



## BIOVISION PRE-CONFERENCE REPORT FORMAT

### INTRODUCTION

BioVision introduces a NEW ARCHITECTURE by adding 9 Pre-conferences in 2006 and a web Forum hosted by BioVision NXT. and will take place between March and October 2006.

The Pre-conferences will ensure continuity, between the two successive forums by enlarging the circle of participants in order to better meet the needs of the key BioVision participants: Science, Society and Industry.

### OBJECTIVE

The OBJECTIVE of Pre-conferences is to explore and develop the topics for debate and discussion at BioVision Forum.

The WORK PRODUCT of a pre-conference will consist of an EXECUTIVE SUMMARY of the discussion, RECOMMENDATIONS FOR ACTION and CONCLUSIONS recorded in table format specifically spotting the key issues in the field and the viewpoints of the communities: Science, Society and Industry.

### METHODOLOGY

Pre-conferences will consist of small meeting of up to 10 participants to develop the key issues for the BioVision Parallel Conferences in three sectors: Health, Agriculture and Environment.

Each Pre-conference will have Host Partners. The Host Partners with BioVision support will organize the meeting, choose the participants.

The topic recommendations of the Pre-Conferences will be honed and refined for the BioVision Forum. Due to time limitations of the Forum, not all identified topics and issues may be covered in the Forum.

**PRE-CONFERENCE TITLE:**

Topic Description: **INTEGRATED APPROACHES TO ELIMINATING HUNGER**

LOCATION: Bangkok

DATE: May 5-6 2006

**HOST PARTNERS:**

FAO/ International Assessment of  
Agricultural Science and Technology for Development  
(IAASTD)

**BIOVISION PARTICIPANTS:**

Alain Godard (Agriculture and Food advisor)  
Jean-Michel Roy ( Human Sciences advisor)

**MODERATOR:**

Alain Godard ( Biovision)

**PARTICIPANTS:**

- Dan Gustavson, FAO India Representative, New Dehli.
- Keith Weibe, USA, US Department of Agriculture, Washington, USA.
- Janice Jiggins, Wageningen University, NL
- Roger Leakey, James Cook University, Cairns, Australia
- Agnès Rola, Institute of Strategic Planning, University of the Philippines, Los Banos, Philippines.
- Carl Pray, Rutgers University, USA.
- Monika Zurek, FAO, Italy.
- Harald Prinz, Country head for Thailand and Sri Lanka, Bayer Cropscience, Bangkok.

**AGENDA:**

1. WELCOME BY HOST PARTNER and INTRODUCTION OF PARTICIPANTS
2. OVERVIEW OF BIOVISION NEW ARCHITECTURE
3. PRESENTATION BY DAN GUSTAVSON
4. PRESENTATION BY ROGER LEAKEY
5. IDENTIFICATION OF QUESTIONS FOR DEBATE AND VIEWPOINTS: SCIENCE, SOCIETY AND INDUSTRY
6. CONCLUSIONS AND RECOMMENDATIONS FOR ACTION

## EXECUTIVE SUMMARY:

### NARRATIVE:

- General definition of the topic :

Poor peasants, according to recent FAO statistics represent 600 M of the estimated 852 millions people suffering from hunger in the world, and their number has not diminished in spite of important global progress in hunger reduction since 1960. Consequently, they represent a “hotspot” that should be given short term priority. In addition, an integrated approach to the problem is a necessity: the general consensus is that the life sciences alone cannot solve the problem, and that scientific progress must go together with social, financial, trade and educational measures.

- Preliminary issues:

- the very notion of a hotspot of hunger must be refined: it should not be simply understood in broad geographical terms as a group of undernourished people living in such and such country or geographical zone. More factors must be taken into account, even though geography remains a key one: degree of under-nourishment, potential for progress, degree of emergency of the food shortage problem...
- the list of already identified hotspots must be complemented: isolated pockets of tropical equatorial West, Central and East Africa must at least be added to Billaz et al. list, that includes: millet and sorghum cultivators of Sahel, ‘fellhas’ of Magrheb and Middle East, small rice growers of South and East Asia, peasants living in peripheral Himalaya, peasants cultivating corn and beans in Andean heights, Brazilian Nordeste peasant populations, Amazonian farmers.
- a better knowledge of the various characteristics (social, cultural., economical...) of the identified human groups is necessary for fighting in the most adequate and efficient way their persistent hunger problem, as there is no unique way of solving it
- the notion of an integrated approach is seen as needing also more analysis, regarding both the various elements to be integrated and the modalities of their integration. The main idea behind it is that high level scientific knowledge and technologies are not enough, and even, at a certain level, inadequate (cf. below). But more reflection is necessary on the exact definition of the additional contributions that are needed (social, economical, financial, educational...) and on their mutual interactions.
- the distinction between short term and mid or long terms actions should be used with caution: It is in particular important that short term actions do not hinder long term ones and are consistent with them. The experts also recommended resisting the temptation to see new technologies provided by the sciences of life as being necessarily miracle drugs able to provide short term relief. In particular, the general opinion of the experts is that there should be no obsession with OGMs: they should not be excluded, but used with caution and not to the detriment of a more integrated approach to the problem of hunger that gives due attention to the various factors involved in the persistent poverty of poor peasants.
- the concept of life sciences is ill-defined: Several interpretations, more or less restrictive, of this notion are possible; they deserve discussion and it should also be made clear which one is at play in the definition of the problem.

- Central issue:

The central issue is whether the Green Revolution of the sixties that started in India could be applied to these hotspots: is it a model transferable to these areas?

The benefits of the Green Revolution were not put into question as far the increase in productivity in the cultivation of main plants such as rice, corn, wheat or cotton in certain geographical zones (primarily Asia) is concerned. There was a consensus that these highly sophisticated technologies

have to be developed and improved in Northern and industrialized agricultures of the South, as some of them could represent medium/long term opportunities for the poorest countries. In addition, it was acknowledged that the role of the private sector is key for developing these new technologies in these types of industrial agricultures.

However the agronomic, economical and social principles of the Green Revolution are seen as relatively inadequate for the hotspots of hunger under consideration (for lack of structure, soil quality, water, education, diversity of crops). The experts showed a widespread consensus in estimating that it is necessary to restore the balance between the role of advanced science and techniques and the role of social, political, financial... elements in order to be able to make significant progress in fighting the hunger problem of poor peasants.

- Two main sides of the central issue:

In areas populated with poor peasants with a hunger problem two main approaches to agriculture can be distinguished:

- an approach based on crops and local and regional varieties, that are known to agronomists but have benefited from little scientific or technological development (sorghum, millet, manioc, beans, sweets potatoes, upland rice...); on these cultures, selected technologies from the North could quickly improve the productivity and the quality in significant proportions (going from 0,5 to 3/4 tons per ha). In this type of agriculture, re-plantation of adapted trees is a key success factor for increasing the regularity of annual crops; mention was made of the particular interest of resorting to accelerated conventional breeding using molecular genetic technologies (markers).
- an approach that, taking advantage of biodiversity, is based on the immediate use of local plants largely unknown to the agronomical community (many of these plants being trees providing dry fruits or pulp fruits):

In this recourse to biodiversity, many experts see a great potential for improving the availability of food to poor peasants. Very simple techniques like basic massal selection, easy to offer to these populations, could turn these plants into real cultures and very significantly improve the productivity of this approach to agriculture, that can barely qualify as such in its initial form. Experiments of such domestication of wild and locally known plants are already under way in Africa in the domain of agroforestry. This process of domestication does not involve any transformation of the plant, but could nevertheless be a first step into this direction. In addition, it also has downstream economical effects on the local economy by initiating a process of trading, employment... This improved approach corresponds to a model of farming quite different from the dominant ones, in the sense that it relies essentially on agronomical knowledge (cultivation in association, preservation of ecological equilibrium, minimal use of fertilizers, recycling of vegetal wastes...). However, it should be noted that nothing prevents it from evolving in the future towards a closer relationship with the modern developments of the life sciences, such as the use of molecular markers (like in the former approach). It is also possible to envisage that, in the long term, such cultures change category and end up becoming dominant ones in many regions of the world. This happened in the past with the oil palm tree and the hevea, which were basically undeveloped at the beginning of the century.

#### IDENTIFIED DEBATE QUESTIONS:

- why has the hunger problem of poor peasants proved to be so resistant to previous programs ?
- how to define the notion of hotspots of hunger ?
- better identification of hunger hotspots in the world
- social, cultural and economical characteristics of hunger hotspots
- how to articulate short term and long term efforts in solving the hunger problem in these areas ?
- how to integrate the progress of the life sciences in an a multifaceted approach to the elimination of hunger problem ?

- what role for OGM's ?
- distinguishing the role of the different components of the life sciences
- the basic principles of the Green Revolution
- what are the conditions of a successful application of these principles ?
- in what parts of the hunger hotspots can they be applied ?
- what are the limitations of the Green Revolution principles ?
- the traditional ways of using biodiversity
- methods for improving the use of biodiversity
- overview of the results already obtained in efforts to develop the use of biodiversity (agroforestry particular)
- analysis of the economic and social consequences of these results

### RECOMMENDATIONS FOR ACTIONS:

a) Stimulating the private sector in developing new high technologies for the industrialized agricultures that fully take into account the intrinsic constraints of a sustainable development and some key factors of evolution like the scarcity of oil, the climate changes or the reduced availability of water.

b) Reinforcing the prominent role of public research institutions in addressing the priorities of the poorest countries, either through the elaboration of their own research and development programs, or by transferring, when it is justified, technologies developed by the private sector for industrialized agriculture.

This reinforced role of public research institutions requires a commitment to substantial and long term funding that goes against the actual trend of reducing financial help for programs on hunger. The experts vigorously denounced this decline in research subsidizing and see it as a major obstacle for solving the problem. They also insisted on the necessity to adapt the organization of funding to the multifaceted approach recommended.

In addition, for public research institutions to play such a prominent role, agreements will have to be reached between the private and the public sectors for making some technologies affordable (such as in the case of genetically modified manioc, where the involved gene is patented by a private firm).

c) Making a priority of the identification of possible domestications of wild species in the poorest areas of the world, with the aim to quickly and at low cost improve food supply and economic development in these areas.

d) For the development of medium and long terms help programs, progress in research needs to be accompanied by a policy clarification regarding funding, trading and social factors like health and education. Beyond the necessity to increase the level of financial help, it is also necessary to establish more protective trade rules for a transitional period, and to develop learning centres where farmers can learn new techniques and receive basic teaching regarding more sophisticated technologies that they might come to use in the course of time. Previous educational efforts of this kind (e.g. farmer field schools in Philippines, Indonesia...), in which FAO played a major role, have shown that they help to reduce the sense of alienation towards the new technologies provided by development of the sciences of life and to integrate them better with traditional knowledge and agricultural skills of farmers.