was mentioned for the first time in the international political debate of the Rio summit in 1992 (in the chapter dedicated to sustainable agriculture and rural development). During the Uruguay Round, and later within the framework of the WTO Committee discussions on trade and environment, the multifunctionality of agriculture was referred to several times, under the title “Non Trade Concerns” (NTC). Multifunctionality was mentioned again in the World Food Summit in 1996 and has been introduced in OECD vocabulary since 1998.

28 The concept of multifunctionality of agriculture is the result of three major concerns:

- the first underlines the fundamental link between agriculture, environment and sustainable rural development
- the second pertains to the relationships between agriculture and food security
- the third involves the relationships between agriculture and world trade.

29 In that respect, agriculture produces not only tradable products, but also territorial development, use of marginal land, landscapes, food security and symbolic cultural aspects.

30 The interpretative angle provided by multifunctionality combined with economic theory attempts partially to correct the inability of current economic models to fully account for the non-trade aspects of agriculture. The growing importance given to the non-productive functions is now leading economists to think about taking into account external influences and amenity production which generate public assets.

31 In the WTO, the debates deal with the possible negative effects of uncontrolled liberalisation of the agricultural trade on food security, the environment and the rural economy in developed and developing countries, given the multifunctional aspect of agriculture. But there is also a debate on the risks inherent in a particular use of the concept to justify the payment of direct aid to farmers in certain developed countries.
There is a need to develop an approach of governance in order to find an optimal balance between regulation and markets, and to internalise externalities in order to valorise public goods.

32 In the EU, increasing productivity leads to more environmental and social damages while the subsidisation of intensive farming generates distortions and conflicts at an international level. The actual distribution of funds is mostly profitable to the most productive and richest farms. It creates a major disparity which is prejudicial both to the society as a whole and to the external commitments.

33 The challenge of the EU governments lies in their capacity to face such problems and to respond to consumers’ demand. As far as the CAP is concerned, the question of its removal is in debate. Some would argue in favour of its disappearance, the CAP creating major market distortions and difficulties to fit with the next EU enlargement to Central and Eastern European Countries. Some would make the CAP accountable for the sanitary state of breeding (BSE, Classical Swine Fever, and the recent development of foot-and-mouth disease).

34 The removal of the CAP would nevertheless have major negative consequences:
   • the end of a common policy and a risk of re-nationalisation of subsidies in agriculture, with greater disparities among Member States
   • the end of any market regulations with the impossibility of facing necessary supply and demand adjustments.

35 Furthermore, the removal of the CAP and its regulation would lead to more land concentration among farms and the comparative advantage principle would play in favour of the most intensive farms. It would not guarantee more food safety, animal health and environmental protection as it is shown in the less subsidised sectors of pigs and poultry in Europe which are also the most integrated.

36 Good governance in the EU should consist in reforming more deeply the CAP, in a way to fit both the international commitments (the WTO negotiations) and the national needs. The functions which require specific public funds in the EU are related to environment, land and landscapes, food safety and social matters. There is an urgent need of re-allocation of funds, especially direct payments. The negotiation will turn towards the cofinancing between national and EU funds, the upper limit per farm, the transfer to rural development and the environmental conditionality for payments.
Main Acronyms and Abbreviations

1. AFSSA: Agence Française de Sécurité Alimentaire des Aliments (France: see FSSFA)
2. AMS: Aggregate Measure of Support
3. AoA: Agreement on Agriculture
4. BSE: Bovine Spongiform Encephalopathy
5. BOP: Balance of Payments
6. BST: Bovine Somatotropine
7. CAC: Codex Alimentarius Commission
8. CACP: Commission for Agricultural Costs and Prices (India)
9. CAP: Common Agricultural Policy (EU)
10. CBD: Convention on Biological Diversity
11. CEECs: Central and Eastern European Countries
12. Cif: Cost, Insurance and Freight
13. CJD: Creutzfeld-Jakob Disease
14. CMOs: Common Market Organisations (EU)
15. COP: Cereals, Oilseeds, Proteins
16. CTE: Contrat Territorial d’Exploitation = land management contract (France)
17. EAGGF: European Agriculture Guidance and Guarantee Fund (EU = FEOGA in French)
18. EC: European Community
19. ECU: European Currency Unit (before the Euro)
20. EU: European Union
21. FADN: Farm Accountancy Data Network (France)
22. FAO: Food and Agriculture Organisation
23. FCI: Food Corporation of India
24. FCO: Food Consumption Observatory (France: see OCA)
25. FDA: Food and Drug Administration (USA)
26. FEOGA: Fonds Européen d’Orientation et de Garantie Agricole (EU: see EAGGF)
FF: French Francs
Fob: Free on Board
FSSFA: Food Sanitary Safety French Agency (France: see AFSSA)
GATS: General Agreement on Trade in Services
GATT: General Agreement on Tariffs and Trade
GCF: Gross Capital Formation
GDP: Gross Domestic Product
GOI: Government of India
GMO: Genetically Modified Organism
HACCP: Hazard Analysis at Critical Control Points
HYV: High Yielding Varieties
IADP: Intensive Area Development Programme (India)
IDB: Integrated Data Base (India)
IMF: International Monetary Fund
IMR: Infant Mortality Rate
INRA: Institut National de la Recherche Agronomique (France)
IPR (s): Intellectual Property Rights
IRDP: Integrated Rural Development Programme (India)
ISO: International Standard Organisation
IVD: Indemnité Viagère de Départ = pension for farmers leaving their land (France)
JECFA: Joint Expert Committee on Food Additives and Contaminants
JMPR: Joint Expert Meeting on Pesticides Residues
JRY: Jahawar Rozgar Yojana, an employment programme (India)
LDCs: Less Developed Countries
LFAs: Less Favoured Areas (EU)
LMO: Living Modified Organism
MEP: Minimum Export Price
MFN: Most Favoured Nation
MMR: Maternal Mortality Rate
MNC: Multinational Corporation
MPS: Market Price Support
Mt: Million tonnes
NAFED: National Agricultural Marketing Federation (India)
NPK: Nitrogen, Phosphate, Potassium
NREP: National Rural Employment Programme (India)
NSS: National Sample Survey (India)
NTBs: Non Tariff Barriers
OCA: Observatoire des Consommations Alimentaires (France: see FCO)
OECD: Organisation for Economic Cooperation and Development
OGL: Open General Licence (India)
PBRs: Plant Breeders Rights
PDS: Public Distribution System (India)
QRs: Quantitative Restrictions
R & D: Research and Development
RLEGP: Rural Landless Employment Guarantee Programme (India)
Rs: Indian Rupees
SAPARD: Special Accession Programme for Agriculture and Rural Development (EU)
SPS: Sanitary and Phyto-Sanitary measures
STC: State Trading Corporation (India)
STE: State Trading Enterprises (India)
TBT: Technical Barriers to Trade
TOT: Terms of Trade
TPDS: Targeted Public Distribution System (India)
TRIMs: Trade Related Investment Measures
TRIPs: Trade Related Intellectual Property Rights
UPOV: International Union for the Protection of New Varieties of Plants
URA: Uruguay Round Agreement
USDA: United States Department of Agriculture
WHO: World Health Organisation
WTO: World Trade Organisation
Résumés

Introduction

1 Jean-Luc Racine

2 De l’alimentation, des agriculteurs, du commerce et des États. Un dialogue franco-indien sur l’agriculture et l’Organisation mondiale du commerce

3 Quelles que puissent être les différences entre la France—où la part de la population paysanne est minime—et l’Inde—où elle est majoritaire—les deux pays sont des puissances agricoles marquées par une tradition interventionniste de l’État. Pour celui du Nord comme pour celui du Sud l’agriculture est un enjeu d’importance, fût-ce pour des raisons différentes, et la mondialisation affecte les principes fondateurs des politiques agricoles françaises et indiennes. Il y a là matière à un riche dialogue. Un premier ensemble de questions touche aux formes de marché, aux degrés de protectionnisme ouvert ou masqué que l’on peut admettre. Une deuxième interrogation porte sur la mondialisation, considérée comme une opportunité par la plupart des participants mais aussi—parfois par les mêmes—comme une menace de renforcement des inégalités. Les préoccupations sociales sont particulièrement marquées du côté indien, étant donné le double enjeu que représentent dans ce pays le sort de millions d’agriculteurs et l’accès de tous à la sécurité alimentaire. Un troisième ensemble de questions porte sur les droits de propriété intellectuelle, le rôle des biotechnologies, et plus généralement sur la place de la recherche entre profit et éthique. Au total, la délégation indienne, tout en prenant acte de la libéralisation et en dénonçant à l’unisson le maintien du protectionnisme dans les pays développés, reste partagée entre deux points de vue assez différents, opposant libéraux et tenants d’une régulation. La délégation française, elle, se caractérise par un certain attachement au rôle de l’État, ainsi que par le souci de la sécurité sanitaire et de l’entretien des “territoires” permis par la “multifonctionnalité” de l’agriculture. En définitive, la complexité des relations commerciales se déployant aujourd’hui, et l’importance vitale des enjeux en cause imposent, sans méconnaître le poids des intérêts nationaux, d’aller au-delà d’une simple dichotomie entre Nord et Sud.
I. Les héritages nationaux en Inde et en France

G.S. Bhalla

L’héritage national de l’Inde : évolution de la politique agricole depuis les années 60

Des réformes agraires et un important investissement dans les infrastructures rurales ont permis, entre 1950 et 1990, d’accélérer la croissance agricole. L’Inde est devenue autosuffisante en céréales dès la fin des années 70. Mais cette croissance était source d’inégalités sociales et régionales. Les partisans des réformes économiques introduites à partir de 1991 affirmaient que les obstacles majeurs résidaient dans la surévaluation de la monnaie et les prix agricoles peu élevés. Depuis, les termes de l’échange se sont améliorés, et pourtant la croissance agricole a perdu de sa vitesse, preuve que ce ne sont pas les prix mais les investissements dans les infrastructures qui déterminent le gros de la croissance. Ceux-ci sont d’autant plus essentiels pour l’Inde qu’elle ne doit pas trop attendre de la libéralisation commerciale dans le cadre de l’OMC : les pays du Sud ne pourront en bénéficier que si les pays développés réduisent leurs aides, les subventions à l’exportation, et le protectionnisme déguisé des barrières techniques.

Christophe Blanc

35 ans de Politique Agricole Commune. Conséquences sur l’agriculture française


II. Marché et régulation : les scénarios nationaux

Bibek Debroy

Uruguay Round, agriculture indienne et OMC

L’Uruguay Round ajoute l’agriculture aux autres domaines du GATT. Ses efforts pour faire progresser le libre-échange devraient permettre la croissance du commerce mondial et en cela profiter à tous les pays, développés ou non – excepté peut-être les importateurs nets de produits agricoles. Les quatre composants majeurs de l’accord sur l’agriculture sont l’accès aux marchés, les subventions à l’importation ou à l’exportation, les mesures sanitaires ou phytosanitaires, et une déclaration concernant les pays les moins avancés. L’accord n’empêche pas le maintien de bien des mesures de soutien agricole existant en Inde, étant donné que la Mesure Globale de Soutien n’y dépasse pas les plafonds acceptés et se trouve même négative : en particulier, l’existence du Système de Distribution Public
La réforme de la PAC dans l’Agenda 2000. Une identité française dans le cadre d’une politique supranationale

Jacques Loyat


Bhupat M. Desai

L’OMC et l’agriculture indienne : au-delà des politiques publiques ayant trait au commerce


Jean-Paul Charvet

Politique Agricole Commune et transformations des espaces agricoles français

Alors qu’elle était essentiellement au départ, dans les années 1960, une politique des prix, la PAC est devenue, surtout depuis les années 1990, une politique agricole de plus en plus territorialisée. Aux aides attribuées aux régions de montagne et aux régions défavorisées, sont venues s’ajouter à partir de 1992 des aides directes différenciées à l’hectare ainsi que des aides agri-environnementales. Ces paiements différenciés ont plutôt contribué à
accentuer les contrastes d’orientation déjà existants entre régions agricoles. L’empilement et la juxtaposition dans les campagnes françaises de cet ensemble d’aides, différentes dans leurs niveaux comme dans leurs modes d’attribution, a en quelque sorte “institutionnalisé” les clivages existant entre espaces agricoles. La gestion de ces aides devient de plus en plus complexe dans la mesure où elles ne concernent plus seulement les agriculteurs des régions de montagne ou des régions défavorisées, mais aussi, et de façon différenciée, la plus grande partie des agriculteurs français.

III. Sécurité alimentaire et sécurité sanitaire

S.S. Acharya

La sécurité alimentaire et le nouvel accord sur le commerce international : perspectives indiennes

La “révolution verte” a permis à l’Inde d’obtenir l’autosuffisance en matière de céréales. Mais elle est loin d’avoir touché toutes les cultures, et les considérables stocks de blé et de riz obtenus certaines années n’empêchent pas que le statut nutritionnel d’une partie de la population demeure dramatique. La Food Corporation of India chargée de constituer des stocks pour les redistribuer à prix subventionnés aux pauvres ne peut suffire à assurer une véritable sécurité alimentaire, malgré une gestion des flux de grains qui est bien moins mauvaise qu’on le prétend habituellement. Les réformes vont dans le sens d’une double libéralisation, intérieure (réduction des subventions aux intrants) et extérieure (réduction des barrières commerciales dans le cadre de l’OMC) : elles sont sans doute les bienvenues, mais il importe qu’elles restent graduelles afin de ne pas briser tout l’édifice bâti en quatre décennies.

Jean-Christophe Bureau & Stephan Marette

Sécurité sanitaire, préférences des consommateurs et règles du commerce international

Depuis la baisse des tarifs douaniers permises par l’Uruguay Round, les barrières non tarifaires, et notamment les protections sanitaires et phytosanitaires, apparaissent comme les outils d’un protectionnisme déguisé. Cependant, les mesures sanitaires nationales correspondent aussi légitimement à des différences culturelles, en matière de goûts par exemple, et de pouvoir d’achat : entre l’exigence sanitaire (plutôt américaine) et le souci de “typicité” (plutôt européen), il est bien difficile de définir des standards internationaux. Les définitions du “risque” ne sont pas non plus les mêmes entre l’accord SPS de l’OMC traitant des questions sanitaires et phytosanitaires et le Codex Alimentarius. Les disparités des environnements juridiques nationaux (régulation ex ante française, procès ex post étatsuniens), les interdits religieux (porc en pays musulmans), les soucis éthiques (bien-être des animaux) ou écologiques, ainsi que des degrés de confiance en la science variables selon les consommateurs rendent très complexe la conciliation des règles de commerce international et des soucis des consommateurs. Les scientifiques eux-mêmes ne parviennent pas à s’accorder sur des normes. Les labels et la traçabilité sont coûteux et difficiles à mettre en œuvre. L’élargissement des critères du GATT aux valeurs éthiques et culturelles ouvrirait la boîte de Pandore. En conséquence, l’analyse économique en termes de coût-bénéfice apparaît un précieux moyen d’établir des règles admises par tous et d’aider les décideurs à choisir entre différentes gestions du risque. C’est par exemple le cas si l’on calcule la volonté des consommateurs de payer un surcoût...
pour éviter certains produits. D’une façon générale, davantage d’analyse économique est requis dans la gestion du commerce international afin de maximiser le bien-être global sans risquer de l’amoindrir au nom de principes trop rigides.

Mohan Lal Chhipa

la sécurité alimentaire en Inde :

le rôle du Système de Distribution Publique

La politique d’achat de grains aux agriculteurs indiens a progressivement remplacé le recours aux importations pour alimenter le Système de Distribution Publique (PDS), dont le réseau s’est désormais étendu à presque toute l’Inde pour proposer des produits subventionnés. Ce n’est qu’en 1997 que le gouvernement central instaura un système de prix favorisant les pauvres aux dépens des ménages au-dessus du seuil de pauvreté. Mais des États avaient déjà mené une politique originale en la matière, comme l’Andhra Pradesh. Malgré de nombreux défauts, il semble que le PDS ait des effets notables sur les ménages défavorisés, ce qui est essentiel à l’heure où les débuts de la libéralisation ont vu augmenter la pauvreté. D’où l’importance de mieux encore le cibler, notamment vers les zones tribales, d’augmenter les quantités proposées à la vente, et d’impliquer davantage dans sa gestion les institutions locales élues du Panchayat Raj.

Jean-Pierre Doussin

Sécurité sanitaire et OMC : une perspective scientifique ?

La définition du concept de “sécurité sanitaire alimentaire” (food safety) par l’Organisation mondiale de la santé et la Commission du Codex Alimentarius permettent de discuter de la notion de risque. Les institutions chargées de sa gestion existent aux échelons français (Observatoire des Consommations Alimentaires, Agence Française de Sécurité Sanitaire des Aliments) comme sur le plan international. Les divergences entre les pays concernent l’estimation et surtout la gestion de ce risque. Dans la définition des politiques, on constate en effet de grandes disparités dans le rôle dévolu aux scientifiques, l’importance du principe d’utilité et du principe de précaution, la place laissée aux goûts des consommateurs, tout comme la prévalence variable de l’approche en terme de qualité. On distingue notamment les positions indienne et française, pour lesquelles la sécurité alimentaire doit être maintenue tout au long de la chaîne de transformation, de celles pour lesquelles suffit une simple aseptisation finale. Le débat sur la nocivité de l’hormone “laitière” en est une bonne illustration.

IV. Commerce, agriculture et OMC : bénéfices et problèmes potentiels

Ashok Gulati

Commerce et agriculture : acquis et problèmes potentiels. Un point de vue indien.

L’Uruguay Round s’est conclu par trois engagements en matière agricole. En ce qui concerne l’accès au marché, l’Inde a accepté de supprimer toutes ses barrières non-tarifaires, et ce tout en consolidant ses tarifs à des niveaux élevés, ce qui laisse une marge de manoeuvre agréable face aux prix mondiaux. En ce qui concerne la Mesure Globale de Soutien, elle se révèle négative, étant donné que les subventions aux intrants ne compensent pas la taxation nette des productions agricoles du fait de leurs prix domestiques bas : l’Inde ne doit donc pas réduire ses subventions. Enfin, en ce qui
concerne la concurrence mondiale à l’exportation, l’Inde ne s’est engagée à aucune réduction dans les subventions à l’exportation, étant donné qu’elle n’en verse aucune directement. Au total, une simulation révèle que globalement l’Inde va être bénéficiaire de la libéralisation. La position offensive que devrait tenir le pays lors des prochaines négociations internationales est ensuite exposée, depuis la demande de suppression des subventions aux exportations jusqu’au souci de limiter l’instabilité des prix mondiaux.

Jean-Marc Boussard

Dynamique de marché, commerce et avantages comparatifs dans l’agriculture et les industries alimentaires

Parce qu’il élargit l’éventail des possibilités de production, le commerce est “bon” sans ambiguïté. Pourtant, étant donné que le commerce se pratique par l’intermédiaire des marchés, il peut arriver que les déficiences de ceux-ci mettent en danger les avantages commerciaux. C’est particulièrement le cas pour l’agriculture, étant donné que la rigidité de la demande rend les marchés dynamiquement instables. Voilà pourquoi, dans les années 30, le président Roosevelt avait décidé de rompre les liens entre l’agriculture américaine et le marché. Cette politique fut en fin de compte étendue avec succès à la plupart des pays. Avant de l’abandonner, il faudrait donc peut-être examiner sa justification et ses résultats. C’est ce qui est ici tenté : il apparaît en définitive que pour la gestion de l’agriculture bien des solutions “sans marché” peuvent se révéler plus efficaces qu’une confiance aveugle dans des marchés qui ne convergent pas.

V. Commerce, agriculture et OMC : les droits de propriété intellectuelle

Pushpa Savadatti

Comme et agriculture indienne : implications de l’ADPIC

L’Accord sur les Droits de Propriété Intellectuelle relatifs au Commerce oblige de prévoir la mise sous brevet de toute invention, produit ou procédé, à l’exception notable des plantes et des animaux. Mais dans ce cas, les membres de l’OMC doivent concevoir au moins un système de protection sui generis. Or, la loi indienne de 1970 ne prévoyait que la protection de quelques procédés, et ce de façon très restrictive. Autre difficulté : les créateurs de nouvelles variétés ne sont pas protégés en Inde, car le pays n’a pas adhéré à l’Union pour la Protection des Obtentions Végétales. On peut douter des avantages de celle-ci en raison des risques d’appauvrissement de la diversité génétique, tout comme de la privatisation de biens communs au profit d’intérêts privés ou de multinationales, et ce même si le privilège des agriculteurs de réutiliser leurs semences est maintenu.

Hélène Ilbert

OMC, ADPIC, agriculture et environnement : relations entre les droits de propriété intellectuelle et les biens communs

L’Accord sur les Droits de Propriété Intellectuelle relatifs au Commerce oblige les pays membres de l’OMC à établir un système de brevets, au risque de désavantagez les pays du Sud et de mettre en péril la protection des biens communs. La loi indienne sur les brevets (1970) ne satisfait pas les nouvelles exigences internationales, ce dont se plaignent en particulier les États-Unis. Or, les brevets fonctionnent surtout comme un moyen de limiter la concurrence au profit des seules firmes multinationales des pays développés,

VI. Après Seattle

G.S. Bhalla

Après Seattle. Une approche indienne pour un nouveau round de négociations

La réunion de Seattle en décembre 1999 mit en lumière l’importance de l’opposition aux objectifs de l’OMC. La plupart des manifestants venaient des pays développés, prônant des normes sociales et écologiques limitant le libre-échange. Tout autres étaient les revendications des opposants venus des pays du Sud, qui dénonçaient des conditions de commerce et des règles trop favorables aux pays développés. Les premiers combattaient l’esprit même de l’OMC, le libre échange, tandis que les seconds voulaient une réforme plus équitable de l’OMC. De quelque bord qu’ils soient, les experts indiens s’accordent sur la nécessité de réduire les hauts niveaux de protection maintenus par les pays développés, les subventions aux exportations, sans oublier les autres soutiens contenus dans la “boîte bleue” (qu’il faut vider) et la “boîte verte” (qu’il faut réduire). Il faudrait de même limiter l’utilisation abusive des mesures sanitaires et phytosanitaires, les exceptions aux tarifications, ainsi que les implications de l’ADPIC.

Jacques Loyat

Après Seattle. Un point de vue français

Trois événements majeurs ont eu lieu depuis 1999. L’échec de la conférence de Seattle a mis en lumière la déception des pays du Sud face aux accords de Marrakech, mais aussi la méfiance de la société civile des pays du Nord qui réclame des normes sociales et environnementales, quitte à se faire accuser de protectionnisme par le Sud. C’est que le deuxième événement, la maladie de la vache folle, doublé du débat sur les OGM, a placé au premier plan en Europe le souci de sécurité alimentaire sanitaire, et la nécessité de satisfaire non seulement les agriculteurs mais aussi les consommateurs. Enfin, en 2000, fut adopté le protocole sur la biosécurité de Carthagène, qui donne aux États le droit de prendre des mesures de précaution en cas d’incertitude scientifique : l’environnement fait désormais partie de la législation sur le commerce, même si cela va à l’encontre des règles générales de l’OMC. En parallèle, le modèle européen a dû accepter des réformes : le Conseil de Berlin de 1999 a reconnu la dimension multifonctionnelle de l’agriculture, mais sans modifier radicalement l’orientation des aides au profit du développement rural et de l’environnement ; la loi française d’orientation agricole de 1999 pourrait servir en la matière de modèle, avec le lancement des contrats territoriaux d’exploitation. D’une façon générale, le concept de multifonctionnalité est de plus en plus discuté au niveau international. Il représente peut-être un moyen de réformer profondément la PAC sans pour autant démanteler celle-ci.
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