

A Messy Confrontation of a Crisis in Agricultural Science

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The 2008 food crisis sets the stage for this paper, which explores the processes involved in the International Assessment of Agricultural Knowledge, Science and Technology for Development. The insights drawn are situated in an historical recognition of the interface between agricultural crises and agricultural knowledge. The paper offers a window on both ongoing debates in agricultural science and the experiences of other recent international assessments of energy, the environment, and climate change. It is concerned with analysing how the IAASTD was designed and written, for what it can tell us about the conclusions drawn and controversies raised. The democratic practices underpinning the set of IAASTD reports and the integrated approach to agricultural knowledge, science, and technology, commodity production, and environmental and social goals, are central for understanding contemporary debates about agricultural knowledge.

At a meeting of authors and editors of the International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) in South Africa, in June 2007, the theme of a crisis in agriculture was put forward as a possible framing for what would become the Assessment's Synthesis Report. However, this idea was rejected because it was thought to exaggerate the prevailing conditions. When the report was launched, in April 2008, food riots in Haiti, and elsewhere, revealed the severity of the agricultural situation. The food crisis was followed by unprecedented increases in energy prices that helped to broaden how people were beginning to think about relations between poverty, energy, land, and natural resource use.

A brief look at the controversies and debates in the Food and Agricultural Organisation (FAO), the UN organisation established in the post-war period precisely to enable freedom from want and hunger, reveals their continued salience today. Under the early leadership of John Orr, tensions emerged between two distinct views of the FAO's appropriate objectives and strategy. One view offered a technical approach to enhance production,¹ while a second took food security and sustainability as its animating principle. While the latter view was rejected in favour of enhancing productive capacity through technological change and scientific expertise, the controversy signals a continuing tension between two different strategies for improving agriculture capacity. The Consultative Group on International Agricultural Research (CGIAR) system, like the FAO approach, tends to focus on enhancing production through technological change that leaves questions about changes in the environment, consumption, and distribution to researchers outside of the agricultural sciences proper.

In contrast, the IAASTD approach critically integrates questions about agricultural commodity production, in relation to the environment and the lives and livelihoods of poor producers and consumers, and opens to scrutiny several complex relations that might need to be understood if we² were to offer decision-makers viable options in the generation of policy. This distinctive approach framed IAASTD's organisation and practice, and established a basis for assessing past achievements as a window on future options, sensitive to context and need. The IAASTD Report has been challenged for not being prescriptive (Coghlan 2008: 9) and for its lack of sufficient appreciation of the Green Revolution but these were not its objects or purpose.

This paper is, partially, a response to the notion that there is much to be learned from documenting the IAASTD process over the course of its four-year history, since it stands apart from prior assessments in its organisational structure, breadth of stakeholder

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participation, transparency, and broad comparative frame. Following a brief description of the IAASTD process, we address two critical themes: how the diversity of experience and scientific expertise was deployed and valued, and how democratic practices shaped the assessment process. Our methodology incorporated: participant observation; perusal of IAASTD documents as well as non-IAASTD ones; interviews with participants; and a survey of contributing authors. Importantly, this analysis is a process documentation study and should not be confused with an assessment of the IAASTD's findings or its official evaluation.³ We conclude with a discussion of the political contours of assessment practices and the lessons to be learned from the day to day activities and relations that constituted the dynamic exchanges and processes of the assessment.

1 Background

Two meetings organised by the World Bank initially stimulated the IAASTD. One meeting, in November 2000, was held between James Wolfensohn, then president of the World Bank, Bob Watson,⁴ World Bank senior scientific advisor, and executives of major biotech, seed, and pesticide companies; the other, in spring 2001, was between Wolfensohn, Watson, and civil society organisations (CSOs). The concerns of these two interest groups mark the origin of the Assessment: the demands of the agriculture-biotech industry for a World Bank strategy for biotechnology, and those of CSOs for a development strategy to tackle poverty through addressing the negative effects of liberalisation. These meetings, engaging a broad range of interested parties, contributed to the formation of a steering committee (SC) with representation from the corporate sector, CSOs, researchers, and government officials, to oversee the consultative processes that would lead to the IAASTD.

Parallel to the formation of the IAASTD, the Intergovernmental Panel on Climate Change (IPCC) was producing evidence about the potential consequences for agriculture of climate variability, while the Millennium Ecosystem Assessment (MA)⁵ (Hassan, Scholes and Ash 2005: 7-10) was examining the nexus between ecosystems and resource use.⁶ These conditions, and the commitment of international donors and governments to achieve the millennium development goals, became an important basis for broad support for IAASTD.

The IAASTD was officially launched in September 2004 in Nairobi, and recommended by an intergovernmental plenary of stakeholders. The plenary endorsed the establishment of a secretariat in the World Bank as well as the IAASTD design as multi-thematic and multi-spatial, to include the organisation, conduct, and publication of regional assessments,⁷ and a global report. The design of the bureau involved many members of the initial SC, comprising 30 government and 30 civil society representatives from the private corporate sector, civil society groups, and producer and consumer groups, with equal voice in decisions about the processes and protocols to be deployed. However, if an issue became contentious and a vote was required, only government representatives could vote. Each new IAASTD activity sought approval of the bureau through annual meetings (2004-08). Significantly, the bureau was not simply a rubber stamp for

decisions passed on to it by the secretariat or demanded by some relatively articulate stakeholders. Instead, the secretariat was an arena for deliberated decision-making and policy discussions.

Beginning in January 2005, the bureau approved the design of the global and sub-global assessments. While the former was coordinated by the secretariat in Washington, a design team organised the sub-global assessments, with members of the secretariat and a local host organisation handling their logistics. During the course of writing and revising chapters, each team of authors met at least four times for face-to-face exchange. By August 2006 the draft chapters, followed eventually by a Summary for Decision Makers (SDMs) and a synthesis report, were placed on an open access international web site for peer review. Responses to each comment, by chapter teams, led to rewriting or retaining the text, with supporting and justifying arguments and evidence. Revisions of these reports were subject to a second round of peer reviews. Some governments (the United States) commissioned their own internal review. Following a final revision, IAASTD documents were presented to governments in preparation for the intergovernmental plenary scheduled for January 2008, in Nairobi.

Political disturbances in Kenya prevented the intergovernmental plenary being held as planned, and it was rescheduled for April 2008, in Johannesburg. Of the 61 governments who attended, 58 approved the Global SDM and the executive summary of the synthesis report. Three governments, Australia, Canada, and the US, noted reservations, specifically on issues of trade and genetically modified organisms (GMOs). All the sub-global SDMs and underlying reports were approved and accepted by respective regional governments, in parallel sessions held during the plenary. Again, only Australia, Canada and the US had reservations, referenced in the text of the SDMs, wherever they were expressed.

The assessment was asked to address four development goals and to explore how agricultural knowledge, science and technology (AKST) would address them. The secretariat and the bureau had to identify what kind of knowledge was needed, who would have the ability to provide it, and how different streams of knowledge would engage with the assessment goals. Here we explore how the more than 400 authors were identified and how substantive differences among them were resolved or, in some cases, left unresolved. Broadly conceived, the approach of the secretariat and bureau was one of informed pragmatism built on the need for broad, interdisciplinary exchange. This led to chapter teams comprising biological, environmental, ecological, as well as, social scientists.

2 Bringing Expertise on Board

The IAASTD engaged a broad definition of the agricultural sciences in terms of the key drivers affecting agricultural knowledge, hierarchy, traditional knowledge in AKST, as well as the causal relationships or impacts of agricultural science on its clients. The bureau sought expertise from a variety of disciplines and institutions, including the academy, the public sector, industry, and CSOs. Some areas, however, remained poorly represented: inadequate expertise in livestock, fisheries, agricultural and rural mechanisation and forestry. People were identified

based on previous association, reputation for expertise, and the recommendation of participating institutions and governments. The support of several governments in initiating, specific, sub-global assessments, acknowledged the diversity of AKST issues worldwide and the criticality of regional assessments that could contribute to, but not be aggregated into, a single global assessment.

2.1 An Explosive Mix

As a scientist with expertise to address some of the intractable questions about human activity and environmental change, Watson proved to be a leader whose consciousness of the social character of scientific knowledge came from his experience working with scientists, politicians, csos, industry, and the bureaucracy in the US, the UK, and internationally. He realised, for example, that the MA would, most likely, have produced a different political commitment from governments if it had included the social sciences and made social and political issues more explicit. He also felt that the MA would have been more effective in policy arenas if government representatives had been fully involved from the start. The secretariat and bureau, too, recognised the importance of a substantial social science input in the assessment thereby bringing to fruition an innovation not evident in other global assessments. This led to recognising the critical significance between, for instance, the organisations of science and technology and the institutions that shape the conduct of research and the construction of knowledge. Substantively, too, the IAASTD learned from the MA experience and differed in its initial assumptions. Whereas the MA took international trade, changing consumption patterns, and multinational companies as drivers of change and thus beyond the framework of analysis, as did the World Bank Report on Agriculture (WBRA), the IAASTD opened to question these assumptions or drivers and sought to explain their policy implications once they were opened to interrogation.

Bringing natural and social science authors together created several productive tensions. Major issues that arose included (a) competition for appropriate strategies to best meet the integrated goals of increased production, sustainable environments, rural poverty reduction and secure livelihoods; (b) divergent interpretations of measures of past success; and (c) antagonism between multinational firms, public sector organisations, international research and development organisations, csos, and individual academics. These productive tensions were made possible by the commitment by those in the IAASTD to debate and discussion, and to ensuring that each author, irrespective of disciplinary status, had the right to provide evidence and support for their interpretation or claim. Some of these tensions were resolved within chapter teams while others required exchanges between the secretariat and the authors in efforts to seek balance in the written documents.

In some instances, productive tensions turned into unproductive exchanges as when disagreements led some authors to refuse to contribute to the writing endeavour and “walk out”⁸ on the assessment (Keith 2008: 17), only to write about their decision in a public forum before the reports were presented to governments at the plenary. Others that withdrew from the assessment

contested its findings without, however, seriously engaging differences among approaches and were generally unwilling to explore alternative interpretations of evidence about relationships among production, sustainability and livelihood security goals since the rationale for exit was often expressed in the belief that production insufficiencies and limited land resources required a bio-technological revolution if we were to meet the food needs of an increasing population.⁹

Fortunately, the opportunity to explore the benefits and limitations of productionist approaches was made possible by Watson who, with his experience and vision, organised the assessment as a cross-disciplinary exercise with attention to complex relations and intersecting goals. Significantly, the limited agricultural knowledge of Watson, and of the two co-chairs,¹⁰ turned into a tremendous strength of the IAASTD because it meant that they did not carry with them past conflicts and competing interests within agricultural science.

2.2 Challenging ‘Gatekeepers’

Unwittingly perhaps, the design of the IAASTD as a multi-stakeholder, multi-disciplinary assessment challenged the expectations established in earlier assessments, with narrower criteria. By demanding balance in the report and engaging several rather than focusing on a single interpretation, the exchanges among authors revealed, and in some cases challenged, the gatekeepers of conventional AKST.¹¹ The IAASTD was unusual in that it made evident that industry was an interested party in these exchanges, and that the science they promoted was grounded in particular assumptions about the role of technology in responding to agricultural needs. Thus, the IAASTD processes reveal the interest-laden and contentious nature of assessments in the areas of science and technology production and the realisation that there is much to learn from questioning assumptions and engaging a wide range of expertise and evidence, especially if it can help delineate and interpret the complex connections between agricultural production, eco-systems, and the lives and livelihoods of different social groups. Importantly, too, the IAASTD was not a prescriptive document and the assessment did not seek consensus. Instead, its purpose was to present contextualised, conceptually clear, and substantively supported options for action that could be of use to decision-makers as they weigh alternatives within and across world regions.

3 Democratic Practice

In contrast to other assessments, the IAASTD was built on a set of democratic ideals that included inclusiveness, decentralised decision-making, transparency, and engagement. In this section, we highlight the kinds of exchanges that occurred, and continue to occur, during the messy, but extremely powerful ways these democratic ideals were realised in the assessment process. Four key themes are given particular attention.

3.1 What Is New About the IAASTD?

The distinctive approach of the IAASTD was not designed as an “action research project” to develop best practices for scaling up; rather its ground was comparative analysis. Thus, it challenged

the traditions and trajectories of participatory, stakeholder, and consultation approaches to development since it was premised on a substantive rather than an experimental approach, offering options rather than a generalisable model for replication among producers and interest groups. It also questions previous approaches in its integration of agriculture with issues that include environmental degradation, climate change, water use, and increasing poverty.

3.2 Representation

As in all democratic processes there is a challenge about how best to represent different groups and interests, and how to ensure that there is representation among the poor. The IAASTD took care to mediate this challenge by building on the shared knowledge of all the participants – from those in the academy to those from various research and field sites. This encouraged productive tensions over “who knows best or more” that forced careful thinking about the need for empirical evidence that require broad statements of opinion to be demonstrated or challenged on evidentiary grounds.¹²

3.3 Regulatory Framework of the IAASTD

As we have already noted, the IAASTD’s regulatory framework was designed to provide a set of principles to manage the assessment that drew extensively on the IPCC and the MA. This did not always provide a useful way forward, as there were occasions when the IAASTD coordinator or participants would suggest possible ways to resolve an issue that unsettled its democratic principles. One alternative used at the plenary to sustain agreed upon operational principles was the method by which a dissenting view to a particular finding could be recorded by a footnote to the agreed text, giving voice to those who, in other circumstances, might feel marginalised or decide to leave the exchange completely.

During report writing, the exchange and clarification that attended to discarding the scenarios chapters in the global and regional reports, similarly reinforced the principle and rule that it was the bureau that held responsibility for policy decisions, that all decision-making must follow certain procedures, and that there had been unanimity in the bureau to discard the scenario chapters from all reports.

Another example of respecting agreed upon procedures emerged when one of the sponsors of the assessment felt that the project was not going the way they had anticipated, and sent a letter to the World Bank to this effect. The letter was shared with the bureau who invoked the agreed upon rules to confirm its democratic practices. This example also reveals the diverse assumptions held about the World Bank: some believing that it was just a joint sponsor of the IAASTD providing office space and other logistical support to the project; while others viewed it as a voice of authority with powers that exceeded the agreed rules and regulations of the assessment. The secretariat and bureau, recognising these differences, yielded productive discussions that reinforced the integrity of the IAASTD regulatory framework.

Such events, however, did not completely eliminate scepticism among some authors and review editors concerned about the role

to be played by funding institutions, and whether or not there was a limit on what could be said, with supportive evidentiary material, in the assessment. A restatement of the commitment to evidence-based findings and balance, reinforced the importance of empirically based social and natural science to address the IAASTD goals. The organisational structure including face-to-face meetings and numerous iterations of all that was written aided this democratic process, one that depended on respect for difference and a willingness to integrate various points of view in a final document.

Another feature of the democratic process worth highlighting, especially given the voluntary contributions of most authors, was the ever-present threat of some actors walking out of the assessment whether over disagreements of interpretation and evidence, or a presumption of ownership of what should be included in the report. In a well-publicised act of “walking out”, corporate sector representatives of some major interest groups, contributed an opinion piece to the *New Scientist* weeks before the report’s completion (Keith 2008)¹³ with statements that did discredit the final report. Members of the bureau, however, decided to maintain the integrity of the democratic process with the result of a near uniform endorsement by governments of the final report. It is these challenges and controversies that contribute to recognising the political stakes involved in decisions about agriculture, and the diverse and competitive interests shaping them.

3.4 Insiders and Outsiders

The assessment was unusual in the sense that the work to produce the report was voluntary for many authors except for out of pocket expenses. There was a group of insiders who were either in the bureau or in the secretariat, or who served as writers and editors of the various chapters, and those others who reviewed chapters through the web site. This sense of insider and outsider came to a head during the last few months of the assessment when the draft reports received a very large number of critical, and sometimes rude, comments from reviewers, in particular, those from the US. There is no evidence that specific people were requested to serve as reviewers; however, it is conceivable that some effort was made to try to unsettle the legitimacy of the assessment well before it was to be formally presented to governments (Minigh 2008).

The differential sense of ownership of the report also arose with reference to other assessments and reports being undertaken, in parallel with the IAASTD. The WBRA, for instance, began well after the IAASTD and ended before it. While it was a different exercise focused on the potential of specific technologies in achieving productivity gains, with no claims of following a democratic process, both insiders and outsiders of the IAASTD made frequent reference to it. This was surprising given that the mandate of IAASTD was to situate technology, as well as other agricultural strategies, to realise growth but under conditions of securing ecological sustainability, securing livelihoods for poor producers and labourers in rural areas, and ensuring equitable social inclusion.

Another important observation returns us to the hierarchy of disciplinary knowledge and the assumptions it accords

owners of particular expertise. In the social sciences concerned with agriculture, agricultural economics holds traditional authority, and within the international agricultural community there is a network of researchers (insiders) presumed to be able to speak, authoritatively, on behalf of agricultural issues. Importantly, this presumption of who holds authoritative knowledge informs how the parameters of engagement are defined, and constructs a category of outsiders whose status is questionable. It reflects how personal networks, institutional affiliation, and style of research, contribute to shaping international assessments and why a democratic process can expose opportunities opened by engaging a broad base of institutional representations and author participation, willing to debate diverse, and sometimes even contradictory, interpretations of evidence.

3.5 Transparency and Openness

Transparency was another key feature of the IAASTD process that expressed itself in some expected and unexpected ways. Comments from the web review were sent to the authors and required their response. What this process did not anticipate was a lack of professionalism in the reviewer comments in response to the substantive issues raised. One explanation for this behaviour is the range of expectations members of different institutions hold about their presumed rights and privileges regarding authoritative knowledge. Other examples include debates over hiring an editor towards the end of the process, in 2007, and the possibility of marginalising the analysis and contributions offered by csos. To reiterate, one critical success of IAASTD has been the equity in voice and representation in bureau membership and among participants that has contributed to appreciating the range of knowledges useful for enhancing the contributions of AKST.

4 Concluding Reflections

While the IAASTD was not established during a moment of agricultural crisis, questions about resource limitations were already evident, and the coincidence of its final report with worldwide food riots indicates its timeliness and reveals the need for fresh thinking about these issues.

The processes documented here highlight the IAASTD as part of a larger global political process. The democratic structure of the IAASTD reveals the essentially political character of AKST as is suggested by three critical observations: one, that IAASTD processes and reports are invoked selectively by different constituencies; two, that different organisations and groups are able to use their authority to publically challenge the credibility of IAASTD processes, authors, and reports; and three, recognition of the place of csos as political actors, and of their role in keeping vigilant on behalf of those often marginalised from decision-making.

While there is little doubt that an agricultural strategy focused on increasing production has helped to reduce poverty, in some cases the costs of this growth have contributed to the energy crisis and have failed to mediate critical differences in access to land, food, and other natural resources. One

consequence of these mixed results is continuing contestation among researchers and policymakers over the relationship between increased production, and an approach that involves several other types of knowledge crucial to understanding and addressing the integration of enhanced productive capacity with those of environmental sustainability, poverty reduction, and securing livelihoods.

The IAASTD was designed to address issues that were beyond the scope of the production and growth-oriented framework that shaped the Asian green revolution. This was realised in the selection of a director and co-chairs whose experiences were not limited to the CGIAR system, and in inviting participating authors with experience and expertise from a broad range of disciplines and institutional setting and sub-sectors that helped to create a space for imaginative thinking.

While some of the tensions we identified have a long history, what is new are the ways in which they are now elaborated globally. Further, unlike the Asian green revolution, where agricultural science and technology capabilities were realised with public sector support, current capabilities are concentrated in a few private sector corporations and government agencies of large countries creating new patterns of ownership and power (World Bank 2008). While these new relations clearly shaped discussion during the IAASTD process, they were mediated by the democratic principles of the IAASTD to reveal, and sometimes even to broker, various diverse interests. The opportunity to rethink relationships between science, practice, and policy contributed to changing how some thought about agricultural research and policy, with added benefits for their organisations and constituencies. This may explain why authors and editors were so generous with their time.¹⁴

While there are undoubtedly limitations of the final document, what sustains the credibility of its findings has been the ability of authors to engage the challenges posed by those guided by a more narrowly focused production and growth approach. Moreover, the issues identified in the assessment and their framing, as well as the goals, design, and implementation of the process, created opportunities to examine the many relationships that constitute the agricultural sector and agricultural production specifically. For instance, the WDR (2008) and Pingali and Raney (2005) offer important evidence of the growing concentration of R&D capability in the corporate private sector and the for-profit parts of the public sector. However, they explain these as “drivers” of change that, by positioning them as independent drivers, suggests that little can be done to alter their role in the process and signals that such issues are beyond the scope of analysis.¹⁵ Importantly, these were precisely some of the concerns identified in the IAASTD which shows that only engaged participation, and public discussion and debate can open to scrutiny the kinds of contradictory evidence that will need to be addressed if we are to chart options for future action (Watson 2008; Wakeford 2008). This suggests that even as some of the processes and tensions of IAASTD were messy, the original goals were well conceived.

The IAASTD, in other words, despite the controversies associated with it, can be viewed as an effective vehicle for raising

contentious issues that have to be central to policy discussions on the future of AKST. Decision-makers the world over, who are acutely conscious of several impending crises as a consequence of climate variability, will find both the conclusions of the IAASTD, as well as its processes and practices valuable to guide them through difficult decisions and deeply entrenched stakes involved in decisions regarding agricultural production. However, it is crucial that the IAASTD not be institutionalised, as if it were a

product to be replicated. Instead, it is important to view it as a critical process from which we can learn about substantive issues of concern to the agricultural sciences, as well as about the contributions to understanding agricultural practices offered by multi-disciplinarity, transparency, and democratic processes of engagement. Finally, the endorsement of the IAASTD by numerous governments acknowledges its significance in identifying options for future action.

NOTES

- In this approach, the development of new crop-related technologies is the basis for increasing agricultural production.
- Biggs and Feldman served as review editors, Raina as author, and all contributed to authoring the Synthesis Report and Summary for Decision Makers. We write in the tradition of informed insiders (Mosse 2006).
- The World Bank, the IAASTD implementing agency (also a donor), is sponsoring an evaluation under the direction of Howard Elliot with team members that include scientists from the CGIAR system.
- Bob Watson would eventually serve as IAASTD director.
- Watson was part of the IPCC, its third director, and the MA, as board co-chair, under the auspices of the United Nations Environment Programme.
- A range of initiatives came at this time, such as planning for the international assessment on water and the Global Food Summit. But, the IPCC and the MA were particularly important in framing the assessment including scenario planning, a transparent review process, and an innovative governance structure. Many authors, review editors, and bureau members participated in one or both of these assessments.
- The sub-global reports include Latin America and the Caribbean (LAC), East and Southeast Asia and the Pacific (ESAP), Central, West and North Africa (CWANA), Sub-Saharan Africa (SSA), North America and Europe (NAE).
- CSOs discussed walking out of the process but decided not to. A few others withdrew during the writing process, but we lack sufficient information about why they decided to do so (e.g. disagreements with IAASTD conclusions, lack of time, or other obligations).
- An important literature on epistemic communities and disciplinary framing is impossible to engage here. Illustrative of such communities, however, is Stokstad's (2008: 1474) characterisation of the tensions among authors as a simple binary, on the one hand, agricultural economics and production scientists and, on the other, those who "hijacked" the enterprise and "oppose genetically modified GM crops and other common tools of industrial agriculture". The term hijacking by "activists" and "opinion" reveals disparagement of different points of view, rather than a willingness to entertain alternative interpretations for what they might offer.
- Hans Herren is an agricultural scientist and World Food Prize winner, and Judi Wakhungu, a geochemist with expertise in education and policy-making.
- See efforts by the Consultative Group on International Agricultural Research (CGIAR 2008) to exclude presentation and discussion of IAASTD in their AGMo8.
- The assertion, for instance, that "without the technical science expertise offered by the Green Revolution there would have been starvation in India."
- Also see articles posted just prior to or immediately after the Report's release, suggesting that they were prepared well before the actual launch. Most addressed disagreements over the potential of biotechnology to meet the goals of production,

diversity, and sustainability (Amman 2008; Coghlan 2008; Leahy 2008; Mitchell 2008, Minigh 2008).

- It should be acknowledged that many contributors to the various reports did so voluntarily, while others were working with institutions that supported the initiative with funds or with scientists who served as authors.
- This is precisely why trade was such an important issue in IAASTD.

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