Indian Villages
Achievements and Alarm Bells, 1952–2012
Gilbert Etienne
This book presents a unique testimony on the evolution of the Indian peasant's world over more than sixty years. Its originality lies in part in the unique trajectory of its author, Gilbert Étienne, an exceptional man, all at once scientific traveller, thinker of the North/South relationships and economist concerned by sociology and history inputs. In unfolding the story of his passionate relationship with India, the author offers a very personal look which takes into account not only crop diversification and production techniques, but also local anthropological structures and the conditions of the various castes, including the lowest ones.

With its approximately 100 pages, the book is sometimes reminiscent of a collection of vignettes and impressions gathered while travelling, such as can be found in field notes. Here lies the strength of this unusual work, especially as the "things-seen" dimension is completed by penetrating reflections on the transformations of an agrarian society discovering modern consumer goods, on a comparison between France in 1946 and India today, and on the causes and consequences of contempt for agriculture in a country whose elites swear by cities, as Christophe Jaffrelot said.

This book is the latest publication of Professor Gilbert Etienne, written before his death in May 2014.

GILBERT ETIENNE

Gilbert Étienne (1928–2014), Honorary Professor of Development Economics at the Graduate Institute of International and development Studies in Geneva, was a renowned specialist of South Asia and its rural world, which he criss-crossed for more than half a century. Favouring a multidisciplinary approach based on long-term history, Gilbert Étienne was involved in the 1960s in the creation of the African Institute of Geneva – the future “Graduate Institute of Development Studies” – alongside Jacques Freymond. In addition to his columns in major newspapers such as Le Monde, one will remember, among his forty or so publications on developing countries (India, China, Pakistan as well as Africa), Le Pakistan, don de l’Indus (Paris, PUF, 1989; new digital edition, 2014), Repenser le développement: Messages d’Asie (Paris, A. Colin, 2009), Chine-Inde: La grande compétition (Paris, Dunod, 2007), or his contributions to A History of Pakistan and Its Origins (edited by C. Jaffrelot, London, Anthem Press, 2004).

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Cover Transplanting rice. Photo: Gilbert Étienne.
Foreword

Jagdish Bhagwati

1 Gilbert Etienne was indisputably the most perceptive writer on India’s villages and rural problems for over half a century. His technique, reflecting his interest in sociology and anthropology, was to have the villagers and also the bureaucrats and politicians in charge of rural programs talk to him about on-going policies and their soundness. In a way, Etienne was doing what Jan Myrdal did when he talked to the peasants in China after the Long March. But Etienne went further: he also visited the same villages over and over again. So, he had what amounted to longitudinal “data” and he could draw conclusions about how the rural situation was unfolding.

2 I found in particular his technique most helpful in showing that the Green Revolution (with the new seeds) had not polarised the countryside, causing distress that might precipitate the red revolution. By increasing multiple cropping, the Green Revolution had in fact helped bring prosperity to the countryside, including rise in wages because the demand for landless labour had gone up. And Etienne confirmed the benign outcome.

3 Economists used to econometric evaluations – and now also to randomised trials (which are badly overdone since many important issues like macroeconomic and trade policies cannot be analysed in this way) – will consider Etienne’s technique less than “scientific” in the sense that National Sample Surveys in India are. But in policy evaluations, one needs to be catholic: no one technique will yield adequate insights by itself. Etienne’s technique was brilliant and insightful.

4 This book was his last; and he died before a prestigious Indian press could offer him a contract. So it is wonderful that this last testament, in which Etienne looks back at Indian villages, their achievements and their on-going problems over the period 1952–2012, is now being published by the Graduate Institute, where he was long a jewel in the crown. He would have been delighted, as is his widow and lifelong companion, Anne, that the Institute has taken this initiative to honour a truly great intellectual, and a warm and generous man, whose loss we all mourn.
AUTHOR

JAGDISH BHAGWATI

University Professor (Economics, Law and International Affairs), Columbia University
Preface

Jean-Luc Maurer

1 This book is published as a posthumous tribute to Professor Gilbert Etienne who passed away on 17 May 2014, a few weeks before celebrating his 86th birthday. He had been teaching development studies at the Graduate Institute since 1958 and it is how we thought we could best express our gratitude to him. It was also in our view a duty to make this book available to the international community of researchers working on Indian development issues as his last gift to them, a sort of ultimate message if not a testament. After all, he was certainly the only scholar in the world capable of writing such a short and concise synthesis based on sixty years of direct observation of economic and social change in rural India, from 1952 to 2012.

2 Born in 1928 in Neuchâtel, Gilbert Etienne initially studied law and obtained a licence in 1951 at the university of his hometown. However, as a very open minded person with a keen interest for other cultures and curiosity for the things of the vast world, he had developed, very early on, a true passion for India and its civilization. He then went to Paris to pursue his studies of India and Hindi at the famous Institut des langues et civilisations orientales, from which he graduated in 1954. In the meantime, primarily attracted by a concrete confrontation with fieldwork, he had managed to spend a full year in India and Pakistan in 1952-53. During this time he taught in Lahore and conducted his first research to collect the information needed for the doctoral thesis he was preparing on the economy and population of India, which he defended in Neuchâtel in 1955. After having married in 1954 Annette du Pasquier, the love of his life with whom he was about to celebrate their 60th wedding anniversary, and while their first child was only six months old, the Etienne family departed in 1956 to settle in Bombay. There Gilbert was going to work as a representative of the well-known Swiss watch brand Favre-Leuba until 1958. This first professional experience gave him the opportunity to meet many Indian people from governmental and private circles involved in the economic and social development policies of their newly independent country and it convinced him that his vocation was to devote his life to the study of these issues.

3 Not long after returning to Switzerland, he met Professor Freymond, then the dynamic and visionary director of the Graduate Institute of International Studies (IUHEI). Jacques
Freymond, who was aspiring to open his institution to the study of development issues and Third World countries, as they were then called, recruited Gilbert Etienne as a lecturer in 1958. Having already published two books in 1955, the first drawn from his doctoral thesis on the economy and population of India and the other on Indian art, he made the effort to widely broaden his horizons on Asian economic and social development issues by publishing an essay in 1959 entitled, *De Caboul à Pékin, Rythmes et perspectives d'expansion économique*. In 1962, he started to deepen the comparative perspective between the two Asian giants of the developing world, which would remain at the heart of his research work until the end of his career, by publishing his first book on China entitled *La voie chinoise*, later translated in several languages. It is on this basis that he was appointed full professor at IUHEI where he would become the main initiator and vector of development studies. As such, he was closely involved in the creation of the Geneva African Institute in 1962, which would become the Institute of Development Studies in 1973 and the Graduate Institute of Development Studies (IUED) in 1977. Sharing his great availability and energy between the two institutions, Gilbert has remained a very active and influential professor until his retirement in 1998, equally appreciated by both his colleagues and his students.

As far as teaching is concerned, Gilbert Etienne has effectively and enthusiastically taught several generations of students in our two institutes about the economic and social development issues of Third World countries, or the Global South as it is called nowadays. Upholding a multidisciplinary approach in which the “long history”, dear to Fernand Braudel and his *École des Annales*, is crucial to understand and possibly solve economic, social and political development problems, he has been at the origin of many vocations. An excellent professor, he was able to transmit his passion and his enthusiasm to those students who had chosen to do their MA or PhD thesis, as it had been the case for me, under his supervision. A very demanding thesis supervisor, able to return a chapter read and corrected the day after its reception, but always cognizant of the difficulties of writing or the hazards of life, he has always supported his students in all circumstances. He fully belonged to the highly respectable category of university professors who are happy and proud of the success of their students, for which they feel honoured, instead of running them down and fighting them when they feel they might bring them umbrage. I personally experienced this positive and generous attitude when I became the director of IUED from 1992 to 2004, while he remained a very supportive but critically constructive faculty member. He had also taught regularly outside of IUHEI and IUED, which merged in 2008 to form the present Graduate Institute (of International and Development Studies), in the USA, at MIT, Cornell or Chicago universities; in India at JNU in Delhi; and has been invited twice as guest professor to the Collège de France in Paris by his mentor and lifelong friend Pierre Gourou, who then held the chair in tropical geography. Besides this, Gilbert has given a countless number of conferences and seminars in universities and places located at the four corners of the world.

Concerning research and publications, Gilbert Etienne has shown amazing activity and has been a very prolific author. Actually, he has published no less than 40 books in his career, more than 30 as sole author, and well over 100 articles in scientific journals, not to mention his very regular contributions in Swiss and French newspapers like *Le Journal de Genève*, until it ceased publication in 1996, and *Le Monde*, but occasionally also in the British and Indian press. Most of his writings are based on his own fieldwork research in Asia, where he has lived altogether for more than ten years. Gilbert never missed the
opportunity of a sabbatical leave to go back for months to India, but also Pakistan, Bangladesh and China, usually accompanied by his wife Annette as his closest assistant, to study again the main economic and social development issues facing these countries. His methods were simple, not based on grand theories or any ideological position, but just on common sense and the analysis of information and opinions gathered from the whole social and political spectrum of each country, ranging from the prime minister to the most humble landless agricultural labourer. On the basis of his concrete and comparative analysis of major developing countries like India and China, he would then draw more general conclusions on development policies and practices. Among his latest and most important and successful books, the complete list of which is given at the end of this publication, let us just mention: *Chine-Inde: le match du siècle* in 1998, updated in 2007 under the title *Chine-Inde: la grande compétition* or *Le développement à contre-courants* in 2003 and *Repenser le développement: messages d'Asie* in 2009. From his more focused studies on agricultural and rural development problems and prospects in Indian villages to larger comparative considerations on development strategies and what he called “the overall process of development”, Gilbert struggled and pleaded until his last breath for sound economic and social policies capable of improving the lives of the poorest people. The present posthumous book in its simplicity and straightforwardness is a perfect ultimate synthesis of his contribution to development studies.

An intellectual and a man of action at the same time, Gilbert Etienne also never hesitated to get involved with and to engage in concrete development activities, working as a regular consultant for the Swiss government, either with the Swiss Development Agency (DDC) or the State Secretary for Economic Affairs (SECO), occasionally for some Swiss private companies like Nestlé and Electrowatt, the World Bank or IFPRI in Washington. Last but not least, he has been for many years a member of the International Committee of Red Cross (ICRC), of the board of Swisscontact, an NGO dealing with vocational and technical education in developing countries, and above all had been the long-time President of the grass-root Swiss NGO Frères de nos Frères and of the Geneva Asia Society.

On a more personal note, I just want to give the reader a short testimony about the extraordinary and original character that was our colleague, mentor and friend. Among many other things, I remember the amazing departures of the Etienne family each time Gilbert had a sabbatical year. I still see the Peugeot break, full to the top, leaving their home in Geneva, turning right at the end of the road in the direction of the south and towards Italy... destination Delhi! In India, I had the good fortune in the 80's to spend a week with Gilbert-sahab, as he was called by the Indian peasants, in Khandoi, the village of Western Uttar Pradesh where he had done his initial fieldwork and where he came back repeatedly over the years. The studious and frugal life would start at 5am with some tea, a nan and his favourite schabziger cheese from Central Switzerland when it was available, then the departure to look for some villagers to interview, many of whom have probably not yet forgotten this tall white man dressed in bush-short rushing to them to ask questions about their daily life in a Hindi he mastered very well. Back in Geneva, the main image of him I will forever keep in mind is of Gilbert riding his bicycle even on a pouring day, following the pedestrian sidewalk at full speed to avoid the traffic lights and then asking the staggered doorman of a luxurious hotel to keep his bike and his drenched raincoat while running in his impeccable blazer, with a rose at his buttonhole, to an appointment with an important academic, diplomat or businessman. Returning to less mundane considerations, what I mostly want to convey here is that Gilbert was a free and
independent mind who never hesitated to frankly convey his way of thinking to people. How much verbal sparring with colleagues did he engage in to oppose “rightist and leftist dogmatisms”, as he qualified them? When the conversation was taking a more sibylline and tedious character, he delighted himself in reminding the audience that “the virtue of flies was in danger”! Until his last breath, he never ceased to fulminate against the idiots and ignorant people who neglected the role of agricultural and rural development or, on the contrary, against those who thought it was easy to launch an Asian-type “green revolution” in mostly un-irrigated Africa.

To sum up, Gilbert Etienne has really been a man of exception. Born under the sign of Gemini, he realized a rare synthesis within a single person, one which contained both a man of strict principles and a true nonconformist. His incomparable style, his large culture, his wide vision of things, his authentic humanism, his generosity, his faithfulness in love and friendship, his impatience to see reason and compassion finally getting the upper hand, his perseverance to fight up to the end for a better and more equitable world make him an irreplaceable person. He is leaving a great void for his wife, his children, his family, his friends and his colleagues. All of them deeply regret his passing and nobody will ever forget him. We shall henceforth have to do without this eminent Swiss citizen of the world, a type of man who has become rare when we would need many more of his kind to face the challenges of our time. He has devoted his whole life to traveling the vast world around in the endeavour of improving the human condition. For that and many other things Gilbert Etienne will remain in our minds and in our hearts. It falls now on us to follow his example. As present generation youngsters would say today with a single word that they often use: “respect to him!”

Almaty, Kazakhstan, 1st August 2014

AUTHOR

JEAN-LUC MAURER
Emeritus Professor, the Graduate Institute, Geneva
Acknowledgements

1 A large number of people have helped me during all my time spent in India. Some dear friends are unfortunately no more. Raghu Raj and his wife Vimal, Naval Tata and Surendra Pal Singh let me enjoy their hospitality, their affection and their experiences of their country. Surendra Pal Singh, an important land owner in Unchagaon, who would later on become minister, greatly helped me in my research and in my life in Khandoi.

2 Pran and Raksha Talwar, Aspi and Kitty Moodie, Simone Tata, Radesh Singh and her sons have been no less intimate and helpful friends. To all of them, I wish to express my deepest gratitude.

3 Janine and Gerry Rodgers have greatly helped me with their deep knowledge of Bihar.

4 A number of civil servants, including some former ministers like Y. K. Alagh, helped me in organising my surveys and helped me with their advice. In addition, there have been many peasants, poor and rich, who shared their experiences and knowledge with me.

5 On several occasions, I obtained financial support from the Swiss Fund for National Research and from my Institute. I also wish to thank the staff of the library of the Institute, particularly Martine Basset who supplied me with several books and reports.

6 Parts of the field studies with reference to Dalits have been published by the Institute of Rural Management at Anand (Dalits in Villages and Poverty Alleviation Policies, 1963-2008, 2010).

7 I wish to thank very warmly my old friend Jagdish Bhagwati, professor at Columbia University, who has kindly prefaced this book.

8 Annette, my wife, has played a crucial role in all these surveys. She gracefully accepted a kind of nomadic and sometimes frugal life. Her sound understanding of development and her critical judgement greatly helped me. This book is also the story of a very close couple. After spending so much time in India, can one remain totally removed from the cosmic principles, Purush, the male principle, and Prakriti, the female principle, with the former being nothing without the latter and vice versa?
Introduction

While India has become an emerging country with considerable economic and social achievements, including rising middle classes, poverty remains a severe issue in large parts of the country, especially in a number of rural areas. Recently there have been indignant reactions, including Prime Minister Dr. Manmohan Singh’s, in response to estimates indicating a sizeable number of stunted and malnourished children. Such estimates are questionable, as will be seen in this book, but the issue of malnutrition and poor health remains very serious. During my latest surveys, I observed in several villages that poverty is retreating even among landless Dalit peasants, but I also came across villagers who possessed only one shabby set of clothes, and lived in quasi empty huts.

Such contrasts were more prominent in 1947. India, at the time, was one of the most advanced countries coming out of foreign rule. It was the tenth largest industrial power in the world in absolute figures. It enjoyed dynamic banking and trading centres, many of which were run by Indians. Some rural areas had become quite prosperous, thanks to irrigation canals built by the British. There were bright elites in all fields. In 1950, in the corridors of the Planning Commission you would rarely encounter a foreign adviser, as could have been seen in most Asian countries at that time, including Soviet experts in China.

Nevertheless, India was also infamous for its acute poverty, hunger, very low literacy, its rigid caste system and its “holy cows”. Today, although poverty has been considerably reduced, along with other social weaknesses including castes relations, these contrasts still exist.

This book is not intended for senior researchers in agricultural economy but for the layman. There is a growing expansion of middle classes born, educated and living in cities. It results in a huge gap between these new classes and villages, their ways of life. The present technical issues, the future of the farmers is less and less known by the new classes.

As shown in these village studies, complaints of poor infrastructure came out already in the 1950s and one still waits for a thorough orientation of the rural policy as well as an
emphasis on correction of a number of practical agricultural techniques, which the
growth of agriculture, particularly more emphasis on bio agriculture. The next steps in
agriculture development will be much more complex, costly and time consuming than
the Green Revolution of the 1960s. Huge marketing issues need to be improved since at
the moment about 1/3 of fruit and vegetables are lost after harvest.

6  The major aim of this book is to show what has happened and what is happening in areas
representative of the diversity of India in terms of geography. The surveys attempt to
assess, mostly through repeated field studies in the same villages, variations such as the
differences between areas fit for the Green Revolution and districts that are unfit. The
historical background, local caste patterns, as well as political and economic issues are no
less important to this inquiry. Out of these surveys emerge the next possible steps for
rural areas; such steps are bound to be more complex, more expensive and time
consuming than the introduction of the Green Revolution.

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7  I first landed in India in November 1952 as a student from the Institute of Oriental
Civilizations and Languages in Paris. Until 1963, I had cumulatively spent about three
years in the country over various occasions. At that time I was observing the broad trends
of the economy, including agriculture, through numerous journeys.

8  In 1963 I decided to study agriculture and the rural scene at the grass roots level by
surveying several villages, having a look at local administration and at the impact of the
development policy pursued by the central and the state governments.

9  The selection of villages gives a fair sample of the three major categories of regions in
India, except the Himalayas: irrigated plains in the Northwest and in the Southeastern
deltas; the Eastern plains and their large untapped potential of irrigation; and peninsular
India with its often weak and uncertain rains, low potential for irrigation and wide tracts
with poor and eroded soils.

10  The first survey took nine months in 1963/64. Some more villages, especially in rainfed
areas of the peninsula, were added to the original ones in subsequent rounds in 1978/79,
1985/86, 1992/93 and 2002. For each round, except the last one, I came with my family
from Europe in my own car and used it to tour the country. In between these dates, I
occasionally visited some of the villages. Between 2002 and 2008 I added surveys of
Mayurbhanj district in Orissa and those from revisits to Khandoi. From 2010 to 2012, I
relied on information supplied to me on Khandoi, Kila Ulur, Mayurbhanj and Bihar.

11  Knowing Hindi, I only needed interpreters in the non-Hindi speaking areas. During the
first round, I stayed with my family in the villages, except in Kila Ulur. For the following
rounds, I commuted every day to “my” village from the district guesthouse, except in
Khandoi where I lived repeatedly.

12  It would not have been reasonable to concentrate only on agro-economics. One requires a
basic knowledge of social and political factors in order to understand the issues faced by
villagers and the prevailing class and caste relations and their links with poverty,
particularly concerning the Dalits.

13  The third part of the book is based on the synthesis of my field studies and on a number
of books and reports, and deals with national issues; economic reforms and agricultural
There have been considerable achievements in the economy and in rural society, which include agricultural growth, improvements in rural infrastructures, and poverty alleviation, especially in Green Revolution districts. Yet, alarm bells are ringing due to the slowdown of agricultural growth and, more recently, of the whole economy. About 50% of the working population still subsist on agriculture, which accounts for 15% of the GDP. As for the rate of urbanisation, it has only reached 31.2% of the population according to the 2011 census. Such data emphasize the great importance of agriculture and of the rural economy as compared to other emerging countries that have higher urbanization rates and fewer workers dependent on agriculture. In comparison, 37% of China’s working labour force is engaged in agriculture and the urban population is 52%, while in Indonesia the figures are 50% and 42% respectively. The importance of agriculture in India is also salient from a social point of view, since poverty is usually more acute in villages than in cities.

Finally, the growing gap between urban elites and villagers referred to in this book is not particular to India. It is common to other countries in Asia and Sub-Saharan Africa, two continents where the number of poor and undernourished peasants is still quite high.
Part 1 – Before the Green Revolution
Chapter 1 – From the British to Independent India

A major defect of British rule was the growing imbalance between population and resources. The former grew from 150-200 million at the end of the eighteenth century to 420 million in 1947 (Pakistan included). Until 1921 India was primarily exporting cereals. From that year on imports began, and would eventually reach 3 million t in 1950, versus 54 million t of food grains output. Imports further rose to 5 million t in 1951 due to a very severe drought, consequently avoiding casualties as had been the case during famines in the nineteenth century and during the severe Bengal famine in 1943.

In spite of totally insufficient efforts to promote agriculture, the British created wide networks of irrigation canals in the Indus and Upper Ganges Basins, as well as in the Southeastern deltas in the latter part of the nineteenth century and in the beginning of the twentieth century. In those areas, production and double cropping increased along with a growing amount of agricultural commodities entering market centres and cities, the latter being facilitated by the construction of the main roads. Landowners, of course, benefited from these developments, but small farmers and landless agricultural workers also improved their living conditions. In the 1930’s, Nehru was surprised by the differences in poverty between Punjab and Eastern UP, which was amply confirmed by the following data:

Table 1: Daily Agricultural Wages in Annas (16 annas = 1 rupee)

<table>
<thead>
<tr>
<th>Year</th>
<th>Punjab irrigated</th>
<th>Western UP irrigated</th>
<th>Eastern UP irrigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1912</td>
<td>7</td>
<td>2.7</td>
<td>1.6</td>
</tr>
<tr>
<td>1943</td>
<td>16</td>
<td>15.6</td>
<td>6.4</td>
</tr>
</tbody>
</table>


Such trends confirm what happened in Asia, as well as in parts of Europe, wherever rainfed crops were replaced by irrigated ones. In the Archives of Catalonia (Spain) one
reads, “Water makes you free, water makes you rich” (1243), a comment more true nowadays than ever before.

4 The British introduced jute in Bengal, tea in Assam and the Nilgiris, and coffee and rubber in Kerala. They also encouraged the expansion of cotton and sugarcane in other provinces. While well-received, these changes remained far behind population growth in the country. In wide rainfed tracts, crop yields were more or less stagnant. Land holdings became fragmented and the number of landless peasants increased. The percentage of cultivators and casual agricultural workers grew from 62% of the working population in 1881 to 71% in 1951 (Census). Acute misery was prevalent in a number of villages, and many people owned only the shabby dresses they were wearing. In some cases, only one member of the family could go out of their hut, for lack of clothes for all the family members, as had been observed by Mahatma Gandhi’s wife in Bihar in the 1920s.

5 The per capita availability of food declined between 1891 and 1947. “Even the population growth rate of 0.67% was higher than the increase in food grain output” (Dantwala 1973, 24). The rate of urbanization, in spite of growing, was still very low in 1951 at 16%. At the time, India figured as the tenth largest industrial power in the world (in absolute figures) and important industrial, trading and banking centres were created by both British and Indians. However, such trends were much too limited to absorb a large number of peasants as had happened, by contrast, in the Industrial Revolution in Europe.

6 A major change did, however, occur. During Mughal days, the vast plains stretching from Benares to Bengal, not too heavily populated at the time, were feeding the imperial cities of Agra, Delhi and Lahore, mostly through transport along the Ganges. They were also exporting rice and cotton textiles to Southeast Asia, sugar to the Middle East, and textiles of various types to Europe.

7 As for Punjab and present day Western UP, they were quite poor with limited irrigation, only a few wells, and rainfall that was much lower than in the Eastern plains. A major shift took place from the latter part of the nineteenth century onwards: thanks to the irrigation canals, Punjab and Western UP became the granaries of India.

8 Rural infrastructure was hardly developed at the all India level. Out of 565,000 villages, only 5,000–10,000 were electrified. While the British built a substantial network of railways and highways, most villages remained isolated with poor tracks that were often cut off during the monsoon. Motor vehicles were hardly visible and most local transport depended on bullock carts. Like trade, money was limited in villages.

9 Caste factors are important in the overall assessment. Usually you would have a dominant caste in a village or an area. This is often the largest community, if not the majority, and often owns a sizeable part of the land. Members of the dominant caste play an important role in the local affairs (M. N. Srinivas 1976). When the dominant caste was agriculture oriented by tradition – like the Jats, Patidars, Kammas – the tillage and care of land was much more prominent than under castes such as the Rajputs or Thakurs; Bhumihars; and certain sub-castes of Brahmins. This did not escape the attention of British officers. In 1920, the famous Sir Malcolm Darling, who was posted in Punjab, mentioned the major differences between a Jat and a Rajput village (Darling 1947, 31).

10 An important innovation introduced by the British, inspired by the Chinese model, was the creation of the ICS (Indian Civil Service) in 1858. The recruitment of senior officers was carried out through competitive examination. ICS officers (numbering 800-1200) were the heads of districts and led both provincial and central administrations. The
system was de jure open to both British and Indians since its inception, although de facto the purpose of colonial administration meant retaining institutional barriers for Indian aspirants, until reforms in the early twentieth century. At the time of independence in 1947, the Indian recruits were the de facto majority (Knight 2012; Mansingh 2010). They became a big asset for the Indian and Pakistani governments.

Land tenure was often under the Zamindari system (particularly in the North) or under the Ryotwari system. In the former, big or fairly big cultivators were made owners of the land. In the Zamindari system, occupancy tenants were cultivating a large part of the land, and could retain occupancy by paying rent to the zamindars (landlord). The zamindar kept part of the rent and gave the rest, as land revenue, to the state. Both rent and revenue were fixed by the State. Under the Ryotwari system, the farmers were owners of the land and paid the land revenue directly to the State.

During famines, in several cases, the British organized public works to help peasants earn some living, a system still practiced after independence. The British introduced, on a limited basis, rural credit cooperatives in 1904. Some research institutes were created to improve crops, as one could observe in the Northwest for wheat and sugar cane.

After Independence, 1951 to 1966

The tasks of the new State were particularly heavy and complex. One had to make up for lost time during the Raj and promote a more dynamic form of agriculture and to curb poverty while promoting economic growth. The new rulers fully understood such issues. We read in the first Five Year Plan (FYP 1951-56) that: “Agriculture, including irrigation and power, must have the top priority.” (49).

Several major irrigation projects were started. It was impressive, in 1953, to visit the site of the Bhakra dam project in Punjab for power and irrigation. Most of the work was organized and implemented by Indian engineers (there were only a few foreign consultants) who were using all means available, from bulldozers to files of women with baskets of sand on their heads. Minor irrigation was no less developed: open wells and TWs (tube wells) were being used, with the latter being encouraged by rural electrification since electric engines of TWs are cheaper than diesel ones. All-weather roads began to take villages out of isolation, although motor vehicles remained rare. Agricultural extension services (see below) started promoting better tillage techniques, including the introduction of chemical fertilizers, as well as education and health.

Between 1951 and the 1960s, the net cultivated surface area rose from 120 million ha to 140 million ha, but part of the additional land was rather marginal in peninsular India. Since then, there has hardly been any new land to reclaim because there is no more extra land fit for agriculture. As for the net (topographical) irrigated surface area, it increased from 21 million ha in 1951 to 27 million ha in 1964/65. When including double cropping on the same soil in the year, the gross area rose from 22.6 million ha to 31 million ha.

Institutional changes implemented by the central or state governments accompanied such investments. The Zamindari system was abolished. The tenants became, in most cases, full owners of the land they were cultivating. They were also freed from various obligations to the zamindar, such as begar or forced labour for some days, or fees on special occasions. The zamindars were allowed to keep the land that they were, themselves, cultivating. In many cases, this could be around 10–20 ha. Later on, several
states passed a ceiling law for landowners in order to recover land for landless peasants (6.3 irrigated hectares in UP). These laws, however, were poorly implemented. It was already very obvious that there was not enough land to accommodate all marginal cultivators and the landless, as would be observed in the field. The alternative to such inequality would have been collectivization of the land as was done in China, a solution unthinkable in India where state legislative assemblies were dominated by middle and upper class farmers at that time. A law to improve the conditions of the tenants was also not successful.

17 In 1952, following a pilot project in Etawah (UP) started in 1948 with the very able support of an American, Albert Mayer, the whole of India was gradually covered by Community Projects through Development Blocks (sub-districts). A BDO (Block Development Officer), assisted by village level workers (VLW), was charged with promoting self-help at the village level, with new inputs in agriculture, education, health and village sanitation. The Block worked closely with the growing number of cooperative societies for the purpose of giving loans to farmers.

18 After this came the Panchayati Raj, instituted in order to strengthen village level administration. The idea first came from Lord Ripon, Viceroy in 1882, when he introduced the principle of self-government. Until then there had existed – as do now – caste panchayats dealing with the caste members’ problems. Experiences of village panchayats with limited suffrage were introduced before 1939. The idea came up again during the preparation of the Indian Constitution. One of the main authors, Dr. Ambedkar, a Mahar (an upper Dalit caste of Maharashtra) and one of the first educated Dalits, was against it because he was well aware that such village councils would unavoidably strengthen the influence and power of the dominant castes. He succeeded in reducing the role of such panchayats in the Constitution, though they were greatly favoured by Mahatma Gandhi.

19 The idea of strengthening the panchayats came up again in 1957 with the Mehta Report – named after the president of the study team on Community Projects. A three-tier system was conceived and implemented: the gram (village) panchayat, an elected body at the village level; the Block Samiti, with the presidents of gram panchayats, at the Block level; and the Zila Parishad at the district level.

20 The new institutions were, at least, partly disappointing. Community projects tended to focus too much on social goals, including latrines which were dear to Mahatma Gandhi, instead of giving top priority to agriculture. Panchayati Raj yielded very limited results, especially in Northern India. Cooperative credit considerably increased, but was hampered by leakage and corruption. On principle, loans were devoted to agriculture, while there were also loans which financed marriages.

21 When travelling through India in the 1950s, one observed only a limited opening up of the rural world. Most modern inputs like chemical fertilizers, pesticides, and irrigation pumps were only just beginning to be used. Tractors were exceedingly rare. Bullock carts were dominant even on most National Highways. Extreme poverty and caste differences were widespread in many villages in the plains or in the Deccan. As for the Adivasis, (aboriginal castes) they were just simply forgotten.

22 There were exceptions to these trends. Punjab (which included the future state of Haryana) was forging ahead under the strong and efficient leadership of Pratap Singh Kairon, Chief Minister from 1952 to 1964. He had been trained in American universities
before the war, and after his return he became a militant nationalist. One could see how agriculture was progressing during his leadership. The Sikhs who had left the Pakistani part of Punjab were often resettled on land left behind by Muslims who went to Pakistan. Mostly Sikh Jats displayed their resilience while being actively supported by the Chief Minister’s policies: land consolidation, agricultural research in the new university of Ludhiana, the setting up of rural roads, electricity, cooperative credit and irrigation. One must, however, add that he was very corrupt and had to resign in 1964. He was assassinated the next year.

In the Ganges Basin, agricultural changes were still at the very initial stage. In the rich Southern deltas, as in Thanjavur, the level of agriculture was already quite high with paddy yield at around 2,000 kg/ha or a bit more, versus 1,000 to 1,500 kg/ha in many rainfed areas. In peninsular India, cities and industries in Maharashtra and Gujrat could attract migrants from villages, thus reducing poverty, whereas in more isolated parts of the peninsula these limited safety valves were lacking.

After the success of the first FYP – though priorities changed in favour of heavy industry in the next plan, particularly in favour of the public sector – further progress was recorded in agriculture and rural infrastructure until the mid 1960s. By that time, agricultural growth was levelling off while the population was rising faster, at a rate higher than 2% per year versus 1.3% in the 1951 census.

Since there was no more new land to cultivate after the increases made between 1950 and 1960, rising yields, which required massive technical innovations, had become crucial. Similar currents did appear, at the same time, in Pakistan, as well as in future Bangladesh, in Indonesia and China. In 1965 and 1966 the country faced two consecutive and terrible droughts. India was saved from what could have been a devastating famine due to the supply of US grain and the ability of the administration to distribute it. A few years before, China was hit by an extremely terrible famine, with about 40 million casualties, largely due to the absurdity of the Great Leap Forward (1958–61), while imports of cereals kept on rising Indonesia and Pakistan.

It had become quite clear in India and in other Asian countries that major efforts were needed to boost further agriculture. Political leaders, senior civil servants, agronomists and research institutes were increasingly conscious of the key role of technical factors.

These situations fitted well with the book, recently published at the time, by Theodore Schultz, future Nobel Prize winner in economics, titled *Transforming Traditional Agriculture* (1964). The book relied mostly on field studies carried out by the professor’s students, in particular David Hopper who lived and studied in a village in Benares district for 18 months. The main points of the study are as follows:

1. Traditional techniques follow rational practices within the technical know-how of the peasant.
2. Any technical system finally reaches its limits and, consequently, technical innovations are needed to proceed further.
3. The bulk of technical innovations can be adopted by illiterate farmers.
Chapter 2 – In the Villages

1 The first round of village studies gives us an idea of the major challenges faced by decision-makers, civil servants and peasants. It shows how acute the need for a major breakthrough in agriculture had become in the face of constantly increasing population pressure. These studies took place in 1963/1964, except Pilkhi and Manchala, which were surveyed in the summer of 1967.

2 Several aspects of social life, the work of housewives, marriages and severe infantile mortality had been presented in the case of Kandoi. A number of such observations can be found in other villages, which is why repetition has been avoided. On other the hand, references have been made to the difference of status of the women in the South.

3 The form of petty corruption referred to in Kandoi was no less widespread in the other northern villages. It was, however, comparatively less prominent in the South and in Maharashtra.

Khandoi (population 1227 in 1961), Unchagaon Block, Bulandshahr District

4 Bulandshahr district greatly benefitted from the irrigation canals built by the British in the latter part of the nineteenth century: rising crops, progress of cattle, improvement of market places and the laying of some major roads. Khandoi and Unchagaon in the eastern part of the district were moderately affected by these changes because of their location at the tail end of the canals. That is why Khandoi relied mostly on wells. Farmers made use of the Persian wheel, i.e. a vertical chain of water buckets lifted by the horizontal rotation of a pair of bullocks around the well. This had replaced the less efficient Mot system some decades ago where a leather bag of water is lifted from the well by a pair of bullocks.

5 Wheat (rabi crop) was the major food grain, while sugarcane was the main cash crop (10-12 months). In the kharif, coarse grain was sown; such crops are often rainfed (maize, sorghum, millet). Various pulses were sown both in the rabi and in the kharif. Most farmers, except very small landowners and landless labourers, owned cows and buffaloes. Bullocks were used for land tillage and transport using a cart.
The population trebled between 1861 and 1961 and had reached 1237 inhabitants. As in many other villages in the Ganges basin, the total area (fields and houses) remained constant. Out of 276 ha, the sown area and orchards accounted for 262 ha. By 1889, all fallow land had been brought under the plough. The irrigated area more than tripled between 1861 and 1961 to reach 190 ha. The remaining land relied on the rather weak monsoon in that region and on scattered rains in the winter. In the inter war period, better varieties of wheat (not to be confused with the high yield seeds of the Green Revolution) and sugar cane had been introduced by the agricultural department.

More changes have appeared since 1951. The Development Block was opened at Unchagaon, the main central village, in 1954. The road between Jahangirabad, the nearest small city, and Unchagaon, which was often cut off during the monsoon, was made an all-weather road. From Unchagaon to Khandoi (3 km) the track was often cut off by floods during the monsoon. Even in the 1960s, motor vehicles were very rare, and most transport was carried out by bullock carts and some tangas. Unchagaon had only a few small shops. There was a poor market day once a week, but if you wanted a good supply of vegetables and fruit you had to go to Bulandshahr city, 40 km away.

Khandoi was a typical Hindu Jat village (with Jats being the dominant caste): 386 Jats out of 1227 people, owning 150 ha out of 260 ha. At the bottom of the social hierarchy, the largest group of Dalits consisted of Jatvis (called Chamars elsewhere in UP or Bihar), who were very often landless. It was striking to see how the Jat spirit, a caste known for its good agricultural practices, was common among higher castes. Brahmins, themselves, were ploughing like the Vaishyas. As for the Lodhas, they were a typically rising OBC (Other Backward Caste). Out of 182 families in the village, 108 owned land.

With the opening of the Block, extension services started propagating the use of chemical fertilizers which were adopted only by a few peasants. Cooperative credit was also expanded. In 1955, the installation of the first electric line led to the construction of the first TW (tube well) belonging to the State but it was not working properly. Later on, a few private tube wells using oil were introduced.

One great weakness common among most Indian villages was – and remains – the poor use of organic manure. It was out of the question to have latrines and collect human excreta, a feature of Chinese civilisation for over 2,000 years. Cow dung was largely dried and used as fuel for cooking. What was left was badly kept in pits and exposed to the sun, and hence, lost much of its value. Compost, a Chinese device, was unknown. As a result, the use of farm manure was limited, while only a few farmers were trying chemical fertilizers.

In Khandoi, the 3 ex-zamindars could only keep 10 to 15 ha each. The minimum economic holding required by a family to cover its basic needs would range from 1.5–2 ha, mostly irrigated. In 1963, uneconomic holdings covered 56 ha, while 200 ha were cultivated under relatively favourable conditions.

There was one primary school in Khandoi and some secondary schools within a radius of 4 to 8 km. Only 20% of the people were literate. A few petty traders were selling clothes, sugar, onions and biddies (cigarettes).

The consolidation of land holdings was spreading from Punjab to Western UP. In Khandoi this was completed in 1965 and brought down the number of plots from 613 to 135. This paved the way for private tube wells, which started expanding, also stimulated by the supply of electricity. As it will be seen, improved irrigation is a major factor in the Green Revolution.
Revolution. While considerably useful, the consolidation of holdings is a tedious operation, and takes a few years to be fulfilled. Under a special officer and his staff, landowners exchange scattered plots among themselves in order to have their holdings in one piece, or more rarely in two. This is done according to the value of each plot which is decided upon between landowners and the staff. For instance, a clever Lodha gave up his irrigated plots to have his holding in the unirrigated part of the area. He thus obtained a larger piece of land than what he had before. Then he set up a TW covering all of his land.

Most landowners, along with their wives and children, were leading a hard life. A Persian wheel could irrigate 0.5 ha per day with two pairs of bullocks, one working after the other, being pushed by one man. Wheat required ploughing ten times over, with each round being followed by levelling off the ground with a heavy plank pulled by bullocks. Sowing with a seed drill attached to the plough took a full day for one third of a hectare, and required the labour of one man and his wife. Careful weeding eventually followed. Harvesting was of course done by hand, threshing by bullocks, and winnowing by hand. Sugar cane was transformed into raw sugar (gur) and sold in Unchagaon or Jahangirabad (14 km away); cane was crushed through iron cylinders moved by a pair of rotating bullocks. The juice obtained was cooked to give a brown liquid, which is decanted, in stone mould, ready for sale.

In November, the crop calendar was extremely tight. Kharif crops had just been harvested, and one had to plough for wheat and start cutting the cane. Farmers were starting ploughing under the moonshine and continuing during the whole day. Women were no less hard working. Early morning they prepared flour in a millstone for one or two hours, after this they cooked, collected cow dung, dried it for fuel, looked after the cattle, and helped their men in the fields. However, unlike in South India, they would not work for wages with other families.

Traditional techniques involving a large amount of work and skill from mostly illiterate farmers were reaching their upper limit in terms of productivity: traditional irrigated wheat yielded 1,200–1,300 kg/ha, and gur around 5,000 kg/ha (50 t of cane). Only major technical innovations could lead to sharp agricultural increases as illustrated by Schultz’s thesis (see chap 1).

Even medium-scale farmers (1.5–3 ha) and often upper-scale farmers (4–5 ha) were leading a very frugal life: owning a cycle, a watch and a radio set. Most houses had mud walls. All people were wearing rather poor traditional dresses, for instance women with their greyish saris. Men were making fun of “patloo and tyewala” (men with trousers and a tie). The basic diet consisted of chapattis made of wheat or coarse grain, along with some pulses, chutney, and some mustard leaves (sag) in winter, or some mangoes during the season. Fruit and vegetables were a quasi-luxury. Milk consumption for children and adults was prominent in medium and upper families which owned buffaloes (producing 5–7 l of milk per day) or cows (1–2 l per day). In the houses of small landowners, there were cases where there was just enough milk for the children, while for a number of landless families there would be no milk at all. Part of the milk in fairly well-off families was used to make ghee (clarified butter, used for cooking). Tea and sugar with milk were rarely served. Most people were vegetarians and avoided even eggs (poultry was rare). A number of farmers were often indebted to a money lender charging 36% interest.

Family planning was unknown except in a few families, like the zamindars’. Yet, when some women learnt from my wife about family planning, they begged her to bring them the “dawa” (medicine). Mortality was still very high, especially the infantile one. Out of
94 couples interviewed, 309 children were alive and 317 dead. The rate was particularly high among the Dalits. Some couples had 2 to 3 children living and seven dead. Even one of the ex-zamindars lost two out of seven children. A fairly rich landowner, owning 5 ha, lost four of his eleven children.

Most of the Dalits were very poor and often indebted. Only a few Jatifs owned some land, often less than 1 ha. Some owned tiny shops selling matches, salt, and biscuits. The majority were casual agricultural labourers. Many of them, including children, suffered from malnutrition. In a number of families, there was no consumption of milk. Infant mortality was very high with some couples hardly having more surviving children than dead ones. Daily wages amounted to Rs 1, possibly along with the provision of rotis (flat unleavened bread), and 5–7 kg of grain per day at the time of harvest. Working on a kolu sometimes, but not always, paid Rs 1.50 per day.

When talking with the Jatifs, one gathered the impression that their poverty – physical, mental, and spiritual – was such that they were barely surviving and were lacking the will or the ability to live better. In addition, they were burdened by their low status. Several of the Bhangis (scavengers, sweepers) were equally miserable, but some were more enterprising than the Jatifs in spite of their even lower status. Under the Jajmani system (whereby artisans or women worked for farmers and were paid in kind) some Bhangi women worked for Brahmins, Jats, and others. They were paid in grain. They also earned some money by working as midwives. They could be quite alert and aggressive, at times arguing loudly with their employers about their wages. Some Bhangis raised pigs for a military farm in addition to engaging in agricultural labour. Saggan, for instance, was doing quite well with his pigs and was one of the very few villagers who owned some poultry.

The Dhobis combined the washing of clothes of the higher castes under the Jajmani system with working in the fields or in the kolus. On the whole, they enjoyed a higher social status and were less poor than the Jatifs or the Bhangis.

The Dalits did not complain of abuse or physical bad treatment or dabao (pressure) from the higher castes. Extreme cases of caste-based pollution seemed to have disappeared. An old Jatif told me that when he was a boy, he had touched the shirt of a Jat by mistake, a transgression for which he was beaten and his father was made to replace the supposedly tainted garment. On the other hand, there was no inter-caste eating or drinking. During village meetings, the Jats, Brahmins, Lodhas and others sat together on the same charpais (four-legged wooden bed or cot), while the Jatifs and the other Dalits squatted nearby.

When I asked one of the leaders of the Jatifs, a tailor who was not too poor, if the living conditions of his people had improved since independence, he replied, “There is only one change. We no longer have a tala (lock) on our mouths.” When I posed the same question to a number of other Dalits, they replied, “Kuchch nahin” (Nothing). However, Saggan the Bhangi said that he was better off than he had been ten years ago, and this at least was true in his case.

Even if some Dalits had become less poor, the majority of them remained depressed, both physically and psychologically. When I asked the Brahmins, Jats and Lodhas why the Jatifs were so poor, they replied flatly, “Sust hain” (They are lazy). It could happen, as they complained, that when they needed extra labour, the Jatifs would not turn up for work, meaning that the former had to work still harder. When I asked a Jatif why this was so, he replied that working for only Rs 1 per day was hardly worth the trouble. He would
have to eat more to expend energy on working, so it was sometimes better to sit idle
while consuming less food. The explanation was not entirely convincing because I
observed instances where the Jatavs could have earned Rs 2 per day for doing light work,
and yet they did not turn up. Could this lethargy be a consequence of acute poverty and
malnutrition?

Marriages were all arranged within the same caste (including Dalit castes) but the girl had
to come from another village, as is the tradition in Northern India. The family of the girl
had to bring a dowry, often quite heavy, as was the case everywhere else where the
custom is practiced. The groom and the bride would meet for the first time during the
marriage ceremony. Some farmers knew about western marriages, but they had no Hindi
words for it, so they used the English words “love marriages”. Wives of the higher castes
followed the rules of purdah, not meeting men outside the family and hiding their face
with the tip of their sari when going out.

In spite of its weaknesses, the Development Block did help farmers as well as the
cooperatives, but there were many complaints against corruption, of getting a loan, of
buying water from the state’s TW, and in reference to the consolidation of holdings.

How did the future of Khandoi look in 1964? Even in a fairly advanced village
representative of others in the region, acute poverty was still widespread, especially
among Dalit landless families. About one-third of the population was living under frugal
but satisfactory conditions, one-third was very poor, and one-third, often landowners
with less than one hectare, figured somewhere between the two. Population was
increasing faster, while agricultural production was lagging behind. Besides, local non-
agricultural activities were limited. One could, however, expect more growth with the
advent of TWs, a consequence of the consolidation of land holdings. With these, the whole
area could be irrigated and in a more efficient manner than with the Persian wheel. One
could expect some yield increases due to greater use of chemical fertilizers and
cooperative credit, but a big question remained open: would such potential progress be
enough to substantially reduce poverty? In those days, nobody knew about the Green
Revolution which was about to appear.

Nahiyan (population 2500 in 1961) Mangari Block,
Benares (Varanasi District) UP

Whenever discussing development policies in Lucknow, the capital of UP, in the 1950s and
early 1960s, officials kept on complaining about the poor performance of eastern UP
compared to the western side. Irrigation was progressing much more slowly, agriculture
was more sluggish while the population was rising quite fast with heavier densities that
in the West. As we have seen (in chapter 1) the former relative prosperity of the eastern
plains had disappeared by the end of the nineteenth century and had been replaced with
a growing concentration of poverty and rising population pressure.

Although rainfall was higher than in western UP, irrigation was needed to compensate for
a possible weak monsoon and to support good crops in the rabi when only scattered rains
occurred. The British did not build irrigation canals because the rivers here are flowing
below the fields. Therefore gravity canals were not possible as in western UP and Punjab,
so farmers relied mostly on wells. The latter used the mot system, wherein buckets of
water were pulled out of the well by bullocks, irrigating 0.10 ha in 12 hours versus 0.25 ha in Kandoi with the Persian wheel.

30 By 1880, land records show that all cultivable land had been put under the plough. As for the yields, they hardly increased. In the inter-war period, eastern UP did not benefit like western UP from improved varieties of wheat and sugarcane. Here, the yield from irrigated wheat weighed in at 900 kg/ha, and gur (raw sugar) at about 3,000 kg/ha. Paddy, which was only rainfed, gave 1,000–1,500 kg/ha for many decades. Animal husbandry and milk were less developed here than in western UP.

31 Population, which was already heavier here than in the west in the eighteenth century, kept on rising without being compensated by urbanisation, industries and trade. Even Benares had not had much impact on the villages. Nahyian had 2,500 inhabitants in 1961 with a density of 600 persons per sq km (Kandoi had 440).

32 Caste behaviours played an important role. My friends in Kandoi had warned me “Purbi log dhile hein” (Easterners are lazy or easy-going). The dominant castes, Thakurs, Bhumihars and Brahmins were observing the taboo preventing them from ploughing or from doing other manual work.

33 Nahyian is located 30 km from Benares, the last 4 kilometres lying on a poor track. The flat landscape is broken by mango trees, pipals, bamboos and small tanks. While villages are compact in the west, partly due to old fears of invasion, here villages are split into different hamlets based on caste. One could see some fine old mansions, their walls made of puddled clay covered with round tiles and with an inner courtyard that belonged to the landlords, reminding one of lost prosperity. Arable land amounted to 362 ha out of which 50 ha were owned by the four main Thakur landowners. Many land holdings were below 1 ha. 169 ha were cultivated in the rabi mostly with wheat, peas and some potatoes. These crops were mostly irrigated by wells. In the kharif there were 240 ha out of which 180 ha were covered by mostly rainfed paddy. Irrigated sugarcane, a full year crop, covered 53 ha. Farm manure, as in Kandoi, was badly kept and a large part of the collected cow dung was used for cooking. Locally made gur used less efficient techniques than those used in Kandoi. A few big farmers had started using improved seeds with chemical fertilisers. Some low lands were periodically flooded even under normal monsoon rains due to lack of drainage.

34 The good alluvial soils, the amount of available groundwater, the surrounding rivers and ponds could have irrigated the whole land with double cropping due to TWs and low-lift pumps. Yet there were only two state-owned TWs since 1963 with the advent of the electric line. They covered around 100 ha quite poorly. The consolidation of holdings had not yet started. Sowing, weeding and harvesting were much further behind Kandoi, a clear consequence of the spirit of dominant castes: Thakur, Bhumihars and Brahmins. Even small cultivators among them followed the taboo on ploughing, with most of the work being done by tenants or agricultural workers. In Kandoi a young, alert Brahmin had conveyed to me his surprise when, at a course for cooperative secretaries, eastern UP Brahmins refused to do any ploughing exercises. When I asked a Brahmin in Nahyian why only 5.6 out of his 10 ha were irrigated, he replied: "That is our weakness". Another Brahmin joint-family had 8 ha. The joint-family of 24 adults and children had enough manpower to till their land. Yet the major part of the work was done, in addition to the casual workers, by two permanent labourers, each paid Rs 5 per month and allowed to use 0.4 ha each. The family was thus losing Rs 120 per annum and one-tenth of their land. A Kayasth joint-family of 25 members with 4 ha irrigated faced a similar situation.
A few big landowners did better, such as Kamla Prasad Singh, a Thakur. He looked more carefully at his land, supervised his 5 permanent labourers, and followed the advice of the extension services. Two-thirds of his land was irrigated with double-cropping. He had 6 bullocks, 1 buffalo and 2 cows supplying milk. The family was well fed on cereals, pulses and occasionally mutton.

While a number of medium and upper-ranking families faced living conditions substantially below similar cultivators in Kandoi, the hamlet of the Kurmis (OBC) offered a very different picture. While building the railways, the British had already noticed their hard work and ability. All the inhabitants were ploughing and doing most other agricultural work as well. Two brothers from a joint-family were improving their living out of 6.25 ha, were using recommended doses of fertilisers, and were having two pairs of bullocks, three cows and one buffalo supplying plenty of milk which accompanied their supply of chapattis, pulses and sometimes meat. Another Kurmi with his wife and four children had a hard life out of their holding of 0.75 ha that was double-cropped: they had no cow, no milk, some cereals and some pulses and, rarely, goat meat. He would also work as a labourer for Re 1 per day. The Kurmis were also asserting themselves which led to clashes and other rivalries with the high castes.

Daily wages were the same (Re 1) as in Khandoi, but the misery of the Dalits was more acute. The Chamars (still called as such) represent the largest group of Dalits. A few manage to survive not too badly. One of them, who owns 0.75 ha, part of which is double cropped, grows paddy, wheat, and sugarcane. He has two bullocks, but no cow, and hence produces no milk. He can just about manage to survive by consuming cereals, some spices, and, very rarely, some goat meat. Others are much worse off. “Misery does not leave the poor,” a landless Chamar told me. Many of them were underfed and there was very high mortality among small children. They were living in huts where some even lacked charpaïs (beds).

Many Dalits had debts from procuring the means of their survival or, not infrequently, from the marriages of their daughters. They had to borrow from moneylenders charging 24 to 36% per year, while medium and upper-ranking farmers could rely at least partly on cooperative credit.

The Musahars (rat eaters) are situated at the bottom of the Dalits’ social ladder, and were the worst off, living in a miserable hamlet. They were looked down upon by most castes, and were greatly subdued under the weight of their misery. At times, they could be paid even less than the Chamars.

Such poor agricultural practices could offer only limited job opportunities in the non-agricultural sector. Ancillary activities, which are very important in reducing poverty, were not common. In addition to their poor economic conditions, the word dabao (pressure) and other abuses from the high castes were often encountered when talking with the Chamars or with other people. I was just settling down in Nahiyan when some Bhars (OBC) came to me, bleeding from the head, after being beaten by Brahmins in a fight about litigation over a few square metres of land. As for corruption complaints, they were as common as in Khandoi.

I left Nahiyan in near despair. What could one do in such an area that appeared cursed by so many evils? I could now understand the feeling of helplessness over the eastern UP districts expressed by senior officials I met in Lucknow.
When I reached Bihar in the summer of 1967, everybody from Patna Secretariat down to the villages kept on talking about the promotion of sinchai (irrigation), a consequence of the terrible drought in 1965 and 1966. New Delhi had sent some of the best ICS or IAS (Indian Administrative Service) officers to organise the distribution of wheat. As a result only a few old people or children died of hunger.

Acute poverty, poor crops and feudal lords, and a general impression of lethargy were striking. In the middle of the nineteenth century one reads in the Gazetteers of the districts: “The number of rivers, the alluvial soils and the usual monsoon make the tract one of the major production centres of Bihar ... as the granary of India” (reprint 1964). In those days the population was only beginning to grow, landholdings were not so fragmented and the number of landless persons was still small. Another Gazetteer reverts to the region: “The climate is responsible for the characteristic ease-loving, complacent attitude of the people. The philosophical discussions and erotic poems found a fertile soil where people are allergic to hard work.” (Chowdhury 1964, 24).

All twice-born landholders at the time of my visit were strictly following the taboo on ploughing, and were using tenants and/or landless labourers, even when they had holdings no larger than 1 ha. The level of agricultural development looked worse than in Benares district, with even less irrigation versus the fast population growth after all arable land had been reclaimed around 1880.

Pilkhi, though less isolated than Nahiyan, does not appear to reflect any clear impact of Muzaffapur city though it is 20 km away on the main road. The urban district population only accounted for 5%. The landscape is completely flat with rainfed paddy fields, and with woods and bamboos surrounding hamlets of each caste. The cropping pattern had hardly changed since the Gazetteer quoted above: rainfed paddy with a low yield of 1,000 kg/ha. 50 ha of low-lying land suffered from excess water even under a normal monsoon due to the lack of drainage, meaning that either the crops could not grow or would give yields less than 1,000 kg/ha of paddy.

In 1961, out of 470 ha, 370 ha were cropped and 26 were devoted to mango orchards. The population was 2,471 with an already high density of 525 persons per sq km. Some fields were covered by state TWs installed several years ago but these were working poorly due to lack of maintenance. Though rainfall is a little higher than in Benares, irrigation would have been badly needed from groundwater or out of the Burhi Gandak flowing near the village. Land tillage was not carefully done, and the levelling of paddy fields was uneven. Nurseries were not well kept. When we were there paddy transplantation had been delayed so it needed to be carried out very quickly. Yet, only a few men were slowly at work. Consumption of chemical fertilisers was negligible. As for rabi crops, there was some maize, tobacco, chillies and potatoes and some kitchen gardens here and there. Animal husbandry and milk held only a limited role in the local economy.

It was striking to come across really big landlords owning 50–100 ha or more in this region. Their land was looked after by a manager, tenants and/or landless labourers. Even poor yields out of such holdings would allow the landlords to live a comfortable life. Smaller high-caste landowners were, as in Nahiyan, faced with difficult living conditions. There were some hamlets of Kurmis and Yadavs (both OBCs) who, through their hard
work, managed reasonably well like the Kurmis of Na hiyan. Economically and socially they had begun to improve their status, which led to clashes with the upper castes, which feared losing their power; this could also be observed in several other parts of Bihar. There were also tensions between OBCs and Dalits.

Although it is not so far away, Muzaffarpur city did not appear to have much impact in terms of employment. The town and the bazaar are undoubtedly growing, but not in a significant manner, and only have a few industries. Chamars, Dusads, and other Dalits lead a very poor life, with cases of extreme misery. They live in small huts, often nearly empty, without even a charpai. Some men have only one set of clothes, the ones they are wearing, consisting of a shabby kurta (shirt) and an old dhoti (piece of cloth tied at the waist). Many women could not afford even a choli (blouse). Several people complained that they were worse off than they had been twenty years ago. Their diet was deficient, with practically no milk. They did not have money to buy meat or fruit. Many of them had debts. As in the villages I had visited earlier, here too, the infant mortality rate was very high compared to that found among high-caste medium and upper-scale farmers. Daily salaries for agricultural work amounted to only Rs 1.50 and ancillary opportunities to earn some extra money were quite limited due to the overall underdevelopment of the area.

Another factor is responsible for the small income of the Dalits. Unlike the situation in South India, here it is not acceptable for women, even the poorest of them, to work as wage labourers. They might do so only in the company of their husbands. I saw a few odd males transplanting paddy, whereas in South India one would come across lines of women and men at work. The living conditions of the poor were made worse by the abuses of landlords. The word dabao (pressure) came up more often in interviews than it did in Nahiyani. Social barriers were particularly rigid. The use of lathis (bamboo sticks) by landlords’ retinues was not uncommon.

It was obvious that a very large potential for growth could be tapped through widespread irrigation, drainage and flood control. Collectively, such developments would have paved the way for a future Green Revolution, which was already beginning on a very modest scale in Pilkhi and in some other plain areas. At the same time, it proved quite difficult to assess or predict human behaviour, especially that of landlords and medium-scale farmers. Also, what would be the commitment of the government of Bihar, which looked so keen to push irrigation, but was torn by factions? Finally, the problem of corruption remained widespread.

Manchala, Tenalli Block, Guntur District, Andhra Pradesh

In 1845, a British Commissioner was sent from Madras to Guntur to investigate the poor situation prevailing after what had been a long period under British rule. He reported: “the canals of the Cholas (Tamil rulers in the tenth-twelfth centuries) had long been choked in the delta of the Krishna.” Good alluvial soils were poorly cultivated. Paddy was confined to a small area and was dependent on a few wells. Rainfed millet and pulses with a low yield were dominant. The situation was further worsened by drought or cyclones. In 1833, famine wiped out more than half of the population, under the fairly miserable condition of the administration (Frykenberg 1965, 2-8).
By the middle of the nineteenth century, the government introduced drastic administrative reforms, curbing corruption and inefficiency. Sir Arthur Cotton, Chief Engineer of the Madras Presidency, had had the Krishna and Godavari deltas criss-crossed with irrigation canals. Irrigated paddy replaced poor rainfed millet. Tobacco was introduced in the fringes of the delta, which led to the setting up of factories in Guntur. The main roads were improved. Consequently, job opportunities increased in agriculture and in other activities. Sir Arthur Cotton was so popular, that a statue of him was erected after his death. It is still garlanded by local people today. The process of growth was helped by good agricultural castes: the Kammas, Reddis, and Kapus.

Upon leaving Guntur City in the summer of 1967, after a few kilometres we crossed the Buckingham Canal, a wide waterway from which canals begin. Not far from the main road is the village of Manchala, 18 km from Guntur. The total area of the village was 313 ha, out of which 260 ha were cultivated, and it had a population of 1,462 in 1961. The Kapus were the dominant caste, ahead of 20 Brahmin families - a number of which had sold their land to move into cities. While they would not touch the plough, they were closely supervising their labourers. The two biggest farmers (Kapus) owned 12 ha each; 32 land holdings were in the range of 1.6 – 8 ha; and 140 were below 1.6 ha. The bulk of the landless were Yanadis, a scheduled tribe which had settled in the village one or two centuries ago after leaving their forests. Some Kapus were working outside in the district like some Yanadis who were attracted by the vegetable belts growing in the outskirts of Guntur.

Unlike the Ganges and the other northern rivers, which depend on both melting snow in the Himalayas and the rains, peninsular rivers are only fed by the monsoon and, hence, have less flow. Canals were opened between the end of June and January so that only one crop of paddy was possible. In the rabi, farmers would grow pulses yielding 500 kg/ha. In 1967, high yield varieties of paddy had not yet reached the region, but in the last ten years, improved varieties with small doses of chemical fertilisers had been introduced.

The contrasts between Pilkhi and Manchala, both visited at the same time, was amazing. My friend Daniel Thorner, a leading foreign expert on India who had visited coastal Andhra and Bihar in 1966, had drawn my attention to the following differences (Thorner 1967). Unlike in Pilkhi, paddy fields were properly levelled, well tended and irrigated. Seedbeds were carefully prepared through several rounds of ploughing and levelling using a plank. Strong male Yanadis would pull the paddy shoots from fine nurseries to be transplanted by lines of Yanadi women, who were swift and clever. Weeding would follow the harvest. As a result, paddy yields had doubled from their traditional level to 1,800–2,200 kg/ha.

The upper-rank Kapu landowners were fairly well off and no less active than smaller farmers. As for the latter, Wenkataswarulu, 35 years old, was managing adequately for his wife and five children out of only 0.6 ha. He produced enough paddy for the family and even had some quintals for sale. In the dry season the sales of pulses would bring Rs 300. He also had a pair of bullocks, which he used for ploughing other landowners’ fields unless he rented them out. His two buffaloes gave 2 l of milk each, consumed per day at home. Their neighbours, five brothers, owned 0.4 ha each, which were equally well cultivated. Thanks to the addition of some ancillary work they could manage to buy some chemical fertilisers. Finally some Kapus were working in Guntur, a busy, growing town, and were commuting every morning from Manchala. Others could work during the dry season repairing canals. There were only a few tiny shops. Most houses had mud walls
and thatched roofs as are widespread in the South. Bicycles, watches, and radio sets were fairly common among medium and upper-scale landowners.

57 The Yanadis lived in a separate hamlet. Both men and women were busy during the paddy cultivation period – ploughing and puddling, transplanting and weeding, harvesting and threshing. They had other sources of income, such as making bamboo traps to catch rats in the fields. They could catch 15 rats per day, thus earning Rs 3 from the landowners. They also recovered paddy stored by the rats in the field bunds, a practice quite common in many areas, including Bihar, which can recover close to 75 kg of paddy in one year. Apparently, they also ate rats. Some of the men collected hair, making chignons that were sold in the bazaar. In the off-season, they did some repair work on the canals.

58 Daily wages for the same work amounted to Rs 3–4 in Manchala compared to Rs 1.50 in Pilkhi. Most women in Manchala were also busy in the fields, unlike in Pilkhi. By pursuing ancillary activities, in addition to working in paddy fields, the community managed to escape acute poverty. Their homesteads were well kept. Men and women were smart and lively, not at all subdued, as were so many landless Dalits in the Ganges basin.

59 Finally, inter-caste relations appeared to be rather smooth. Brahmins were beginning to sell their land to Kapus and moving to cities, a trend quite common in South India. The Kapus did not abuse the Yanadis.

60 When leaving Manchala, one had the impression that, on the basis of the progress already achieved, the next steps would strengthen the present trends.

Kila Ulur, Orathanad Block, Thanjavur (Tanjore) District, Tamil Nadu

61 Thanjavur has been the rice bowl of Madras for nearly 2,000 years thanks to the irrigation canals built from the Cauvery River in the old delta. The new delta where Kila Ulur is located was brought under irrigation after 1935 thanks to the Cauvery Mettur Dam which increased the irrigation capacity of the river. Until then it had been a poor area unable to support a large population. Many people had to migrate. As a result, in 1961 the total population amounted to 1,574 inhabitants with a density of only 262 persons per sq km.

62 The village could be reached on a poor track a few kilometres away from the main road, 15 km from Thanjavur. Kila Ulur is composed of several hamlets settled according to caste. The Kallars (OBC) are the dominant caste. They are followed by Ambalakkarars and a large group of Dalits, the Paraiyars (Pariahs).

63 Before the advent of the canals only 58 ha out of the 370 ha that were cultivated were irrigated by wells. Various types of millet with low yields (cholam, kumbu, ragi) were the main crops. There were also groundnuts. Only 105 ha bore paddy, partly rainfed. Unlike other parts of the country South India receives two monsoons in July-October and November-December. With the advent of the canals, thanks to the Mettur Dam, irrigated paddy rose to 305 ha.

64 In the 1960s, 70 holdings were below 0.4 ha, 100 between 0.4–2 ha, and 50 with 2–6 ha. According to the 1951 census, landless labourers amounted to 410, versus 672 landowners and 125 tenants. In addition there were a dozen families, artisans, barbers, dhobis and teashops.
The agricultural year starts with the opening of the canal at the end of June. There are two short duration crops on the same soil: kuruvai and thaladi (end of June-February) and samba requiring 180 days. By February the canals are closed. In the rabi, temporary wells irrigate ragi crops (millet) and groundnuts. There is also some green manure. Crops are particularly well tended: paddy fields are prepared by seven rounds of ploughing, each followed by pulling a plank to level the soil. From fine nurseries, men swiftly pull the shoots, which are transplanted by lines of women. Transplanting also has to be done quickly so that all paddies mature at the same time, hence the need for having extra labour even for small plots of land. This involves either paid labour or mutual assistance. Weeding, a painstaking job involving ten to twenty-five persons for 0.4 ha per day, follows.

The area contains coconut trees near the houses, casuarinas, and other trees so peasants do not burn cow-dung for fuel. All farm manure (badly stored) is used in the fields. Chemical fertilisers had become widespread. Farmers rented a pesticide sprayer from the panchayat. Hard work and new inputs resulted in average yields of 2,000 kg/ha of paddy. Some peasants reached 2,800 with chemical fertilisers. Ragi yields were quite high with 1,400 kg/ha and shelled groundnuts were 575 kg/ha.

Credit, chemical fertilisers and extension services were typical features of the level of administration provided in Tamil Nadu, much higher than in UP and Bihar. Besides, unlike in those states, in Tamil Nadu the Collector or District Magistrate is directly in charge of development. In Thanjavur it was a most remarkable IAS officer, touring his district in the simplest manner, meeting small farmers, and closely supervising his staff. However, one weakness was already apparent: the supply of water from the canals was not always assured. The Department of Public Works responsible for them did not ensure proper maintenance of the canals: silting, lack of control by officials, and lack of finance were the main problems.

Acute poverty was much less obvious here than in our northern villages including Kandoi. Let us look at a large landowner according to local standards. Pichiya Thevar, a Kallar, 40 years old with his wife and three children had 4 ha of irrigated paddy, and 0.12 ha of coconut, banana and mango trees. His cattle consisted of 7 bullocks and 3 cows supplying milk to the family. A hen and 9 chickens were running around the grounds. Our man employed labourers only in busy periods. He and other cultivators would help one another. Out of 11,000 kg of paddy, Pichiya sold 6,700, consumed around 2,080 kg of clean rice and paid labourers with the rest. The family enjoyed a rather good diet: 3 meals of rice a day with coprah oil and chillies, mutton or goat once a week, some vegetables and milk, and fruit in the season. Tholappa Thevar, another Kallar, 35 years old, his wife and daughter applied chemical fertilisers from the Development Block on their 1.6 ha of paddy, sold three fifths of his crop, as well as most of the ragi crops. He would also sell nuts from his coconut trees. Near the house were two pairs of bullocks and 3 hens. Tholappa was happy with his lot, and was eager to get advice from the Block. His neighbour with 1.2 ha and a larger family enjoyed rather comparable living conditions. Other Kallars with 0.8 ha irrigated holdings could save some paddy for sale and sell eggs from their few hens. They might have, in addition, some coconut trees. Their wives were busy transplanting paddy for larger landowners.

The Paraiyars were the main Dalit caste. There were also some Dhobis, operating under the Jajmani system. The wives of small landowners, and those of landless labourers, were very active in the fields during paddy cultivation. The Paraiyars were clearly better off.
than the Chamars of Nahiyan and Khandoi. Daily wages were Rs1–2 (it was only Re 1 in the two other villages in 1963/1964). They had more working days in agriculture thanks to the intensity of cropping and the relatively high yields produced. During the off-season, they made mats, buying the fibre locally and then dyeing and weaving it. Each family managed to earn Rs 50–100 per year. They caught fish, cut down some casuarinas, or worked on canal maintenance during the winter.

The population pressure, lighter here than in the Ganges basin, the availability of various small odd jobs, and also the availability of agricultural work meant that the Paraiyars were rarely as poor as the poorest in some other areas. Yet, they admitted that their material conditions had hardly improved in the last fifteen years. On the other hand, caste relations had improved. The Paraiyars could now bathe in the Kallars’ pond and walk with their shoes on in the Kallars’ street. The temple of the Kallars was open to them. When riding in a bus, the Paraiyars would not be ejected if they were sitting next to a twice-born (something that could still occur in Bihar in 2000). The hamlet of the Paraiyars was well kept. More of their children were attending the local school. Their food was a little more diversified than it was in the North; they ate some fish, occasionally meat, coconuts, and rice. Sumptuary expenditures seemed less common than in the North. Landless Chamars in Nahiyan would spend up to Rs 800 on a wedding compared to Rs 100 in the case of the Paraiyars. Upper-medium Kallars would spend only Rs 1000.

Finally, although modern family planning was still absent, just as it was in the Hindi-speaking belt, the fertility of women, both poor and less poor, was substantially lower than it was in the North, a trend that was widespread in Tamil Nadu. Between 1951 and 1961, the population of the state increased by 1.4% annually compared to the national average of 2.15% annually. The gap with the Hindi-speaking belt has increased further since then, thanks to the more rapid progress of family planning in the South.

All these factors – fairly advanced agriculture, relatively low population pressure, economic diversity, more opportunities for pursuing odd jobs, and the cleverness and hard work of both Kallars and Paraiyars – combined to explain the lower level of poverty in this region.

Eksal, Koregaon Block, Satara District, Maharashtra

With Eksal we enter a physical milieu typical of peninsular India with its natural constraints concerning soils and climates. Drought can be devastating; the average rainfall in Eksal amounts to only 650 mm per year, with rains being held up by the Western Ghats. Soils on undulating plateaus are often poor and eroded. The irrigation potential from both ground and surface water is low.

From Satara City we proceeded to Eksal, 30 km away, located on a second-class metal road a few kilometres away from the small town of Koregaon which was linked to Satara by a bus service. Eksal’s population increase was very high at 28% between 1951 and 1961, probably due to the lower infantile mortality rate than in the previous villages. 1,973 inhabitants were living on an area of 672 ha – 606 ha were cultivated out of which 92 were irrigated mostly by wells. 232 ha had mediocre soils and 97 ha covered slopes furrowed by erosion with only sparse crops. Under a weak monsoon 40–70 ha cannot be cultivated at all. There were about 200 landholdings. To live reasonably well a family needed 0.8 ha irrigated and 3 ha of rainfed land. About one-fifth of the families were above that level,
occupying 160 ha. At the other extreme 70–80 families were at a poor subsistence level with less than 100 ha altogether. 80–90 landowners relied on a little more than 300 ha. Share-cropping was very limited. Landless peasants, as in many other villages, were few: 29 families according to the 1951 census. Then there were artisans, petty traders and domestic servants.

Marathas, the dominant caste, comprised about 80% of the population. They can be likened to the high-castes. Their ascendancy became striking in the second half of the seventeenth century in their wars against the Great Mughal, Aurangzeb. They recall the Jats being both martial people and hard-working peasants.

The main crops (kharif) depend on the monsoon, which arrives in early June when not delayed. Following the first rains, farmers plough their land once or twice and level it. The harvest occurs from the end of September to November, followed by sugarcane cutting from December-January (following 12-13 months of growth). Jowar (sorghum) and bajra (small millet) are the main crops, and are relatively resistant to low rainfall, with an output of 330–460 kg/ha for the former and rarely more than 270 kg/ha for the latter. Drought may cut such numbers by half. Even in a normal year the village is not self-sufficient in food grains. Irrigated by wells, sugarcane has grown from 3 ha to 11 ha between 1952 and 1963. Villages make gur (raw sugar) on the spot as in Kandoi. The average yield is 6,500 kg/ha of gur, higher than in Kandoi (5,000 kg/ha), which is partly due to a milder climate which is more favourable to sugarcane than that of Northern India. Groundnuts are progressing with improved seeds. Kitchen gardens are growing, unlike in the North; they are irrigated by open wells with the mot system of a bucket pulled by bullocks. One comes across potatoes, chillies, and vegetables being cultivated. A new crop has recently appeared: grapes are grown on 2.5 ha, fetching a very high price in the bazaar.

Since the region is fairly wooded, people do not need cow-dung for cooking. Farm manure is carelessly piled up in crude pits without protection, as in so many Indian villages. Farmers use chemical fertilisers and groundnut cakes for sugarcane as well as for vegetables and grapes. These are provided by the Development Block of Koregaon since its opening in 1957. Cooperative credit is widespread but favours medium and upper-rank farmers. Often, growers of cane and vegetables own a total of 5–10 ha, some of which are irrigated by wells.

Irrigation is a big constraint. There are 44 open wells, but sub-soil water is at a depth of 80-100 m under laid rocks, which raises the cost of boring much more than it is in the alluvial plains. A well 3M wide requires 25 men for between six weeks to three months. Since a few years ago, diesel pumps have replaced the mot system on ten wells, each irrigating 1.2 ha per day. In the hot season water becomes scarce so the pumps work for no more than two hours a day. Wells relying on the mot are often dry from February–March until the arrival of the monsoon in June. The soils even on slight slopes can suffer from violent, though rare, rainstorms washing away the topsoil. Some farmers erect bunds 1 m high but they must be renewed every 10 years.

For many decades, out-migrations have acted as a safety valve for all families, whether poor or less poor. Out of 200 families, 125 men have found a job outside in Bombay, Pune or in other cities. Several of them are in the army in the well-known Maratha Regiment.

Ramachandra Ganapatli Bhosle, a Maratha, started with 0.4 ha from which he expanded to reach 15 ha, becoming the main landowner of Eksal. At age 60, he keeps a close watch on
his crops with two of his married sons. Four sons are at school in Pune and 4 daughters are married. Two-thirds of the land bears rather poor rainfed jowar while three wells with diesel pumps irrigate one-third: sugarcane, vegetables, chillies, potatoes and more recently the first vineyard of 2 ha. He employs 30 workers and small landowners, each of whom is paid Rs 2 per day. He is also the owner of the only diesel-driven grain-mill (electricity had not yet reached the village). He even owns an old car, a unique case among the villages surveyed so far. He is the chairman of the village panchayat which is more active than panchayats in UP or Bihar. It promotes, with success, primary education, helps improve local roads, supplies sprayers for using pesticides and is involved with some other village activities.

Maratha landowners of 3.6 ha live fairly well if one-third of the land produces irrigated cash-crops. Smaller landowners are helped by one or two sons working outside the village. Agricultural labourers, often Mahars, are far less numerous here than in the plain areas. They earned Rs 2 per day, double the amount earned in Khandoi and Nahiyan. A number of Mahars were also found in towns. Some had joined the Mahar Regiment, one of the few Dalit regiments in the Indian Army. The Mahars have long been known for their enterprising spirit. They also enjoy a high social status among the Dalit castes. They also benefited from Dr. Ambedkar, a Mahar, and an eminent leader of the Dalits (see Chapter 1).

Govin Pandurang Sawan is a fine example of the enterprising spirit of the Mahars. He owns 0.8 ha, on which he grows jowar and groundnut in the kharif (monsoon season, June–July to September–November), and some wheat in the rabi. He worked for eight months for the main Maratha landowner, from whom he learned how to cultivate grapes. Then he did the same on 0.1 ha of his own land, which is irrigated by a well that he managed to dig after taking a loan from the cooperative. He owns a bullock, a cow, a goat, and two hens. He, his wife, and their four small children are properly fed and dressed. Although not all Mahars have succeeded as well as Govin, they are not subdued or passive, but assert themselves. I did not witness serious tensions between them and the Marathas, but nevertheless caste distinctions in matters of marriage and food were as strict here as they are in other villages.

As in Thanjavur, District Administration was better here than in the northern states. Maharashtra, unlike the other states, has created a dual district leadership: the Collector or District Magistrate is in charge of general work and the CEO (Chief Executive Officer), an IAS of equal rank, is responsible for rural development with the Zila Parishad. During our visit, the CEO, S. Rajgopal, a Tamil Brahmin, was of outstanding calibre. It was a pleasure to accompany him on his visits to villages or to observe the way he supervised his staff. He also initiated the first camp for the sterilisation of men (in those days it was more common than operations on women); already having had two children, he was the first in the queue to be operated upon. Later on he followed a bright career, retiring as Cabinet Secretary in Delhi, the top post in administration.

Other villages in Satara district face more physical constraints than Eksal. In Lasurne village, out of a population of 1,975, 200 men work in Bombay, Pune or are in the army. Out of 800 ha, 166 ha are more or less irrigated. The village panchayat is trying to build a small dam on the stream (for water harvesting), but the rocky terrain hinders the digging of small canals. Furthermore, the Phaltan Block, even under normal conditions, is classified as “Scarcity Area”. The soil is exceptionally poor. Only a few plots of land can be irrigated by wells. In one village, for the time being, the panchayat is trying to improve
the drinking water system through metal pipes and taps, because the water is so bad that people fall sick and are demoralised.

Summing Up

85 The picture emerging from this first round of surveys emphasises the variety of agricultural situations. It fits rather well with the broad trends mentioned at the national level in the first chapter: progress in certain areas, semi-stagnation in others all combined with growing population pressure. At that time, most landowners were illiterate but anxious to send their children to school, the death-rate was falling while the birth-rate hardly changed, and most village women were totally ignorant of family-planning methods. Maharashtra was a rare exception among these cases.

86 There was hardly any new land to reclaim after what had been achieved until the early 1960s. At the same time, traditional yields and techniques were reaching their plateau making a major breakthrough using technical innovations crucial to progress. It was no less striking to observe that in an advanced village like Khandoi a number of people remained very poor. With reference to institutions and administrations, one must underline the differences of leadership at the district level: the limited role in development of the District Magistrate in UP and Bihar versus the more direct responsibilities of IAS Officers in Tamil Nadu and Maharashtra. Frequent transfers of district heads under the pressure of dubious local politicians were already obvious particularly in UP and Bihar, already torn by political factions, but also in a better-run state like Maharashtra.

87 Petty corruption from small officials and policemen was quite alive under the British, but the channels of corruption increased considerably with the new institutions: community projects, cooperatives, Panchayati Raj, and the provision of electric supply. One could already record many complaints from farmers, but these have increased considerably in the following decades till the present day. On the other hand I never heard of any corruption case involving ICS /IAS officers. Local administration and extension services were of a higher standard in the South and in Maharashtra. Panchayati Raj achievements, though limited, were more conspicuous in Tamil Nadu and Maharashtra than in the North.

88 All over the country, landless people were very often Dalits. Their relations with other castes did partly improve in Khandoi, in the South, and in Maharashtra, while abuses and extreme rigidity were evident in Nahiyan and Pilkhi. The differences between agriculture-orientated castes and castes following the taboo on ploughing, already noticed by the British, remained quite alive.

89 With reference to marriages in the North, the bride had to belong, of course, to the same caste as the groom, but she also had to come from another village. In the South, the couple could both come from the same village; with the bride remaining in her own village, she could seek the protection of her family in case of difficulties. Besides these observances, purdha was quite strict among upper-castes in the North where even low-caste and Dalit women would not work as paid labourers.
NOTES

1. This device could already be found in Sumerian culture from 2000 years B.C. This is an example of how ancient techniques could spread over great distances.

2. The governments of UP and of other Hindi speaking states were careless about family planning unlike in the southern states or in Maharashtra (see below: Eksal village)

3. This is a typical case where advanced knowledge is crucial, because if you do not question farmers, they will most likely not mention such points. It was only in 1967 that I read an article by M. N. Srinivas mentioning this fact. Since then, I questioned farmers wherever I went, and found out that it was a widespread custom. Probably less common was the eating of rats.
Part II – The Green Revolution and After
Chapter 3 – The Green Revolution

1 The Green Revolution (GR) in India remains a model operation because all the ingredients of success were put together at once. In a way it is the victory of the intelligence and competence of all parties involved.

2 First, it had the required political will and commitment at the top. When Lal Bahadur Shastri became Prime Minister, following Nehru’s death in May 1964, he showed a deep concern for agriculture and was critical of the lack of contact between the elites and the peasants. After the death of Shastri, in January 1966, Indira Gandhi became Prime minister. She was no less committed to the improvement of agriculture and getting free from US grain dependency.

3 Second, there was the issue of implementation. The PM, Shastri, selected C. Subramaniam, one of the most efficient statesmen, as minister of agriculture. Subramaniam, in turn, was assisted by some bright and dedicated ICS/IAS officers and by excellent scientists like M. S. Swaminathan (who is still active at more than 80 years of age).

4 Third, it had dependable foreign assistance. The Ford and Rockefeller Foundations already had representatives in India, men with solid experience of the country and great sympathy for its people. They were equally worried about the future of agriculture. In 1959, the Ford Foundation had prepared the Report on India’s Food Crisis and Steps to meet it, published by the Ministry of Agriculture. In the meantime, the American Norman Borlaug, an agronomist, was promoting research in new high-yield varieties (HYVs) of cereals. Both foundations introduced from their respective institutes, CIMMYT in Mexico and the Rice Research Institute in the Philippines, Mexican seeds of wheat and filipino rice seeds. The properties of these new seeds (already introduced for wheat cultivation in the West in the 1950s) were as follows:

1. The new seeds reacted better, genetically, to higher doses of chemical fertilizers than traditional varieties. They are shorter, or dwarf breeds, to avoid lodging. They often mature earlier than traditional varieties, which facilitate double cropping on the same soil within the year.

2. Chemical fertilizers require, in many areas, a better water supply than traditional varieties cultivated without or with small doses of chemical fertilizers. Hence the key role of water, particularly irrigation.
3. Areas with poor and erratic rainfall and low irrigation potential are unfit for the Green Revolution.
4. Since HYVs are genetically more homogenous than traditional varieties, they are more vulnerable to pests, especially during the monsoon. Hence they require pest control.
5. The new seeds must be replaced every four to five years, otherwise the yields decline. Hence they require a continuous process of research. As for hybrid seeds (at that time for maize and sorghum) they must be replaced every year.
6. Any new seeds’ variety may not be suitable to any physical milieu and climate, hence the need for careful testing.

5

As we have seen, good irrigated yields without chemical fertilizers, or only with small doses, amounted to 1,000–1,300 kg/ha of wheat and to 2,000 kg/ha of paddy (1,300 kg/ha of clean rice).

6

During the early years of the GR, as we will see, yields of wheat grew to 2,000 kg/ha, and paddy to 3,500 kg/ha (2,200 kg clean rice). In 2011/2012, the state-wise national average yields are as follows:

Table 2: State-wise Yields of Wheat and Rice (Kg/ha)*

<table>
<thead>
<tr>
<th>Crop</th>
<th>Tamil Nadu</th>
<th>Andhra</th>
<th>Punjab</th>
<th>Haryana</th>
<th>UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>-</td>
<td>-</td>
<td>4900</td>
<td>5030</td>
<td>3100</td>
</tr>
<tr>
<td>Clean rice</td>
<td>3420</td>
<td>3140</td>
<td>4000</td>
<td>3000</td>
<td>2360</td>
</tr>
</tbody>
</table>

* The data refer to areas that are 90-99% irrigated, except rice in UP with 78% irrigation


7

Rainfed paddy, under the best conditions with a good monsoon, has hardly increased, with a yield of around 2,000–2,500 kg/ha (660–1,000 kg clean rice). As for coarse grain, mostly rainfed in peninsular India, there has been some yield increase, with the possible use of small doses of chemical fertilizers and improved seeds, which are often not HYVs. In the best cases (Madhya Pradesh, Karnataka, and Andhra Pradesh) a good year’s jowar (sorghum) reaches 1,100 to 1,500 kg/ha versus India’s national average of 950 kg/ha. The national average for bajra (small millet) amounts to 700–1,000 kg/ha with good rains, but is only half this number with poor rains and can be zero in a drought year. Maize does better: now 25% irrigated versus 13% until 1964, with a present average yield of 2,000-2,400 kg/ha.

8

The data fits quite well with our field observations. The absolutely key role of irrigation is obvious. Yet, as we will see, today a number of influential Indians keep on advocating for a Green Revolution in rainfed areas. There is some scope for improving yields of rainfed crops, particularly through watershed development projects and biotechnical agriculture, but they will remain far behind irrigated HYVs. As for crops in the dry season, they can hardly increase in their yield.
The Achievements

9 The first Mexican wheat variety proved to adapt well to the northwest of India, from Punjab to Western UP. By a happy coincidence, the conditions for a Green Revolution had already been created: the consolidation of holdings and the advent of electricity had paved the way for a fast growth of private tube wells, leading to new irrigated lands and to better irrigation. Besides, locally dominant castes like Sikhs and Hindu Jats, though mostly illiterate, were quick to adopt the new seeds. In Punjab, the support of the state was particularly active. As will be seen, the introduction process was very simple, so that in one or two years most farmers were more or less able to double their yields.

10 The introduction of new rice varieties was more complex because rice is quite sensitive to a variety of micro climatic conditions. Some of the first varieties coming from Taiwan failed. Later on Filipino varieties proved successful. After a first round with foreign seeds, local research institutes and the new Agricultural Universities created with US assistance, like in Pantnagar in UP, started producing their own seeds.

11 Thanks to the Green Revolution, cereal imports fell from 10 million t in 1966/1967 to 3 million t by the early 1970s. India is now more or less self-sufficient in food grains except in pulses. It exports rice and, from time to time, wheat. Such progress enables the government to buy part of the grain and store it for use in case the monsoon fails and for distribution to poor people.

12 The Food Corporation of India was set up in 1965 to store part of the grain purchased from farmers on the basis of a minimum support price. A public distribution system functioning under various state-wise rules releases subsidised grain to people below the poverty line. The whole system for output and distribution relies on a wide array of subsidies for electricity (which is even free in some states), for chemical fertilizers, food distribution, and petrol. As will be seen, such subsidies have been useful to promote the GR but now they have become a heavy burden for the exchequer, at both the central and state levels. The issues of waste and corruption still persist.

13 The Green Revolution is not without technical weaknesses, which prove to be very slow to be corrected with regard to the use of new inputs. These have led to some levelling off of yields, which has been very obvious in recent years as we will see. Unbalanced use of chemical fertilizers, defects in the use of pesticides, and a lack of organic manure contribute to damaging the soils, an increasingly worrying issue which needs urgent remedies. Spurious chemical fertilizers, pesticides and seeds are another source of trouble for the farmers.

14 However, when drawing a final balance sheet of the Green Revolution, its advent has, for the first time in history, banned any risk of famine in India. One may add that a similar process, aided by the US foundations, has occurred in Pakistan, Bangladesh and Indonesia. As for China, it started its Green Revolution with its own means. After 1971, following its return to the UN and its improved relations with the US, China also benefitted from outside assistance.

15 It is no less striking to observe that the breakthrough of wheat and rice opened the way to a global process of rural development, i.e. the diversification of cropping patterns and the growth of all kinds of local non-agricultural activities which have increased job availability and overall social progress compared to rainfed areas. On the whole, daily
wages for agricultural work in Green Revolution villages amount to double or more for the same jobs in rainfed areas.

Finally, one may notice that the Green Revolution is not so new in Asia. In the eleventh century, under the Sung dynasty in China, a new variety of paddy was introduced from central Vietnam, with many chain reactions. Francesca Bray refers to “development policies, so sweeping in scope that they may well be compared to the so called green revolution in Asia now” (Bray 1984, 597–600).
Chapter 4 – Green Revolution (GR) in UP Villages

1 In the coming chapters, it is not necessary to review each round of surveys. It is preferable to indicate the beginning of the main socio-economic and technical changes in the period 1965–1979 and review the latest trends between 2000 and 2012.

Khandoi in the Late 1970s

2 Following the consolidation of holdings in 1965 and the progress of electrification, 48 private tubewells (TWs) have been installed, 10 of which belong to owners of less than 2 ha. A number of farmers get loans from the Cooperative Credit Society in Unchagaon. As a result, Persian wheels are disappearing, and most of the land is irrigated better than it would be with traditional wells. Therefore, by a happy coincidence, the village is ready to receive wheat HYV (high-yield varieties) that requires 5 to 6 watering against 3 to 4 for the old varieties.

3 In November 1966, the Block Office delivered Mexican wheat seeds and a bag of mixed chemical fertilizers to some farmers. The best of them harvested 2,000 kg/ha instead of around 1,200 kg/ha. Farmers were quick to learn and in the next year HYVs with chemical fertilizers were used on most fields, giving 2,000 kg/ha or more. In our survey of 1978/1979, the average yield amounted to 2,500 kg/ha. Practically all landowners including the smallest ones have adopted HYVs for wheat, the main food grain.

4 There is not much change for the other crops: coarse grains, sugarcane, pulses, and some mustard sown with wheat. However, these crops lose some ground to wheat. A few farmers have begun to replace jowar with paddy in the monsoon thanks to better irrigation, a trend that was about to grow. Some plots of potatoes can be noticed. Milk production, for which Bulandshahr district is famous, is expanding: buffaloes supply 4–7 l/day, and some times even 8–10 l.

5 Though not yet dominant, tractors begin to replace bullocks and the wooden plough with a piece of iron. Bullock carts with their wooden wheels encircled with iron are being replaced by buggies, which use a set of wheels and tyres from old trucks. The two bullocks are being replaced by one male buffalo. It moves more slowly than a pair of bullocks but it
can carry 2 tonnes on a good track (half on a bad track) in comparison to 8 quintals for a bullock cart. The road has been asphalted from Jahangirabad to Unchagaon but the track to Khandoi remains poor.

Small electric threshers made in Haryana are appearing. As for the kolus, they now resort to electricity for crushing cane. 8 flourmills have been opened, freeing women from the strenuous millstone. One can count half a dozen small shops selling groceries, cloth, batteries, matches, and cigarettes. A young Muslim has opened a workshop to repair pumps and motors. The shift from mud walled houses to brick walled ones is beginning, creating a number of jobs for bricks making, transport, and for masons.

I recorded the first complaints about the poor supply of electricity. Pilferage of power is quite common. Meters are tampered with. Because of poor maintenance of the network, breakdowns are common and can last a full day. In one year, during the very hot and dry months from April to June, there was no power supply and as a consequence, much of the sugarcane was ruined, and threshing of wheat by machine could not be done.

Credit is expanding with, in addition to the cooperative society, the opening of a branch of the Punjab National Bank in Unchagaon. The latter begins to look like a small town with 141 shops and workshops: milk collection from villages is dispatched by trucks to Bulandshahr and Delhi, clothes, flour, blacksmiths, saw mills, bicycles, radios, motor and tractor repair workshops, and tea shops can be seen. Eight private doctors have opened their practices next to the small public hospital. Living conditions of many people begin to improve. Family planning is no longer totally absent. Women are at last informed and are quite outspoken with my wife, as they already had been in 1963/1964.

In spite of these changes, there are still people who are very poor. Manthuri owns an oil press for mustard which requires a bullock. Out of his ten children, only two have survived. He has only one set of clothes. From time to time he earns Rs 5 a day as an agricultural labourer. His standard of living may not go down but it is also not improving. Nan Singh, a Jativ, 50 years old, has lost 4 out of 9 children. He works as a permanent labourer for a large landowner, earning Rs 120 per month. He has debts totalling Rs 1,000. He and his children never drink milk. As for the Bhangis, their lives remain very hard and, on top of that, their houses with mud walls and thatched roofs have fallen down under heavy rains in 1970.

A number of Jatibs are more alert, articulate and better dressed than they were in 1963/1964. In 1978, they are now allowed to sit on the same cot with the Jats and other high caste members. Nandram, a landless Jativ, works in agriculture for Rs 5/day and also as a mason earning double that amount. Out of the 6 l of milk supplied per day by his buffalo, part of it is consumed and the rest is transformed into ghee (clarified butter) and sold. His two elder children are attending school.

Dalchand, a Bhangi whom we will meet again, has spent six years in the army before returning home. He became the tractor driver of the main ex-zamindar after learning how to use it from the salesman. He sells 2 l of milk out of the 3,5 l supplied per day by his buffalo. He bought pigs with a loan of Rs 600 (at 4% interest from the Punjab National Bank).

There is clear improvement for the landless peasants, due to growing daily wages in real terms: Rs 5 to 6 in 1978/1979 versus Rs 1 in 1963. At harvest time, labourers receive 10 kg of grain per day versus 5 kg in 1963.
Tez Singh and his brother, Lodhas, own 0.94 ha, half of which is devoted to wheat in the rabi and coarse grains in the kharif, one half to sugarcane which is then transformed into gur and sold. They have two bullocks and two buffaloes, cumulatively giving 5 l of milk, entirely consumed at home. The two brothers also do some casual labour. Thus the joint-family begins to live better, like other families with 1 ha to 1.5 ha.

Ram Singh, a Jat, with only a few years of schooling, holds 3.12 ha of land. The eldest of his 6 children are at school when we meet in 1963. In 1978, he is standing in front of his tube well after harvesting 3,200 kg/ha of wheat, part of which is being sold along with all of his gur. He is then experimenting with paddy. Two of his sons are working in Delhi and the third one in Jaipur as a sanitary inspector. Later on he started a poultry farm with a few hundreds hens. Unfortunately, all of them died of disease due to lack of hygiene – a typical example of the complexity of promoting poultry farms, especially in relatively isolated villages.

From this new survey it was quite clear that most changes were about to either spread or, alternatively, appear: the breakthrough of wheat, rice in the monsoon, the progress of milk, creation of more local non-agricultural jobs, and the appearance of tractors.

Khandoi, 2000–2012

The cropping pattern has changed with the expansion of paddy in the monsoon as jowar and bajra, giving lower return, have been replaced and more employment has been created. Production of wheat has increased, maize is improving, and potatoes have made some progress and are sold in Jahangirabad where they are kept in recently built cold storages. Mustard sown with wheat is improving and old mango orchards are being replaced with new ones.

Animal husbandry is expanding fast with mixed bread cows (Frison) supplying 10 to 12 l of milk per day, a large part of which is bought by private agents or cooperatives, carried by truck to Jahangirabad and packed. Some kitchen gardens can be noticed.

The drive towards building new brick houses has reached nearly the whole village, including houses of the poor built after 2000. A brick kiln has been opened in Unchagaon from which donkeys bring the bricks to Khandoi. There are more hand pumps for drinking water. The track to Unchagaon has been asphalted and one bus service passes through the village every day. Bullocks for ploughing have been totally replaced by tractors, either owned or rented. Cars and trucks are spreading in the region as well as tractors that are transformed locally into some kind of trucks. The production of gur has been discontinued except in a few households, as farmers prefer to supply the cane by truck to sugar mills near Jahangirabad. Local trade and transport keep on creating more jobs opportunities.

Health is improving. Most women now deliver their babies at the hospital of Unchagaon. There are regular anti-polio vaccinations of children in Khandoi. Education has made substantial progress, bringing an end to generations of illiterate farmers. One primary school is for boys and the other for girls. Both are run rather smoothly and include free mid day meals under a Government project. A high school has been opened in 1985 with 500 students from Khandoi and other villages. Some boys are now attending colleges in Jahangirabad or Bulandshahr.
The number of small shops has risen to ten. Many villagers commute every day for some work in Unchagaon or Bulandshahr. Others leave their family in Khandoi for jobs in more distant cities. Their savings play a crucial role for the growing number of families owning less than 1 ha – a consequence of the fragmentation of land holdings due to population increase. Such outside jobs are, of course, no less essential for landless families, but are also useful for medium and even upper-rank farmers when several brothers inherit the land of their father. (As one knows, according to tradition women do not inherit land, even if this right is granted by the Constitution.)

Since around 2000, farmers are worried about having their yields levelling off in spite of using more inputs. Wheat yield is around 4,000 kg/ha, and paddy 5,000 kg/ha. Soils are deteriorating due to the chemical imbalance created by N-P-K fertilizers, a defect widespread in India and in other Asian countries. Proper soil conservation requires, in addition to chemical fertilizers, the use of more organic manure. Farmers have started buying bio fertilizers and making compost. Farm manure has increased because cooking gas cylinders began to replace dry cow dung as fuel. Nevertheless, soil micronutrients and soil testing are also badly needed. In addition, there are complaints about spurious fertilizers, pesticides and seeds in the market.

After having been engines of growth, electricity (since the late 1970s) and roads (since 2000) have become stumbling blocks due to lack of investments and maintenance expenditure. Electricity is supplied 3 to 8 hours a day when there is no breakdown or low voltage which can damage the motors of TWs. Some farmers have resorted to oil engines, more costly than electric ones. There are now a total of 80 TWs irrigating the total cultivated area of 245 ha. As for the roads, they become congested, and even damaged. It is distressing to see that the weak supply of electricity has not been corrected even after more than 30 years.

In spite of these shortcomings, poverty alleviation has improved. The Bhangis, the poorest and lowest Dalit caste, are at last becoming less poor, though they lack grazing plots for their pigs. They received pukka (permanent) houses at a subsidised rate from the government, but they had to pay a backshish (donation/bribe) to the concerned officials. When I met them in 2008, they looked better off, and had fewer complaints. Out of 25 families, 12 men work in big cities. Yet, unlike the Jatifs, they are still not allowed to sit on the same cot with high castes.

Daily wages now range between Rs 150 and 160 per day in 2012, an increase in real terms, or 25 kg at harvest (10 kg in the 1980s). The main job opportunities within agriculture and in animal husbandry, ancillary activities, and local or external non-agricultural activities put together do alleviate poverty. On the whole, the slow down in agriculture seems to be compensated by milk and animal husbandry, small scale industries, and trade and transport stimulated by the rather fast growth of industries and services at the national level until 2010/2011.

More Jatifs are educated; some even hold a B.A. degree and get jobs in the administration. A number of their families own some cattle, buffaloes or crossbred cows (now supplying 10 to 12 l per day) allowing the whole family to drink milk and sell part of it. Dev Karan tells me: “Now life is better, I could rebuild my house with bricks and my children go to school.” After learning tailoring in the city of Harpur, a young Jativ has opened a workshop, adding some income to his family. Another one, in 2005, opened a bicycle
repair workshop and later on engaged an employee who is paid Rs 500 per month to help him.

26 The Dhobis have given up their traditional work under the Jajmani system (working for a number of families in exchange for food grains), an indication of their improved condition of living. Some are engaged in transport using a cart and a horse, while some are busy as agricultural labourers and are raising cattle. The Nais (barbers, a low shudra caste) have also given up the Jajmani system. One family has opened a barber shop in Unchagaon and another has the same in Khandoi – a tiny room with one chair, one table and a mirror. In 2008 he charged me Rs 5 for a haircut, while I had paid Rs 50 in a small barbershop in Bhubaneshwar and it was Rs 500 at the Imperial Hotel in New Delhi.

27 Jats, Brahmins and other medium to upper caste farmers live better, in spite of shrinking holdings, again through a combination of activities. Here is Harcharan, a Brahmin. His father owned 3,3 ha of land and had been quick to embrace the Green Revolution. Harcharan, one of his sons, has inherited 1,6 ha. He first worked hard on his father's land while becoming a teacher. Today he is the head master of one of the primary schools. He also runs a shop and looks after his land with some agricultural workers. One of his sons drives their van which is used to bring pupils to a high school in Jahangirabad everyday. Another one runs a dairy, and the third one works in a bank in Delhi.

28 Iqbal Singh, a Jat, and his brother rely on 2,2 ha irrigated by their own TW. They have one tractor; they recently sold their car, but intend to buy another one. In addition to agriculture, they collect 400 l of milk per day in their dairy, which is sent with their own truck to Aurangabad, 50 km away. Jagdish Singh, a Lodha, is living on 1,2 ha, and has 2 buffaloes with a low supply of milk. His daughter, having been married, has left the house. As for the three boys, one works in a shop in New Delhi, another one is in Haryana, and the third is in a factory in Bulandshahr. A young Kumar (ex-potter caste) got in touch with a merchant in Delhi to cultivate glayals for sale in the city on 0.3 ha of rented land. At first it went all right, but later on the whole field was eaten by some wild animal. Another Kumar has also given up his professional job of being a potter. With his donkey and a light cart he makes his living from transport. He lives with his wife, while one boy works outside in a factory. They have been able to rebuild their house with brick walls.

29 Since around 2000, the society of consumption, prominent in many cities, begins to appear in Khandoi. In 2008, there were 20 private cars, 40 motorcycles, and a number of vans. In 2012 one could count 50 cars, 100 motorcycles and around 40 tractors, often used for transport in addition to ploughing. Some houses use modern furniture like beds, a bathroom and W.C. While their fathers made fun of “patlun walas” (people wearing trousers), most of their sons and grandsons now wear jeans, western style shirts, canvas shoes, and often American baseball caps. Women from medium and upper-rank families look like women in Delhi, dressed in smart coloured saris, wearing lipstick and makeup. Some of them have as many as ten saris. All these trends keep on increasing between 2008 and 2012. Diet has improved with, in addition to milk, tea and sugar, biscuits, vegetables and fruits.

30 TV sets, universal cellular phones, some refrigerators and gas cylinders for cooking have become common. Soft drinks, beer and other alcohol are sold in Unchagaon, while in the 1960s one could not even find Coca Cola in any place smaller than a district town. In 2008, for the first time, I saw in a lane of Khandoi, a man lying down, completely drunk. In Unchagaon, the main street keeps on growing with fairly heavy traffic of motor vehicles.
Marriage rules remain unchanged, although some educated girls begin to talk of love marriage. Dowries, as elsewhere, are becoming very high and often include semi-durable goods like a refrigerator or a scooter. There are a growing number of couples with 2 to 3 children, provided one is a boy. However, population pressure remains high. It is therefore essential to promote further family planning. The population has reached 3,500 according to the 2001 census and more than 4,000 in 2011. As for the cultivated land 10 ha have been lost to new houses (there are 245 ha for cultivation versus 255 in the 1960s).

The economic future faces big challenges: the urgent need to improve agricultural techniques, to further increase the number of local and external non-agriculture jobs, to, at long last, improve electricity supply and push for the improvement and maintenance of roads. Last but not least, young people tend to be reluctant to work in agriculture, a feeling that is not particular to Khandoi and is getting strengthened by the expansion of a society of consumption. In the 1980s, farmers were already grumbling about their sons becoming “soft”. As for population, though the growth is slowing down, it has already become very high.

Finally, corruption and other malpractices keep on increasing. IAS officers are no longer as immune as the ICS/IAS officers of the 1960s. It is no less disturbing to see that between 2000 and 2008 there have been 13 Block Development Officers succeeding one another in Unchagaon – not the best way to improve the extension services. As for the senior IAS officers in UP most of them do not stay in the same post for even one year. Many transfers are provoked by dubious local politicians at the district level and in Lucknow.

The Panchayat and the village administration have improved: looking after drinking water, village lanes, the delivery of small pensions to lonely old people, and the delivery of cards for people below the poverty line entitling them to some subsidised wheat.

**Nahiyan: The Beginning of Changes**

After leaving Nahiyan in 1964 with a feeling of helplessness, I was most pleasantly surprised in 1975 and 1978 to see that the village was coming out of its lethargy. The consolidation of holdings had been completed which, along with the progress of electricity, led to the construction of 47 private TWs, in addition to the state TW, thereby replacing the mot system and widening the irrigated area. Out of the cultivated 370 ha, 250 ha are now more or less irrigated. HYVs of wheat and chemical fertilizers enable a number of farmers to harvest 2,500-3,000 kg/ha, while others get only 1,500 (in the 1960s, the average yield was 900 kg/ha).

The progress of paddy moves much more slowly, except on high lands. With the help of TWs, farmers get 3,200 kg/ha of paddy, a level that falls to around 1,300 kg/ha in low land, which are usually rainfed, and subject to flooding. Potato and vegetable production for sale are moderately rising. Milk production is hardly increasing. Some farmers are using diesel powered mechanical threshers. Three tractors are used side by side with bullocks. Buggies on tyres that are pulled by a buffalo begin to be noticed.

In 1978, daily agricultural wages amounted to Rs 2.50–3.00 per day plus some food, which in real terms does not signify an increase compared to Re 1 in 1964. During harvest, wages are rarely above 3 to 4 kg of wheat or paddy per day. These figures are below those of Khandoi at the same time: Rs 5–6 per day or 10 kg of wheat at harvest.
Kamla Prasad, a Thakur, keeps on improving his crop yields on 15 ha, using two TWs, HYVs, and chemical fertilizers: 3,000 kg/ha of wheat and the same of paddy. His two co-owning brothers are in Benares, one working as a lawyer and the other as a factory manager. A third brother, an agricultural economist, has gone to USA for teaching.

Saka Narain Singh, a Thakur, is the head of a large joint-family of 24 adults and children, which holds 3,75 ha, 4 bullocks, one cow, and one buffalo. He buys water from a nearby tube well, enabling him to get 3,000 kg/ha of wheat and the same of paddy. He also grows sugarcane and sun hemp, all of which get sold. The family has improved its lot to a large extent because of the three married sons who work as clerks in Benares.

The Kurmis keep on progressing. They buy water from TW owners, and have turned to the use of HYVs and chemical fertilizers. Barsati Ram, with 1 ha, lives with his wife and four children. He harvests only 2,400 kg/ha of wheat, followed by some paddy, pulses, and sugarcane. He now grows enough food for his family. Two goats supply milk. He has two bullocks, occasionally used for ploughing other people’s land. A small cow he owns does not give milk yet. One of Barsati Ram’s sons has started making carpets, which are sold in Benares. Barsati is now practicing birth control.

One of the Chamars tells me that “life has improved a bit”, but others complain, as in 1964, of dabao (pressure) by the high castes. Some Chamars must work for Re 1 per day, instead of Rs 3, for a landowner “in exchange for drinking water from his tube well.” As for the Musahars, they remain as miserable as ever and they are paid only Re 1 per day. Their huts are quasi empty.

Nahiyan still lags behind Khandoi, but upward economic trends are taking root, although the whole region remains less dynamic than Western UP. The electric supply is as poor as ever, and local roads are so bad that you can still see camels carrying huge bags of fodder. Tensions persist between Dalits and twice-borns, with the former becoming less subdued. Conflicts between rising Kurmis and Thakurs are far from over.

**Nahiyan: The Following Steps**

Since the 1980s, there is a clear acceleration of development in spite of the population doubling between 1961 and 2001 to reach 5,000 inhabitants, i.e. more than 1,000 persons per sq km.

Agriculture keeps on improving in irrigated areas. Average yields have reached 2,500–3,000 kg/ha for wheat or paddy. Vegetables and potatoes are growing, stimulated by the rising demand in Benares. Farmers get a much higher return from these than from cereals. The same goes for flowers – a new activity. There is also some improvement for coarse grains in the kharif and for sugarcane. Milk and cattle improvements remain far behind those in Western UP. Tractors are, by now, as dominant as in Khandoi. They are also used for transport, although caravans of camels have not disappeared.

The road to Mangari (the small town with the Block headquarters) has been asphalted and one comes across some cars, and many motorcycles and trucks. Lines of shops are spreading along the road to Nahiyani, selling textiles, semi-durable goods, Pepsi cola, workshop services, bicycles, tractors, and threshing machines. More than 30 workshops are now making saris and carpets that are ordered by merchants in Benares. As for the Lohars, traditionally blacksmiths, they have 15 workshops producing agricultural implements.
A big change has occurred. The twice-borns, especially when owning little land, have broken their taboo preventing them from ploughing “majburi se” (out of compulsion), a Brahmin landowner tells me. Fateh Singh, a Thakur, lives with his old parents. With his four brothers, he owns 2.8 ha and grows sugarcane, wheat (3,125 kg/ha), paddy with only 2,200 kg/ha and some potatoes. One brother works in Mangari, one is in business in Benares, and one is a lecturer in a college in Delhi - such cases are more and more common among joint-families with work in and outside agriculture.

Kurmis keep on doing well. One of them stands in front of his new house. He enjoys a second hand Fiat car that he rents out for marriages. This was bought with the savings of his two sons working outside the village, but keeping their families at home. On his 0.8 ha he grows wheat, followed by paddy. Like others, he complains about the lack of electricity, particularly when TWs are needed for irrigation. As for the state TWs it still does not function adequately because of lack of maintenance. He is also vocal about corruption.

The fragmentation of land holdings keeps on increasing with many of them shrinking to below 1 ha. That is why outside jobs or ancillary local jobs are increasingly necessary, for the rich as well as for the poor. People from the upper castes and with higher education often find a job far away within India or in foreign countries. For others, the impact of Benares is increasingly felt: the growth of the holy city, its industries and its expanding trade, especially in handicrafts, tourists and pilgrims. Men from Nahiyan, often Dalits, commute every day as coolies or rickshaw pullers. Agricultural labourers earn Rs 50 per day in 2002 and 10 kg of wheat at harvest (both figures are the same as in Khandoi at that time) while masons earn Rs 100.

As in Khandoi, the Chamars here have also not been left out of the process of growth. There are about 200 Chamar families, constituting one-third of the total population. A hundred Chamar men work outside the village and send a part of their earnings to their families, which have been left behind in Nahiyan. Others commute to Benares every day for work. A number of them are employed in local workshops or have established their own. In the village there is a large joint-family of seven couples, fifty adults and kids, who only own 0.2 ha. Their main activities depend on three handlooms with which they weave the brocade saris for which the town is renowned. Their living conditions have improved substantially in the last ten years.

Bipat Ram owns 0.4 ha, two bullocks and two cows. From June to September, he grows bajra, part of which is self-consumed and part of which is sold as fodder. He also manages to cultivate potatoes, followed by wheat. The cultivation of these crops, which requires remarkably intensive practices, is supported by the Green Revolution and also enables Bipat Ram to lead a decent life. He also works as a casual agricultural labourer. His five children go to school. They drink the milk of the two cows.

Talking to several Chamars reveals that the depressing scenes I had observed in 1964 have been changing, especially in the past ten to fifteen years. People are now better dressed. Housing has improved to some extent. Many more children attend school. The people are much less subdued and one hears fewer stories of dabao and other abuses. However, caste relations have not changed much. Unlike the situation in Khandoi, Chamars here still cannot sit on the same charpai with a member of a twice-born caste. There have been instances where the latter would not let Chamars use their wells.
The 270 Musahars face much greater difficulties. Their status is among the lowest. They live in a slightly distant hamlet. Some have received brick houses from the government. They raise pigs, but complain that the market is not so good. They also make baskets out of leaves, which brought in Rs 10 per day in 2000. As agricultural workers, they are not always paid at the standard rates, receiving Rs 40 instead of the Rs 50 paid to the Chamars. It is easier to exploit the Musahars since they are weaker. Several of their huts do not even have a charpai and they possess only a few clothes. Infant mortality is very high among them. One couple has seven dead children compared to six who are still alive. When one discusses the fate of such depressed people with other villagers or with low-ranking officials, the usual reply is, “The Musahars are lazy and spend their money on drinks.” This is a rather simplistic explanation, although it can also be heard for similarly poor people or groups in other regions.

The end of a long period of sluggish development in eastern UP (as seen in Nahiyan) is no doubt very encouraging, both economically and socially. However, as in western UP, alarm bells are ringing. The supply of electricity is as bad, if not worse, than in Khandoi, so that farmers have to resort to oil engines, which are more costly in terms of investment and operation. In addition, large tracts that could be irrigated are still rainfed. In Nahiyan, as in other villages, there are still low-lying lands suffering from lack of drainage. Problems with seeds renewal and chemical fertilisers still occur. All these factors put together explain why, as in Khandoi, the yields of the major crops have tended to level off, whereas the diversification of agriculture should be expanding more rapidly. Finally, in spite of growing migrations, the population density per sq km had reached 1,000 in 2001, and is certainly more today.

Under these circumstances, it is obvious that if the rural economy does not expand more rapidly, the first group to suffer will be the Dalits. Among them, could the administration take special measures to assist the Musahars whose lot has hardly improved over so many decades?
Chapter 5 – In the Eastern Plains

1 Except in West Bengal, the eastern plains have faced slow growth for several decades. In Bihar, it accompanies one of the fastest population growth rates in India: between 2001 and 2011, it was 25.17% compared to 17.6% for the whole country. Towns absorb only 11% of the population versus 31% (the national average). The average state density has reached 1,107 persons per sq km. Although population pressure is less acute in the plains of Orissa, poverty remains severe. The state has become deficit in food grains, while it enjoyed a surplus in the 1950s.

In Muzaffarpur

2 When returning to Bihar and Muzaffarpur in the fall of 1978, the urge and enthusiasm for irrigation prevailing in 1967 had vanished. Progress in the prevention of floods and excess water was also stunted. In Pilkhi, 7 private TWs have been installed with a command area of 5 ha each. They rely on diesel because electricity supply is erratic. The maintenance of engines is difficult because there are not enough workshops around. As for the state TW, which covers 80 to 100 ha, it is occasionally out of order, sometimes even for a few weeks. As in Khandoi, the operator of the TW requests a bakshish from non-influential farmers. Thus, out of 370 ha that are cultivated, not even one-half is completely irrigated and that too not always adequately. Because of lack of consolidation of holdings, owners of TWs must dig different borings to shift the engine from one plot to the other. Electricity supply remains very poor. Recently there was a breakdown for a whole month because 230 m of wire had been cut and robbed for sale in the bazaar.

3 One counts 3 tractor owners and a fair number of buggies on tyres. With HYV paddy, chemical fertilizers and good irrigation, cultivators harvest 2,300 to 3,000 kg/ha. Rainfed paddy yield remains at around 1,500 kg/ha when it does not fall to 1,000 kg/ha or less in low lands suffering from excess water. Under such conditions, paddy cannot be transplanted and is sown broadcast, often a floating variety, which grows with rising water. One stem may reach up to 1 m. Wheat acreage has increased with good farmers achieving yields of 2,000 to 2,500 kg/ha with adequate irrigation and some chemical fertilizers, while others only manage 1,200 kg/ha (unirrigated wheat was 500 kg/ha in the 1960s).
High-caste landowners, and even small ones, remain faithful to the taboo on ploughing. Women, even Dalits, do not work as paid labourers. As for ancillary jobs, petty trade, transport and small industries, they are not expanding much in such a sluggish economy. Some small landowners manage decently. Kaplewas is a young man, married with one child so far. Out of his 0.25 ha, he devotes some plots to tobacco, which fetches a high price. He also grows pulses, which, though providing a low yield, give a good return. He sells part of the milk supplied by his buffalo. Smart and outspoken, he says: “The landlords eat and we work.” A Yadav (a rising OBC caste) just about manages with half a hectare and by taking up diverse odd jobs. Among landlords, some of them do fairly well, while others are still neglecting their crops.

The Dalits’ lot is not improving. As was the case before, they complain of bad treatment from the twice-borns, but they may, in addition, face clashes with Yadavs and Kurmis, who at the same time have conflicts with the high-castes.

The progress recorded until 2002 is not striking. The state TW is hardly functioning, and one counts 22 private TWs with oil engines, covering around 125 ha out of a cultivated area of 370 ha, even though there is enough irrigation potential for 90% of the area, if not more. Irrigated yields of paddy have hardly increased since the 1970s and there is no change for rainfed paddy. Irrigated wheat has done a little better, reaching 2,500 to 3,000 kg/ha versus 2,000–2,500 kg/ha. HYV hybrid maize, a new crop, cultivated in the rabi on 50 ha, delivers a very good yield of 4,000 to 5,000 kg/ha. Small irrigated and well-tended plots are expanding their outputs with chillies, tobacco, vegetables and some mango and lichi trees, all of which give a much higher return than cereals. The lack of drainage, as before, prevents the use of 25 ha or allows only very poor yields. The number of shops is increasing. Tractors and buses become more common and some landlords have even bought a car.

Muzzafarpur is well known for its litchis, but it is hardly possible to boost its growth due to lack of cold storage. Traders were telling me that, since the period for plucking fruit is short, you absolutely need cold storage. The lack of electricity cannot be remedied by using diesel generators, which would be too costly.

At last, high-caste small landowners have broken their taboo on ploughing. There are, at the same time, more women working as agricultural paid labourers, partly as a consequence of male out-migrations.

During my visits in 1978, 1985, and 1992, I recorded constant complaints by the Dalits, mostly Chamars and Dusads: “The mota (fat people) sit idle, while we do all the work.” The word dabao came up often. Once, when I was interviewing some Chamars, young Bhumihars in spotless clean dhotis and kurtas, passing by leisurely on their bicycles, stopped and made ironic comments about the foreigner speaking to Chamars. I poured on them my choicest Hindi abuses. They did not even react, which made me still angrier. In 2002, I felt that the situation was not as bad, but this impression needed to be confirmed. Caste barriers remain as they have been for so long.

In all my surveys, I found that slow economic growth and growing population pressure resulted in daily agricultural wages being about half of those found in Green Revolution districts. In 2002, it was Rs 30 compared to Rs 60 in Khandoi. Job opportunities in the ancillary sector are limited. Outlets in Muzaffarpur were relatively limited. Not many people go and work in Punjab, as was the case for people in many parts of Bihar.
11 Most Dusads and Chamars live in huts with thatched roofs which cannot withstand very strong monsoons. Many huts are nearly empty, with perhaps a charpai, some earthen pots for storing water, and a few odd clothes, if any. Several people own only one set of clothes, those they are wearing, like this group of landless Muslims complaining about their unchanging poverty.

12 Here and there, some Dalits have risen above the poverty line thanks to their ability and possibly because of some luck. Ram Chandra Paswan, a Dusad, is proud of his two crossbred cows and one desi (local) cow. He sells milk, driving around on his old second-hand scooter and works as an agricultural labourer. One of his sons, a painter working with a contractor in Delhi, sends home some money. The other son managed to save money for opening a fair price shop selling subsidised grain to BPL people. He says, unknowingly with a Weberian touch, “I do not drink and I do not eat meat in order to save as much money as possible.” He adds that his conduct is unlike the behaviour of the other Dusads, whom he criticises.

13 Another Dusad, 45 years old, is no less enterprising. After some years at school, he left for Patna, then Delhi, and Calcutta. In 1986 he went to Haryana for paddy cultivation. It was a tough job of 10 hours per day. Using his savings of Rs 800 per month, he bought two cows after returning home, from which he sells part of the milk supplied. He carries it with other farmers’ milk on his bicycle. He received a homestead from the government, which makes him free from the landlord from whom he previously rented a plot for his house. Along with his neighbour, he benefits from a hand pump installed, like others, by the government. After having had two sons, he uses condoms, another sign of his astuteness. The two boys go to school decently dressed. One of them even wears a watch. Unfortunately, such success stories are far from representing the dominant trend.

14 Wherever one looks, one sees all kinds of obstacles to faster progress that could favour the poor in particular: lack of public money, even more serious than here in many other states; a shaky law and order situation; caste tensions, although they seem worse in south Bihar; and delays of all kinds. Complaints about ghus (corruption, bribery) in Bihar are even more widespread than in UP. The poor often suffer more than the upper castes and upper classes. “Qanun (the law) is for the rich. We have to use ghus,” said a Chamar. Lack of electricity, and adulterated fertilizers, often come up in conversations.

15 In spite of all these defects, agriculture is no longer semi-static. Between 1991 and 2001, rainfed paddy has grown from 1,000–1,500 to 1,500–2,000 kg/ha, and, under the best monsoon, irrigated paddy yield has risen from 2,000 to 2,500–3,000 kg/ha. Such increases are not spectacular in villages bearing a density of more than 1,000 persons per sq km, and having shrinking land holdings - except for some landlords, and a large number of landless peasants. On the other hand, there are more kitchen gardens with vegetables, tobacco, and potatoes giving good return. Crossbred cows begin to be noticed.

16 Trade between Muzzaffarpur and Pilkhi is expanding with an increasing traffic of trucks and motorcycles. In the village, one counts 8 cars belonging to landlords and 80 motorcycles, along with some semi-durable goods.

17 The local health centre lacks drugs. The middle school has only six teachers and no headmaster. People below the poverty line, when we saw them, had been waiting for their rations of rice for the last five months.

18 Lack of commitment on the part of the political leadership, and administrative weaknesses because of political interference are also to be found in UP, but their negative
impact on development is worse in Bihar since the latter state is less developed. Bihar needs enormous public investments, which are the responsibility of the State. Also, it has not enjoyed the benefits of the consolidation of land holdings. Other complex historical and socio-political factors have also contributed to this state of affairs.

**Bihar, 2002 to 2012**

19 After 15 years of misrule under Laloo Prasad Yadav and his wife, the governance of Bihar has substantially improved with of Nitish Kumar (a Kurmi) coming to power as Chief Minister. This followed the state elections of 2005 after which he was re-elected in 2010. The law and order situation has improved. Investments in education, health, roads, construction in Patna, and for trade are coming in, leading to the improving growth of the state GDP. On the other hand, such changes are slow to percolate down to villages.

20 Nitish Kumar is rightly paying much attention to electricity. Bihar requires 2,500 MW. 1,700 MW have been sanctioned, but it still needs to get more than 700–800 MW. It seems doubtful that, even with additional 700 MW by 2015, the shortage will fall. At present the per capita consumption per year amounts to 122 kW versus 780 kW, the national average (*Business India*, 18-3-2012).

21 Gerry and Janine Rodgers, who have done much research work in Bihar’s villages since 1969, have done new work in 2009–2012 with some Indian colleagues which brings out the latest trends in the rural economy, a number of them being quite positive (Datta, Rodgers, and Singh 2012). Out-migrations keep on growing. Temporary work like paddy cultivation in Punjab, all kinds of unskilled jobs in local cities, which often require commuting from their village, or men working in major towns and sending home their savings to maintain their families in the village, where they return for one or two months per year, can be noted. Landless agricultural workers and small landowners are not the only ones to migrate, usually for unskilled work. Among landlords, there are also more people settling in urban areas as government officials, teachers, and businessmen. The Rodgers give cases of villages where 44% of the families have at least one member outside, while others have as much as 82%.

22 As a result, local agricultural wages tend to increase, reaching Rs 80 per day in a number of villages. This means that the gap between agricultural wages in Bihar and advanced areas has been relatively reduced, though it still remains high: wages in Khandoi in 2012 ranged from Rs 150 to 160. Masons in Bihar earned around Rs 200 versus Rs 300 in Khandoi. There are cases where it is difficult to hire labour. “To sum up, migration allows households to diversify their livelihood strategies, with one foot in the village and another foot in the city.” (Rogers 2012). It contributes significantly to better living conditions or towards less poor ones. The population of the state has reached 104 million in the 2011 census. Migrations to other states may amount to 10 million, including temporary and permanent workers. Other migrations occur within Bihar itself. The impact of migration has a significant impact on castes relations. “Attached labour has all but disappeared … These new opportunities have sounded the death-knell of semi-feudal mechanisms of control” (Rodgers 2012).

23 The Rodgers surveyed two villages, a more advanced one in Nalanda district and one in Madhubani, not too far from Muzaffarpur. In addition to out-migrations, local non-agricultural activities are growing: construction of brick houses, of roads, as well as petty
trade. Tractors and power tillers are becoming widespread although one still sees bullocks being used for ploughing. In the advanced village, there are more new houses, hand pumps for drinking water, retail shops and four flourmills. Upon reaching the village in 2008, one found that electricity was available for 5 hours a day until 2011 when the transformer was burnt. It was still not repaired one year later. Most of the land is irrigated by TWs. HYVs with chemical fertilizers give 3,250 kg/ha for paddy and 2,760 kg/ha for wheat. While encouraging, these yields still need to be increased bearing in mind that population density per sq km was already 1,132 in 2001.

The agricultural record of the other village is less promising. While irrigation is progressing, similar yields of paddy and wheat are around 2,200 kg/ha. These weaknesses are compensated, to some extent, by a higher rate of out-migrations. In both villages, mobile phones, motorcycles and other durable goods are increasing.

To sum up, the very careful survey by the Rodgers and their Indian colleagues confirms the great importance of out-migrations, their economic and social impact on living conditions of rich as well as poor farmers. Even if agriculture is not moving fast as yet, the economic reforms promoted by Nitish Kumar and his government should, helped by the remittances of migrants, gradually percolate down to villages.

**In Puri District, Orissa**

When I first visited Orissa in 1954, even the main highways were not asphalted. Life was entirely traditional. Due to a relatively low population density, compared to those in the Ganges Basin, agricultural production was able to meet the needs of the people. The state enjoyed a small surplus of rice to sell outside. This changed in the following decades. With faster population growth, the state faced a deficit in food grains. On the road to Puri the traffic was very moderate: bullock carts, some buses and trucks, hardly any cars, and every here and there a Sadhu could be seen walking towards the holy city. Apart from during the great religious ceremonies, the holy city was not very animated.

In 1978, I started my enquiries in Brahmagiri Block, East of Puri, near the sea. After driving 20 km on the district road, we drove another 5 km as far as Chandiput. The area was very isolated. It had poor roads and no electricity. Many low-lying fields in this region suffer from excess water even during a normal monsoon. Either no paddy can be grown here, or it is a floating variety sown broadcast, yielding 500 kg/ha. On higher ground, rainfed transplanted paddy gives 1,000-1,500 kg/ha, using old varieties with no chemical fertilisers. Pulses are grown on some plots during the rabi. Shops are rare. Animal husbandry is poor. Casuarina, coconut and banana trees, along with river fish bring in some additional income. The limited economic growth is being undercut by population growth, and consequently even landowners who own a few hectares are facing increasing difficulties.

As for the town of Puri, until the 1970s, it could neither attract enough workers nor stimulate the supply of agricultural commodities, even during the great pilgrimage festival. During my subsequent visits, I found that the basic hydraulic constraints have not been significantly removed. There is practically no drainage system. By 2002, 51 low-lift pumps (pumps on rivers) had been installed in Brahmagiri block, but only 33 are in working condition. Out of 20,000 ha, 8,400 ha consist of low lands. Over the past 24 years, since I first began visiting the area, there has been little noticeable increase in
agricultural yields, except on the limited irrigated plots, which produce about 2,000 kg/ha of paddy.

Ancillary activities have made some headway under the growing pull of Puri and the demands emanating from the city’s expansion, as increasing numbers of pilgrims and tourists, both local and foreign, are visiting the town. This means increased sales of coconuts, bananas, and fish. Roads traffic has grown with more and more trucks, buses, and motorcycles. Tea stalls now even sell Coca-Cola. Some low lands had been converted into prawn ponds by local contractors in the late 1990s. Refrigerated trucks and cold-storage facilities are being used. In 2002, these new jobs provided comparatively high wages of Rs 70–80 per day for employment under hard working conditions. Such new activities, though welcome, still remain far too limited to have a deep impact on the livelihood of large numbers of poor people. However, it must be emphasised that extreme poverty is less acute here than it is in Bihar. Population density, which was low until the 1950s, is still lower today than it is in the Ganges basin (350–500 persons per sq km in 2001 in the former versus 1,000 or more in the latter), meaning that, even with low agricultural yields, poverty may be less severe. In addition, vegetables, trees (like casuarina, coconut, and banana), and fish play a comparatively more important role in the local economy than they do in Bihar.

I regularly visit a hamlet of Doms (Dalits, population 40) whose living conditions were – and continue to remain – bearable. Children are well dressed and go to school. Men and women are lively. They pursue several activities: their traditional occupation is making bamboo baskets, which they sell in Puri. They catch and sell fish; collect casuarina wood near the sea; they own some banana and coconut trees; and they also work as agricultural labourers, earning Rs 30–40 per day in 2002, an amount similar to the wage rate in Bihar.

On the whole, in 1992, they enjoyed a better quality of life. One of them had started raising goats and had recently bought a TV set. In 2002, some households complained of facing difficulties and leading a stagnant life. The owner of the TV set had to sell it following trouble with his goat business, but he still keeps two bicycles for his family.

In the next hamlet live several Dhobi families. Since 1978, their standard of living has improved slightly. They now perform more small odd jobs, such as collecting wood, engaging in petty trade, and catching fish. However, they are worried because the upper castes have stopped using their services for washing their clothes. In the main village of Chandipur, there is no car, no motorcycle, and no telephone. Small landowners complain of the lack of progress and development.

Pipli is on the highway connecting Bhubaneswar and Puri. In 1954, it was a big sleepy village. Within the last three decades, it became a small lively town. The number of tourists and pilgrims to Puri has been increasing. Tea stalls and all kinds of shops are proliferating. Very attractive handicraft shops have become more numerous and more prominent.

Large areas of Pipli block have suffered historically from excess water, even during a normal monsoon, because of lack of drainage. Hence, these areas are either uncultivable during the monsoon or they produce a poor quality of floating rice. This situation has not improved much over the past forty years. Since the 1970s, medium and high lands have benefited from the canals flowing from the Hirakud dam upstream on the Mahanadi River. Yields of irrigated paddy in the monsoon reach 2,500–3,000 kg/ha in the kharif, a fairly good yield, aided by new seeds and chemical fertilizers, and around 3,500 kg/ha in
the rabi. Yields of rainfed paddy remain around 1,000–1,300 kg/ha, or even as low as 600 kg/ha, in the low lands. Some tube wells and low-lift pumps supplement canal irrigation, which promotes the cultivation of vegetables and fruits. Demand for these products is high in the holy city and they give a high return.

While a number of medium-scale landowners were better off than they used to be, the progress of the Dalits had been uneven. In 2002, the average daily agricultural wages amounted to Rs 40. In Raghurajpur village, not far from Puri, the Kelajats (Dalits) were extremely poor. A number of them owned only one set of clothes. Many women did not wear a choli. The children were half-naked and dirty. Many of them did not go to school. There was no electricity and no telephone. The villagers complained of not receiving even cheap rations of rice that were due to BPL people. In another village, the Bohis (Dalits) were even more vocal about their miserable living conditions, which were worsening. Although acute misery may have been less in Orissa than it was in Bihar, with wages being slightly higher and the population density being lower, the number of people below the poverty line was still high.

When looking at the plain area around Puri, there had, nevertheless, been clear progress of irrigated paddy in the 1980s when the deficit was replaced by a temporary small surplus. This was largely due to the unusual progress of extension services under the leadership of the deputy agricultural director, G.S. Naik - a man of great calibre, who was well qualified in agronomy with much experience and energy. I accompanied him in his frequent visits to villages, talking to farmers in a friendly manner and going out in the muddy paddy fields to check the number of hills of paddy. After retiring he was engaged by the World Bank. He had the honour of getting a full-page write-up in The Economist!

In my 1985/1986 round I noticed that, in a number of districts the agricultural staff was improving on the whole. However, the case of Puri remained exceptional. It demonstrates, once more, the impact of outstanding personalities on development, a remark that may look like a platitude even though it is often forgotten.

Major issues, however, are beyond a few talented men. Large-scale drainage, improved canal networks, more tube wells and low-lift pumps would help in expanding the area under irrigation and in encouraging double cropping, thus leading to considerable increases in yields. There is also much room to push the cultivation of vegetables, orchards, and coconut trees. The growing influx of pilgrims and tourists, both local and foreign, to Puri and Konarak has widened the scope for services like hotels of all kinds and transport. The demand for food products (fruits, vegetables, milk, eggs, and fish) and the sale of handicrafts could increase further and faster. All these factors need to be encouraged in order to accelerate poverty alleviation, particularly in the case of the Dalits.

The Impact of the Services Sector

We briefly referred to the impact of Benares’ expansion on villages in its proximity. The changes in Puri district are no less striking. The semi sleeping city, except during religious festivals, has grown considerably since the 1970s. Until those days, you had only one decent hotel, dating from the British era, called the South Eastern Railway Hotel, facing the sea. Now there are dozens of new hotels, from five stars to small ones, along with restaurants and luxurious villas stretching on the beach for several kilometres. In
the town bazars, fruit, vegetables, and fish are taking a large part of the main avenues, opposite to all kinds of local handicrafts.

40 Even more remarkable is the site of the famous Sun Temple in Konarak (dating from the thirteenth century) close to Pipli. In 1954 and 1964, I was alone here and there was not even a guard. Some children were looking after their goats. In 1971, there were a few tourists and a guard who prevented me from climbing the temple, as I used to do to take pictures on the higher galleries of the beautiful celestial nymphs playing music for the Sun God.

41 In 2006, the temple is surrounded by a fence with a gate and sales of tickets are being carried out for entry. Huge crowds, mostly Indian tourists, walk around. Between the temple and the sea, the beach is covered by a long line of hotels, restaurants, and multiple handicrafts shops selling pottery, leather goods, jewellery, fine traditional paintings, and textiles. Some of them are traditional, and some are new devices. A parking place accommodates a large number of buses and private cars. It would be interesting to study the impact of tourism on local development in detail. It seems that every year, about 100 million Indian tourists travel within the whole country. This represents a clear example of the growth of the services sector and its contribution to the rural and urban economies, another typical aspect of the growing society of consumption and its socio-economic benefits.
Chapter 6 – In the South Eastern Deltas

Manchala

In November 1978, when we return to Manchala, farmers are harvesting 2,750 to 4,125 kg/ha of paddy, versus 2,800 to 3,500 kg/ha eleven years ago. Growth could have been higher, but parts of the soil are unfit for HYVs because they are alkaline or lack drainage. Farmers complain about the poor maintenance of the canals: breaches of dykes and bunds, and a lack of drainage that is particularly important for dwarf varieties. Wells are rare because the groundwater is often brackish. Then in 1977, the region suffered from a cyclone. Canals remain open from the end of June to the end of January. After paddy, as was done in the past, pulses are grown, yielding 500 kg/ha, and are sold at a high price.

Tractors are replacing bullocks for ploughing. There are two in the village and others are available on rent from outside. A Kapu has opened a rice mill, consequently liberating women from hulling paddy by hand. Petty trade, and transport on a bicycle (50 kg or more) to and from Guntur create more jobs. Fishing, catching birds, repair of canals and roads are growing as ancillary jobs. Milk plays but a minor role.

The population was 2,200 in 2001, a very low figure due to out-migrations and the progress of family planning. In the past few years, 100 women have been sterilized. A number of Brahmin families have started selling their land before settling in a town, especially in Guntur, which is a thriving city. The total sale of land amounts to 40 ha in 1978, which helps the Kapus since their holdings are being fragmented by inheritance.

Kapus owning a few hectares manage quite well while small landowners must struggle hard. Nimma Amankamma owns 0.8 ha and rents 0.2 ha from a neighbour, which gives him 450 kg of paddy, half of the crop he cultivates. He uses his two buffalos for ploughing. With a mixture of farm manure and urea, he obtains 3,750 kg/ha of paddy. His large
family – including his parents, wife and five young children consumes 8 kg of rice per day, with 400 kg being leftover for sale. Sun hemp (a fiber), pulses and fodder are cultivated in the rabi. He could have had a better yield of paddy if his land had been properly drained. Complaining about having too many children, he has been sterilized. Other Kapus with 1.2 ha were slightly better off.

The Yanadis feel happy. They have been given some plots of communal land for their houses. Thus they were freed from compulsory work for the Brahmins who were owners of the land where they had their houses. “Now we stand on our own,” a Yanadi told me when admitting that their living conditions had improved moderately. They keep on recovering paddy stored by rats in paddy bunds and continue catching rats with their bamboo traps. They fish in the canal and sell the fish, or they catch birds during their migration. They raise a few chickens and can work on the repair of canals. Daily wages have increased from Rs 3 to 4 per day in 1967 to Rs 5 to 6, which means a low increase in real terms. The ratio for harvest in kind is better.

The Next Steps

The growth trends observed in 1978 gathered momentum in the following decades. In 2002, paddy reached 5,000 kg/ha. As in Khandoi, farmers and extension services begin to have cause for worry: paddy yields tend to level off in spite of more inputs. Soils need more organic manure and micronutrients. Some new varieties of black gram (pulses) are introduced, giving yields of 800 to 1,000 kg/ha versus around 500 kg given before. Tractors now cover all the fields. Irrigation seems to have improved. A water tower with pipes and taps supplies drinking water from 6 to 9 a.m. and from 4 to 6 p.m.

Cattle and milk are not progressing much, as villagers complain of lack of fodder. There are hardly any kitchen gardens. As for coconuts, most of them are consumed locally. The number of shops, selling fruit, vegetables, clothes, and even Limca (a soft drink), something quite uncommon in villages, keeps on increasing. There are now two rice mills. In 2002, the village had one car, ten motorcycles, three tractors, cellular phones, and 50 TV sets. All these semi-durable goods did not exist until the early 1990s, except a few tractors and some TV sets. They must have increased by now.

Most of the Brahmins have left after selling their land in small plots to the Kapus. This has helped reduce the increase in the number of holdings through division amongst the heirs. In 2002, the biggest landowner has 8 ha while the greater majority owns less than 1 ha. I meet a Kapu who, out of 0.8 ha, is able to get a surplus of rice, which he sells. He has 3 female buffaloes and sells part of the milk. He lives with his wife and four children. The eldest son works in a laboratory in Hyderabad and sends some money home.

Chandu Satyanaraya, another Kapu, 40 years old, lives with his wife who has been sterilized after giving birth to three girls and one boy. In the 1980s, he owned 0.8 ha. In addition to his income from paddy and pulses, he earned money through the transport of paddy on his three-wheeled cycle, carrying a very heavy load of 300 kg at a time. He managed to save enough money to buy 0.4 ha from a Brahmin who was leaving the village. Now he harvests 5,620 kg/ha of paddy and sells one-third of the produce. After this he grows black gram, which is mostly sold. He rents a tractor. He has five cattle heads: two female buffaloes give milk and two are small cows. Chandu is quite happy. He lives in a pleasant house with a tiled roof and white washed walls. From time to time, he
goes on his bicycle to a cinema in Chebrol, the nearest town. Otherwise he watches his recently bought TV.

11 The Yanadis have benefitted from a government-housing scheme (loan cum subsidy) for building brick houses. This has created a pleasant hamlet, surrounded by flowers, coconut and banana trees. Although the scheme was a fine programme, there were some leakages. After a few years, claims for repayment stopped, making it difficult to finance new schemes. Out of 85 new houses, 15 were sold to the Kapus for a good price. These are the typical shortcomings of government anti-poverty schemes.

12 As usual, women are very alert and outspoken, often unlike the women in the Ganges basin. Makani Kalgaiah told me in 1992, “We now get more money as agricultural labourers.” Her husband goes fishing in the canals. They have four children, of which one son is married; she is proud that the younger children go to school. They have a radio set. The husband has two lungis (dhoti worn in southern India) and four shirts. Several other Yanadis come forth with similar accounts.

13 These observations are repeated in 2002. Daily agricultural wages have reached Rs 50 for men and Rs 30 for women. Fishing during the monsoon brings Rs 40–50 per day. The Yanadis still make traps and catch field rats, earning Rs 30 per day. They have stopped recovering paddy grain stored by rats in the field bunds, another indication of the improvement in their living conditions. “It is a tedious and dirty job,” they explain.

14 Talluri, a Dhobi, is also making progress. He invites us to sit in front of his house on his folding chairs, something unusual among poor people. In addition to his traditional job of washing clothes, he remains busy in the fields and sometimes works in Guntur. He has two daughters and one son, both of whom are well dressed and well fed. His lively wife has undergone sterilisation. He has rebuilt his house with brick walls. After borrowing some money from relatives (at an interest rate of 2% per month), he bought a female buffalo, which supplies 5 litres of milk per day, part of which is being sold.

15 The traffic of goods of all kinds keeps on increasing from the villages to Guntur (20 km), and vice versa. Although the number of motor vehicles continues to grow on roads, bicycles remain an important means of transport; a trip to Guntur from Manchala and back with a heavy load is paid Rs 60. The town continues to expand (with over 600,000 people in 2011) along with the proliferation of industries, shops, cinemas, hotels, and with more cars and motorcycles. More people from Manchala commute for daily work to Guntur. In the outskirts of the city, vegetable belts – which were started in the 1960s and 1970s – are gaining more ground, a trend common to many medium-size cities all over the country.

16 I cannot state that relations between Kapus and Yanadis are always smooth, but one does not find the bitter atmosphere observed in Bihar. Besides, the overall progress in the area, affecting people from the few rich farmers to the poorest landless labourers, is obvious. Looking towards the future, it is clear that the diversification of agriculture will become increasingly necessary. Given the current fairly high yields of paddy, it would be proper to reduce the area under paddy in favour of richer crops, the demand for which is bound to increase in the future. That is why vegetable and fruit cultivation as well as animal husbandry should be encouraged.

17 Further urbanisation in Guntur and Tenali should also lead to the creation of more job opportunities with the expansion of services and industries, especially in the informal sector. Electricity plays only a minor role in agriculture since the bulk of irrigation
depends on canals, but it needs to expand nevertheless. Priority should be given to efforts aimed at improving the maintenance and operations of canals and improving drainage. Another priority involves possibly encouraging the installation of more tube wells, where groundwater is not brackish, for cultivating cash-rich crops when the canals are closed; however, this requires more electricity.

Kila Ulur

18 In the fall of 1978, a number of changes have appeared. HYV paddy, chemical fertilizers and pesticides are used by most farmers, leading to yield increases of about 50% compared to those of 1964: 3,600 kg/ha for kuruvai, 2,770 kg/ha for thaladi, both short duration varieties on the same soil, and 3,360 kg/ha for samba (long duration). New varieties of pulses (black and red gram, not HYVs) yield up to 1,000 kg/ha, about double compared to traditional varieties. Groundnuts have not increased much.

19 Four farmers have installed 5 HP pump sets on their wells in order to supplement canal irrigation. Nobody owns a tractor but one can hire them from other villages. Cattle and milk production are growing, the latter being transported by truck on the newly built road. We, once again, hear complaints about the canal’s maintenance and about the lack of drainage in some plots.

20 Kallars owning 3 to 4 ha of land are improving their incomes. Smaller owners are no less active. Kalyamurti maintains his family on 0.6 ha, one-third double cropped with part of the produce being used for sale. After samba he grows some groundnuts. Tholappa Thewar, who we already met in 1964, had 1.6 ha of land at the time. In 1974 he bought 0.4 ha from small farmers. He now has 3 instead of 2 pairs of bullocks, one being used with a cart for transport – another source of income. Out of 6,200 kg of paddy, he sells 2,800 kg, the remainder being consumed or used to pay workers for transplanting and harvesting. After the closing of the canal, Tholappa digs 3 temporary wells to cultivate groundnuts for sale.

21 In the Paraiyar hamlet, Chinaya, married but with no children and to be met again on a subsequent visit, owns 0.12 ha which is mortgaged for Rs 1000. He does coolie work when he is not in the paddy fields where wages have tripled since 1964 for ploughing and pulling shoots, representing an increase in real terms. At harvest, he receives 7.2 kg of paddy. Another Paraiyar lives with his wife and his two sons aged 22 and 17. One of them has been to school. With 0.4 ha, the father has enough rice for his family and sells some quintals. He has a pair of bullocks and, with the help of a loan from the Cooperative, he has got a buffalo that supplies 5 l of milk a day, which is sold. He also sells 50 nuts from his coconut trees and eats the others. Both sons work as casual labourers when not helping their father. In another Paraiyar family, one son who was educated up to high school, is a truck driver and is about to leave for Kuwait. The father manages fairly well with 0.8 ha.

22 Women are as active as before in transplanting and harvesting paddy. During off-season, many Paraiyars keep on making mats as they were doing before, buying local fibre, then dyeing and weaving it. They also catch fish and cut down some casuarina trees or work on canal maintenance.

23 In the few decades until 2002, the economy has grown with more diversification. But paddy yields tend, as in Manchala, to level off at around 4,000 to 5,000 kg/ha. It is
becoming urgent to make better use of inputs like organic manure and soil micronutrients. As for irrigation, canal maintenance and availability of water remain inadequate. The number of wells fitted with an electric pump is increasing, enabling farmers to start their paddy nurseries earlier, before the opening of the canal. Rabi crops rely on wells after the canals’ closure: pulses, groundnuts, and some soybeans – a new crop. Unfortunately, as observed elsewhere, one hears complaints about the supply of power.

24 The village is, since 1978, connected to the main road by an asphalted smaller road. Tractors, bought or rented, have replaced most bullocks; these are also used for transport. Construction of brick houses is expanding fast and some relatively rich farmers with relations working outside the village live in new houses almost resembling villas. Drinking water comes from 6 water towers, pipes and taps. 6 shops sell a growing assortment of consumer goods; there are 4 teashops, 10 barbershops, one cycle mechanic and 3 motorcycle mechanics.

25 The progress of education is no less striking. In 2002, there were fifty university students. In addition to the old primary school, some relatively rich Kallars have founded a private secondary English school, which opened in 1985. They very kindly called it the “Gilbert Etienne High School”. No one had been to university until the 1960s. In 1996, there were a number of medical doctors, engineers, one chartered accountant, and several people holding BA and MA degrees. Most of them have settled in Thanjavur and other cities, but they maintain close links with their village and often co-own land with some brothers who cultivate it.

26 Considering all these activities and taking into account the slow rate of population growth, daily wages in 2002 were quite high: Rs 70–75 for men and Rs 45–50 for women. Job opportunities in the ancillary sector supplemented the income, especially of landless people and small landowners: fishing in the local pond; engaging in petty trade; transporting products (salt, milk) on a bicycle (which fetched Rs 50 per day); cutting and selling wood; and doing construction work (masons earned Rs 100 per day). In 2002, there were six cars, twenty motorcycles, thirty telephones (fixed line), and a growing number of TV sets.

27 There is, however, a major source of trouble: the endless dispute between Tamil Nadu and Karnataka over the sharing of river water. An agreement on the sharing of the Cauvery River waters was signed in 1924 and lapsed in 1974. Since then, discussions between the two state governments have been dragging on, resulting in frequent disruption in the water supply to Thanjavur. In addition, the canals have been poorly maintained for at least three decades. Loss of water entering the canals is at 50%. Unreliable and insufficient irrigation means increased importance of and dependence on the rains. When the monsoon is normal or above normal, it makes up for the deficient irrigation, but the reverse situation occurs in drought years. Yields can fall by 10–20% with poor rains, versus 4,000–4,500 kg/ha produced during good rains.

28 Since the 1980s, the Kellar landowners having 0.5–0.8 ha have produced some surplus rice for sale. They also rely on the contribution of cows (milk) and chickens (eggs); on selling coconuts from their trees; on some odd jobs here and there; and often on remittances from a family member working outside the village. So far, their standard of living has improved. Sambandam can just get by with only 0.4 ha. Out of two crops of paddy he can spare more than half of his output. Out-migration is increasing, with people moving
within the district or elsewhere. Some Kallars have even gone to Saudi Arabia, and two
Paraiyars have ventured to the Gulf.

Like the Yanadis of Manchala, the Paraiyars, too, have continued to move forward. Already in 1978, Chinaya had told me, “Now we live in a civilised manner.” This was true for him and the other 28 families around, a trend confirmed during my subsequent visits. Housing is improving, with brick walls and concrete roofs. Children and adults are better dressed and better fed. More children attend school. Several people now own a bicycle and sometimes even a TV set. A number of men have found jobs outside the village. On his return from the Gulf, one of the men bought 1.6 ha of paddy land. In 2002, I met Chinaya again. He was aging but still strong. With the help of his two sons (the first works as a clerk in Kombakonam and the second works in Kila Ulur), Chinaya first bought 0.4 ha. In 2002, he doubled the size of his landholding. As for Rajgopal, he worked for five years in Dubai, saving Rs 1,30,000 in the 1990s. After his return he bought 1.6 ha of land, which has transformed his family’s life. He gets plenty of rice for sale, in addition to some crops in the kharif.

Many Paraiyars continue to combine agricultural work with other activities, including the making of mats. It is significant that they have stopped catching and (possibly) eating rats. When questioned about the progress made so far, the Paraiyars mentioned schools, electricity, drinking water, some increase in wages, and more employment opportunities.

The other major Dalit community, the Pallars, had been left behind. Their lower status was not the sole factor contributing to their condition. They had settled in Kila Ulur, under circumstances of which I am unaware, only fifty years ago, rather far away from the other hamlets. Seven out of ten of their houses had been built and paid for by the government, on land granted to them. They had a hand pump, but no electricity.

If caste relations between Kallars and Paraiyars seem quite smooth, extreme caste rigidity is still found in the district. Downstream in the Thanjavur delta, I knew a Brahmin, a former engineer who, after living and working in the modern city of Bangalore had returned to his village. He would refuse (in 1999) to enter a Paraiyar house or to sit outside on the same mat with them. In 1985, in a Kallar village along the national highway near Madurai, Paraiyars had to walk barefoot through the Kallar quarters and they could not open their umbrellas since this was an exclusive privilege of the high castes. Many other contradictory trends may be mentioned. Already in 1953, Brahmin railway employees in Madurai were telling me that they had to mix with other castes in the canteen “out of compulsion”. In 2003, on the other hand, pupils of high caste families attending some schools in Karnataka were prevented from eating the free mid day meal by their parents because the cooks were Dalits.

In 2002, a number of special schemes for the poor had been introduced and implemented by the village panchayat, which would expand further in the next decade. As for the district administration, I was impressed, as in the past, by the calibre of the IAS District Magistrate and of his staff.

In June 2012, I got the following information from some villagers. As elsewhere, there is — as had already been expressed in 2002 — a growing concern regarding paddy yields levelling off in spite of substantial amounts of input of urea, DAP, and potash. The latest yields are around 4,500 kg/ha. More farm manure and nutrients are needed to prevent soil deterioration. The water table is affected by too many wells cum pump sets in the dry season. Canal irrigation requires improvements. As in many other villages, people
complain about wasted plastic items spread everywhere. There are around 100 cross bred cows giving 10 l a day, part of which is being sold. The number of private TWs now covers 30% of the land, improving paddy yields and promoting various crops in the dry season. They have been crucial in 2012, because the Mettur Dam, due to shortage of water, released water in the canals in September instead of end of June. As a result, the early crop of kuruvai could not be cultivated except on plots dependent on TWs. As for samba, it was less affected.

The number of shops is increasing. Every family has a TV set, at least one mobile phone, and 100% of houses have electricity, though the supply is not adequate. Almost all children go to school. The number of graduates keeps on growing. There are now 3 medical doctors, 11 engineers and more people holding a BA or MA. They usually live with their families in Thanjavur or in other cities. Most families have one or more members working outside Kila Ulur as either unskilled labour in the neighbourhood or as small clerks in cities. Upper class graduates are in the administration, in business, in hospitals or are lawyers. Around 30 of them work abroad, mostly in the Gulf, having occupations ranging from labourers to engineers. Health is improving with more hospitals.

One gets the feeling that these growing outlets away from agriculture are a consequence of the faster growth of industry and services at the all India level, particularly in the unorganized sector in both towns and advanced villages. In a way they compensate, at least partly, for the slowdown in agriculture. In addition, there comes family planning and the growing number of couples with only two children. Combined with out-migrations, this explains how, according to the 2011 census, the population has slightly decreased to 1940 inhabitants compared to the 2001 census. This may also be an explanation of the very high daily wages of agricultural workers, amounting to Rs 250, a rather exceptional rate.

The numerous social schemes promoted by the state or by the central government are taking root: free TV for most families, assistance to pregnant women, subsidy for new houses of the poor, free mid-day meals in schools, subsidised rice for the poor, scholarships for advanced studies, all of which come from the state and the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) from the centre, which provides 100 days of employment per year. In spite of leakage and corruption, these schemes still benefit the poor.
Chapter 7 – Peninsular India I

After the alluvial plains, already irrigated or containing a large untapped potential, it is time to proceed to peninsular India, the Deccan, with its severe geographical constraints: dominance of rainfed crops, often poor soils, limited irrigation potential, and its erratic and often low rainfall. Except in the case of Eksal, the surveys here started in 1978.

Jodhpur District, Rajasthan

Few areas face such severe geographical constraints as western Rajasthan with the Thar Desert and other very arid tracts. The average rainfall in Jodhpur is 320 mm, which is very erratic, leading to severe droughts. The soil is often sandy and of poor quality. The water table is buried deep under layers of rock, often 100–150 metres deep, which makes the digging of a well an expensive and difficult proposition and the supply of water is not always certain. The lack of drinking water can be acute. However, the area has seen substantial development with a fall in poverty levels, at least in the not so isolated villages.

Passing through Jodhpur in 1959, I came across a rather dormant little town. Between 1979, when I conducted my first survey, and 2002, many changes have taken place. Jodhpur city has expanded with growing bazaars and many small and medium industries. There is a construction boom, with houses being made of stone sourced from local quarries. The number of tube wells has increased. Wheat yields have more than doubled in the period from 1970 to 2002 reaching 2,000-2,200 kg/ha. Mustard cultivation is expanding. Bajra, small millet, which is particularly drought resistant, reaches 400–600 kg/ha under good rains, and half that quantity with poor rains, or nothing under a severe drought. Low-yield pulses are also cultivated.

The installation of tube wells ushered in vegetable cultivation, including that of chillies. Cattle do well, except during drought years. It is striking to see crossbred cows (supplying 6–8 litres per day) grazing on such poor soils. Every day, trucks loaded with milk cans leave for Delhi and Jaipur. As in other progressive areas, cars, motorcycles and telephones have become increasingly popular since the 1990s. Tractors have practically eliminated bullocks for ploughing, but carts on rubber tyres pulled by a camel are still quite common.
In 1992, in Jawar village, 22 km away from Jodhpur, I meet Babula, a Bhangi, along with his wife and four children. They live in a nice whitewashed brick house, which the family got from the government. They have a cow and 15 goats, which they sell after one year. They sell eggs produced by their 15 hens. They use their two bullocks to pull a light cart for transport. In addition, they earn money by doing casual work for landowners. Despite all this, Babula can just about make ends meet.

Kanga Ram, Babula's neighbour, is also a Bhangi. He owns a few hectares of bajra. He transports and sells milk on his bicycle and also does casual agricultural work. He has recently set up a small flourmill. Kanga Ram, smartly dressed like his neighbour, appears to be better off, both economically and socially, than many Bhangis I met in the Ganges basin. Both Babula and Kanga Ram have given up their “unclean” jobs of scavenging and/or raising pigs.

As one drives towards Osian, one comes across a village of Mochis (Chamars), who have continued to practise their traditional occupation. They make leather goods, including shoes, the demand for which is growing (see below). They have some goats and cows, whose milk is consumed at home. They also cultivate bajra or work as labourers. Each Mochi has three sets of clothes. They eat three times a day, enjoying meat occasionally.

Although these surveys are more limited than those conducted in the Ganges basin, several facts lead one to think that acute poverty is relatively limited even among Dalits. During all my visits, I found that daily wages here were at the same level found in the Green Revolution districts. In 2002, the wages reached Rs 50–60 in villages that enjoyed some irrigation. Deeper within the interior, in the vicinity of the Thar Desert, the wages can fall to Rs 35–45.

Let us stop in a Hindu Jat village. Chota Ram lives with his parents, his wife and children, and two young brothers. They own 10 ha. Their TW, with an attached tank, supplies water to 8 ha. The water table is 80 m deep. They must use a powerful engine of 20 HP. Digging in this rocky terrain is also expensive. They have started to make compost and use it, along with chemical fertilizers, in order to curb soil deterioration. They grow wheat and are now pushing vegetables and take care to avoid pest and diseases. Rainfed terrains bear bajra, used mostly as fodder. The family owns one tractor and one motorcycle. When they need agricultural workers, they pay them Rs 50 per day (2002).

Their neighbour, also a Jat, belongs to a large joint-family: four brothers, wives and children, forty all together with 16 ha of land, out which 4 to 5 are irrigated by two TWs (25 HP) pumping water from a depth of 100 m. In addition to wheat and vegetables, they look after 20 cows and buffalos for self-consumption and the sale of milk. They have recently started to cultivate spices and fruit like pomegranates. They have a phone, a motorcycle and a tractor. Oddly enough, the Jats in Rajasthan have succeeded in being classified as OBCs (Other Backward Classes), although by right they claim the status of Kshatriyas.

Kumar Ram, a Mali by caste (gardener) manages his 29 ha shrewdly with his five sons. He has constructed 5 TWs, each with 25-30 HP, high-powered engines, able to pump water from the water table, 100 m deep. The threshing ground is red with chillies being dried after harvest. After being sown in April–May they are transplanted in July. Several pickings – every fortnight – take place between November and February. Production costs are high but they are fully compensated by sales, in spite of price fluctuations.
Driving towards Osian and its fine temples, we stop at the mansion of Bahadur Singh, a Rajput of the old gentry who has been in the state administration. He runs 29 ha, one third belonging to his brother who lives outside. Again the cost of irrigation is high, 6 ha are covered by a TWs powered by 25 HP. The water table is 100 m deep and is falling by around 1 m per year. Some workers are carefully transplanting onions. Other fields bear chillies and a new variety of mustard yielding 1,900 kg/ha, double that of traditional varieties. Wheat yields 2,000 kg/ha. We have a long talk on all kinds of problems. Our host deplores the declining law and order situation, corruption, and the fall of ancient values. While regretfully invoking the “good old days” he nevertheless agrees that the overall economic and social situation has improved.

The progress of irrigation needs qualifications. Shortage of electricity is the first matter of complaint. Then, the water table may tend to fall if there are too many TWs in a village, or if there is a drought preventing recharge of water. Jodhpur district benefits from the Indira Gandhi Canal, a huge project started in 1958. The main canal starts from the Harike Barrage below the confluence of the Sutlej and Beas Rivers in Punjab. Water flows for 650 km across Rajasthan, supplying drinking water and irrigation through branch canals.

In spite of this progress, water saving techniques remain crucial. Sprinklers for wheat may not always work, mainly because of evaporation of water during the hot season. Drip systems are more appropriate but work only for vegetables or fruit. They save half of the water. In 1979, I came across the first new systems. Encouraged by state subsidies, they are progressing but need to proceed faster, because it is more and more difficult to combine the progress of irrigation with agricultural growth. As for drinking water, in spite of progress, one still comes across villages from which women have to walk two to three kilometres to fetch water.

The impact of economic diversification is striking. Landless agricultural workers represent 5.7% of the working population in Jodhpur district according to the 2001 census. As for non-agricultural workers, they constituted 50% of the population in Jodhpur, as compared to 43% in Thanjavur and 44% in Bulandshahr. Quarrying, construction, and some modern industries like steel processing are important in the district. The town keeps on expanding with new quarters of fine houses (1 million inhabitants in 2002). Vegetable belts with chillies, radishes, and onions are growing, often cultivated by Jats who until recently looked down upon vegetable cultivation. Handicrafts have grown enormously. They include textiles, painted cloths, fine wooden chests, leather goods, pottery, jewellery, wooden boxes, and furniture. In 2001, exports reached Rs 8 billion, a hundred times more than its corresponding figure in 1991 (at current prices). Tourism, both foreign and Indian, is no less conspicuous, with the proliferation of plenty of hotels of all categories catering to visitors, particularly in Jodhpur. When my wife and I first visited Jaisalmer in 1959, we stayed in a shabby guest house. There was only one other visitor at the time, a young British scientist collecting insects. Today both Jodhpur and Jaisalmer have become big tourist centres with plenty of hotels and shops of all kinds. Also, both have important military bases, creating other sources of employment for the local population.

Jodhpur, like other districts of Rajasthan, has a long tradition of fighting drought and preventing famines through special schemes supplying job opportunities to poor people. The NREGA follows this approach even without the advent of emergencies. The supply of subsidized grain is ensured. These different measures do not work so smoothly everywhere. During the drought of 2002, Baran district was badly hit. The Sahariyas, an
Adivasi tribe treated like untouchables, were seriously neglected by the local administration; as a result there have been cases of starvation deaths. Some officials commented: “The Sahariyas drink away their wages” (Outlook, 4-11-02) – a criticism often heard concerning some Dalit castes or Adivasis (see Chapters 4 and 8).

Latest Trends

While all these trends are encouraging, the future is not as secure as one would wish. Only 8–10% of the cultivated area is irrigated in 2002, mostly through tube wells or open wells-cum-pump sets and these do not always supply enough water. The water table is declining (it fell by 20 m between 1970 and 1990) because of excessive pumping, leading to lack of recharge in the water table. One still comes across villages depending only on poor rainfed bajra (small millet); these habitations are surrounded by a semi-desert and bushes, which more or less feed the cattle. Overgrazing and the wind are accelerating soil erosion. To help restore soils, gypsum is required. Better yielding fodder, like lucerne and barseem, is needed in such districts where cows and milk are so important. The population growth rate in Rajasthan is one of the fastest in India because of very weak family planning campaigns, amounting to 20% between 2001 and 2011.

The latest trends until 2011 offer a mixed picture. Investments, particularly in construction, kept on increasing like the expansion of small-scale industries employing 94,200 workers in 2008/2009, particularly in handicrafts. Milk remains important with daily collections of 400,000 l, much of which is sent outside the district. Coarse grains’ output varies depending on good or poor monsoons. Irrigation is increasing only moderately and as a result wheat progress is not striking. Finally the 2011 census gives a population of 3.685 million people, a considerable increase of 27.7% during the decade, and a sex ratio of 915.4 When shall family planning take root here?

Eksal, Maharashtra

Eksal and Satara district are situated in the rain shadow belt of Maharashtra, with the monsoon being held by the Western Ghats. As we have seen (Chapter 2), irrigation was quite limited until the 1960s. Out-migrations from villages were acting as a safety valve against poverty. Such migrations keep on growing, stimulated by the global development of Maharashtra. In addition to the big cities, Bombay and Pune, district towns like Satara are growing fast, and attracting villagers. As a result, and taking into account migrants coming from other states, Maharashtra has an urban rate of 45% of the population (For the whole of India, according to the 2011 census, the figure was 31%).

Since 1964, irrigation has increased considerably in Eksal, an uncommon case in peninsular India. 35 to 40% of the state is drought prone, with the number of rainy days varying between 40 and 100 days. Out of a net cultivated area of 17.4 million ha, 2.2 million ha were irrigated in 2005 (report of the Water Management Department, Govt. of Maharashtra, September 2006).

In January 1979, the dynamic trends observed in 1964 are fully confirmed. The mot system (bullocks pulling a bag of water from the well) has been replaced by 40 pump sets on open wells, relying on either oil engines or on electricity, which has reached the village. It would hardly be possible to add many more wells, especially when considering
the limited rains and the depth of the water table. In the hottest months of April and May, one may have to limit the withdrawal of water, which would affect one-year crops like sugarcane. The irrigated area increasing from 92 to 130 ha paved the way for 28 ha of wheat cultivation giving 1,500 kg/ha, a mediocre yield, and for some hybrid jowar (HYV) with good yields of 1,750 to 2,000 kg/ha versus half or less when rains fail. Jowar remains the main food grain and is mostly rainfed. Sugarcane, potatoes, vegetables, and orchards including vineyards are growing with a good return. Soybean is introduced in the 1980s, and groundnuts give a better yield (both crops are rainfed). In 2002, one counts 80 Jersey crossbred cows delivering 10-12 l per day. The local cooperative arranges for the transport of milk by motorcycle or cycle to Koregaon.

In 1986, a big change occurs. Eksal was brought under the coverage of the Dhom Canal, a major irrigation project coming from a reservoir on the Krishna River. The irrigated area reached 300 ha out of a total of 670 ha. The pump sets also benefited from the seepage of water from the canal. One must however mention complaints about poor maintenance, occasionally restricting the supply of water.

Overall, economic growth has clearly overtaken the population increase: 1,173 in 1961 and 2,378 in 2001. In 2002, daily wages amounted to Rs 60 for men and Rs 40-45 for women. The diversification of the local economy has created more jobs for small landowners and landless labourers. The latter are much less numerous than in the densely populated districts (335 persons per sq km compared to 600–1,000 per sq km). However, as elsewhere, the number of landholdings has increased but their size is falling. Now about half of them are less than 1 ha, and many others are between 1 and 2 ha. Even with 0.4 ha properly irrigated (fruits, vegetables) and 0.4 ha rainfed, a farmer can manage to survive, especially if one or two members of the family work outside the village. These outlets or safety valves keep on increasing, not only as one approaches the big cities, but also in Satara, a modern city by now, or even Koregaon which is becoming a small, lively town. At the bus stand, plenty of motor rickshaw owners wait for customers, while in Patna, the capital of Bihar, cycle rickshaws were still predominant in 2002. 20% of workers have jobs outside the block.

More changes occurred between our visits of 1993 and 2003. By that date, there were 100 telephone connections, one public telephone, 15 jeeps or cars, 7 tractors, and several dozen motorcycles. A private doctor has opened a clinic in the village. There are plenty of new houses and shops. Several farmers are improving their irrigation by using plastic pipes to reach higher ground. From 1995 onwards, the drip system is improving for orchards. Tractors, thresher machines, sprayers for pesticides, and flour mills make life easier for the farmers. The Panchayat has set up more hand pumps for drinking water and a water tower with pipes, which is not working properly because of leakages.

Migrants commute to and from Satara, while others are in Bombay or Pune. The well-known Maratha regiment continues to attract young men. Family planning keeps on expanding. More than ever, farmers focus on rich crops. The climate is more favourable to sugarcane than in UP which explains a good yield of 100 tonnes/ha, (50 to 60 tonnes/ha in Bulandshahr) processed in the sugar mill opened in Koregaon; also, onions, potatoes, vegetables and fruit are increasingly benefitting from irrigation and supply farmers with enough cash to buy food grains if necessary. However, sharp market fluctuations and pest are matters of concern. That is why farmers keep some sugarcane with substantially lower return, but which offer more stable prices. At the same time,
farmers are becoming increasingly aware of the need to promote more organic manure, in addition to chemical fertilizers, on irrigated plots.

A number of Maratha farmers are living better now. Sampat Dadu Bhosle maintains his wife, his children and old parents on 2 ha. Thanks to his pump set on his well, he irrigates 0.20 ha of papaya trees and red chillies. Other irrigated plots are devoted to hybrid jowar, requiring a low dose of chemical fertilizers. His rainfed land located on poor soils yields only 200-500 kg/ha of jowar. He also has some fodder for his cows. Another Maratha, Shankar Gopal Bhosle, 32 years old, enjoys better living conditions, with his wife, one son and one daughter, his parents and his younger brother who is at school. Out of his 2 ha, one is irrigated with potatoes, beans, hybrid jowar and some paddy. Rainfed crops give the equivalent of 300 kg/ha of jowar. The family just about produces enough grain when the rains are good. The family is helped by the remittances of the two brothers, one who is in the army, and the other working in a textile mill in Bombay.

During each of my visits, I meet Govin Pandurang, a Mahar (see Chapter 2). Although he is growing old (2002), he remains fit. He sells some of the milk produced by his two buffaloes. He has set up a biogas plant, which supplies electricity and manure. With the help of his wife, he grows grapes on 0.1 ha. On another 0.1 ha, he has planted onions. On another plot of similar dimensions, he grows irrigated hybrid jowar (High-Yield Variety) in the monsoon, followed by potatoes in the rabi. His two sons, after finishing school, have found jobs in Pune. One of them has temporarily returned home to help his father. He wears a smart shirt and a pair of well-cut trousers.

Not all the Mahars have succeeded as well as Govin Pandurang, but several of them are becoming better off, like the small Maratha landowners. This remarkable reorientation of agriculture (thanks to irrigation) towards the cultivation of fruits, vegetables, flowers and animal husbandry, combined with government subsidies for drip irrigation, can be found in other parts of Satara and in other districts of Marathwada. This shows the way towards the future. At the same time, in spite of the shrinking size of farm holdings, a man like Govin Pandurang can lead a decent life on 0.33 ha of irrigated land. As during my previous visits, in 2002 I was impressed by the competence of the administration with, at its head, a smart and competent IAS CEO.

All these achievements need qualifications. As in other advanced areas, one hears alarm bells in Eksal: the supply of electricity is not adequate, though the situation is better than in UP. The canals need better maintenance. Marketing facilities require improvements, such as more cold-storage houses, better packing and quality controls, especially for exports. Extension services need to adapt to a more complex pattern of rural development. Credit is excessively biased in favour of rich farmers. Nevertheless, we find in Eksal one image of what can be the future of rural India: a decrease in the cultivation of rainfed crops along with their limited growth potential compared to activities bringing better returns and offering more job opportunities.

Many parts of Maharashtra, with their limited irrigation potential, face much less favourable conditions than Eksal. The situation of the poor remains precarious unless they leave their villages and migrate in search of work. Mharwad, 70 km from Koregaon, is surrounded by a desolate landscape: no vegetation, reddish-grey soils and with few dusty tracks leading to villages. The population density only amounts to 80 persons per sq
km, but people depend on such poor soils and only 400 mm of rain per year. The Dorabji Tata Trust started a rural project as early as 1952: supply of drinking water, small dams and improved jowar. It was covering 9,500 people, but the majority of the area could not be reached by the project.

On a Sunday in September 2002, we set off, my wife and I, from Mumbai in a de luxe train for Lonavala, a small hill station in the Western Ghats (mountain ranges along the western coast of India). It attracts crowds of young, upper-class people, representing the new elites of Mumbai, dressed in jeans and t-shirts, girls included, who come by car or motorcycle to enjoy the fresh air, and visit the discos and coffee shops. From there we drive 40 km on a terrible road until we reach some extremely miserable hamlets nestled in the Western Ghats, with hardly any sign of development. Here the daily wages amount to Rs 25, not even half of Eksal. Mediocre rainfed paddy is grown here and poor cattle could be found grazing nearby. This stark contrast showed how the India of the twenty-first century is ignoring the “other” India.

NOTES

4. Data collected from Jodhpur District Office.
Chapter 8 – Peninsular India II

1 The North Eastern corner of the peninsula differs in many respects from the areas visited in Rajasthan and Maharashtra. One main difference refers to the higher rainfall, 1,300 to 1,600 mm per year, mostly during the monsoon. This allows farmers to grow paddy, the main cereal, which is usually rainfed. In the whole of Orissa, it covers about 75% of arable land. The terrain also differs: plains, undulating plateau, wide tracts of hills and mountains covered with jungle. Forests cover up to 1/3rd of the total geographical area.

2 A sizeable part of the population consists of Adivasi (aboriginal) tribes, which exist in various types of civilisation. A number of them are closer to other Indians in their ways of life and in their agricultural techniques. At the same time, others, especially in remote areas, have until recent times remained distant from the Hindu or Muslim civilisations in their spiritual beliefs (animist), their customs and their agricultural practices of burning and shifting cultivation (jhum) without utilising the plough. One must also mention ancient traditions of kitchen gardens, vegetables, and horticulture within the Adivasi tribes.

Deogarh and Godda Districts, Jharkhand
(former parts of Bihar, now a separate state)

3 In 1985 and 1992, I visited villages in Deogarh. The rather heavy rainfall (1,300–1,500 mm) in this region enables farmers to grow rainfed paddy in the bottom of valleys and on terraced fields. Jowar grows on higher altitudes. Adivasi tribes live in the mountains and many of them still practice jhum. The rocky terrain and limited groundwater explain why irrigation covers only 10% of the cropped land, mostly carried out through dug wells, tanks, and some low-lift pumps on rivers.

4 The Santals are the main tribe. They settled in this region at the end of the thirteenth century. Unlike other Adivasis (like the Pahariyas, see below), who live deep in the hills, the Santals have been in contact with Hindus, and later with Muslims, and have adopted their agricultural practices. In the plains there are also Hindus. Deogarh city has expanded since independence. Small and medium-size industries have appeared which are often owned by Marwaris, a merchant caste that is originally from Rajasthan, but
partly settled in Calcutta. Deogarh is also an important pilgrimage centre, which has boosted small trade.

5 In 1985, agricultural change was slow. In a good year, rainfed paddy yields would be around 1,000–1,500 kg/ha. Wheat had been introduced on a limited scale during the rabi (1,000–1,200 kg/ha), a stagnant level as in so many parts of India. Kitchen gardens (producing vegetables, including onions and chillies) were fairly widespread in keeping with ancient traditions that had been adopted or revived in more recent times.

6 In villages 20 km away from Deogarh, I came across Santals and Chamars, the latter working for the former and also making bidis (local cigarettes). Some of them raised pigs. Often without land, they were very poor, but because of the absence of landlords, they did not complain of having to face abuse. Potilal, a Santal, owns 0.4 ha producing rainfed paddy. This, of course, does not cover the needs of his household. Nevertheless, thanks to his well, he cultivates fine plots of vegetables, which are sold in the bazaar. He has some milk from his cow. Occasionally, he works as an agricultural labourer. Finally, he collects wood from the forest for sale and sometimes goes hunting. Lively and clever, he is managing rather well.

7 In 1992, one notices some more development. Several low-lift-pump schemes have been completed. More loans-cum-subsidies meant more wells, both with and without pumps. Hand pumps are more common for drinking water. The district-irrigated area has doubled to 20,000 ha, enabling double cropping. Yet irrigation remains vulnerable to drought, which can lower the water table or leave tanks half full or even empty. Indeed, the rainfall data for this area, as for many other districts of the region (including Keonjhar, see below), are misleading since rain failures are common. For these reasons, average yields remain low. Animal husbandry is very poor, with mostly local cows, which supply 0.5–1 l a day. Poultry is doing better, along with the sale of eggs. Forests and forest products help the locals to supplement their income through wood cutting (though prohibited), collection of wild fruits and medicinal herbs, and through cattle grazing (also prohibited).

8 Near Deogarh, I visit a large joint-family of Santals, consisting of eight brothers, sixty adults and children. They live on 7.2 ha, with 4 ha devoted to paddy and 3.2 ha to wheat and pulses. Thanks to their two wells, equipped with a diesel pump set, they irrigate 2–2.5 ha, giving them 2,000–3,000 kg/ha of paddy. They also irrigate small plots of potatoes, chillies, and tomatoes, all of which they sell in Deogarh. Around fine houses one finds gardens of flowers. Once again, I am impressed by the fine agricultural traditions, including the gardening skills of the Santals, something that was also noticed by L.S.S. O’Malley in his Santal Parganas Gazetteer of 1910 (O’Malley 1984). Goden Suren, one of the brothers, has attended school for four years. He says, “We live better now thanks to the two pumps, which enable double cropping of rice and wheat and the cultivation of more vegetables. We have also started growing hybrid maize. We use some chemical fertilisers.” Some of the family members work as agricultural labourers for landowners. They have a few cows and goats which supply milk. They have two bicycles. While the brothers have been helped by the government, they, like other beneficiaries of loans-cum-subsidies, also complain of ghus (corruption, bribery) which they are compelled to pay to greedy officials.

9 The further we travel from Deogarh, the lower the wages get. At a distance of 30–60 km, they fall to half the amount earned near the city. The differences between the
communities are no less striking. Once again we meet miserable Musahars. They dig in the bunds of paddy fields to recover the grain stored by rats. When they catch the latter, they eat them. They seem even worse off than the Musahars in Varanasi district.

Although acute poverty is comparatively less here than it is in the plains of north Bihar, except among the isolated tribes (see below), the danger signals are obvious. Already in 1991, the average population density in the district was 370 persons per sq km, a high figure considering the available resources. Even out-migration – which has been quite a common phenomenon for more than a century – to the coal mines of Dhanbad, or to Burdwan district for paddy cultivation, or to the tea estates in Assam, is an insufficient safety valve for releasing the social and economic pressures building up.

In 1992, I moved from Deogarh to Godda district. After leaving our car, we had to walk in order to visit some Pahariyas (Adivasis) living in the hilly jungles; there are many in the region. They practise jhum cultivation like the other tribes, but they do not even use the hoe. They dig a hole in the ground with a sharp stick and put the seeds into the soil – the stick being the most ancient tool in agriculture, something that is still used in parts of Sub-Saharan Africa. The Pahariyas use bows and poisoned arrows for hunting, but they complain that wild animals are becoming rare. Their crops of jowar, maize, and pulses sustain them for four months. For the rest of the year, they live on forest produce. They come down from the hills to sell bamboos in the nearest bazaar and to buy salt, grain, and local liquor. Some of them enjoy a drink in the bazaar before walking home. As for roadside bazaars, they reflect the general poverty of the region. They are not very active. Even fruit is not available. One sees only a few trucks and buses. Bicycles are relatively rare.

From the foothills, which are inhabited by Hindus, one has to walk 15 km to reach the Pahariyas hamlets. The further we walk, the poorer are the villages. We see dilapidated huts and naked or half-naked children with balloon-like bellies – a clear sign of malnutrition. Women wear cheap saris without a blouse, revealing their skinny arms and shoulders. Many adults and children suffer from all kinds of intestinal diseases and from a severe type of malaria. I sense an inertia that typically affects people living in extreme misery who can hardly struggle with deprivation and poverty, a feeling that I also experienced in other places.

Have the conditions of the Pahariyas deteriorated in the past fifty years, or have they always been like this? L.S.S. O’Malley in his gazetteer writes, “The Pahariyas are in a state of great poverty owing largely to their drunken habits and idleness” (O’Malley 1984, 126). Such comments may sound partly true, but the explanation smells of Victorian puritanism. How widespread or deep-rooted are the conditions faced by such Adivasis? This question is difficult to answer. In 1954, I had visited Sauras in southern Orissa. I found them an impressive, fine-looking, and well-built people who were fond of singing and dancing. They followed careful agricultural practices, including cultivating irrigated paddy, although they lived deep in the hills.

In 1978, I visited the Kutia Khonds in Purbani district of Orissa. They lived only 3 km from the road, but they were hardly better off than the Pahariyas. Their food reserves were exhausted in the dry season, so they were forced to dig for edible roots or to hunt with bows and arrows. Six families had gone away because wild elephants had repeatedly destroyed their crops. On top of that, they faced abuses by Hindu moneylenders.
Keonjhar District, Orissa
(Visits from 1984 to 2002)

Keonjhar district like most districts in Orissa is too big to be run properly, with a size of 8,300 sq km. One sees the same plains, terraced paddy fields with bunds on undulating slopes, and wooded hills and mountains. The picture in Keonjhar district is not very different from the scene in Deogarh in Jharkhand and neither is the agriculture, with its slow growth due to poor and unreliable irrigation. In 1985, the monsoon had been rather good, so the farmers had harvested 1,500 kg/ha of paddy - in a drought year it can fall to one-third that amount. Only a few irrigated plots bore new seeds, fed with chemical fertilisers, and were giving 2,400 kg/ha (in Manchala, the figure was 5,000 kg/ha).

One does not come across major changes in the cultivation of the main crops, particularly paddy. However, wells, both those equipped with a pump set and those without (often installed with the help of a loan-cum-subsidy), enable farmers (as in Deogarh) to have fine kitchen gardens. These are intensively cultivated with two or three crops per year. In Shankarpur, 6 km from Keonjhar, I met Lachman of the Munda tribe. The Mundas, like the Gonds, are more or less assimilated into the group of Hindu farmers in terms of following certain agricultural techniques. For a long time, Lachman had just survived on small amounts of maize and pulses grown on small plots and also by working as a casual labourer. In 1985, he got a loan-cum-subsidy to dig a well. This brought in additional income from the cultivation of eggplants (brinjal, aubergine) and other vegetables. His net annual income was Rs 1,000. He also earned Rs 5–6 per day, but not every day, working as a casual labourer.

An Oriya nearby, who owns 1 ha, has been helped by one of his sons who works as a clerk in Keonjhar; the son gives the father his savings. With his three bullocks, he cultivates 0.8 ha of paddy as a tenant, keeping half of the harvest. The father and the five other adult sons work part-time as agricultural labourers, so that the entire family manages somewhat decently.

In 1992, in Badaneuli village, nearly half of the inhabitants are Gonds. They live in very well-kept houses, freshly repainted. The number of wells is increasing, allowing the maintenance of fine kitchen gardens. By using small doses of chemical fertilisers, some people harvest 2,100 kg/ha of paddy, but for the majority of farmers the yields are stagnant.

In Bankapatulli, 20 km south of Keonjhar, the contrast between mediocre rainfed paddy and lush kitchen gardens near a well is striking once again. I stop at a Dhobi hamlet. Several of the Dhobis have benefited from new houses provided by the government. As payment for performing their traditional work of washing clothes, they receive 70 kg of rice per year from each household. They have some poultry and sell eggs. As field labourers, they received only half the wages obtained for the same work in more advanced parts of the district. The Dhobis lead a hard life, but without being entirely destitute. Their children are fairly well dressed, and the men were rather alert. In other places, more wells – constructed through loans-cum-subsidies – are also evident, favouring small and marginal farmers. Unfortunately, electricity is available for only 4 out of 24 hours. In some villages, animal husbandry is encouraged and the sale of milk and milk products is promoted, but local cows did not produce more than 2 litres per day.
In November 2002, during our visit, Keonjhar district suffered from a very weak monsoon. As a result, agricultural losses amounted to 30%, and as much as 50–60% in some cases. Irrigation from low-lift pumps and wells was affected. Out of the 70,000 ha targeted, only 48,000 ha received some irrigation and this was not always enough compared to 192,000 ha that produced poor-quality rainfed crops.

Back in Bankapatulli, I meet several Gonds. Sarat Naik along with his four brothers cultivates 2.8 ha of rainfed land that is jointly owned. The land gives a good yield of 2,400 kg/ha of paddy. The fields are located in low terraced land, which gets more rainwater, while on the upper terraces the yields fall to 1,500 kg/ha. Sarat Naik has a pair of bullocks and a cow. His son works in a garage nearby. Sarat lives with his wife and their small child. Thanks to his own hard work and cleverness, also helped by a part of his son’s salary, Sarat is improving his life and bettering the living conditions of his family. He owns a wristwatch, a bicycle, and a radio. His neighbour owns 1 ha of land, which produces low-yield paddy, followed by pulses in the rabi. He must rent bullocks to plough his fields. He is just barely surviving. Kishor Naik would also have been in a precarious situation, with 1.2 ha of rainfed of paddy, but he is lucky to have two sons, both married. One works in Allahabad, and the other is a teacher nearby. As a casual labourer, Kishor Naik earns Rs 20–30 per day. The last Gond I meet has no land. He looks after 45 goats, whose owner gives him 850 kg of rice per year. One son works as a casual labourer. The second son is a sculptor who makes small statues of gods and earns Rs 400–500 per month.

Returning to Badaneuli we meet Rangar Dhar Naik, a Gond. He grows paddy on 1 ha which is partly irrigated, giving a yield, using some chemical fertilizers, of 2,500 kg/ha. His open well with a small pump set irrigates 0.2 ha of vegetables. Here again one is struck by the carefully tended plots. Three crops are grown per year: onions, garlic, tomatoes, and brinjal. Our man lives with his wife, his son and three daughters. He is also the teacher of the village. Alert and happy, he lives in a nice house with white washed walls.

Next door lives a caste Hindu, Upendra Nath Mahant, owning 1.1 ha with a similar cropping pattern: paddy and 0.2 ha of vegetables are cultivated by raising water with a hand lift from the nearby tank. In addition he earns Rs 20–25 per day when repairing bicycles.

Several people agree that their conditions of living are improving. They have now not only a primary school but a high school as well. Roads are better, and buses more common. Yet there are still poor people who have to go and work in West Bengal for the harvest of paddy, as is done in Mayurbhanj. Daily agricultural wages near Keonjhar city amount to Rs 40 for men and 35 for women while they fall to 30–35 for men and 20–25 for women in the interior of the district.

Although the irrigation potential from ground and surface water is limited, more rapid progress is possible. In 1991, out of 622 public low-lift pumps, 97 did not operate, with half being “defunct”. In 2002, out of 756 pumps, 430 are “defunct” and 326 are working according to the district records. As for medium-size canal irrigation projects, they do not seem to progress as rapidly as they should. In 1985 I had visited a fairly large canal irrigation project dependent on a dam on the river Khanjari. Started in 1980, the project was delayed. In 1992, the two major canals were completed but the subsidiary channels bringing water to the fields were missing – a classical defect of many irrigation projects. The records for dug wells show better results. The district irrigable area in 2002 was
similar to that in 1992 (that is 68,000 to 70,000 ha) if the monsoon is good. Extension services are increasing their efforts, particularly in the promotion of crossbred cows.

In Keonjhar, as in Deogarh, the average rainfall (1,534 mm) is misleading, when considering the frequency of drought. In the decade 1976 to 1985, seven years were hit by drought. Later on, one recorded 1,047 mm in 1987, 1,270 for 1988 and 1,970 for 1988 and 1989.

To sum up, both districts are not static, but face considerable physical constraints combined with an unreliable monsoon. It is significant that daily wages in 2002, as in previous surveys, were about half the rates prevailing in the progressive districts. Greater efforts by the government in terms of providing irrigation and extension services could encourage the process of development. The increasing number of wells accompanied by kitchen gardens is encouraging and is a clear indication of the ability of several tribes and castes. How far this can be expanded given the limited amount of groundwater is a key question that needs to be clarified. As for paddy, which covers more than half of the arable land in Keonjhar, one does not notice a clear upward trend over the years: 1,000 to 1,500 kg/ha rainfed, with a maximum output under very good conditions of around 2,000 kg. Irrigated paddy with some urea and DAP give 3,600 kg/ha.

The fate of the isolated tribes, as seen in Deogarh and Godda districts, are more worrying. I did not go into the interior of Keonjhar, but it is quite possible that some of the tribes in this district are not much better off than the Pahariyas.

Mayurbhanj District, Orissa

Mayurbhanj district has two parts: the plains towards the sea, with a number of irrigated fields, and in the interior an undulating plateau, partly terraced, ending in the hills and mountains covered by thick jungles. Adivasis constitute 55% of the population. Until independence, Mayurbhanj was a princely state, which did not benefit from much development.

I conducted research in the interior of the district in 2004, 2006 and 2008 in connection with an Indian NGO, DULAL which was very ably led by Prasanth Narayanan and his wife Seema, both from Kerala. It is supported by an NGO from Geneva to which I belonged. I would continue to receive information from DULAL until 2012.

We find similar physical constraints as observed in Deoghar and Keonjhar: a deep water table (100–200 m). The whole state suffers from declining fertility of soils. In Mayurbhanj "Huge degradation of dry land is far more alarming than a few decades ago." (Baripada, Dist. Office, 2006). Several rivers flow below the surface of the soil so that irrigation is possible only with low-lift pumps. Though the average rainfall amounts to 1,600 mm, drought may be devastating: in 2009 and 2010 production fell by 40%. Electricity is rare. On the road we encounter few trucks and buses; even bicycles and old style bullock carts are not so common here. -. Out of the total population of 2.2 million (2011 census) only 7.5% are urban; 1.2 million people belong to scheduled castes (Dalits).

Santals, Khulus, and other Adivasis are numerous, besides other Indians, but they do not live in isolated villages. There are few landless families, but people cannot live on plots of land of 0.5–1.5 ha that produce a semi-stagnant yield of 1,000–1,500 kg/ha of paddy, and rarely 2,000 kg/ha in the low lands (which receive more rainwater), sometimes without any chemical fertilisers. On parts of the land local people grow low-yield pulses during
the rabi. Cattle and animal husbandry do not play a major role, giving only a low milk output. On the other hand, one comes across small plots of fine kitchen gardens wherever well water is available. Some people make Rs 200 per year through the sale of bananas and papayas grown in their gardens.

Poverty is acute and widespread. Many people go about barefoot. Many women do not wear a choli, and their clothes are shabby. Many children are obviously not fed properly. There are hardly any *pukka* (permanent) houses. In one village, I saw only one motorcycle and three TV sets running on a battery. In several villages, daily agricultural wages amount to Rs 20 plus some food, which were the lowest wages I came across in 2004. In less isolated villages, wages were Rs 30–40. Many people go and work in West Bengal in paddy preparation and harvesting since the crop calendar in that state is not exactly the same as in Orissa. They earn Rs 50–60 per day for this work.

Isolation can aggravate the effects of basic poverty. Simlipal Park, a wildlife sanctuary established in 1956, is home to 65 hamlets and 10,000 people, mostly Santals. There are hardly any schools. Paddy fields are tiny, so the villagers are partly dependent on the forest for their livelihood: collecting the seeds of sal and neem (types of trees), making and selling honey, and collecting and selling medicinal herbs. They sell these items in Jasipur, the nearest market, after walking for an entire day or more and returning home with rice, dry fish, salt, and clothes on their back. One hardly sees any motor vehicles. Even bicycles are not conspicuous.

At the district level, one notices some progress in fruit and vegetable cultivation and in handicrafts (making ropes, plates and cups out of sal leaves, weaving bamboo baskets), which are sold as far as Rourkela. The lady collector of the district, C. T. M. Suguna, is particularly committed to furthering development, but her impact is limited by the sheer size of the district: 10,418 sq km, one of the largest in the country. In addition, the public distribution system of rice seems to work in a satisfactory manner, as does the school midday meal scheme.

The population is rising faster than agricultural production. The former has increased by more than 60% between 1981 and 2001, while paddy yields have remained more or less stagnant. Similarly, progress in other sectors has been slow. According to a survey, in 2006, 42% of the district population was below the poverty line (BPL). Under such conditions, it is distressing to hear that the major irrigation project, Subarnarekha, is still very far from being completed. The agreement for the project, however, was signed in 1978 between the governments of West Bengal, Bihar (now Jharkhand – the state carved out of Bihar in 2000), and Orissa and the work started in 1982. The project was designed to irrigate 94,655 ha in the plains of Mayurbhanj district, out of a total command area of 437,000 ha. The entire economy could have been lifted with the help of the Green Revolution. Instead of going to West Bengal, poor people could have found more employment cultivating high-yielding crops in their own district, as well as in ancillary activities, trade and transport. In several meetings with villagers, they said that their first priorities were water and irrigation.

In 2008 when we return to Mayurbhanj, the situation has not changed much since our previous visits. In the interior, traffic remains very light on the roads, which are poorly maintained in patches. Not infrequently we drive at 30-35 km per hour. From time to time, we see an occasional motorcycle, rarely any tractors, hardly any cars at all, and a few bullock carts. Rainfed paddy remains dependent on the vagaries of the monsoon, with
yields of 1,000–1,500 kg/ha. In the upper terraces or in a drought year, the yield falls to 750 kg. Pulses’ yield in the rabi remains around 400–500 kg/ha.

38 To reach the village of Raipada (in Kusumi Block, one of the poorest and more isolated blocks in Mayurbhanj), we have to walk 1 km. We are surprised to see that the village has paved lanes. Under a government scheme aimed at creating employment, at the cost of Rs 400,000, each worker received 3 kg of rice and Rs 30 per day. With that amount of money, 10 low-lift pumps could have been installed on the riverbank in order to irrigate 120 ha of paddy during the monsoon, which would have doubled the yield, or increased it even more. Farmers were quite bitter about the odd way in which public money had been allocated. As for the major Subarnarekha project, one did not notice any progress since 2004. In some villages, tube wells have been installed, at a depth of 130 m in the rocky terrain. As for open wells, they are often dry from November to July, when the monsoons finally arrive. Many villages are without electricity.

39 Guna Pinga in Raipada lives with his wife, their four young children, and his parents. The family owns 1.6 ha and also 0.4 ha on which they cultivate oilseeds. Guna uses his pair of bullocks to plough the land because nobody owns a tractor in the village. He harvests 1,600 kg of paddy. He gets 1,100 kg of clean rice, pounded by hand at home since there are no rice mills in the neighbourhood. He also owns seven chickens. He sells some of them from time to time. He uses some of his rice to brew a local liquor for sale. He has a bicycle, two lungis, and one shirt. He wears shoes, the soles of which are made out of old tyres. His life has improved slightly in the last few years. He also works as a labourer, earning Rs 40 per day. His children attend the village school, but the lone teacher there has to cope with 100 pupils.

40 Living conditions are much worse in the more isolated villages. Of course, there is no electricity. People go about barefoot and wear very shabby clothes. There is hardly anything in their houses. The local daily wages are as low as Rs 30. Men go to West Bengal for a few months of agricultural work, earning Rs 80 per day. Large numbers of people are classified as BPL, which entitles them to receive or to buy cheap rice from government shops. In several villages, the mid day meal scheme seems to work.

41 Most people in Kusumi are Adivasis of different tribes. For once we are away from the caste system. Customs are much freer here. There are many love marriages or only semi-arranged ones. Wives may divorce freely, but the children remain with the father. There are a few landless people, but the average size of landholdings is around 1 ha, which produces the low yields mentioned above.

42 During each of our visits, we spend much time with DULAL projects, which cover the poorest blocks. In 2011 it reaches 20,500 people in 380 villages. On such a terrain, the project is, rightly, comprehensive. DULAL is encouraging bio agriculture, because HYVs and chemical fertilizers cannot work due to lack of sufficient rainwater and lack of irrigation. They promote farm manure (people there use wood for cooking and not cow dung), compost, leaves, and vermicompost (an organic manure made out of worms). Paddy yields may reach 2,500 kg/ha in low lands where there is more water from the rains compared to the prior maximum of 1,500 kg/ha. On higher land, under the best manure, it may reach 1,500 to 2,000 kg/ha versus 1,000–1,500 kg/ha reached previously. Watershed development is progressing to curb soil erosion and prevent the run-off of rains in order to improve the moisture of the soil. They have reintroduced millet, which had been discontinued earlier, because it is more nutritive than rice. It gives a good yield
of 1,000 kg/ha. They also encourage community work, local councils, women’s self-help groups and healthcare.

Particularly important in this context is the Badi project, i.e., the promotion of mango and cashew nut trees. As one can observe, poor barren soils in the peninsula can bear very good orchards, provided the latter are promoted with great care by adequate extension services, and by teaching farmers how to plant seedlings, how to look after them until the trees bear fruit, and how to fence the orchard. While the trees are still small, interplanting of vegetables is possible. Each tree requires proper doses of organic manure while growing (5 to 7, sometimes 10 kg of compost per tree, per year). While growing, it must be irrigated regularly, if necessary by hand. DULAL promotes 1 acre plantations per family which can bear 40 mango trees or 75 cashew nut trees. Trees begin to yield fruit in the sixth year after planting, and give a net annual income Rs30,000–40,000 when fully mature (according to prices in 2008).

The promotion of fruit is particularly welcome because the demand keeps on rising with growing middle classes. DULAL is thinking of opening small factories to extract cashew nuts and to process mangoes. Such agro processing is still hardly developed in most parts of the country.

Since our last visit in 2008 further progress has been achieved. There has been some increase in fields benefitting from higher yielding varieties referred to above, but they fell in drought years. In 2012, local daily wages for agricultural work amount to Rs 80 and Rs 120 for migrants to West Bengal. The NREGA has had some positive effect on Badi, since the programme is now implemented under the NREGA. The latter has also helped in improving the performance of farmland devoted to cereals.

One can draw some important lessons from DULAL. The prospects for orchards are bright, and now DULAL envisages participating in fruit processing. One must remember that the scope for cashew nuts is particularly wide, since India is importing large quantities of unprocessed cashew nuts from Sub-Saharan Africa ($578 million in 2010/2011 and probably more in 2011/2012)

Very intensive and committed extension services supplied by DULAL boost the yields of rainfed paddy to between 2,000 and 2,500 kg/ha in good years, thanks to organic manure since chemical fertilizers can hardly be used due to lack of water. However, drought brings down yields. Between 2002 and 2012 (included) there have been 6 weak monsoons and in two other years rains were not adequately distributed.

The total expenditure to run the project amounted to Rs 135.2 million for the five years from 2007 to 2012, i.e. around $3 million covering a population of 20,500 in 380 hamlets with a staff of 62 persons: 41 in the field, 12 coordinators, and 9 clerks in the head office at Baripada, the district town. This represents a typical success story, which, however, comes at a high cost in terms of human and material resources. Can it be replicated on a very large scale? I will revert to the question in the last chapter.
Part III – The All India Rural Picture and the Future
Chapter 9 – Progress and Obstacles

1 The village surveys confirm, on the whole, both successes and weaknesses of the agricultural policy since the initial steps taken with the First Five Years Plan 1951-1956. While tackling these issues at the all India level, one must bear in mind – it is often forgotten – that nature or geography widens or restricts the margin of human possibilities. It is no less important to take into account the historical background of various parts of India. We then come across man-made successes or failures, changes in traditions and living conditions, class and caste relations, and Adivasis' issues.

Physical Constraints

2 Wide areas of peninsular India are not, and will not be, able to sustain a Green Revolution due to lack of sufficient irrigation to compensate for poor and/or erratic rainfall. This is obvious in arid zones, as in western Rajasthan, and in wide areas of the central part of the peninsula. In the North East corner the rainfall is higher, but it is not sufficient to promote HVY paddy without irrigation. As for irrigation, we have seen its limitations.

3 Then one must assess the soil. As seen in Mayurbhanj, one can curb the declining trend of soils, which were already poor in the past, but one cannot transform them into rich alluvial fields. And this is true everywhere in the world. The world champions in wheat produce 10 t/ha in the plains of La Beauce in France, where soils are exceptionally rich. Elsewhere, also in fertile soils applying the same techniques, West European farmers raise 5 to 7 t/ha. The data collected in Mayurbhanj – showing up to 1,000 kg/ha of millet and 2,000 kg/ha, or rarely 2,500 kg/ha, of paddy – are very near the upper limits, which can be reached by rainfed crops through bio agriculture on such soils. Besides, in many places, there is no double cropping in the dry season, except some low yield pulses.

4 At the all India level, much greater efforts are undoubtedly possible. One should promote more watershed projects, although they are complex and often costly. They may increase yields but in a limited manner. One big outlet, which should be stimulated more by state governments and extension services, focuses on orchards. We have seen their success and the high income they supply on poor barren soils, owing to simple but very carefully applied techniques. The same can be said of kitchen gardens dependent on wells.
Nature can also be generous, as observed in the alluvial plains, which allowed the first phase of progress with canal irrigation introduced by the British, followed by the Green Revolution. It, however, is up to men to make full use of these natural assets. As observed, this has not been the case so far in the eastern plains for many reasons: technical ones like rivers flowing below the surface of the fields in British days, preventing gravity canals, as in Punjab or coastal Andhra – an obstacle which now can be overcome by low-lift pumps on rivers banks. Then, after independence, there were shortcomings in irrigation policy, which will be referred to in the next chapter.

**Man-Made Successes and Weaknesses**

Before dealing with independent India, it may be appropriate to remember the success story of the Indus Basin under the British, based on certain key ingredients: a very favourable physical milieu; good soils with plenty of irrigation potential thanks to the rivers; and a fine peasantry in Punjab made up of agricultural castes, including Sikh, Hindu and Muslim Jats, and Arains (Muslims). Then there has been a high density of remarkable senior officers: pioneers like the Lawrence brothers, John Nicholson, R. Montgomery, and Alfred Lyall. Later on, in the twentieth century, there were Sir Malcolm Darling and Sir Penderel Moon. Before the Second World War, some, later eminent, Indian ICS officers begin to be noticed: B. K. Nehru, starting his career on a camel in Punjab, and Agha Abdul Hamid, a Muslim Punjabi, later on a Pakistani. The latter was the head of Lyallpur district in 1947, which was one of the few districts spared from riots and killings thanks to Hamid’s courage and ability. In Sind, one could come across equally promising and bright Indian ICS officers like A. D. Gorwala and H. M. Patel. In addition, districts were relatively small (around 2,000 sq km), meaning that they were much better managed than the enormous districts of Bengal.

Undoubtedly, there were negative sides like the weight of landlords favoured by the British; social practices like small girls’ infanticide among Jats and Rajputs, because the cost of marriage is supported by the girl’s family (Darling 1947, 51), and hardships endured due to indebtedness and moneylenders.

As we have seen (Chapter 3), the Green Revolution fits well with the ingredients of success: thorough political commitment, efficient and dedicated ICS/IAS officers, favourable physical milieu, good agricultural castes, and robust foreign assistance. The Green Revolution improved living conditions for the rich and the poor, landowners as well as landless people. The following steps in development policies have been less straightforward, often lacking a sense of priorities, and have not paid enough attention to the rural world in terms of policy and public investments (see next chapter).

**Varying Farmers’ Behaviours**

Our friends in Khandoi were quite outspoken when saying, “Purbi log dhile hain” (The Easterners are lazy and easy going). Although such judgment may be too blunt, we have seen the gaps between traditional agricultural castes and others observing the taboo on ploughing and manual work. Such differences can be found since ancient times in many countries. They may last long, but they may also change. In India, even the best experts
could not have convinced Brahmins and Thakurs to hold the plough in the 1950s/60s, but the passing of time and "compulsion" as they say, led them to break the taboo.

Plenty of other differences are found in such a huge country. Why, for instance, during the Raj, were new industries concentrated among the tiny minority of Parsis, Gujarati trading castes, and Marwaris? Since several decades, a large number of other communities have become no less prominent in industry: Brahmins, Sikhs and Hindu Punjabis, a number of Rajputs, several merchant castes, and even OBCs.

Connected to the behaviour of caste is the historical background. This became very clear as the Green Revolution followed the steps of the British in irrigated areas. One of the more striking cases is that of Gujarat, which has been open to the outside world, foreign trade, and traditional industries for thousands of years. This early start has had some impact on its fast expansion in agriculture, industry and foreign trade in the present. It is equally significant to note that one half of the motels in the USA are run by Gujaratis (Dhingra 2012). It is even more striking to see that Gujarati merchants have broken the monopoly of Jews on diamond trade in Antwerp, where one can also see a Jain and a Hindu temple now.

In brief, one comes across all kinds of behaviours. There are communities that are more inclined to change than others, while the changes themselves can either be slow or more rapid. In addition to caste, classes also enter the picture. We have seen how Kurmis and Yadavs are asserting themselves vis-à-vis the twice-borns, both in economic and political terms. One could say the same about the Kallars. In terms of changing rural power, it is also remarkable to see Brahmins leaving villages after selling their land in order to settle in cities, as observed in Andhra Pradesh, Tamil Nadu and Maharashtra.

The Advent of the Society of Consumption

The establishment of the society of consumption is not confined to cities and is appearing in advanced villages as well: cars and motorcycles, better housing, better dress, more varied food, alcohol and soft drinks. Mechanisation of agricultural work, rice and flour mills and gas cylinders for cooking make the lives of men and women less difficult than they had been fifty years ago. The elder peasants grumble that their sons wearing jeans, t-shirts and canvass shoes have become "soft". Many among the younger generation wish to leave their villages to get jobs in town.

These changes remind us of Western societies after the Second World War. In Western Europe, as elsewhere, life was hard in the nineteenth century and during the first part of the following century. Working hours came down to 10 hours per day only around 1900. At that time very few girls were found in universities. Only a thin layer of the upper classes enjoyed comfortable houses or apartments with bathrooms, refrigerators, a car, and regular holidays in the mountains or on the sea shore.

This picture changed drastically in the three decades following 1945 and the end of the war, something the French economist Jean Fourastié (1979) called Les Trente Glorieuses (The Thirty Glorious Years, title of his book). There was considerable economic and social progress during this time: a clear reduction in income disparities, establishment of social insurances, better housing, food and dress. Bathrooms and refrigerators became common, like telephones and washing machines. Entertainment, going to restaurants,
cars for nearly every couple, and large numbers of people travelling for summer and winter holidays, along with falling class differences, could all be noticed.

Many traditions, within the society, were visibly shaken: rising number of divorces (considered socially reprehensible until 1950), independence of working women, plenty of girl students, sexual freedom before marriage, recognition – though later – of homosexuals, and a reduction of religious beliefs and practices. One must add that, since the mid-1970s, economic and social progress has vacillated with renewed sharp inequalities and defective financial and economic policies which culminated in the dramatic crisis which has been affecting Western countries since 2008.

A number of features of the society of consumption begin to be noticed in India and in China. Divorces are appearing in cities of both countries. On campuses of universities, boy and girl friends have become common sights along with blue jeans and even mini skirts. Both countries have adopted the decriminalization of homosexuality, although the persons concerned may still hide their behaviours.

While there are similarities in the advent of the society of consumption between the West and emerging countries, differences remain. The starting point for the Chinese and Indian economies in the 1980s was much lower than the level of European economies in 1950 after the reconstruction following the war. Their population growth rates were much lower than the rates in Asia. On the other hand, the growth rate of the economy is much higher in China and even India than in Europe of the Trente Glorieuses: 6 to 9% in India, 8 to 10% in China versus 4% in Europe.

To compare the changes let us take Khandoi, a typical advanced village, and a village in France described by Jean Fourastié (1979).

### Table 3: Changes in Douelle (France) 1946–1975

<table>
<thead>
<tr>
<th>Douelle (Quercy)</th>
<th>1946</th>
<th>1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>534</td>
<td>670</td>
</tr>
<tr>
<td>Farmers and agricultural workers</td>
<td>208</td>
<td>53</td>
</tr>
<tr>
<td>Non agricultural workers</td>
<td>71</td>
<td>162</td>
</tr>
<tr>
<td>Life expectancy (years)</td>
<td>62</td>
<td>71</td>
</tr>
<tr>
<td>Use of chemical fertilizers</td>
<td>Very little</td>
<td>Widespread</td>
</tr>
<tr>
<td>Number of tractors</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Number of cars</td>
<td>5</td>
<td>280</td>
</tr>
<tr>
<td>Number of radio sets</td>
<td>50</td>
<td>250</td>
</tr>
<tr>
<td>TV sets</td>
<td>Nil</td>
<td>200</td>
</tr>
</tbody>
</table>

In 1946, practically nobody was undernourished but options for food were dull: bread, vegetable soup, pork from the farm, enough milk for children and home made cheese and
not much fruit. Dress was old fashioned but sufficient and women were aging rapidly. Only four households had running water until 1946 - which was when all houses were fitted with one tap through the public distribution system. In 1975, out of 243 households, more than 230 enjoyed modern comforts, proper bathrooms with W.C., cold and hot water, and 210 had refrigerators while 180 had washing machines. Most houses were new or rebuilt. On the road one could count ten cars per day in 1939 and 600 in 1950. In the seventies, a number of people had gone for holidays to Africa, Rome or USA (Fourastié 1979).

Table 4: Changes in Khandoi (India) 1963–2003

<table>
<thead>
<tr>
<th>Khandoi (Bulandshahr)</th>
<th>1963</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>1290</td>
<td>3000</td>
</tr>
<tr>
<td>Working population</td>
<td>Mostly in agriculture</td>
<td>Some reduction</td>
</tr>
<tr>
<td>Non-agricultural workers</td>
<td>45</td>
<td>300-400</td>
</tr>
<tr>
<td>Yields of wheat, kg/ha</td>
<td>1200</td>
<td>3500-4000</td>
</tr>
<tr>
<td>Number of tractors</td>
<td>1</td>
<td>All agricultural work done by tractor</td>
</tr>
<tr>
<td>Number of cars</td>
<td>Nil</td>
<td>12</td>
</tr>
<tr>
<td>Number of motorcycles</td>
<td>Nil</td>
<td>More than 100</td>
</tr>
<tr>
<td>Telephones</td>
<td>Nil</td>
<td>Plenty of cellular phones</td>
</tr>
<tr>
<td>TV sets</td>
<td>Nil</td>
<td>Widespread</td>
</tr>
<tr>
<td>Cooking with gas cylinder</td>
<td>Nil</td>
<td>40</td>
</tr>
<tr>
<td>Refrigerators</td>
<td>Nil</td>
<td>10% of households</td>
</tr>
<tr>
<td>Modern toilets</td>
<td>Nil</td>
<td>A few</td>
</tr>
</tbody>
</table>

As we have seen, all mud walls have been replaced by brick houses. All lanes are paved and there are a fair number of hand pumps now. Nutrition has improved. Animal husbandry has progressed considerably. The traditional dress of men is disappearing in favour of trousers and modern shirts. Women wear full colour saris, and use lipstick, powder and nail varnish.

The two villages have a number of similarities coupled with serious differences: the eradication of poverty was quasi complete in Douelle, unlike in Khandoi today, because the living conditions of the former at the start were higher and the population growth had been much slower.
Dalits and Other Castes

23 What has been observed in our villages fits well with the global picture of inter-caste relations all over India. There are improvements in relations between Dalits and other castes, as seen in Khandoi where, since several decades, Jativs are allowed to sit on the same cot next to Brahmins and Jats. In Kila Ulur and Manchala, Dalits and dominant castes have rather smooth relations. The socio-economic progress of Dalits is clearly connected with the overall progress in their area: “Now we live a civilized life,” a Paraiyar was already telling me back in 1978.

24 One must nevertheless add a non-economic dimension: the lowest castes within the Dalit hierarchy may draw fewer benefits from the overall growth of the area. Living conditions of the Bhangis in Khandoi have improved less than the Jativs’, and they still squat at the feet of Brahmins and Jats. The case of the Musahars is still worse. As seen in Nahiyana, unlike the Chamars, they have been practically left out of the process of growth. They are paid even less than others, a fact that is heard of in other places also. In the village of Raipara (UP), Musahar children do not go to school. They work in brick factories and their parents cannot get jobs under the Employment Guarantee Scheme, MGNREGA (The Economist, 8-9-2012).

25 The rank of the Dalit castes in the past may also influence their present conditions of living. The Mahars, a superior Dalit caste since a long time, are a typical example. They were already rising in Eksal before the opening up and progress of the economy. One must consider the impact of the dominant castes versus others. The dabao (pressure, abuse) exerted by the twice-borns upon the Dalits could be perceived in Bihar and parts of UP, and probably elsewhere. In slow moving areas, the Dalits cannot help being poorer than the higher castes, as observed in Jharkhand and Orissa.

26 Economic progress does not always curb abuses and violent clashes. In 2002, five Dalits were killed in the rich state of Haryana, following incidents related to the slaughter and killing of a cow (Frontline, 22-11-2002). Another clash also happened in Haryana between Jats who were unhappy to see rising Balmikis, a Dalit caste. On the pretext that a Balmiki dog was barking, they attacked the hamlet of the Balkmikis, looted it, set fire to twelve houses, and two people had been burnt alive (Economic and Political Weekly, 30-7-2011). In 2002, Dalits were prevented from breaking temple taboo at Chakwara village, 70 km of Jaipur (Indian Express, 21-9-2002). We have seen that the Kallars near Madurai were much less open to the Paraiyars than the Kallars of Kila Ulur. In the district of Ramanathapuram, Tamil Nadu, 6 Dalits were killed in a clash with the dominant caste (Economic & Political Weekly, 5-11-2011). The latest report on The State of Implementation of SCs and STs reveals that the cases of violence against SC/STs are increasing. UP accounted for 19.2% of total crimes: 6,242 out of 32,712 (The Hindu, 19-5-2012).

27 On the other hand, education of Dalits has clearly improved over the years, partly because of the reservations policy for education and government employment. Politically, the weight of Dalits is increasing thanks to their sheer numbers as voters. Several of them become influential politicians. UP for instance, has recently been ruled by a lady, Mayawati who is a Chamar. One must, however, add that differences in status and rivalries between Dalit castes weaken their ability to increase their weight in politics and in the economy.
It is not easy to draw a definite balance sheet between positive and negative factors concerning the Dalits, but one thing is clear: after nearly one century of efforts, which started with Mahatma Gandhi, caste distinctions, though diminishing, are still alive. Why is it so? A full-fledged answer is beyond the ability of this writer and the scope of this book. One can mention the weight of deeply rooted traditions and the vested interests of certain upper castes refusing to make room for rising Dalits. One must also admit that social changes in Hindu society as a whole are made more complex than in other civilisations, because of the combination of caste and class. The hierarchy and differences within castes belonging to the four varnas, or to the Dalits, prevent or hinder large-scale movements for change as in usual class struggles.

As an instance, let us take the case of marriage, which is an important factor of social change where rules remain strict, especially in villages. All over the world, rules concerning marriages can be quite conservative. In the West, it is only after the Second World War that interclasses love marriages became widespread, appearing alongside the society of consumption and rising middle classes. Now, in plenty of marriages either the groom or the bride belongs to the ancient upper bourgeoisie and the other belongs to the new post-1945 rising middle classes. Nevertheless one may add that even today in France, in some restricted high-class circles including aristocrats, parents organise so-called rallies – parties where their children in their twenties meet one another, in the, often fulfilled, hope that such meetings will lead to marriage. Oddly enough, the Maheshwaris (a merchant caste from Rajasthan) have adopted a rather similar practice through parichai sammelan. It is a kind of fair where only potential couples of their caste can meet. If the boy and the girl are keen to marry, both parents step in to conclude the marriage (Véronique Pache Huber 2002, 287)

The Adivasis

As we have seen, the Adivasis (about 8% of the population) constitute a very heterogeneous group of tribes. The Santals, the Gonds and others are rather integrated within Indian society: exchanges of goods with Hindus, use of their agricultural techniques, occasionally worshipping the same gods, and through the progress of education. The tribes isolated in hilly jungles follow a different pattern of life, largely dependent on the forest, and practice jhum, i.e. burning and shifting cultivation, and worshipping the forces of nature (animists).

Both types of tribes do not show gender inequalities typical in Hindu traditions. Young people have intimate sexual relations before marriage, which is decided by the future couple. Divorce is free. All people enjoy alcohol, which is a part of their festivals. Sex and drinks were looked down upon by the British influenced by Victorian Puritanism. Later these views were adopted by Indians who followed Mahatma Gandhi (See Guha 1999) and we have come across such prevailing prejudices in some of our villages.

Adivasis in isolated areas have occasionally been victims of abuses from Hindus. The Raj affected several areas. The Forest Department had frequent clashes with the tribes in order to prevent them from using forest resources. Then, at the end of the nineteenth century came mines of coal, iron ore, bauxite and manganese, with most of them being concentrated in tribal areas. People were deprived of their land or poorly compensated.
Hindu moneylenders appeared and exploited some people. Not much was done after independence to uplift such tribes, in terms of development.

33 The first violent incidents executed by communist militants in 1967 in Naxalbari district, West Bengal, were suppressed, but other disturbances appeared. In 1984, I was prevented from visiting villages in Gadshiroli district, Maharashtra, for “security” reasons. Gradually, Maoist militants started operating mostly, though not exclusively, in isolated tribal belts from West Bengal to Telangana in Andhra Pradesh, even including pockets further south. Since around 2000, the Maoists exploit the fears of the Adivasis concerning big mining projects, as well as steel and aluminium plants running into billions of dollars, proposed by POSCO, a South Korean steel company, Arcelor Mittal and Tata. Until now, the governments of Chhattisgarh, Jharkhand and Orissa and the companies involved have been unable to reach agreements acceptable to all the parties including the local tribes. In 2010, Manmohan Singh, the PM, declared that it was “the biggest internal security threat”. Since then, police forces have met with some success, but several areas remain under the control of the Maoists where a rather large part of the population seems to favour them and their assistance (Times of India, 28-9-2011).

34 Jairam Ramesh, Cabinet minister for rural development, summarized the issues as follows: “There is no dignity for tribals... following decades of neglect... We have produced a situation where the Maoists fill the vacuum” (The Economist, 3-12-2011).

35 The solution of these conflicts through development programmes is not easy. First, it is necessary to train some officers who would be in charge of isolated tribes - men of high calibre, unlike the small officials whom we met. In addition to mental qualifications that avoid prejudices on “Savages, womanizing and drinking,” they will need good legs for walking 10 to 20 km until roads are built in the interior.

36 The jhum system is not primitive in a derogatory sense, but beyond certain densities of population it leads to soils exhaustion because of the reduced time afforded to fallow. When necessary, the introduction of the plough and terraced fields cannot be avoided in order to promote agriculture and then come horticulture and vegetables. Relations between the tribals and the Forest Department need adjustments. Health and education have, of course to follow.

The Size of India

37 Countries like India or China are not simply bigger than France or Thailand; they belong to a particular category of countries. How is one to rule and control such huge territories that are so heavily populated? Even with decentralisation, thanks to states, India’s development remains complex. In the 1960s, the alert minister of agriculture in Malaysia (at that time peninsular only) could visit each district every year, something impossible in India with its 466 districts. How could one adequately cover 638,000 villages through extension services? Laws and regulations decided in Delhi – and it is the same in China – are not easily implemented or respected away from the capital. In both countries for instance, rules about environment are often overlooked in villages and even cities. The peasants of China had an old saying, also valid in the case of India, “The sky is high and the emperor far away.”
Corruption

In 1963, while walking around Khandoi, from time-to-time an old peasant who took me for an English man, told me: “Tumhara raj bara achcha tha” (Your rule was very good) referring to corruption under the current administration. This statement was unfair because small corruption did exist under the British: the *bakshish* to the patwari (village accountant), to the policeman, and to some small district officials (Wiser 1963). The institutions created or expanded after independence to promote agriculture, irrigation, electricity, cooperative credit, health and education opened new channels for corruption.

At the national level, big cases of abuses and corruption appeared during the Second World War as a consequence of rationing of essential commodities, occasionally on short supply, and of large orders of industrial goods for the army. In 1947, Dr Radhakrishnan, the future President of the Republic, declared: “Unless we destroy corruption in high places, root out every trace of nepotism, we will not be able to raise the standard of efficiency in administration and production”. In 1964, the Santhaman Committee Report condemning “the failure of integrity” was issued (for these two quotations, see S.S. Gill 1998, 46.) In his book published in 1981, B. K. Nehru, an outstanding former ICS officer, referred to “the cancer of corruption” (63). In 2001, Prime Minister Vajpayee also mentions “the propagation of a real cancer”. Prime Minister Manmohan Singh often condemned corruption since he came to power in 2004. Enquiry commissions and legal measures have not had much impact so far, something compounded by the very slow pace of the judiciary. However, new laws are being introduced in 2012, following large-scale public complaints and demonstrations in several cities.

At the district and the state levels, beyond petty corruption, leakage and big corruption have been growing, concerning electricity, public irrigation, and contracts under the Public Food Distribution System (see next chapter). Then there have been the big “affairs” at the national level, running into the equivalent of millions if not billions of dollars. In addition to politicians and businessmen, these may involve, in the states and at the centre, senior IAS officers – something unheard of in the 1960s.

Since the end of 2010, following the accumulation of big scandals, public opinion, especially in the cities, has become very vocal. Even some “holy” men are getting involved and asking for tough sanctions. This led to some arrests and some new legislation, but one cannot be certain that corruption and leakage are really declining. New cases appeared once again in 2012.

As in China, considerable leakage and corruption have not prevented economic development and social progress, but the billions of dollars, which vanish every year, if properly used, could accelerate poverty alleviation, provide better education and health, and help improve infrastructure. In his speech on Independence Day, August 15, 2012, The Prime Minister, Manmohan Singh, repeated his plea “to reduce corruption” and referred to the new anti-corruption bills already passed by the Lok Sabha.
While reviewing these negative aspects of development in developing countries, we must remember our own past. Plenty of corruption and other abuses of power accompanied the Industrial Revolution in Europe and America until the beginning of the twentieth century. Even today so-called “affairs” are not so rare in the West.

In Western Europe, the Industrial Revolution first occurred by the end of the 18th century and in the nineteenth century and involved deep shadows, corruption, leakage, counterfeit goods, poor working conditions, and slums. Then there was a gap until the post World War II-era when Western Europe entered the society of consumption as referred to above. Now in emerging countries like China and India both currents occur at the same time, which makes basic socio-economic issues more complex.
Chapter 10 – Maya, Ignorance and Prejudices

1 The shortcomings of the present agricultural policy observed in the field will be tackled at the all India level in the next chapter. Before that we must try to understand why, following the early success of the Green Revolution that was boosted by people having a fine grasp of the main issues, villagers have been neglected since the 1980s; although, in recent years, there have been some improvements. Also, why is there a growing emphasis on poverty alleviation through special schemes in favour of the poor, instead of emphasizing the indirect approach involving more productive investments and faster growth benefitting the poor, as seen in the field?

2 There is an odd combination of Maya, the word for “illusion” used by Hindus, with ignorance and prejudices. One must also recognize that many of the wrong assessments are not confined to India. One finds them in other developing countries and in North-South cooperation.

The Gap Between Urban Elites and Villagers

3 The gap between the urban elites and the villagers is not new since it can be found in many past as well as present civilisations. However, in India and other developing countries, it has increased substantially in the past 50 years, and the advent of the society of consumption in cities is making the gap still wider.

4 Already in 1975, the great anthropologist M. N. Srinivas wrote about “the dual cultures... The country’s officials and other professionals are largely recruited from the urban middle class... including high and middle castes... The ignorance of the urban middle class about rural life and agriculture would not have mattered much but for the fact that officials, and a variety of specialists, largely hail from it and have an important say in decisions which affect villages” (Srinivas 1992, 79-80).

5 One comes across many instances of such ignorance. Important political leaders and official reports refer to the need for a “second Green Revolution”. Nirupalam Bajpai and the well-known economist Jeffrey Sachs propose a similar “Second Green Revolution” in (India Today, 3-7-2006). Such statements grossly overlook the fact that the next steps in
agriculture should be quite different from the Green Revolution in the years 1965-1975. As we have seen, it was a relatively easy performance, whereas the tasks lying ahead in villages are much more complex, costly and time consuming, as will be seen in the next chapter. Even worse are the frequent suggestions of introducing the Green Revolution in rainfed areas, which shows a deep ignorance of geography. The President of India, Pratibha Patel, told business people to go and make investments in rainfed areas “in order to introduce a Green Revolution” (Business India, 4-9-2011). The lady is not supposed to be an expert on agriculture but what about the competences of her entourage? In the Approach Paper for the eleventh Plan, one reads that “a second Green Revolution should focus more on dry land areas” (Mahendra Dev 2008, 429). What makes things worse is that most media have no agronomists in their staff and consequently publish such statements without any critical comment.

6 Another negative factor concerns development institutes in India and elsewhere, including Western countries. Village studies, since at least a few decades ago, are no longer fashionable. The classical approach, as illustrated by M. N. Srinivas, André Béteille, the well-known French anthropologist Louis Dumont, my dear friend Jean-Luc Chambard and others, involved a stay of 12 to 18 months in one or a few villages, observing farmers rich and poor, understanding how they feel about their problems and recording their reactions towards government policies and local administration. In other words, it was necessary to tackle technical and economic issues, behaviours, and socio-political factors. For foreigners, learning the local language was equally essential. This way of approaching the rural world is extremely enriching for the researcher. Eloquent or sophisticated theories stand or collapse in the paddy field, in front of a TW lacking power, when facing bad roads, or observing the load of the bullock cart. You learn to become practical. It is also very enriching to observe a society which one is not familiar with, and to observe the ability of the farmers to find solutions to various difficulties. Again, to quote M. N. Srinivas (1992, 82), “I found everyone in the village had something to teach me, including illiterate boys.”

7 Some important experts and scholars started their careers in a village. Professor Schultz in his Transforming Traditional Agriculture relied heavily on the thesis of one of his students, David Hopper, who spent 18 months in a village of Benares district. Later on, he worked for the Rockefeller Foundation in India before holding an important position at the World Bank. Nicholas Stern, former vice-president of the World Bank and author of a well-known report on the environment, also started his career in a village of Moradabad district, Western UP (Bliss and Stern 1982)

8 Unfortunately, similar examples are becoming rare. The trend is to rely on statistics and surveys about food, poverty, and development as a whole. There is reluctance towards engaging in fieldwork, and going and seeing things with one’s own eyes. One prefers to speak about the poor instead of with the poor, even if the surveys are not too reliable. This is particularly obvious in international North-South conferences on poverty eradication. Let us also consider young and smart holders of MBAs coming out of the best Indian business schools. They belong to a city high class/high caste. If visiting a village, they are nearly like foreigners.

9 There are, nevertheless, more positive attitudes to be found. Some companies like Hindustan Lever are particularly interested in rural markets. When they recruit new young cadres, they first send them to a village for six weeks in order to meet and study people and make a report. They begin frightened and mostly return happy to have
learned about farmers and their lives. Lakmé, a cosmetic firm, focuses on small rural towns where new cadres are first sent.

During their two years probation period, following successful recruitment examinations, young IAS officers spend one full year in a district getting trained in the main tasks, from administration to development of various types. This has, of course, a deep impact on their activities when they take direct responsibilities.

Though welcome, such currents should greatly expand when remembering that rural people account for 68% of the total population. On the occasion of the budget 2009/2010, three prominent magazines, *Frontline*, *India Today* and *Outlook* altogether devoted 44 pages to the comments of dozens of important personalities. Only one of them, Ashok Gulati, then director of the International Food Policy Research Institute in New Delhi, raised questions about agriculture and irrigation.

The gap also concerns the politicians and the farmers. We have seen in our field studies a number of district magistrates touring villages without any retinue, sitting with farmers, recording their grievances or suggestions, and controlling district operations on the spot. When he was secretary of the Planning Commission, my friend Ashok Mitra, a fine ICS officer, used to visit a village several times a year; he remained faithful to his old habits when, as a young officer on his bicycle, he was fighting the Bengal famine in 1943.

The late Prime Minister, Lal Bahadur Shastri, was well aware of this lack of contact. "We have waited for long. It is time we go to villages ourselves... I propose to go without pump to a village and stay there for three or four days and getting a real touch with the people. Once in a year or twice it should not be difficult for us." (*Indian Express*, 2-6-1964). Notwithstanding Shastri’s own success as he died in January 1966, it does not seem that any of his successors, or other important leaders, have followed his idea. While speaking with one of them in 2005, he stated: “You cannot do this for security reasons.” He no doubt had a point, but an unannounced visit to a village, if possible incognito, with one personal aide and one bodyguard to protect him against a possible lunatic would not be so risky. A discreet TV operator could make such a visit known. Instead, you often see pictures of a dignitary, Indian or foreign, surrounded by all kinds of local *neta* (leaders/politicians), bodyguards and officials. In 2008, in a village of Orissa, I saw one of these typical scenes, a state minister addressing farmers from a distant platform separated from the crowd by a barrier and then leaving immediately after delivering his speech. Should we remember Harun al-Rashid going incognito in the bazaar of Baghdad to know what the people thought of his rule?

**The Great Fallacy**

My field studies amply demonstrate that the Green Revolution did also benefit the poor: the marginal landowners having below 1 ha, and the landless labourers in terms of income and jobs. A number of Indian scholars reached similar conclusions, like B. Sen (1974), and C.R. Hanumantha Rao (1975). However, our views have been quickly overshadowed by a man of genius (I could not trace him) who coined the mantra: “in the Green Revolution, the rich get richer and the poor get poorer”, thus leading to social tensions and increased poverty. It spread all over India as well as in other Asian countries and in the West.
The mantra was particularly welcome by Marxists and other leftists in India and in other countries. At a time (1965-1970) when the US was particularly unpopular because of the Vietnam War and the activities of their multinational corporations, how could something good come from the Americans? Now even the cleverest propaganda has been unable to deny the sharp increases in yields brought by the HYVs, hence the mantra. It spread so far that it was increasingly accepted by Indians and others, including Western scholars who had no connections with leftist ideologies.

When I published, in 1982, my first book referring to the Green Revolution and its socio-economic impact, T. N. Ninan, a very alert journalist, wrote in his review: “This is an eye opener of a book that will not make the experts happy. The author challenges every bit of accepted wisdom on the Green Revolution.” (India Today, 30-11-1982). In other words, nearly twenty years after the advent of the new seeds, the abovementioned mantra was still accepted by many Indians, often carrying big responsibilities in development, even without any ideological bias. As for André Béteille, a leading Indian anthropologist, he concluded upon my book: “It is unlikely that the author will convert the prophets of doom to his point of view on the impact of the Green Revolution.” (Indian Foreign Review, 1-12-1982)

These wrong appraisals illustrate, once again, the gap between urban elites and villagers, but these also have important consequences on the development policy. “There was a rethinking on the needs for a direct attack on poverty.” (S. Mahendra Dev 2008, 345) through special programmes for the poor which kept on increasing in the late 1970s and after. Various means were used: subsidies for buying cows, or for getting a new house; food subsidies; and, in particular, employment projects. As a result, public investments and recurrent expenditures in agriculture were reduced in favour of growing expenditures on such schemes.

Although the social benefits of the Green Revolution have now been accepted by a growing number of persons including Indian Marxist economists, one still comes across followers of the mantra as late as 2011. “The gains (of the GR) have not reached the majority of small and marginal farmers” or “Small and marginal farmers have not been able to get benefitted as expected through the GR” (For both quotations see M. Kalyanasundaram and K. Kumaraswamy in The Hindu, Survey of Indian Agriculture, 2011).

As for the direct attack on poverty, it has hardly been corrected, as seen with MGNREGA being introduced in 2005, following the victory of the Congress Party at the elections of 2004 (see next chapter).

Various Controversies

A whole set of controversies has been growing since 1970-1980 and have exerted a negative impact on development.

The famous TVA (Tennessee Valley Authority) with its public infrastructure has been important in the New Deal of President Roosevelt. In the 1950s, it became a model for Afghanistan, Pakistan, India and elsewhere, leading to major works: dams producing electricity and feeding wide networks of irrigation canals. A number of major projects were created in Asia, including India. In the 1990s, the wind changed: NGOs from the
North and the South, and individual militants started condemning big dams which were
giving low results, displacing populations, and making people poorer.

On one point, militants were and remain 100% correct; this is their condemnation of the
R&R (resettlement and rehabilitation) of persons displaced by such works. It is shocking
to come across, from Latin America to Africa and Asia, the same criticism of poor R&R.
For instance, villagers displaced by the huge Tarbela dam in Pakistan, completed in 1974,
were still waiting for compensation in 2002. (*The News*, 15-11-2002, Pakistan). In India,
21.3 millions people have been displaced by hydroelectric works, roads and mines
between 1951 and 1991. 40.5% of the displaced, i.e. 8.5 million, were Adivasis. According
to the Planning Commission only one-third of the displaced persons had been
rehabilitated by 2008 (World Bank 2011, 251).

Wherever plenty of groundwater is easily available through TWs for irrigation, it is
cheaper and simpler to follow that option instead of major works. However, there are
cases where big reservoirs and canals are the only solution. In deserts and semi-desert
conditions, as in the area of Kandahar in Afghanistan, reservoirs and canals were the only
solution. In peninsular India, one often comes across similar conclusions about old
projects (Tunghabadra dam in Karnataka, Nagarjunasagar in Andhra), or more recently
with the Sardar Sarovar dam in the Narmada project. One must, however, device means
to reduce silting of dams, which reduces their capacity in the long run.

Small reservoirs are empty or half empty in drought years, whereas a big reservoir holds
enough water to withstand one bad monsoon. In this context comes the future of tanks
which were important in the past, especially in South India. Their performance has gone
down since independence.

Another type of controversy concerns growing criticism of the Green Revolution,
chemical fertilizers and pesticides. It is quite common to see NGOs from India or other
developing countries joining hands with and being supported by equally militant Western
NGOs. Their basic argument is that bio agriculture can save the world: farmers using their
own seeds, relying heavily on farm manure, compost and other means, including
vermicompost. Such a strategy is legitimate wherever poor rains and limited irrigation
prevent, as we have seen, the use of HYVs, chemical fertilizers and pesticides. The anti-
Green Revolution activists are correct to criticise attempts to push HYVs and chemical
fertilizers in such terrains.

On the other hand, it does not make sense to advocate bio agriculture in irrigated areas
because crop yields will be quite limited and small farmers would be unable to grow
enough food grain. 0.5 hectares, well irrigated, double cropped with HYVs, using chemical
fertilizers and organic manure along with pesticides, can yield 2,000 kg of wheat and
1,700 kg of clean rice, hence a total of 3,700 kg of grain. When assuming a consumption of
200 kg per adult per year, the landowner enjoys a substantial surplus of grain for sale.
Under irrigation and bio agriculture, he will not grow much more than 600 to 700 kg of
wheat and 700 to 800 kg of clean rice.

As we have seen in the field, and I will refer to it in the next chapter, serious defects of
the Green Revolution need to be corrected with substantially more organic manure, and
nutrients combined with chemical fertilizers to prevent soil deterioration.

Since many people, particularly among the elites, are ignorant of agriculture, militant
lobbies enjoy a rather free hand allowing their dubious arguments to flourish without
much opposition. In 2010, Vandana Shiva, a prominent leader of the anti-Green
Revolution lobbies was declaring in Bhutan that: “The agricultural system is destroying the planet, destroying the farmers”. She convinced the Bhutanese government to become the first country in the world to have agriculture that is “100% organic” (Vandana Shiva’s speech on December 19, 2010 in Bhutan, in the presence of the approving Prime minister). She could, no doubt, be right when referring to rainfed crops, but Bhutan also enjoys irrigated lands and a rather fast growing population.

Finally, as seen earlier, in spite of its defects, the Green Revolution has saved Asia from the danger of famines for the first time in history. In most countries, a large number of small farmers with 1 ha or less did, in fact, improve their living conditions, as did landless labourers (Etienne 1985 and 2009, Maurer on Indonesia 1986).

Like Western Europe, India is a theatre of violent polemics on GM (Genetically Modified) crops. Sharp criticisms are levelled against Monsanto and Mahico Monsanto, the main suppliers of Bt cotton (a GM crop) in India. It spread since 2002 when the Genetics Engineering Approval Committee (GEAC), under the Union Ministry of Environment, gave its approval; in 2012 this variety covers most cotton fields. The major advantage of Bt cotton is that it reduces the need for pesticides. This is important in India where, before the introduction of the new seeds, one-half of the total consumption of pesticides in the country was devoted to cotton – spurious pesticides included (A. Narayamoorthy et al., Economic and Political Weekly, 30-6-2006).

Table 5: Cotton Cultivation in India from 2004-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>Area (million ha)</th>
<th>Output (million tons)</th>
<th>Yield (kg/ha, lint cotton)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/2005</td>
<td>8.8</td>
<td>16.4</td>
<td>307</td>
</tr>
<tr>
<td>2009/2010</td>
<td>10.1</td>
<td>24.0</td>
<td>403</td>
</tr>
<tr>
<td>2011/2012</td>
<td>12</td>
<td>36.1</td>
<td>512</td>
</tr>
</tbody>
</table>


A substantial part of the growth was achieved in Gujrat. From 29% of the total output of cotton, its share grew to 39% in 2007. Part of the progress was in Maharashtra, the second largest producer, but with very low average yield. In the past ten years no other crop has achieved such an increase. This, however, does not prevent the anti-GM crops militants from remaining very active. One of their major claims is that Bt cotton is massively responsible for farmers’ suicides in Vidarbha (East Maharashtra) and Telangana in Andhra Pradesh, as has been advertised by Vandana Shiva in her book Seeds of Suicide, 2000, a theme repeated by other Indian and foreign NGOs.

This thesis is highly questionable, because the wave of suicides in many parts of India is linked to various causes. In his book, Arvin Panagariya (2010) mentions many other factors: overspending, gambling, drinking, family problems, dowries, falling prices of agricultural products, excess borrowing for construction of houses, and failure when boring a TW in peninsular India. Suicides occur in both rich states like Punjab and Haryana, as well as in poor states like Orissa and Bihar, two states which grow little cotton. There is a link between suicides and drought prone areas where all crops suffer, as mentioned by A. Vaidyanathan (Economic and Political Weekly, 23-9-2006). R. J. Herring
and N. C. Rao show that the net return income can reach double that of traditional yields (Economic and Political Weekly, 5-5-2012). It is equally clear that: “Cotton fails when water is inadequate”. This happens in Maharashtra where only 3% of cotton is irrigated. The two authors also refer to new public sector Bt cotton as “not hybrid, but an open pollinated variety designed to facilitate seed saving for farmers.”

33 Bt cotton is not the only factor of growth: progress of irrigation in some areas, possibly good weather for rainfed fields and better practices enter the picture. There may be teething troubles: farmers not following recommended practices, spurious Bt seeds, or new pests. Yet, the basic advantage of Bt cotton is to reduce the use of pesticides. Until now, in most of Asia, cotton was absorbing the highest amount of them, often in excess of actual needs, and was possibly of poor quality.

34 For a lay man like me, it is difficult to pass a definite judgement on GM crops, a highly technical issue. Difficulties may be encountered, but one is inclined to share R. J. Herring and N. C. Rao’s views when they refer to “A clear refutation of the failure of Bt cotton narrative. Farmers’ adoption and diffusion ratify most convincingly the technology behind Bt cotton” and these are adopted by rich and poor farmers alike. One may add that China, the other largest producer of cotton in Asia, has also fully adopted Bt cotton.

35 To respond to criticisms (Marie Monique Robin 2008), at an international conference under the FAO in Rome in 2008, Monsanto declared that, by 2030, they intend to double the yields of corn, cotton, and soybeans which would curb poverty and malnutrition. Such a forecast seems at least questionable since, unlike the HYVs of the Green Revolution, genetically modified food crops have so far contributed to yield increases of only 10 to 15 %, their main advantage being a reduction in the use of pesticides. To respond to other criticisms, and legal cases against them, Monsanto intend to help poor farmers in Sub-Saharan Africa. To conclude, one can, no doubt, express criticism or reservations about Monsanto which has faced legal cases for dubious practices, but, when considering their success in India and China, one must recognize that it is not the arch-villain as often described by activists in India and elsewhere.

On the Poverty Line

36 There have been countless studies of poverty since the study by V. M. Dandekar and N. Rath (1973). They are no doubt useful to indicate broad trends of income and for assessing the level of poverty, but questions must be raised. Without giving up these types of surveys, like the NSS (National Sample Survey), one could also envisage a complementary approach for two reasons:

1. Present studies with their emphasis on the Poverty Line and the BPL estimates are not too reliable.
2. It could also be useful to conduct field studies through a selection of areas where poverty is clearly going down and others where poverty alleviation is slow or hardly apparent. This would help strengthening development policies on the basis of success stories.

37 In his study of a South Indian village, the French anthropologist Louis Dumont wrote: “It is difficult to give estimates on yearly consumption, especially among the poor, because their diet is irregular, they buy and live from hand to mouth” (Dumont 1957, 110). In my village surveys I came across similar difficulties. However, one can draw a line between
extreme misery and less acute poverty, which seem more difficult to measure. However, when I meet people (landless, often Dalits) who have no extra clothes except their shabby dress, or when I enter their huts where there is nothing except an earthen pot for water and some towels, not even a charpai, one does not need further enquiry and calculations about their BPL status.

When looking at diet and calories, there may be pitfalls. Dandekar’s study was severely criticized by P. G. K. Panikar for claiming that in Kerala, 90% of the people were BPL, while several sources of food, tapioca, fish and some other items had not be counted. M. N. Srinivas has been no less critical of other surveys neglecting various sources of diet, often not mentioned by the poor. As for P. V. Sukhatme, he raised a point, which seems forgotten nowadays. He stated that the average requirement of 2,450 calories per day for an adult are highly uncertain because the actual requirements of two persons of the same sex, weight, age and occupation, may vary by 300 calories above or below the average (Indian Journal of Agricultural Economy, 1977). Referring to large-scale surveys, M. N. Srinivas also expresses doubts over the qualifications of the surveyors who are not always fully committed to a job, which can be tedious. How far have these shortcomings been reduced since then?

A clear weakness of such studies is the amalgamation of average data getting hidden by large area-wise variations of income. For instance, district data may be accurate when the area is homogeneous in its rural economy, but not in a district which covers irrigated plains and rainfed plateau. Roadside villages are also usually better off than villages deeper in the interior. BPL data for very poor states like Bihar, Orissa and its neighbours may reflect, more or less, the actual situation, but the same cannot be said of other states where the overall level of development may vary area wise, as can be seen even in a rich state like Punjab. That is why one could easily envisage collecting data based on relatively homogeneous areas: advanced, medium, and very slow moving.

NSS, the latest Human Development Report and other surveys give global data on Dalits, Adivasis and Muslims’ poverty or poverty alleviation. They overlook the differences within scheduled castes and within scheduled tribes mentioned in my surveys. Clearly, there are people whose living conditions have not improved in the past 30 years or so, while other poor people are less poor today.

A Complementary Approach

After more than sixty years of development, it is relatively easy to identify rural areas where poverty alleviation is clearly progressing and others where progress is slow or hardly noticeable. An evaluation of the same would require looking at:

1. Ann initial macro type of information that could involve measuring the total population of Green Revolution districts and/or Taluks and Tehsils. This would give us some broad information.
2. Surveying some Green Revolution areas.
3. A selection of poor, but potentially rich areas (the eastern plains).
4. Relatively isolated areas in peninsular India, facing severe agricultural constraints, such as hills and rainfed plateau in Orissa, Jharkhand, Chhattisgarh and parts of Madhya Pradesh.
5. Other peninsular areas also facing physical agricultural constraints but enjoying more jobs outlets, as in the cities of Maharashtra and parts of Gujrat.
6. Semi-desert areas in Rajasthan and parts of Gujrat.
7. Adivasi areas deep in the interior of the eastern side of the peninsula.
8. Rainfed areas in the interior of Andhra Pradesh and Tamil Nadu.

Instead of massive surveys one could rely on a limited number of studies conducted by researchers trained in village studies, spending at least a few weeks in one village or in a cluster of villages, after gathering basic data from the district head office. A very fine example of such studies is the book by the Rodgers et al. on Bihar.

In such studies it is not always easy to approach the poor, because, when you enter a village, you are taken care of by the local netas or upper-ranking farmers. Such gatherings are useful to get a broad picture of the village, but one has to move around, including making visits to the fields, stopping in Dalits’ and other poor quarters in order to question them without bigger/high-caste landowners attending such meetings.

Some Guidelines On What to Incorporate in Surveys

1. Average yields of the main crops now and thirty years ago, importance of animal husbandry and milk, of fruit, vegetables, and poultry.
2. Daily wages of agricultural workers (with or without food) in cash or kind, often for harvest. Wages twenty-thirty years ago in cash and kind.
3. The approximate number of non-agricultural workers out of the total; those working fully in the village or outside of it locally and commuting from and to their village; and workers working permanently in some city, with their families having stayed in the village.
4. The caste pattern and the local dominant caste.
5. Infrastructure, roads, and electricity.
6. Some appreciation of District & Block institutions, the role of the District Magistrate (directly recruited or promoted IAS), of the district agriculture, education and health officers, their respective operations, and the role of the panchayat.

One could partly readjust NSS techniques with an emphasis on homogeneous areas and add some more detailed but more limited studies, focussing on agricultural and non-agrarian activities, particularly among the poor.

The latest estimates on the poverty line released by the Planning Commission give the following data:

<table>
<thead>
<tr>
<th>Year</th>
<th>Source</th>
<th>Rural</th>
<th>Urban</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004/2005</td>
<td>Tendulkar report</td>
<td>42.2</td>
<td>25.7</td>
<td>37.2</td>
</tr>
<tr>
<td>2009/2010</td>
<td>Planning Commission</td>
<td>33.8</td>
<td>20.9</td>
<td>29.8</td>
</tr>
</tbody>
</table>

BPL estimate of daily consumption expenditure per head and per day: for urban people Rs 28.3 and for rural people Rs 22.4. (The Hindu 20-3-12)

These data have been strongly denied by the All India Democratic Women’s Association. They claim that poverty is much more widespread. The above data may be questionable,
but two things are clear: poverty has been declining in the recent past, but when adding other data to BPL percentage, namely health and nutrition, particularly of children, considerably greater efforts are needed, especially in rural areas.

**A Look Beyond India**

49 The neglect of agriculture, along with ignorance and prejudices are not confined to India. They are equally obvious in other Asian countries, in Africa, in North-South relations and in international assistance to developing countries. In spite of uncertainty on poverty data, it is admitted that, usually, acute poverty is less widespread in cities than in rural areas, meaning that agriculture and the rural economy should receive priority in debates and actions on development.

50 Around 2000, and in the following years, there have been several international conferences on poverty alleviation under the auspices of the World Bank, the IMF, the UNDP, and the FAO. Good government, education, health, the condition of women (the so-called gender issue) are prominent, while agriculture was hardly being mentioned as can be seen in the Millennium Development Goals of the United Nations, aiming at the reduction of poverty by half by 2015.

51 The total public aid to agriculture declined by nearly 50% between 1986 and 1996, with another fall of 30% between 1996 and 2002 in real terms (FAO Report 2002). There has been a fall in infrastructure as a percentage of total aid: from 6 to 4% for Africa, and 11 to 5% for Asia. In Cairo in 2002, the President of the Rockefeller Foundation spoke of “A Dramatic underinvestment in agricultural research” in agricultural institutes of developing countries and in international development agencies. According to John Mellor, one of the best American experts on development, the number of American agronomists in developing countries fell by 80% in the past twenty years. In 2002, during a conference at one of the best European business schools on the future of Asia, there was no session on agriculture. As already mentioned, village studies are on the decline in most Western development institutes.

52 Instances of ignorance are not lacking. The UN Economic Commission for Asia stated that India “needs another Green Revolution” (*Financial Times*, 2-5-2008). A number of people like Kofi Annan and the Bill Gates Foundation recommend a Green Revolution in Africa while Jeffrey Sachs, the maestro of the Millennium Development Goals, wrote about Sub-Saharan Africa that: “Yields could triple within the next few farming cycles” by using the Asian model (*Financial Times*, 14-9-2006). He apparently forgets or ignores that the factors behind the Green Revolution in Asia in 1965–1970 are either missing or scarcely operate today in Sub-Saharan Africa. Asian countries enjoyed 30–70% irrigated arable land in 1965 versus 4–5% currently available in Black Africa. The techniques applied in Asia were more productive, and already there were the foundations of electricity and roads. The extension services were more advanced. In other words, there are undoubtedly large possibilities of development in Africa but they will need much more time and investments than the Green Revolution in Asia. It is quite disquieting to see one of the best daily papers in the world publishing such articles without a word of criticism. In other newspapers, such poor judgments can be more common.

53 Changes of orientation began to appear in 2007. The World Bank, which, under the pressures of militant NGOs, had stopped financing big dams and had given more emphasis
to health and education, “rediscovered” infrastructure, major works, big dams, roads and agriculture (World Development Report 2007). Bilateral aid agencies are also returning to the peasants.

The State of Food Insecurity in the World (2012), released by the FAO, is even clearer. The number of undernourished people has fallen from 980 million in developing countries in 1990/1992 to 852 million in 2010/2012. However, in spite of progress, in South Asia there are still 304 million undernourished (327 million in 1992) versus 232 million for South East and Eastern Asia (395 million in 1992). In Sub-Saharan Africa the number has increased from 170 million to 234 million. The report emphasises the contribution of agriculture towards the reduction of poverty, hunger and malnutrition. “In Asia, during the Green Revolution, smallholder farmers adopted new technical innovations, increased productivity... The demand for labour in rural areas increased, generating jobs for the rural poor and increasing wages for unskilled workers.” This is a clear confirmation of what has been seen in our Indian Green Revolution villages. The report insists on the tasks ahead: “Better rural infrastructure such as roads, markets, storage facilities and communication services.” Progress of organized trade through contract farming is mentioned. Extension services and agricultural research are key factors of growth, involving both private and public sectors (30).

All these changes are most welcome, but, as an official of the World Bank was telling me recently, in aid agencies including the Bank, the lack of experts in agriculture may take time to be overcome, hence the need for special training programmes including village studies.

NOTES

7. Ibid.
Chapter 11 – Towards the Next Steps

India has reached a stage where a number of issues in agriculture and in the rural economy are – or should be – clear, while others remain hazier. How far should one either attack poverty in a direct way through special schemes targeted for the poor, or through an indirect attack implying more investments in the whole economy?

Some Basic Changes in the Rural World

Quantitative and qualitative changes are occurring in villages. While the total population has more than trebled between the census of 1951 and 2011, the output of food grains has been multiplied by more than five (for data see appendix). There has been considerable progress in cash crops, cotton, sugarcane, and oil seeds. Changes in the distribution of total value of agriculture are even more striking:

<table>
<thead>
<tr>
<th>Year</th>
<th>Livestock</th>
<th>Fruit and vegetables</th>
<th>Fish</th>
<th>Other crops</th>
</tr>
</thead>
<tbody>
<tr>
<td>1982/1983</td>
<td>20.3</td>
<td>14.1</td>
<td>2.7</td>
<td>62.8</td>
</tr>
<tr>
<td>2005/2006</td>
<td>26.1</td>
<td>16.0</td>
<td>4.6</td>
<td>53.3</td>
</tr>
</tbody>
</table>


It seems likely that the share of other crops (food grains, sugarcane, cotton, oil seeds) has been reduced further by 2012. We must bear in mind that livestock, fruit and vegetables give a much higher return than the main crops, which is why such trends are important, particularly with shrinking agricultural holdings, two-thirds of them now being below 1 ha (appendix). One must add that, in spite of substantial growth, the demand for vegetables and fruit remains higher than the supply, which has led to sharp increases in prices.

As we have seen, in advanced districts the share of non-agricultural jobs keeps on increasing with the beginning of the society of consumption. On the other hand, several
areas are still progressing much too slowly. There has been “a deceleration of agricultural growth” since the 1990s (Ahluwalia 2011). One observes that the massive increase in subsidies and anti-poverty projects (see below) have been accompanied by a fall in public investments devoted to agriculture and rural economy from the centre and the states. Such a trend contributes to the deceleration of agricultural growth (A. Babani in Business India, 8-7-2012). The share of agricultural investments as a percentage of the GDP has declined from 5% in 1980/1981 to 3.7% in 2006/2007 (11th Five Year Plan 2007-2012, vol. III, 8). There has been some improvement during the 11th Plan, when agricultural growth rose from 2% to 3.3% per year. However, this achievement remains below the Plan target of 4% per year.

The average growth rate hides differences between states: UP, Bihar, Karnataka, Tamil Nadu, Kerala, and Jharkhand are below 2%. Maharashtra is doing better with 4% and Madhya Pradesh with 6.5%. Gujarat is the supreme star with a GDP growth rate of 10.5% per year from 2002/2003 and 2009/2010 and an agricultural growth rate of 9.6 % thanks to the progress of irrigation, roads, electricity, Bt cotton, agricultural research and extension services. However, social achievements are not so spectacular vis-a-vis the Public Distribution System, water, sanitation, and health (The Hindu, 27-9-2012).

The Planning Commission emphasizes the need to reach 4% or more per year during the next Plan 2012/17. The preliminary report, An Approach to the 12th Plan (2011), makes a comprehensive survey of the tasks ahead, which I refer to below. The growing diversification of agriculture is clear: +2% per year for food grains and +5–6% for livestock, horticulture, dairy, and poultry. Such targets can be achieved but political will and a strict order of priorities will be the decisive factors.

The Direct Attack on Poverty

It is quite clear that the concern for poverty alleviation is a combination of genuine pro-poor attitudes and political goals. The trends initiated in the 1970s-80s in favour of special agencies, including the creation of more job opportunities, have culminated in the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) dated 2005. It began to be implemented in February 2006 and became a nation-wide measure in 2008. The basic idea is to guarantee a hundred days per year of unskilled manual work to people. Payments must be made on a weekly basis. The planning of works is decided in open assemblies of the village and ratified by the panchayat. The basic activities are water security, soil conservation, drought proofing and flood control, land productivity, and road works. Dalits and Adivasis are favoured by the programme. The Central Government bears 100% of the wage costs of manual labour and 75% of the material cost, which includes wages of skilled workers. Social audits should scrutinize all the work records.
Table 8: Total costs of MGNREGA 2006/2007 to 2011/2012

| Budget outlay | Rs. 172,500 crores | $38 billion |
| Expenditures  | Rs. 166,516 crores | $37 billion |
| Person days   | 1,280 crores       | 28% Dalits, 23% Adivasis |

**Source:** MGNREGA Sameeksha, Ministry of Rural Development 2012.

8 There are many articles on this enormous project – some of which are highly critical while others are more positive. The MGNREGA Sameeksha has been issued by Jairam Ramesh, Minister of Rural Development. This report mentions a number of positive results as well as weaknesses: low quality of certain works, corruption and leakage, delays in payments of wages, limited capacities of many panchayats to prepare sound projects, and substantial differences in implementation between the states.

9 We have seen positive results in some of our villages, such as in Mayurbhanj and Kila Ulur, while such projects have had limited success in Bihar. The big and embarrassing question concerns the huge amount of expenditure. Is it commensurate with the achievements? Would it not be preferable to invest more in tasks referred to below which have a lasting impact on the poor? For political reasons, the present Congress coalition government could not give up such a colossal project, but would it be possible to reduce it?

10 There are at least eight other central projects for rural areas which target employment, sanitation, and drinking water; seven projects are devoted to education and the mid day meals, covering 104 million children in primary schools, for which reports are on the whole positive (Ministry of Finance 2011, 312–320). In a number of villages, subsidized houses for the poor are successful in spite of baksheesh. One comes across small rents paid to old people.

11 One may wonder whether it would not be preferable to have fewer, but better coordinated, projects when taking into account projects that are dependent only on the states. Already in 1979, a senior IAS officer was telling me: “What we need are some simple ideas upon which to build rural development.”

12 In the end I would like to quote a comprehensive study by the International Labour Organization (ILO) covering many countries in Latin America, Africa and Asia, which shows the prime importance of widening job opportunities in the non-formal sector. “Developing countries have often attempted to reduce poverty by implementing special work programs or employment guarantee schemes. In principle, these programs can constitute investments for the non-formal segment. In practice, they often function as mechanisms for transferring payments for the poor. Such payments should complement and not substitute for investments in the non formal sector.” (Emphasis added, Ghose et al, 2008, 144–145).

13 In all of these debates one should listen more to the voices of the poor. We have seen in Mayurbhanj how the inhabitants of a village would have preferred to have low-lift pumps for irrigation instead of the employment scheme to pave their streets. In 1997, at a seminar about poverty alleviation at the Rajiv Gandhi Institute, Abid Hussain, former IAS
officer and ex-member of the Planning Commission, said: “We have had enough of all these anti-poverty schemes. What we need are electricity and roads”. The next day in Khandoi I met my old friend Dalchand, a Bhangi. I asked him what he thought of all these issues. He answered: “Arre Sahab, nam, nam hein, hamko bijli aur sarak chahiye.” (These are just words, what we need are electricity and roads). Apparently, Dalchand does not need electricity because he has neither a TW nor land and he does not need a road since he has nothing to transport. Nevertheless this small man has better understood the significance of such developments for the poor than so many advocates of direct anti-poverty projects.

As a final point, it is not certain that this approach will always bring so many political dividends in terms of votes. When talking to people who have benefitted from employment schemes, some of them give the impression that the bakshish paid overshadowed the advantages obtained.

Subsidies, part of them for the poor, have considerably increased in the past thirty years. The major ones, which are dependent on the centre amount to 2% of GDP, i.e. Rs 144,000 crores, or $ 28.6 billion. These are devoted to food, fertilizers and petroleum products. One should add that states’ subsidies involve “very large losses in the power sector due to under-pricing electricity to the farmers with free or very cheap power supply” (Ahluwalia 2011).

Subsidies are of three types: ones for fertilizers, constituting nearly 1/3rd of the total; cheap rate of electricity for farmers’ TWs, originally designed to boost production; and the setting cheap prices of petroleum for all consumers, with the third one having more social value. Food subsidies, which are supposed to help poor people, play a major role through the Public Distribution System. They involve considerable waste, leakage and corruption, along with transport losses in the case of food grains. According to the Planning Commission, 54% of the food grains under the Public Distribution System disappear before reaching the poor (The Hindu, 19-11-11; Economic and Political Weekly, 18-2-12). Another estimate mentions losses of $ 5.7 billion due to corruption (Business India, 5-2-12). There are complaints from a number of people who are unable to receive a ration card. The Food Corporation of India (FCI) has a coverage capacity of 30 million t, while the central pool had around 60 million t of wheat and rice in June 2012, collected through the Minimum Support Price (Ministry of Finance 2011, 197). 6 million tons of wheat lay under open skies due to lack of jute bags. Losses can reach 20% of the stocks (The Hindu, 22-6-12). The number of fake ration cards has been estimated at 500,000 in Maharashtra (Outlook, 12-4-10).

The National Food Security Bill envisages distribution of 35 kg of grain per household per month for the so-called general category of people. In addition, there is maternal and child support for the destitute. 90% of rural households and 5% of urban ones will be entitled to subsidized food.

With so many tubewells and pump sets, India’s agriculture consumes 20% of its electricity production, which includes a lot of waste, corruption and theft of current. Power is cheap or free but very often missing. Does it make sense to pay a small amount or nothing, but without receiving a desirable supply of electricity? The answer is further complicated by the states’ politics and vote catching as the State Electricity Boards supply the largest proportion of electricity.
When looking at all these anti-poverty projects and subsidies, one cannot escape a feeling of uneasiness. How is it possible that, in spite of all these costly schemes, India’s human development record remains low: infantile mortality is at 62% in rural areas and 41% in cities; 43% of children below 5 years of age are underweight; half of all adult women anaemic; and half of all adults underweight (World Bank 2011, 156–165, 176). The availability of large stocks of grain with, at the same time, a substantial number of people – irrespective of the figure – being undernourished is quite puzzling. The World Bank adds that India’s expenditures on programmes for the poor are higher than in most other developing countries. In Sub-Saharan Africa, which suffers from low development, only 16% of women and 30% of children are underweight.

To add to our embarrassment, according to Arvind Panagariya, professor of economics at Columbia University, all these data are very doubtful (Tehelka, 25-11-12). However, these have been reinforced recently by the 2012 Global Index. Through sound arguments, the author shows that most of these figures are highly exaggerated. It is also quite doubtful to claim that 240 million Indians are suffering from chronic hunger. I am inclined to believe Arvind Panagariya’s criticism in view of my reservations on the measurement of poverty (see previous chapter).

Undoubtedly, there has been social progress in the last three decades. The average life expectancy has increased from 62 years in the 2001 census to 70 in 2011. The literacy rate has grown from 64.8% in 2001 to 74.0% in 2011 (census). Poverty has decreased substantially in many villages. There is also progress in cities with rising middle classes.

To sum up, beyond these controversies on data, there is no doubt that a substantial amount of acute poverty remains in a country which has enjoyed considerable development over more than sixty years, with the involvement of elites of a high standard coming from all walks of life.

Towards the end of 2012, the government took a drastic turn with regard to subsidies. According to the change, all subsidies will be abolished and replaced by a cash allowance of Rs 40,000 per year ($730) granted to 720 million Indians, i.e. more than half of the country’s population. Such an allowance has been practiced successfully in Brazil. It should remove many opportunities for corruption and/or waste, but let us see how it will be implemented. The Delhi Government has decided, under The Food Security Scheme (allotted 150 crores in the Budget), to replace 400,000 ration cards granted to 400,000 families below the poverty line with Rs 660 per month cash allowance granted to 660,000 households’ bank accounts.

The Global Process of Rural Development

Let us summarize our field studies, which show the impact of growth, along with diversification of the local economy, on poverty.

Table 9: Daily agricultural wages for men (in kind or in current rupees)

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<tr>
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<tr>
<td>Khandoi</td>
<td>1 or 5–7 kg/grain at harvest</td>
<td>10–12, or 10 kg</td>
<td>60, or 10 kg</td>
</tr>
<tr>
<td>Village</td>
<td>Paddy Yield (kg)</td>
<td>Wages (Rs)</td>
<td></td>
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<td>------------</td>
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<tr>
<td>Nahiyan</td>
<td>1 or 2–3 kg/paddy</td>
<td>10 or 4–8 kg</td>
<td>50–60</td>
</tr>
<tr>
<td>Pilkhi</td>
<td>1–1.50 plus some rotis (1967)</td>
<td>5–6 or 3–6 kg paddy</td>
<td>30</td>
</tr>
<tr>
<td>Kila Ulur</td>
<td>1–2 or 4–8 kg/paddy</td>
<td>7–10 or 10 kg</td>
<td>50–70</td>
</tr>
<tr>
<td>Orissa, Puri</td>
<td>–</td>
<td>–</td>
<td>30–40</td>
</tr>
<tr>
<td>Korta</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Eksal</td>
<td>2</td>
<td>10–12</td>
<td>60</td>
</tr>
<tr>
<td>Keonjhar</td>
<td>–</td>
<td>8–10 or 4 kg paddy</td>
<td>20–30</td>
</tr>
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</table>

24 Some latest data for 2011/12 (wages/Rs): Rainfed areas of Mayurbhanj, Rs 60 to 70 (Rs 20 in 2002); villages in Madhubani district, Bihar, Rs 80; in Khandoi, Rs 150–160 and during harvest time 25 kg of grain per day.

25 The table is confirmed by the FAO Report quoted in the previous chapter. The breakthrough of the main crops has accompanied the diversification of agriculture and of the local economy along with an increase in non-agricultural jobs. Migrations to cities and/or other states act as another safety valve, particularly in Bihar. In Jodhpur, the severe constraint of the climate limiting agriculture is compensated, to a large extent, by small industries, trade, and handicrafts. In spite of serious weaknesses, progress of transport and power has been reported. On the other hand, poverty remains severe in slow moving regions, whether they are isolated or not.

26 A recent World Bank Report, Perspectives on Poverty in India (2011), made for the Government of India fully confirms our conclusions in terms of achievements and alarm bells: slowdown of agriculture, growth of non-farm jobs, which contribute towards 50% of rural household income in dynamic areas, displaying a clear acceleration since the 1990s, along with fast growth of industries and services. While these findings are encouraging, the authors of the report insist on the need for faster agricultural growth, in food grains as well as for other crops like oilseeds, vegetables, and fruit.

27 I have given clear evidence of substantial poverty alleviation in a number of villages, but what about income disparities? These have increased in the last decades and the Gini Coefficient for India had reached 36.8% in 2004/2005, versus China, which has the maximum in Asia with 46.9%. For Japan the coefficient is 21.9%, and for South Korea 31.6% (UNDP 2008). I am unable to assess income disparities in the villages surveyed because such a measurement is beyond the capacity of a sole researcher. This can only be done by a team. Moreover, I am inclined to think that, at this stage of development, the decisive aim is to reduce poverty.

28 The global process of rural development described in this book is by no means confined to India. I observed it in countries as different as China, Pakistan, Bangladesh, and, before it became engulfed in wars, Afghanistan (Etienne 1985 and 2010). Looking at this global process of rural development in different places evokes a feeling of déjà vu. This process of growth – agricultural diversification, technological innovations, industrial progress, increased trade, closer links between villages and cities owing to the expansion of roads and/or waterways – was very clear in Western Europe in the 12th and 13th centuries. It
was rather similar in China during the same time period (Elwin 1973). Similarly, it seems to have occurred in Bengal, particularly under the Mughals, as described by Bernier, the famous French traveller: “In Bengal, everything is in abundance.” (Bernier 1981, 325). The French historian, E. Leroy Ladurie, writes about Catalonia (Spain) in the eighteenth century: “An astute irrigation policy boosting crop yields, vineyards and orchards, fodder for the numerous cattle, iron ploughs replacing wooden ploughs, new industries... Everything moved together: standards of living, wages...” (Le Roy 1969). This description could also be applied to the Green Revolution areas, but with two differences. First, in the past, population growth hardly reached 1% per year unlike the situation today. Second, technological innovations have become much more advanced and far-reaching than the innovations in earlier centuries, such as improved ploughs or the replacement of the mot system by the Persian wheel.

**Warnings and Alarm Bells**

It is odd to see that whatever we are writing below on defects of agricultural policies has been raised, in the past twenty to thirty years, in countless official reports, in books of scholars, in the media, by Indians and by some foreigners. The Economic & Political Weekly is replete with such articles. C. H. Hanumanta Rao already issued warnings in his book dated 1975. B. D. Dhawan deplores the defects of canal irrigation in 1988. A number of other scholars like Y. K. Alagh, G. S. Bhalla, A. Gulati and Rakesh Sharma are no less critical of the falling investments and recurrent expenditures in agriculture. Similar complaints come from Research Institutes as I have recorded on several occasions. In 1989, the Planning Commission, under the auspices of Y. K. Alagh, issued a report on *Agro Climates Planning*. Complaints are issued repeatedly by the Ministry of Agriculture, such as the excellent report on *The Agricultural Policy*, in 2000. It refers to poor irrigation, lack of electricity for TWs, improper use of chemical fertilizers, the need for massive irrigation and drainage in the eastern plains (already recommended by S. R. Sen in his report to the Reserve Bank in 1984), emphasis on watershed development, and greater help to isolated Adivasis. In 2005, the World Bank had tread along similar lines in *India Re-Emerging: the Agricultural Sector*. Following the 2007/2008 budget, M. S. Swaminathan, Y. K. Alagh, and A. Gulati asked, once again, for additional efforts in agriculture and irrigation. P. Chidambaram, then Finance Minister, acknowledged the need for “greater attention to agriculture” (*Business India*, 25-3-2007).

Although there have been some increases in budget allocations and growth rate in recent years, these remain far below the requirements.

**Research and extension services**

At a time when agriculture is becoming more sophisticated and complex, research and extension services suffer from a shortage of funds and personnel. R&D (Research & Development) accounts for 0.33% of the agricultural product in India compared to 0.49 % in China and 2.4% in the West (S. Pal, *Economic and Political Weekly*, 26-6-2012). The shortfall of staff is estimated in 2001 at 1,960 technical and administrative people. Private research is gaining ground, but the public sector retains an important role to play, in particular for plants, which are not attracting the private sector. As for the extension
services “the system has more or less collapsed” wrote Montek Ahluwalia, Deputy Chairman of the Planning Commission (Economic and Political Weekly, 21-5-2012).

Deep improvements are needed in both fields for two reasons: a) to correct a number of damaging practices leading to a slowdown in agriculture and the wastage of inputs, as observed in our villages and b) to introduce new and better techniques and new varieties of crops.

The use of chemical fertilizers and pesticides requires considerable improvements. There is no correlation between the sharp rise in consumption from an average of 17 million t of nutrients per year from 2000/2001 to 2004/2005 to 27 million t for 2009/2010 and 2010/11 (for nutrients see appendix). 70% of the fertilizers are devoted to food grains. Data on pesticides are lacking but one suspects that there is the same discrepancy, like, for instance, excess use for cotton. Fertilizers’ use is biased in favour of nitrogen, leading to chemical imbalance with phosphate and potash, which in the long run damages the soils. Such a defect appeared with the Green Revolution but has not been corrected even after more than forty years. One may add that the picture is similar in most Asian countries, including China.

Then there is the issue of soil deterioration. There is a growing awareness among cultivators and agricultural officers of the effects of substantially increasing the use of organic fertilizers combined with chemical ones in irrigated areas. As for rainfed peninsular India, much more organic manure is needed to curb soil degradation. Greater and better supply of farm manure, compost, crop residues, and possibly vermicompost, are hindered by the poor traditions of Indian farmers in these matters, as seen in the villages. The Chinese, have been world champions of organic manure, farm manure, possibly silt from rivers and grass and including, since ages, the use of compost, a Chinese invention, and the use of the content of latrines attached to every farm house. Using these, the Chinese have been collecting 10 t/ha or more since ages. In Mao Zedong’s days, one could come across up to 50 t/ha. Farmers were devoting 1/3rd of their time to the collection, treatment and use of manure (Huaiyin Li 2009). In India, small landowners may not have enough farm manure because cow dung is used as fuel or because of the lack of cattle. Young farmers already desiring to leave agriculture may be reluctant to perform additional work in order to apply 10 t/ha or more of organic manure.

Micro-nutrients such as sulphur and zinc are needed in many areas which also require much more soil testing than is being done at present. The potential for organic manure is around 13 million t in terms of nutrients (9 million net). The actual use is considerably less, at around 1/3rd for crop residues and animal dung. By 2015, food grain consumption of 300 million t may require 35 million t of chemical fertilizers (for nutrients, see appendix) and 10 million t of organic manure. Last but not least, how far can one reduce fake fertilizers, pesticides and seeds?

Plenty of new tasks are growing for research and extension services: hybrid rice producing 8,000 kg/ha of paddy in stations; new paddy cultivation techniques, as practiced in Tamil Nadu; better drought resistance for coarse grains; improved varieties of pulses, oilseeds, vegetables, fruit; further progress in livestock and milk; and in techniques like zero tilling, i.e. sowing without previous ploughing.

Greater progress can be achieved, but one constraint, though possibly reducible, will remain: how to reach millions of farmers in 640,000 villages? Small projects of NGOs, as seen in Mayurbhanj, can provide the necessary human and material resources (a staff of...
62 persons, and $600,000 of expenditure per year for 20,500 people). But such a model cannot be replicated all over the country. The success of extension services in USA and Europe was much easier than in India because of the comparatively small number of farmers. Today, as an example, I know a former rural village in Switzerland, which, out of 5000 inhabitants, has only 6 agricultural households and 5 vineyards now. The agricultural services of the canton reach every cultivator for technical assistance against payment. They can even hold the accounts of the farmers.

**Water Management**

Water remains the key issue in agriculture, especially when bearing in mind that most rains occur during the monsoon between June-July and October, with 50% of the precipitation occurring within 15 days. Over 90% of rivers' flows last just four months. Northern India benefits from small winter rains but these are not always reliable. As we have seen, there are wide differences in rainfall and the lesser the rains in a particular region the more erratic they can be. About one-third of India can be exposed to drought and on the other hand, 40 million ha are flood prone.

Out of 140 ha that are cultivated, 63 to 65 million ha are irrigated in 2010. Both data refer to the net or topographic surface. Gross irrigation, i.e. including multi-cropping, amounts to 88–90 million ha out of a gross cropped area of 185–190 million ha. The data do not take into account the efficiency of irrigation referred to below. Good monsoons compensate for weak irrigation, while drought affects crops under defective irrigation. A major shift in irrigation occurred mostly after independence. Canal irrigation has been overtaken by about 26 to 30 million TWs, pumps on open wells, and, in some areas, low-lift pumps taking water from rivers. These cover 70% of the irrigated land. The complaints about the lack of electricity or its lack of reliability are universal in all sectors of the economy and among private people. Between 1992 and 2007, only half of the targets of additional power were reached. The original target of the 12th Five Year Plan (FYP 2007–2012) was reduced from 78,700 MW to 61,374 MW, and only 50,000 MW will be reached (Ministry of Finance 2011, 253). Agriculture is severely hit since it consumes 20% of total electricity.

Another worry concerns excess pumping in several states, particularly Punjab and Haryana which have the highest rate of irrigation by TWs. Many farmers have to deepen the boring of their TWs, which requires more powerful engines, and, hence additional expenditures. But even when doing so, the recharge of groundwater is not always assured. The falling groundwater level is also affecting parts of the peninsula. Since years there have been talks of passing a law to limit the number of wells, thus dealing with the ownership of the underground, which, so far belongs to the owner of the land.

While many parts of India are reaching the limits of their irrigation potential, the latter remains considerable in the eastern plains, which enjoy high rainfall, plenty of rivers and groundwater, which has not been tapped much so far. They could be irrigated from 80 up to nearly 100% like Punjab and Haryana, while the rate is around 30-50% or even much less in Assam (5%).

Canal irrigation is also far from satisfactory due to poor maintenance, due to which only $1/3^{rd}$ of the water entering the main canals reaches the plants, while the normal rate should be double. The price asked from farmers covers “only about 15% of the O&M
costs” (Ahluwalia 2011). To make things worse, a large amount of money is absorbed by the staff of the Irrigation Department (110,000 officials in UP). In Haryana, 83% of the funds allotted to canal maintenance are devoted to employees’ salaries (Briscoe & Malik 2006, 27). Another weakness concerns the trend of head-reach farmers taking too much water at the cost of tail-enders.

Conflicts between states over sharing water add to the difficulties, as seen in Thanjavur. The idea to integrate rivers basins has been under discussion for a long time, as for instance shifting of excess water from the Ganges and Brahmaputra to the South, but the costs appear too high and one could expect inter-states rivalries. When considering the limitations of groundwater, surface water remains essential and requires more major works, but delays, lack of money and neglect hinder progress.

Rajiv Gandhi had announced on October 29, 1989 a target of an additional 10 million ha within the next five years. Only 7 million were covered over time. An Accelerated Irrigation Benefit Program was started in 1996. In March 2011, out of 290 projects, only 139 were completed. The gap between the new irrigation potential created and the actual irrigation amounted to 7 million ha in 1984/1985 and to 14 million ha in 2008/2009, due to delays in completing the construction of canals and watercourses.

Larger amounts of funds should be devoted to operations and maintenance (O&M) of canals and for the acceleration of new investments. The overhauling of State Irrigation Departments is equally urgent when considering the loss of efficiency of these departments in many states. We have seen considerable delays in major irrigation projects in Mayurbhanj. A recent White Paper on Irrigation published by the Government of Maharashtra, points out considerable cost increases due to very long delays, corruption and other defects. One major work has been delayed by 28 years (The Hindu, 2-12-12).

In the past, collective tanks have been an important source of irrigation in South India and in some central parts. Most of them are now in a state of decay, with the smaller ones depending on the village panchayat, and the larger ones on the Public Works Department. Both kinds are poorly maintained and farmers tend to prefer to bore open wells with a pump set or TWs, meaning that a number of tanks are now defunct. Even if one could restore them, one must bear in mind that the tanks used to get “adequate water supply in three out of ten years” which also shows the limits of schemes for harvesting water (Polanisami in Prasad (ed.) 2003, 171).

Water saving techniques like drip system or sprinklers have been propagated for more than 20 years, but the pace of progress could be faster. In 2008, only 500,000 ha were covered. Farmers may benefit from a subsidised loan but the costs of equipment need to come down through improved technology. Drip systems can save 50% of the water, sprinklers around 15%, but during hot months the evaporation can be high. Drips are particularly welcome in horticulture, in sugarcane and cotton. Sprinklers, as in Europe, can irrigate cereals. A reorientation of crops could be promising: Punjab and Haryana reducing rice and wheat crops, which require too much water, in favour of fruit and vegetables requiring drip irrigation, while progress of irrigation in the eastern Plains would boost food grains output.

Rainfed areas cover 56% of the total cropped area. 84% of pulses, 73% of oilseeds and 45% of cereals are grown under such conditions. So far, watershed management has met “with limited success” (Planning Commission 2012, 73) although it has been encouraged for at least the past twenty years.
49 Such projects are needed in peninsular India. The idea is to fight soil erosion and prevent the run-off of water in order to enrich groundwater, which can support open wells-cum-pump sets. Such projects are complex and may be costly. They require a careful survey of the area. Then it is not always easy to reach an agreement with and ensure the participation of all the farmers involved. In many instances, the village panchayat does not possess the technical know-how to promote such projects, which give better results when supported by an NGO, as seen in Mayurbhanj. They are vulnerable to drought years, especially if they are consecutive.

50 There are controversies. In water scarce regions “run-off of water harvesting does not offer any potential for groundwater recharge or improving water supply at the basin scale” write M. Dinesh Kumar et al. in a very critical article in Economic and Political Weekly (Dinesh Kumar et al.). They also underscore that the run-off available from rainfall and groundwater recharge in such regions is low. It is accompanied by “the poor storage capacity of hard rock aquifers in most water scarce regions”. They correctly insist on more scientific research on a proper, balanced development of surface and groundwater. The Central Groundwater Board, dependent on the Ministry of water Resources, takes an opposite view in their recommendations in a report titled Water Harvesting Techniques to Augment Groundwater (undated, but rather recent).

51 From these conflicting views one thing becomes clear: greater efforts are needed in research and implementation of projects. NGOs cannot be everywhere, that is why extension services and the agricultural district administration must be much more active.

52 Lack of water can be a calamity, yet excess water is also damaging. Flood prone areas account for 40 million ha, about 25% of the cultivable land, mostly located in the eastern plains: 55% of the total area in Bihar, 37% in West Bengal, 32% in UP, 10% in Orissa, and 50% in Assam (Report of the National Commission on Flood 1980 and Census of India 2001). There are enormous needs for embankments and drainage canals, which are still not covered or are not adequately maintained.

53 As we have seen, there are, in addition, low lands, which even under a normal monsoon suffer from excess water, which either prevents any paddy cultivation or can tolerate a very low yield floating paddy. Drainage measures are, all too often, lacking.

54 Finally, more drainage is needed in canal-irrigated areas suffering from water logging and/or salinity.

Markets and Contract Farming

55 The marketing of agriculture has been criticized for many years for weak supply chains and too many intermediaries. Farmers often receive only 12-15% of the price at which horticulture products are sold in the bazaar. Recently, angry Punjabi farmers threw their bags of potatoes on the road. They hardly receive Re 1 per kg, while potatoes are sold at Rs 15 per kg in Delhi markets (The Hindu, 16-11-12). In addition, there are post harvest losses: about 30% of vegetables and fruit output and around 10% for cereals. Marketing suffers from numerous intermediaries, slow transport, poor packing, lack of cold storage, which is so often needed for fruit and vegetables, poor marketing places and cumbersome regulations such as the APMC Acts (Agricultural Produc e Marketing Committee) and other acts. For instance, today, apples coming from Himachal Pradesh to Bombay are more costly than apples imported from New Zealand.
Only around 5% to 7% of total retail trade is in the organized sector, much less than in countries like China or Brazil. "Food and grocery form 62% of the total retail pie and 10.5% of the organized retail pie" (Gulati 2007). Processing of fruit and vegetables is also very limited.

As we have seen, a major change has been occurring within the agricultural sector over the past thirty years. The share of the main crops is falling in favour of fruit, vegetables, poultry, fish, and milk. Since ages, all of these, except milk, have been marketed much more than food grains. Today, market channels, already inadequate in the past, cannot meet with the increasing supplies of such commodities. See the number of cold storage houses needed today compared to the needs for the same in the 1960's. Market rules also need changes. Contract farming has started to change the picture with a number of large Indian companies stepping in: Tata, Godrej, Reliance, Mahindra and others including foreign enterprises. Two types of operations are practiced: direct purchase and sale of agricultural commodities or companies purchase and process such commodities. Nestlé, for instance, opened a powder milk factory in Moga (Punjab) in 1961. The milk is collected and processed. In the 1990s, Pepsi Co followed the path: supporting farmers for their growth and processing the supply of tomatoes into tomato juice. In a number of cases, the companies may supply new techniques, seeds and fertilizers, along with easier bank loans. Between 2001 and 2009, potato yields under such contracts have tripled from 16 t/ha to 54 t/ha, the equivalent of Europeans yields. A. Gulati (2007) quotes a study showing that milk contract farmers make double the profit made by non-contract farmers and the profit difference can reach 78% for vegetables.

There are hurdles in these deals. A. R. Vaugal, one of the architects of Pepsi Co's contract farming, notes that "the fundamental problem is that farmers do not understand industry" and vice versa (India Today, 12-10-2009). Is this another instance of the gap between urban elites and villagers?

Furious polemics have started about the possibility of allowing multinational companies like Walmart and Carrefour to open retail shops in India. Bazaris and local politicians are dead against the move. The government has finally decided that states could authorise such activities, provided that the companies concerned respect a number of rules. They are allowed up to 51% foreign equity in a retail company, provided they supply at least $ 100 million. Part of such investments must support the improvement of infrastructure in the retail chain (Sarkar 2013).

As we see in Europe, contract farming may lead to abuses by the purchaser but, on the whole, provided the interests of the farmers are respected, the system may be more favourable to producers than the old pattern of trade, which can have adverse effects on farmers. Contract farming by Indians or foreigners can boost the output of fruit, vegetables, and eggs, the supply of which remains too low at present, leading to sharp price increases. In other words, contract farming may contribute to changes and improvement in food habits within the society of consumption.

Climate Change

Towards the end of the century the temperature may have increased between 1.8 to 4 degrees C in India. One could expect heat waves, heavy precipitation and a rise in sea level by 0.20 to 0.60 m. Water supply would be affected by the melting of the glaciers in
the Himalayas. Yields of some crops would increase while wheat output would fall. All these factors would result “in greater instability in food production and threaten livelihood security of farmers... We need to urgently take steps to increase adaptive capacity to mitigate climate change impact” by enhancing, in particular, investments in water storage and ensuring more efficient water use with increased appropriate agricultural research. At the same time, it is hoped that international negotiations on these issues will progress faster than they have until now (National Academy of Agricultural Sciences 2009, 87–89). In India, as well as in other countries, the ruling elites avoid taking drastic measures to reduce the dangers, which may severely affect future generations.

**Leakage and Administration**

Money is far from being the sole factor of growth. As far as irrigation, roads, cooperative credit, extension services and electricity are concerned, in India, as in other developing countries, one comes across weaknesses: neglect and laxity (laparvahi), lack of administrative control and oversight by senior officers, along with corruption, collusion between politicians and local vested interests, and lack of sanctions. Similar shortcomings are equally common in the areas of education and health, as denounced by Amartya Sen (“India’s Poor need a radical Package”, *The Hindu*, 9-2-2005). Teacher absenteeism, particularly in villages, is as high as 25%, leading to the wastage of 22.5% of the outlay for education, according to a UNESCO report (C. Chauhan, *Hindustan Times*, 12-8-2007). When people are asked why they do not complain, they reply, “Koi nahiin sunta” (Nobody listens), a comment recorded repeatedly in all my surveys, from the first one to the last. How far could one reduce such weaknesses?

Since the introduction of Panchayati Raj in 1957, there has, undoubtedly, been some improvement in village panchayats’ commitment and operations. The 73rd Constitutional Amendment of 1992 “enlarges the space for people representation in matters of governance... the Act sought to correct the prolonged marginalisation of the poor” (Alagh, (ed.) 2007, 15). Based on this very comprehensive report on panchayats, it becomes apparent that one remains, twenty years after said amendment, far away from such goals. True, there are cases were Dalits assert themselves in the village panchayats and one comes across women chairpersons. Yet, Y. K. Alagh (2008) and his colleagues mention in their conclusion many shortcomings in irrigation, land development, and the gap between targets and achievements. “As an overall picture, the contemporary picture is far from comforting... a few exceptional States stand out as islands in an otherwise bleak canvas... the quality of activity leaves much to be desired. However, there are shining exceptions.” S. Wiswanathan is also quite critical some years later: “After two decades of the functioning of PR (following the 1992 amendment), many feel that nothing much has come of this exercise.” Then he refers to Dalits who are victimized by upper castes, corruption, and weak panchayats’ chairmen, possibly manipulated by dubious officials (*The Hindu*, 18-6-2012).

This kind of obstinacy of relying on village panchayats has been reemphasized, as we have seen in the MGNREGA and later on in 2012 and 2013, advocating more power to the village chairman. Perhaps it is time to remember Dr. Ambedkar, the father of the Constitution (see Chapter 1) and one of the very few educated Dalits, who succeeded in reducing the role of the panchayat in the Constitution against the will of Mahatma
Gandhi. He was well aware that the local neta (leader) of the dominant castes would be the main beneficiaries of the system.

In promoting development from below, bottom up through local authorities, India has been a pioneer in the Third World. Such an approach went through its ups and downs. It lost weight with the advent of the Green Revolution in Asia and its top down approach, which proved successful. However, in the 1980s, the bottom up approach made a big come back in Third World countries and in international assistance.

This re-emphasis of bottom up has been recently studied under the auspices of the World Bank (Localizing Development, Does Participation Work? (2012)). Ghazala Mansuri and Vijayendra Rao reviewed 400 cases among the World Bank’s projects costing $ 85 billion over the last decade. “The purpose of participatory programs is to enhance the involvement of the poor and the marginalized in community – level – decision making bodies in order” to improve the conditions of the poor. In practice, “the participants in civic activities tend to be wealthier, more educated, of higher social status (by caste and ethnicity) and more politically connected than non-participants.” According to the main findings: “Inequality tends to worsen both efficiency and equity” while investments in infrastructure are often wasted with or without corruption. Such observations coming from Latin America, Africa, and Asia confirm our observations on India.

Would a stronger district administration not be more helpful to the poor and be more successful in achieving overall growth than all bottom up projects? From a political point of view, one could not give up the whole system but it would help if it was restricted in favour of a stronger district administration. A capable and committed IAS district magistrate, who is directly recruited and not promoted, along with equally competent senior officers looking after agriculture, health, and education, could, as I have observed in a number of cases, make a substantial difference compared to the situation in districts that are “led” in a routine manner. However, to work efficiently, such a system needs political commitment on the part of political leaders at the state level so that officers are not transferred frequently following pressure from dubious politicians. In UP, most senior IAS officers are transferred within less than a year, and this is not an isolated case.

Nearly sixty years ago, in a broadcast to the nation, Lal Bahadur Shastri declared: “The district officer should delegate all his routine work to some other officer, reserving his own attention and energies almost exclusively for work connected with agricultural production” (The Hindustan Times, 11-1-1965). Similar pleas are repeated in the 1980s and later. One may add the complaints about transfers among the main issues.

Finally, there is a very practical point. Huge districts of 8,000–10,000 sq km in states such as Orissa should be bifurcated so that they become more manageable like the Punjab districts that are 2,000–3,000 sq km in size, a plea found in countless reports.

NOTES

9. The major proportion of electricity generation, power houses, transmission & distribution depends on the states. There are also central power houses, and private ones.

10. For all these data see State of Indian Agriculture, 2009, 118-123.
Conclusion

1 As hinted in Chapter 9, Western Europe went through two distinct phases of development since the beginning of the Industrial Revolution. It really came out of poverty in the thirty years after the Second World War with the advent of the society of consumption; however, in recent years poverty has re-emerged with the economic difficulties on both sides of the Atlantic.

2 In India and China, the scene is much more complex because the Industrial Revolution and the society of consumption are growing nearly simultaneously. India faces, at the same time, the abuses and shadows of our Industrial Revolution along with the advantages of the society of consumption. Corruption and other malpractices common to China and India remind us of our own past, this is why we are ill placed to sermonise Indians or Chinese. Moreover, corruption is far from having disappeared in our countries nowadays.

3 Two other factors make India’s development more complex. First, population growth there has been much faster than ours. Second, the standards of living in Western Europe in 1950, after the reconstruction following the end of the war, were much higher than in Asia now or twenty years ago. Poverty was not lacking, but misery was limited. Most people had enough to eat, unlike a number of Indians today. These conflicting currents make the tasks of the political leadership far from simple.

4 Beyond these basic points, the challenges in agriculture and the rural economy as a whole are crystal clear thanks to a number of official reports, surveys, and scholars’ works which are referred to in this book. That is why boosting agriculture, as intended in the Twelfth Five Year Plan, is, above all, a question of implementation, or to have things “delivered” as Prime Minister Manmohan Singh declared in his address from the Red Fort on 15 August 2004.

5 The second question refers to the mobilisation of public funds for the rural economy. A reduction of leakage and corruption, of questionable expenditures in social schemes and subsidies could help. Already in 2004, when he took the finance portfolio, P. Chidambaran declared: “The money is there, it is the misuse of money, it is the wrong use of money which is hurting us” (NDTV, 30-5-2004).

6 The third point concerns the commitment of the urban elites. We have seen how wrong it is to talk of a “second Green Revolution,” because the next steps reviewed in the previous chapter will be much more costly, complex and time consuming. What remains
indispensable is the spirit of the men who were behind the Green Revolution. As Rakesh Mohan, then deputy director of the Reserve Bank, declared: “Agriculture needs a new mission comparable to the Green Revolution” (Mohan 2006). It is in this perspective that the gap between urban elites and villagers could be an obstacle to such a commitment.

Fourth, the leadership of the Congress Party is weakened by the coalition it is directing. After months of uncertainty, the Prime Minister has launched a new set of most welcome economic reforms but his difficulties are not over. If the BJP wins the next elections in 2014, his leadership may also not be strong enough.

Fifth, even when taking into account that Gujarat has always been an advanced state – following its opening to the world 2000 years ago and based on the ability of its business castes and of its farmers, like the Pattidars – such success is remarkable even if it is exaggerated by the local authorities. In addition to many new industries, why is it the sole state, which has implemented such a comprehensive and efficient agricultural and rural policy? Since 2001, Narendra Modi (BJP), an able and strong personality, has been Chief Minister but under whose rule 2000 Muslims were massacred in 2002.

Sixth, how can one explain that repeated criticisms and warnings, over several decades, have had so little effect on development policy, be it on technical issues, the shortcomings in irrigation and power supply, extension services and research, or the extremely frequent transfers of IAS officers and, consequently, the necessity to strengthen district administration and the role of the District Magistrate?

Looking at world history, irrespective of the civilizations and the epochs, a strong and able bureaucracy has helped outstanding leaders to run their country: mandarins under great emperors of China, mansabdars under Akbar, and French senior bureaucrats assisting Bonaparte (1799–1804) in the reconstruction and creation of new institutions after the French Revolution.

Even under less outstanding rulers, civil servants can play a big role, as seen under the rather weak French Fourth Republic 1946–1958. I had the privilege of knowing some of them, and they reminded me of several ICS/IAS officers in terms of commitment, competences and integrity.

Praising the bureaucracy looks quite politically incorrect nowadays in Western countries and in the eyes of many Indians. In fact, one should, at the same time, fight against rightist sectarians who believe in nothing but the private sector and the leftist sectarians who believe in nothing but the state. In spite of some dubious elements, the IAS officers, especially those directly recruited, remain at a high standard. Competitive examinations are conducted without manipulations. In their probation period, the young officers acquire a good grasp of rural issues. We have seen in this book some examples of their roles, be it for the introduction of the Green Revolution or as heads of districts. One could add a number of officers in the secretariat of states or in Delhi.

Finally, one has to revert to the size of the country. I wonder whether the gap or distance between the best and the worst off people is not wider than in other countries. One could quote the following extremes. In 1964, in Rourkela, the roof of a rolling mill, one of the most modern in Asia, collapsed and severely damaged the equipment following a rather normal rain. One had simply neglected to remove the iron dust accumulated on the roof for years.

At the other extreme, let us mention the Kumbh Mela, the famous festival at Allahabad, occurring every twelve years, something mentioned by the Chinese pilgrim Hyuan Tsang.
as far back as the seventh century. During one month, pilgrims have a dip in the Ganges. The highest number of people comes on the most auspicious day of the festival. In 1954, the first festival after independence, there came 5 million Hindus on that auspicious day. There was a stampede, which led to 500 fatalities. For the next Kumbh Mela in 1966, the government appointed a senior ICS officer as Kumbh Mela Commissioner. He organised huge parking places for bullock carts and buses and mobile barriers to canalise people, with towers from which to supervise the movements of the crowd. On the auspicious day, during 24 hours, 7 million people had their bath on the riverbank, which is 2.5 km long, without any incident. The number of pilgrims kept on increasing, reaching 17 million in 2001 on the auspicious day and more so in 2013, each time without incidents. Such a performance is unique in the world. The next largest gathering of people occurred in New York in 1969, to celebrate the return of the cosmonauts from the moon, but the crowd was spread along many streets and it only amounted to 4 million people.

In spite of all the stories of endemic corruption, venal politicians, sycophantic civil servants, there are still political leaders, administrators, scholars, and business people in India whose vision and calibre can help improve the fight against poverty and boost the overall development of the country. As we have seen, there have been some improvements in agricultural development since 2007. An acceleration of the process belongs to the art of the possible, but it is not certain that it will occur. The Indians would often say: “we always muddle through” without major positive or negative changes. Dramatic crises should be avoided thanks to the level already reached by agriculture, some progress going on and also due to the food grain reserves achieved. However, a big question remains open: will it be possible to alleviate rural poverty faster, especially in non-Green Revolution villages? Perhaps, it is more an issue of will than of material means.
Appendices

The Caste System

1. The castes (jatis) are divided into four categories known as varnas (colours), which, although abstract, serve as a general reference. After these come the outcastes or untouchables, now called Dalit (depressed). Traditionally, the Brahmins, who constitute the first varna category, are responsible for the maintenance of spiritual and religious values. The Kshatriyas (often called Rajput in the north) are soldiers and rulers, and are responsible for the maintenance of temporal and military power. The Vaishyas are traders or cultivators. The Shudras are agricultural labourers or artisans. The Dalit castes are engaged in various services or in agricultural labour. There are 2,500 to 3,000 different endogamous groups or castes that are classified either into one of the varnas or into the untouchables’ category. This system of classification, although seemingly rigid, has allowed, over the centuries, a certain degree of upward social mobility for several castes. Theory will dispute this claim, but the facts support it. For instance, the Jats call themselves Kshatriyas, whereas the Brahmins call the Jats Shudras. Indeed, because of its socio-economic rank, this agricultural caste can be included among the Kshatriyas.

2. This system of social classification is equivalent to a division of labour, but this has not been strictly observed, especially now with the modernisation of the country. In villages, many people belonging to the first three varnas have devoted themselves to agriculture for a long time, and the great majority of Brahmins are engaged in all kinds of jobs.

3. The Constitution of India has abolished untouchability and prohibits caste discrimination. There is a reservation system for Scheduled Castes (Dalits) and Scheduled Tribes (Adivasis), and quotas for admission to government jobs and in educational institutions. Reservations and quotas have been extended to the OBCs (Other Backward Classes), that is, castes belonging to the Shudra category.

4. It is quite common to find in villages a dominant caste, which has the largest number of people and owns the largest part of the land. It, therefore, has much influence locally in the socio-economic life.
The Green Revolution

1. New seeds (cereals or others) react better genetically than traditional varieties to higher doses of chemical fertilisers. Shorter or dwarf varieties are used in order to avoid lodging. They often mature earlier, which facilitates double cropping in a year.

2. Chemical fertilisers very often require a better water supply than traditional varieties cultivated without fertilisers - hence the key role of water, irrigation, and/or rain.

3. Areas with poor and erratic rainfall and low irrigation potential are not suitable for the Green Revolution.

4. Since new seed varieties are genetically more homogeneous, they are more vulnerable to pests, especially during the rains – hence the need for pest control.

5. New seeds must be replaced after four or five years, otherwise the yields decline. Hence a continuous process of research is required. Hybrid seeds are renewed every year.

6. Any one seed variety is not suitable for all physical milieus or climatic conditions.

Examples

6. Good traditional yields (kg/ha) of irrigated crops:

7. Wheat: 1,000–1,300 kg/ha

8. Rice: 1,200–1,400 kg/ha [clean rice, two-thirds of paddy]

9. During the first phase of the Green Revolution, yield for each crop: 2,000–2,500 kg/ha.

10. At present, yield for each crop: 3,500–4,000 kg/ha, or even more.

11. Traditional rainfed crops:


13. Rice: 700–1,000 kg/ha depending on amount of rainfall.


15. Millet (bajra): 400–1,300 kg/ha.

16. Chemical fertilizers: Nitrogen N, Phosphate \( \text{P}_2\text{O}_5 \), Potash \( \text{K}_2\text{O} \).

17. Nutrients refer to the content of \( \text{N}, \text{P}_2\text{O}_5, \text{K}_2\text{O} \) in merchandise chemical fertilizers.

18. For the main fertilizers: urea, 46% of N; and for di-ammonium phosphate (DAP) 16.5% N, 48% \( \text{P}_2\text{O}_5 \).

19. Muriat of potash, 50 to 60% of \( \text{K}_2\text{O} \).

Population and agricultural data


21. Population increase per year 1951–2001: between +2 to +2.4 %. 2011 +1.6 %

22. Urban 17%; Rural 83% 1951

23. Urban 31.2%; Rural 68.8% 2011

24. Workers in agriculture constituted 70% of active population in 1951, 50% in 2011
### Agricultural holdings 2010–2011

<table>
<thead>
<tr>
<th>Category of holdings (millions)</th>
<th>Number of holdings</th>
<th>Area in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marginal, less than 1 ha</td>
<td>92</td>
<td>22</td>
</tr>
<tr>
<td>Small, 1 to 2 ha</td>
<td>25</td>
<td>22</td>
</tr>
<tr>
<td>Semi medium, 2 to 4 ha</td>
<td>14</td>
<td>23.6</td>
</tr>
<tr>
<td>Medium, 4 to 10 ha</td>
<td>5.8</td>
<td>21.2</td>
</tr>
<tr>
<td>Large, 10 ha and above</td>
<td>1.0</td>
<td>11</td>
</tr>
</tbody>
</table>

Total number of holdings 138 millions; total area 159 millions ha.

Unfortunately these data do not give a breakup between rainfed and irrigated areas. The owner of 1 ha irrigated and double cropped is much better off than a farmer with 2 or 3 rainfed ha. In 1951, the percentage of holdings below 1 ha amounted to 39%.

### Agricultural production, million t

<table>
<thead>
<tr>
<th></th>
<th>Food grains</th>
<th>Pulses</th>
<th>Oilseeds</th>
<th>Cotton lint</th>
<th>Sugarcane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950/1951</td>
<td>51</td>
<td>8.4</td>
<td>5.1</td>
<td>3</td>
<td>5.7</td>
</tr>
<tr>
<td>2011/2012</td>
<td>250</td>
<td>–</td>
<td>–</td>
<td>12</td>
<td>–</td>
</tr>
</tbody>
</table>

One notices a very low increase in pulses which have today, including large imports, become a quasi luxury for the poor.

### Horticulture, million t


### Stock of food grains

- Available, 2011, Jan. 1: wheat, 21.5 million t, rice 25.6 million t
- Buffer norms for wheat and rice, Jan 1, 2011: 25 million t,
Stocks in June 2012, after wheat harvest, were around 60 million t.


Exchange rate Rupees per dollars

<table>
<thead>
<tr>
<th>Year</th>
<th>Exchange Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963/1965</td>
<td>4.75</td>
</tr>
<tr>
<td>1966/1969</td>
<td>7.50</td>
</tr>
<tr>
<td>2001/2002</td>
<td>47.7</td>
</tr>
<tr>
<td>2008/2009</td>
<td>46.0</td>
</tr>
<tr>
<td>2010/2011</td>
<td>45.6</td>
</tr>
<tr>
<td>Early 2012</td>
<td>50</td>
</tr>
</tbody>
</table>

Glosary and acronyms

- Adivasi: aboriginal tribe, Schedule tribe (ST)
- Ancut: weir on a river for irrigation
- Bajra: millet
- Baksheesh: gift, tip or corrupt practice
- Baniya: caste belonging to the Vaishya varna
- BDO: Block development officer
- Bhangi: sweater and scavenger, Dalit
- BPL: Below poverty line
- Casurina: kind of tree
- Chakki: stone mill
- Chamar: Dalit
- Charpai: bed or cot
- Chaukidar: gardian, gard
- Choli: blouse
- Dabao: pressure, abuse, coercion
- Dalit: former untouchables, social category divided into many castes, schedule caste
- Desi: local, indigenous
- Dhobi: washerman
- Dhoti: one-piece garment of unstitched cloth tied at the waist, worn by men
- Dom: scavenger or weaver
- Dusad: Dalit from Bihar
- FYP: Five Year Plan
- GR: Green Revolution
Gur: cooked sugar from cane juice, kind of molasse
HYV: High yield variety of seeds
IAS: Indian Administrative Service (after independence)
ICS: Indian Civil Service (in British days)
Jajmani: system whereby artisans or labourers work for farmers and are paid in kind
Jati: caste
Jhum: shifting and burning cultivation without ploughing
Jowar: sorghum
Kachcha: not permanent, for instance unpaved road, mud house
Kharif: monsoon season, June-July to September-October
Kolu: traditional system of pressing sugarcane and making raw sugar (gur)
Kurta: shirt, tunic
Laparvahi: neglect, carelessness
Lungi: little dhoti worn by men in Southern India
Mahar: Dalit, field labourer and village servant in Maharashtra
Mot: lift irrigation from an open well with a bucket pulled by bullocks
Musahar: Dalit, literally eater of rats
Neem: type of tree
Neta: local important politician
OBC: Other Backward Classes, Kurmi and Yadav in the North, Kallar in Tamil Nadu
Pahariyas: adivasi tribe
Panchayat: village council, self-governing body
Paraiyar: Dalit, field labourer or village servant
Pukka: permanent (for example a house with brick walls)
Qanun: law
Rabi: crop season, from November to April
Rahat: Persian wheel, chain of buckets lifted from the open well by a pair of bullocks
Roti: kind of flat bred
Sadhu: holy man
Sal: kind of tree
Sarson: mustard
Tala: lock
Taluk or tehsil: subdistrict
Twice-born: refers to the first three varnas
TW: tubewell
UNDP: United Nations Development Programme
UP Uttar Pradesh
Varna: litt. colour, one of the four categories of castes above dalit
Zamindar: landlord
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Photos

In Baluchistan (Pakistan), 1980

Gilbert Etienne speaking with lorry drivers before continuing on his way back to Switzerland with his family
Madhya Pradesh, 1956: procession of bullock carts

Tractors in modern India
Tamil Nadu: plowing before planting rice

Andhra Pradesh: rice transplanting
Rajasthan: women at the well

Khajuraho: Persian wheel with metal buckets
Khandoi: Gilbert Etienne interviewing farmers

Rajasthan: Jaisalmer Market