

How to feed the world in 2050?

An inconvenient truth

October 2009

The International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) is the first and most authoritative global assessment of agricultural knowledge, science and technology (AKST). Concluded in 2008, the IAASTD addresses the overarching question: “How can AKST be used to reduce hunger and poverty, improve rural livelihoods, and facilitate equitable environmentally, socially, and economically sustainable development?” Four hundred scientists, in over 2000 pages, assess the state of agricultural knowledge, the challenges currently faced by agriculture, and lay out possible policy directions for governments and intergovernmental bodies.

The overarching conclusion of the assessment?

Business-as-usual is no longer an option.

“If we do persist with business as usual, the world’s people cannot be fed over the next half-century. It will mean more environmental degradation, and the gap between the haves and have-nots will expand. We have an opportunity now to marshal our intellectual resources to avoid that sort of future. Otherwise we face a world nobody would want to inhabit.”

- Professor Robert T. Watson, Director of the IAASTD

This is a hard message for the keepers of the status quo to swallow. Organisers of the High-Level Forum on “How to feed the world in 2050” clearly took pains to avoid consideration of the IAASTD conclusions. A review of the numerous background papers written for a preparatory meeting held in June 2009 revealed a single paper referencing IAASTD conclusions, with the reference buried deep in the paper. The intervention of an impressive number of civil society organisations who called attention to the deficit only resulted in the FAO including a link to the IAASTD reports on the conference website and the invitation of a co-chair of the IAASTD process as a panelist. (See attached correspondence)

Why go to such pains to ignore the most far-reaching and comprehensive assessment to date of agricultural knowledge, if the meeting organisers are indeed serious about feeding the world? Clearly the IAASTD comes to some inconvenient conclusions that run counter to the dominant paradigm and its trilogy of outdated solutions: ‘markets first’, trade liberalisation, and input-intensive production technologies.

The current industrial farming system, which is dependent on fossil fuels and chemical inputs and gives scant regard to common goods, is not sustainable from an environmental, economic and social point of view. It has led to a world where 1 billion people suffer from hunger and 1.6 billion people are overweight.

The results of the IAASTD must be the starting point for an urgently needed thorough and radical overhaul of present international and national agricultural policies.

I. Markets first vs. farmers first

The smallholder farm sector feeds the majority of humanity, manages about 60% of arable land worldwide and is the main source of income for one-third of the world's population. Ensuring small farmers' access to seeds, land, water, knowledge, capital, markets and human rights is essential to guaranteeing their continued survival.

The challenge of the coming decades is to achieve optimal food efficiency per hectare, i.e., to produce a maximum of healthy food where it is needed with the minimum of fossil fuel and chemical inputs, as well as freshwater, soil and environmental degradation. These goals are poorly served by present global market imperatives of producing a maximum of financial return with the minimum of human labour inputs and minimal regard for the overexploitation of common goods through externalisation of the environmental and social costs of production.

Trends towards further privatisation of water, seeds and knowledge, as well as unrestricted global markets for arable land, will serve the strongest market players at the expense of equitable global food security. They are unlikely to improve food efficiency and promote the vital reduction of our food, feed, fuel and fibre production's ecological footprint. Restricting access to these resources to those best performing on a globalised market fails to address the fact that hunger and poverty and the depletion of public goods must be fought at a local level under generally imperfect market conditions.

IAASTD conclusions point instead to the need to **reduce reliance of small farmers on purchased and patented external inputs**, thus, to develop seeds, improve soil fertility and water efficiency, control pests, guarantee year-round food availability and adapt to climate change by means of **locally-adapted** farming methods and biodiversity, rather than expensive inputs.

"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..."

Contrast that position with the one articulated by the US government in its new 'Global Hunger and Food Security Initiative', where farmers are to rely on purchased inputs from a strengthened private input sector: "We will work with partners to develop **private** input industries, organise **private** dealer networks." [emphasis added]

In this view of the world, small resource-poor farmers lack quality seeds or fertility only because there are no private input suppliers to sell them goods, not because the agricultural research and extension system has ignored them. If they only had access to a market, all would be solved - except perhaps the lack of effective demand, i.e., money.

II. Trade liberalisation

The bulk of agricultural production and consumption takes place outside or on the periphery of national markets, rather than international markets, which concentrate on a few commodities, mostly for animal feed and industrial use. The economic invisibility of the small-farm sector, coupled with ever-declining commodity prices on the world market, led policy-makers for years to assume that cheap imports were the best way to feed poor populations. That is until the food crisis struck in 2007-2008 and prices of internationally-traded commodities and inputs went skyrocketing. Suggesting some international and national control mechanisms while continuing to advocate further liberalisation of agricultural trade is unlikely to address the major underlying problems caused by the global commodification of agricultural products, externalising ecological and social costs and maintaining wasteful and destructive, highly inequitable terms of trade.

On this topic, the IAASTD is quite cautious:

“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.”

Some developing countries with large export sectors have achieved aggregate gains in GDP, although their small-scale farm sectors have not necessarily benefited and in many cases have lost out. The small-scale farm sector in the poorest developing countries is a net loser under most trade liberalisation scenarios that address this question.”

III. New technologies

The IAASTD assessment of the Green Revolution is not welcomed by supporters of the status quo. While recognising that the Green Revolution (and its component fossil-fuel dependent technologies of pesticides, synthetic fertilisers, input-responsive seed varieties and irrigation) contributed to substantial productivity increases, the assessment concludes that those increases were not well distributed and have resulted in serious environmental and human health consequences jeopardising the sustainability of our present food-system.

“People have benefited unevenly from these yield increases across regions, in part because of different organisational capacities, socio-cultural factors, and institutional and policy environments. ... Emphasis on increasing yields and productivity has in some cases had negative consequences on environmental sustainability.”

To the chagrin of promoters of genetic engineering¹, the assessment was decidedly lukewarm on the potential of this and some other new technologies exclusively aimed at increased market productivity. Instead, the IAASTD focused attention on the need for systems-oriented, agroecological solutions to the complex and diverse problems of agricultural production, redefining how we might conceive of ‘cutting edge’ research and offering a new, participatory concept of innovation rather than individual technologies.

“Historically the path of global agricultural development has been narrowly focused on increased productivity rather than on a more holistic integration of natural resources management (NRM) 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.”

Such integrated and multidisciplinary innovation concepts surpass the present ‘technology transfer’ system and its agricultural treadmill. Hence, a significant result of the IAASTD process was to elevate the status of traditional and local knowledge of farmers and communities to the level of knowledge coming from men in white lab coats at major formal research institutions.

“[G]iven the new challenges we confront today, there is increasing recognition within formal S&T organisations that the current AKST model, too, requires adaptation and revision. Business-as-usual is not an option. One area of potential adaptation is to move from an exclusive focus on public and private research as the site for R&D toward the democratisation of knowledge production.”

Once AKST is directed simultaneously towards production, profitability, ecosystem services and food systems that are site-specific and evolving, then formal, traditional and local knowledge need to be integrated. Traditional and local knowledge constitutes an extensive realm of accumulated practical knowledge and knowledge-generating capacity that is needed if sustainability and development goals are to be reached.”

¹ So much so that the representatives of the genetic engineering industry withdrew from the process before its conclusion.

Since the adoption of the IAASTD in April 2008 some of its messages have already been integrated – though rarely referenced to the IAASTD – in the perspectives and rhetoric even of most of its detractors. These agreements should serve as the starting point of the High-Level Expert Forum.

Among these agreements are:

- Acknowledgment of the pivotal role of small farmers in fighting hunger and achieving more sustainable agricultural practices
- Necessity of increased public investment in agricultural research, knowledge and extension as well as rural development and infrastructure with special emphasis on small and particularly women farmers
- Integration of development goals with urgent climate change and adaptation efforts, acknowledging industrialised countries' financial responsibilities
- Acknowledgement of the detrimental impacts of expanding present agro-fuel production on food safety and sustainability, requiring instant change of policies