Appendix 2. Terms of reference for the expert group report

DOI: 10.4000/books.irdeditions.1293
Publisher: IRD Éditions
Place of publication: IRD Éditions
Year of publication: 2009
Published on OpenEdition Books: 8
October 2013
Serie: Expertise collégiale
Electronic ISBN: Expertise collégiale

Electronic reference
INTRODUCTION

Context of the review request

Rapid expansion of several insect-vector borne diseases carried on a steady extension of the distribution range of some of these species has generated a resurgence of vector-borne diseases over recent years. This threat is a major concern for public health, for both human and animal aspects, a situation that makes a comprehensive reform of vector-control policies imperative.

Four French ministries and one State Secretariat – the Ministry of Ecology, Sustainable Development and Planning; the Ministry of Agriculture and Fisheries; the Ministry of Higher Education and Research; the Ministry of Health, Young People and Sport, and the State Secretariat for Ecology – jointly commissioned the Institut de recherche pour le développement (IRD), by letter dated 18 January 2008, to conduct a wide-ranging review in order to formulate proposals for comprehensive reform of policy on disease vector control in France (including metropolitan and overseas regions). The Ministry of the Interior, Overseas Territories and Local Authorities gave secondary support to the commissioning of the review.

The request is for two standard forms of expert consultation in the public health field: first on the knowledge acquired to date, then on the possible decisions and the terms and conditions for implementation. It will entail the establishment of a state-of-the art picture of the structures, practices, current means of entomological surveillance and their critical points, existing operational methods, plus the ways and means currently used to achieve vector control. This review will categorize the risks according to the degree of threat they represent for human and animal health, and will be taken as the basis for drawing recommendations for improvement of the present vector control policy covering both metropolitan France and the country’s overseas regions.
The result of the investigations will be the basis for a new overall strategy for preventive vector control, intended for both human and animal public health.

**IRD expert group study method**

As part of its missions, the IRD conducts collective scientific surveys designated “Collegiate expertise” or expert group reports. This form of consultation study is an original tool for scientific knowledge transfer to the sphere of decision-makers and leaders. It is a means to provide quite rapidly a multidisciplinary scientific analysis on a set subject through a comprehensive, accurately focused state-of-the art review, plus conclusions and recommendations, at the request of one or more commissioning bodies. The work is performed under the terms of a formal contract.

As such, this method of investigation is called on as an aid to decision making, which is what particularly distinguishes it from scientific knowledge production in the strict sense, more often than not at the “public policy” level. It is therefore an original form of valorization of research.

Group expertise as defined and implemented at the IRD by its Department of Expertise and Valorization (DEV), is built on a now well-proven methodological method (9 expert reports published, 2 under way), certified with standard ISO 9001.

The survey is conducted by a college of experts from a range of complementary disciplines, working under the responsibility of a Scientific Coordination Panel, and followed-up by a Steering Committee grouping together commissioning-body representative(s). On completion of the survey, the final report and its recommendations are delivered to the commissioning bodies concerned. In the months that follow the report is published by IRD Editions in the series “Expertise collégiale” as a summarized review, together with full contributions from the experts involved.

**Definition and Objectives of Vector Control (VC)**

**Definition**

In its broadest sense, vector control embraces the control and protection against arthropod vectors (insects and acarians) of pathogens affecting
humans and other vertebrates, and also their surveillance. It includes nuisance arthropods when these are potential vectors or when the nuisance caused becomes a public health or veterinary problem.

Vector control is founded on a variety of control methods that depend on the vectors themselves, the epidemiological situations and socio-economic context. It comprises chemical, biological and genetic methods of control, action on the environment, health education, social mobilization, and continuous assessment of such methods.

Objectives

The objective of vector control is to contribute, alongside other public health actors, to a reduction to a minimum of risks of development of endemic or epidemic situations (endemization or epidemization), reduction of pathogen transmission by vectors and to management of vector-borne disease epidemics, according to a planned strategy.

OBJECTIVES OF THE REVIEW

The results of the group survey must provide ways towards better prevention and management of epidemics to come. The aim is to work upstream of the disease development itself, on control measures against their vectors. Consequently, the expertise objectives will be to:

■ Clarify the issues to consider regarding the changes that are essential in this field,
■ Produce a state-of-the art account of present methods and means,
■ Formulate recommendations for the methods, means and organization, for improvement of current policy on vector control.

CONTEXT

The context will summarize the main epidemiological data:

■ Diseases currently transmitted by vectors in France,
■ Prevalence of infections according to geographical zone,
■ List of human and animal epidemics that have occurred in France and bordering countries over the past ten years,
Establishment of fact sheets on the zoonoses affecting humans and on animal diseases,

Classification of risk in order of gravity: classification in three levels according to the criteria of morbidity, mortality and socio-economic consequences,

From nuisance organism to vector.

**LIST OF QUESTIONS FOR THE GROUP SURVEY**

This group study will hinge on major wide-ranging themes, themselves broken down into a set of questions.

**Theme 1 – Scope of the analysis**

**Question 1 “What is the legislative and regulatory framework?”**

- In France: for metropolitan France, the overseas départements and regions (DOM-ROM) (Guadeloupe, French Guiana, Martinique and Reunion Island), the département authority of Mayotte and the overseas authority of Wallis-and-Futuna.
- At European level?
- At international level? (International Health Regulations (IHR) established by WHO, legislation in force in countries bordering the overseas local authorities, the DOM17 and Mayotte)
- What are the similarities and differences between the different systems?
- Do any derogations exist and why?
- What is the current insurance law?

**Question 2 “How is governance organized?”**

- What are the modes of application of statutory texts and policies at the different levels responsible for vector control in France?
- What are the various actors involved in vector control and their roles and responsibilities?
- How can a form of governance be organized that is capable of meeting the objectives of vector control?
- What arrangements can ensure coordination of actors and adaptability in case of emergency?

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17 Overseas départements: Guadeloupe, French Guiana, Martinique, Reunion Island.
Theme 2 – Implementation

Question 1 “What are the vector control strategies in France?”
- Identification of geographical areas, types of vector or diseases.
- What capabilities are there for anticipation emergency response?
- How is health control organized at national borders (setting-up of international health regulations)?

Question 2 “What are the forms of organization used and the human resources available?”
- What is the interaction between the vector control actors and the epidemiology-surveillance network?
- What are the triggering points for a specific intervention?
- What employment framework for field personnel: sedentary staff or field operations staff (the latter with duties often entailing discomfort, risk or danger)?

Question 3 “What networks of information, education and communication exist?”
- What are the methods used and the intended targets for public communication?
- How does the communication effort affect community participation?
- Do health communication and education result in better community participation?
- How can a permanent state of mobilization in communities be achieved?
- How can the means and resources of information, education and communication be coordinated in an emergency?

Question 4 “What are people’s perceptions and the acceptability of the effectiveness of vector control?”
- What are the levels of perception of the various populations when they are affected by an epidemic?
- What anthropological factors can explain these different perceptions?
- How can people's level of satisfaction and support for vector control be assessed?
Theme 3 – Assessment of vector control

Question 1 “What are the vector control assessment processes and approaches used?”

- Why must vector control be assessed?
- How is vector control assessed?
- What difficulties are there for implementing vector control?
- Why is vector control assessment so little developed in France?
- Are there any existing vector control assessment reports in the world?
- What assessment tools are available: indicators and measurement units?

Question 2 “What economic approaches are used in vector control?”

- What are the cost and financing of vector control and nuisance-organism control?
- What are the comparative costs of vector control and of dealing with an epidemic?
- What is the efficacy of vector control?

Question 3 “How can unwanted side-effects be assessed?”

- What are the regional differences in control practices (comparison)?
- What are the unwanted side-effects of insecticides?
- What are the unwanted side-effects of repeated use of repellents?
- What effects are there on human behaviour?
- Does insurance cover the possible harm done?

Theme 4 – Tools for anticipation

Question 1 “What contribution does vector risk assessment make to epidemic risk assessment?”

- What are the assessment processes for health risk?
- Can the size and severity of an epidemic risk be predicted?
- Does an entomological alert imply an epidemiological alert?
- What contribution can modelling bring?

Question 2 “What regional and international cooperation can be envisaged for vector control?”

- What regional and international cooperation mechanisms currently exist in metropolitan France and the overseas regions?


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**Question 3** “What are the existing training programmes and further training needs?”
- What initial and continuous training is currently offered?
- What are levels of vector control training within these structures?
- Is the training well geared to needs?
- What are the training deficiencies?

**Question 4** “How does research contribute to improving vector control?”
- How can the effectiveness and selectivity of insecticides used be improved?
- What are the mechanisms of resistance to insecticides?
- What new insecticides can be used?
- What alternative means of control are there?
- How can knowledge of vector biology be improved?
- What is the contribution of social and behavioural sciences research?

**Theme 5 – Examples from outside France**

**Question 1** “What models of action are there on the international scene?”
- What are the different operational models?
- What lessons can be drawn?