GREENPEACE Briefing

The UN Agriculture Assessment: Results and Recommendations

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

Greenpeace, May 2008

Millions of people are facing food shortages, unaffordable food prices and in many cases, hunger. Global grain reserves are declining, and grain prices are skyrocketing. There are many underlying factors for the current crisis, from bad harvests due to climate change, unjust distribution of food, diversion of grain to fuel cars, or the global increase in meat consumption.

In this situation, the first ever scientific assessment of global agriculture, finished in April 2008, calls for fundamental change in farming practices, in order to address soaring food prices, hunger, social inequities and environmental disasters. The report, commonly known as the World Agriculture Report, is formally called the International Assessment of Agricultural Science and Technology for Development (IAASTD).

The IAASTD report is a call for governments and international agencies to redirect and increase their funding towards a revolution in agriculture that is firmly agro-ecological. The core message of the final IAASTD report is the urgent need to move away from destructive and chemical-dependent industrial agriculture and to adopt environmental modern farming methods that champion biodiversity and benefit local communities. More and better food can be produced without destroying rural livelihoods or our natural resources. Local, socially and environmentally responsible methods are the solution. The IAASTD also concluded that such techniques as genetic engineering are no solution for soaring food prices, hunger and poverty.

This briefing paper summarises the history and importance of the IAASTD and quotes some of its key results. The final report of the IAASTD, published in April 2008, is likely to become a key reference point for future national and international investments in agricultural research.

The background

The IAASTD goals

The IAASTD's key objective was to provide information for decision makers on how to structure agricultural research and development to cope with current and future challenges. The IAASTD is a scientific assessment, very similar to the Intergovernmental Panel on Climate Change (IPCC). At its heart is the work of over 400 scientists from all around the world who took stock of the current situation in global agriculture and identified some key challenges and options for action for the future of farming.

The IAASTD was guided by a broad set of goals: "*the reduction of hunger and poverty, the improvement of rural livelihoods and human health, and facilitating equitable, socially, environmentally and economically sustainable development.*"[1] The challenge was to simultaneously meet development and sustainability goals while at the same time increasing agricultural production.

The focus of the IAASTD was on the role of new scientific developments, with equal emphasis on local and traditional knowledge and formal research. The term coined by the IAASTD was 'AKST' – Agricultural Knowledge, Science and Technology.

The process

The IAASTD is a unique collaboration initiated by the World Bank in partnership with a multi-stakeholder group of organisations, including the United Nations Food and Agriculture Organisation, United Nations Development Programme, United Nations Environmental Programme, the World Health Organisation and representatives of governments, civil society, private sector and scientific institutions from around the world. Greenpeace also participated as an author to the report and was part of the Bureau that governed the IAASTD.

[1] Global Summary for Decision Makers, p. 4

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The outcome

The scientists wrote six detailed reports: one global assessment and five regional assessments (1. Sub-Saharan Africa, 2. East and South Asia and the Pacific, 3. Latin America and the Caribbean, 4. Central and West Asia and North Africa, 5. Europe and North America). Each of these reports is summarised in a Summary for Decision Makers. In addition, a Synthesis Report was prepared based on all six underlying reports and focussing on cross-cutting issues such as agrofuels or biotechnology.

In April 2008, nearly 60 governments signed the IAASTD's final reports in Johannesburg, South Africa. The underlying reports were accepted by governments without a detailed discussion, while the Global Summary for Decision Makers and the Executive Summary of the Synthesis Report – the two key final documents – were negotiated line by line by government delegates in Johannesburg.

The non-signatories

The United States, Canada and Australia did not approve the IAASTD reports. A few months earlier, also the biotechnology industry left the process. They all accuse the assessment of being 'unbalanced' and are attacking the authors' independence – despite the fact that all of them were among the stakeholders who selected the report's authors. One of the lead authors on biotechnology was even a representative of the genetic engineering industry. By abandoning the assessment, the companies are challenging and attacking the independence of scientists, but the move of the big monoculture countries and the industry had no negative impact on the overall acceptance of the IAASTD. As one of the co-chairs of the IAASTD, Hans Herren, put it in Johannesburg: "The losers are the ones that did not make it to the end."

The importance of the IAASTD report

The IAASTD report is not a legally binding document, or a treaty such as the Kyoto Protocol. Similar to the World Climate Report (IPCC), the World Agriculture Report is a global scientific stocktaking of the state of agriculture. It presents Options for Actions for governments and funders to bring the much needed paradigm shift in agriculture about, but none of these options are legally binding.

However, it is hard to imagine that any political decision maker in the field of food and farming can ignore the report's findings. The power of the report is its balanced, scientific and sobering view on the facts. It will, though, require substantial work in the coming years to alert the relevant decision makers about the report and its key findings. Very similar to the first IPCC reports in 1988, the World Agriculture Report is still known only by parts of the scientific community and few decision makers – the target audience of the report.

It is important that all funding organisations, research institutions, governments, regulatory authorities, farmers' organisations and NGOs are made aware of the report and its key findings, and use it to its maximum effect. Considering that it this the first ever scientific assessment of global agriculture, many governments, organisations and individuals would benefit greatly from being able to reference the reports when shaping agricultural policy.

The IAASTD Summary for Decision Makers on…[2]

In the following, we document some of the scientists' conclusions in the Summaries of the IAASTD reports, as approved by governments in Johannesburg.

… the need for change in global agriculture

"The ecological footprint of industrial agriculture is already too large to be ignored, and projected increases in future global environmental changes could make the footprint even larger." (Global Summary, p. 33)

"Successfully meeting development and sustainability goals and responding to new priorities and changing circumstances would require a fundamental shift in AKST, including science, technology, policies, institutions, capacity development and investment. (SR Summary, p. 6)

"*Emphasis on increasing yields and productivity has in some cases had negative consequences on environmental sustainability*." (Global Summary, Key Finding 3, p. 8).

"Over the last century, the agricultural sector has typically simplified production systems to maximize the harvest of a single component (…) this has often led to degradation of environmental and natural resources." (Global Summary, p. 21)

"Natural resources, especially those of soil, water, plant and animal diversity, vegetation cover, renewable energy sources,

[2] All quotes are verbatim from the final approved texts of the Global Summary for Decision Makers ('Global Summary'), the Executive Summary of the Synthesis Report ('SR Summary') or the Summary of the Latin American & Carribean report, as downloaded from www.agassessment.org on 24 April 2008.

climate, and ecosystem services are fundamental for the structure and function of agricultural systems and for social and environmental sustainability, in support of life on earth. Historically the path of global agricultural development has been narrowly focused on increased productivity rather than on a more holistic integration of natural resource management with food and nutritional security. A holistic, or systems-oriented approach, is preferable because it can address the difficult issues associated with the complexity of food and other production systems in different ecologies, locations and cultures." (SR Summary, p. 17)

*"**Agriculture operates within complex systems and is multifunctional in its nature**. (…) The concept of multifunctionality recognizes agriculture as a multi-output activity producing not only commodities (food, feed, fibers, agrofuels, medicinal products and ornamentals), but also non-commodity outputs such as environmental services, landscape amenities and cultural heritages."* (Global Summary, Key Finding 6 and box on multifunctionality, p. 9)

… reducing chemical inputs in agriculture

"Toxic agrochemicals applied in a wide range of agricultural systems result in overexposure adversely affecting the health of producers, laborers and communities. (…) The health and environmental risks and effects of agrochemicals have been extensively documented in the scientific and medical literature." (Global Summary, p. 20)

… food security and the need to invest more in ecological agricultural research

"***An increase and strengthening of agricultural knowledge, science and technology (AKST) towards agroecological sciences will contribute to addressing environmental issues while maintaining and increasing productivity***." (Global Summary, Key Finding 7, page 10)

"Policies that promote sustainable agricultural practices (…) stimulate more technology innovation, such as agroecological approaches and organic farming to alleviate poverty and improve food security." (Global Summary, Options for Action, p. 33)

"More and better targeted AKST investments, explicitly taking into account the multifunctionality of agriculture (…) can help advance development and sustainability goals." (Global Summary, Key Finding 20, p. 13).

"There is growing concern that opening national agricultural markets to international competition before basic institutions and infrastructure are in place can undermine the agricultural sector, with long term negative effects for poverty, food security and the environment." (SR Summary, p. 19)

…the future ecological model of farming

"AKST systems are needed that enhance sustainability while maintaining productivity in ways that protect the natural resource base and ecological provisioning of agricultural systems. Options include improving nutrient, energy, water and land use efficiency; improving the understanding of soil-plant-water dynamics; increasing farm diversification; supporting agroecological systems, and enhancing biodiversity conservation and use at both field and landscape scales." (SR Summary, p.9)

"***Policy options include ending subsidies that encourage unsustainable practices**."* (SR Summary, p.9)

"For example, agroecosystems of even the poorest societies have the potential through ecological agriculture and IPM to meet or significantly exceed yields produced by conventional methods, reduce the demand for land conversion for agriculture, restore ecosystem services (particularly water), reduce the use of and need for synthetic fertilizers derived from fossil fuels, and the use of harsh insecticides." (Synthesis Report, p. 64)

"Examples involving better resource management include improved soil and water management to increase water retention and decrease erosion; (…) wider deployment of soil conservation measures; (…) modeling of pest and alien species dynamics to reduce reliance on chemicals to maintain human and ecosystem health while addressing emerging pest threats posed by climate change. Integrated crop, tree, livestock and fish systems can be intensified and managed as multifunctional agricultural systems with less negative consequences to ecosystems." (Global Summary, Options for Action, p. 27)

"Investment opportunities in AKST that could improve sustainability and reduce negative environmental effects include resource conservation technologies, improved techniques for organic and low-input systems; a wide range of breeding techniques for temperature and pest tolerance; (…) increasing water use efficiency and reducing water pollution; biocontrols of current and emerging pests and pathogens; biological substitutes for agrochemicals; and reducing the dependency of the agricultural sector on fossil fuels." (SR Summary, p. 9)

"*Other policy approaches that are already in use in various countries, which would reduce the negative footprint of agriculture include taxes on carbon, agrochemical use and water pollution. (…) Another option includes prohibiting particularly damaging practices in highly vulnerable ares (e.g. deforestation in tropical forest margins, use of toxic chemicals in watershed headways and near streams)."* (Global Summary, Options for Action, p. 34).

"Sustainable agricultural practices are part of the solution to current environmental change. Examples include improved carbon storage in soil and biomass, reduced emissions of CH_4 and N_2O from rice paddies and livestock systems, and decreased use of inorganic fertilizers." (Global Summary, p. 21)

"One technique for land rehabilitation is agroforestry, which has developed community-based techniques in land rehabilitation that offer opportunities to increase yields of staple food crops and create productive mixed cropping systems." (Global Summary, p. 28)

… on the best approach to climate change adaptation and mitigation

"Some "win-win" mitigation opportunities have already been identified. These include land use approaches such as lower rates of agricultural expansion into natural habitats; afforestation, reforestation, increased efforts to avoid deforestation, agroforestry, agroecological systems, and restoration of underutilized or degraded lands and rangelands and land use options such as carbon sequestration in agricultural soils, reduction and more efficient use of nitrogenous inputs." (SR Summary, p. 16)

… on food sovereignty

"Food sovereignty is defined as the right of peoples and sovereign states to democratically determine their own agricultural and food policies." (Global Summary, p. 18)

…genetically engineered crops

"A problem-oriented approach to biotechnology[3] R&D would focus investment on local priorities identified through participatory and transparent processes, and favor multifunctional solutions to local problems." (SR Summary, p. 15)

"***The impacts of transgenic plants, animals and microorganisms are currently less understood. This situation calls for broad stakeholder participation in decision making as well as more public domain research on potential risks."*** (Global Summary, p. 20).

"A*ssessment of modern biotechnology is lagging behind development; information can be anecdotal and contradictory, and uncertainty on benefits and harms is unavoidable. There is a wide range of perspectives on the environmental, human health and economic risks and benefits of modern biotechnology, many of which are as yet unknown."* (SR Summary, p. 14)

„Biosafety policies that (…) assure the avoidance of genetic contamination in centers of origin and diversity. (…) At the discretion of each country, the regulatory framework could include the possibility of preventing the use in the centers of origin and genetic diversity." (Summary of the regional report on Latin American and the Caribbean, Spanish original, p. 20)

"The application of modern biotechnology outside containment, such as the use of GM crops is much more contentious. For example, data based on some years and some GM crops indicate highly variable 10-33% yield gains in some places and yield declines in others." (SR Summary, p. 14)

"An emphasis on modern biotechnology without ensuring adequate support for other agricultural research can alter education and training programs and reduce the number of professionals in other core agricultural sciences." (SR Summary, p. 14)

"***Recognition of consumer preference with respect to GM products***; (…) ***ensure no cross-contamination.***" (Global Summary, table 1, policy approaches to advance development and sustainability goals)

"In regions or countries that choose to produce GMOs, the regulation should be based on the precautionary principle and the right of consumers to have an informed choice, for example through labeling." (Summary of the regional report on Latin American and the Caribbean, Spanish original, p. 20)

…patents

"Regimes of intellectual property rights that protect farmers and expand participatory plant breeding and local control over genetic resources and their related traditional knowledge can increase equity." (Global Summary, p. 23)

"The use of patents for transgenes introduces additional issues. In developing countries especially, instruments such as patents may drive up costs, restrict experimentation by the individual farmer or public researcher while also potentially undermining local practices that enhance food security and economic sustainability. In this regard, there is particular concern about present IPR instruments eventually inhibiting seed-saving, exchange, sale and access to proprietary materials necessary for

[3] The IAASTD uses a very broad definition of the term 'biotechnology': *"It is a broad term embracing the manipulation of living organisms and spans the large range of activities from conventional techniques for fermentation and plant and animal breeding to recent innovations in tissue culture, irradiation, genomics and marker-assisted breeding (MAB) or marker assisted selection (MAS) to augment natural breeding."* (Global Summary, p. 11).

the independent research community to conduct analyses and long term experimentation on impacts. Farmers face new liabilities: GM[4] farmers may become liable for adventitious presence if it causes loss of market certification and income to neighboring organic farmers, and conventional farmers may become liable to GM seed producers if transgenes are detected in their crops." (SR Summary, p. 14)

… broad stakeholder involvement and farmers participation

"*Community-based innovation and local knowledge combined with formal AKST approaches, such as agroecology and agroforestry, can address issues relevant to rural poor people*." (Global Summary, p. 26)

"Community-based approaches to natural resource management, such as watershed management, community forestry management, integrated pest and crop management and the strengthening of local seed systems, are helping support and integrate social and environmental sustainability." (Global Summary, p. 24)

…agriculture and climate change

The post-2012 regime has to be more inclusive of all agricultural activities such as reduced emission from deforestation and soil degradation to take full advantage of the opportunities offered by agriculture and forestry sectors. (Global Summary, p. 16)

[4] GM = genetically modified