RESHAPING AGRICULTURE'S CONTRIBUTIONS TO SOCIETY

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IAAE Synopsis: Reshaping Agriculture's contribution to society

1. Introduction

With the synoptic session we brought to a close the 25th conference of the International Agricultural Economics Association. This was only the third time that the IAAE had met in Africa, and the conference rightfully highlighted the food and agricultural situation in Africa. At the start of the meeting we were challenged by the South African Minister of Agriculture to make our work relevant to the problems of poor countries and poor people. We were also warned that we were in danger of becoming an endangered species. Yet, I found listening to the papers, the panels, symposia, discussion groups and the poster sessions, that we continue to be a vibrant profession, that is continually renewing itself, and continues to be highly relevant.

In this conference we took stock of where we were on age-old issues, re-examined our positions on perennial debates, and charted course for venturing into new and urgent issues facing the global community. As we prepared to leave Durban, I was convinced that we continue to make major contributions to the issues of today and the issues of the future: such as globalization, trade integration, urbanization, and environmental conservation. I should also note that at this conference we saw the birth of the African Association of Agricultural Economists. The AAAE can become a crucial forum for highlighting the unique problems of African agriculture and a useful network for increasing numbers of agricultural economists in the region.

Some of the major messages which I heard in this conference naturally related to the four sub-themes that the conference was structured around: 1. Strategies for reducing poverty; 2. Efficiency in food and farming systems; 3. Environmental stewardship; and 4. Food safety and security.

2. Strategies for reducing poverty

We were reminded several times during the conference that despite significant gains, the number of absolute poor and food insecure people continues to be inexcusably high, particularly in Africa and South Asia. We were also reminded that the problem of poverty and food insecurity persists even in the rich countries, such as the USA. Economic growth is a necessary condition for poverty alleviation, but accompanying policies that address the underlying structural causes of poverty are crucial if we hope to make significant progress in reducing the numbers of poor and undernourished.

Our conceptual frameworks for understanding the dimensions of poverty have improved significantly, we have the tools to track the extent of poverty both temporally and spatially, and we have a menu of policy interventions that could help the poor climb out of poverty. These interventions could be in the form of safety nets or cargo nets (the former for transient poverty and the latter for removing the structural and institutional obstacles that contribute to chronic poverty, such as: lack of credit, access to markets, etc).

Even when we know the extent of the problem and how to deal with it, we have not been very successful in beating the problem of persistent poverty and food insecurity. Is this because the problem is not that we do not know what to do, but rather in being unable to do it consistently? What is the political economy behind the slow implementation of pro-poor policies in the developing world? We as a profession ought to pay a lot more attention to the political economy, and institutional factors that govern the promulgation, implementation and effectiveness of anti-poverty programs. Important ways in which economists can contribute to the growing right to food debate emerged at the conference. We explored the political, institutional and legal dimensions of incorporating a "rights based" approach in the national and international fight against hunger.

3. Efficiency in food and farming systems

Several papers in the conference re-visited the issue of farm size and productivity, and questioned the

ability of small farmers to use agriculture as a means of climbing out of poverty. Productivity growth on small farms, especially in intensive farming systems has been well established, and so has their commercial viability. The green revolution experience has shown quite conclusively that small farms can indeed act as an engine of overall economic growth in developing countries. Where small farms have not been successful, it has been because structural factors, both agro-climatic and socioeconomic have constrained their growth.

The debate on the viability of small farmers has surfaced again in the context of agricultural commercialization trends that are induced by globalization and rapid urbanization across the developing world. Global and national food systems are changing fast; vertical integration in procurement, processing, distribution and retailing is fast becoming a reality across the developing world. We agreed that the transformation of agricultural systems will lead to dramatic changes in the small farm sector. Several examples were presented of small farmers successfully integrating into the global economy, however, there are an equal number of cases of them losing out in the process. Agricultural commercialization is certainly not a frictionless process and the short term adjustment costs can be enormous. We agreed that we need to do a lot more work to understand who wins and who loses, and how we can help the losers in the transition process. "Retooling" smallholders with appropriate technology and knowledge that makes them able to face the requirements posed by commercial markets will be a formidable challenge for research and extension systems in developing countries.

Our research supports the view that increased agricultural trade liberalization and enhanced access to OECD markets would be beneficial to developing countries. But our work also cautions that the gains from trade have limits too. It is important for us not to forget that complimentary investments in infrastructure and human capital are crucial in order to "make markets work for the poor". We need more research on volatility effects and distributional impacts on small farm households, particularly those in marginal production environments. We need to invest a lot more in capacity building so that developing countries can more effectively participate in the negotiation process.

The conference examined the role of emerging technologies in helping improve the efficiency of small farm production systems. There were several papers on biotechnology addressing the prospects, the constraints and the consequences of adoption. The focus of biotechnology research is shifting from whether or not to promote/adopt these novel inputs to how best to target biotechnology to the needs of the poor. While biotechnology has captured the interest and imagination of our profession, information technology and its consequences, which I judge to be equally important, received scant attention in the conference and by has been neglected by agricultural economists in general.

4. Environmental stewardship

The state of the environment was discussed quite extensively, with a particular emphasis on the identification of potential win-win solutions for managing local and global resources. Examples, such as conservation tillage, better water management, etc., were cited as opportunities for enhancing small farm productivity while at the same time contributing to sustaining the local and global resource base. The role of policy reforms, particularly the removal of input subsidies and protectionist policies, were examined in the context of improving incentives and/or removing disincentives for the adoption of productivity enhancing and resource conserving technologies.

The conference highlighted the need for aligning local incentives with the goals and desires of global treaties. Specifically, the question that was asked was: what incentive do local communities and producers have to change their behavior in order to comply with global treaty requirements? The Kyoto Protocol on climate change and the Clean Development Mechanism (CDM) that emerged from it was widely discussed in this context. We were left with several questions on the feasibility of such payment mechanisms to mitigate climate change while at the same time addressing development and poverty alleviation goals.

Several empirical studies tested the relationship between poverty and environmental degradation. These studies questioned the common belief that the poor degrade their environment. Where incentives exist poor households have made the necessary investments and modified their behavior in order to conserve the environment. These studies call for concerted efforts at policy and institutional reform that generate incentives for sustainable management of the resource base.

5. Food safety and security

Effective mechanisms for improving food safety standards is an emerging agenda for the developing world, not just in terms of complying with SPS standards for commodity exports, but also for the domestic food supply chain, especially given the burgeoning task of feeding the cities. Urbanization is likely to increase the "effective demand" for food safety. In developing countries, the informal sector is often a significant producer, processor, distributor and preparer of food and food products (e.g. street foods).

Food safety is a very important dimension of food security, and ensuring the provision of safe food is as important for the developing countries as it is for the high income countries. However, we do need to address the trade-off question. When imposing standards that are difficult and costly to achieve, policymakers need to be wary of the implications for low-income food producers, sellers and consumers. Regulation has to be accompanied by capacity building, nutrition education and other means of support. This is a huge task.

The conference highlighted the fact that in today's world there are more people that are overfed than underfed. It was said that "over-consumption of food is not safe consumption of food". The problem of over-consumption is becoming an increasingly important phenomenon in developing countries, particularly among the middle classes in urban areas. Already a number of countries experience what is termed "epidemiological transition", i.e. a gradual shift from a prevalence of infectious diseases to the prevalence of chronic ones associated with changing diets and a sedentary lifestyle. The paradox lies in the fact that high incidence of nutrition related diseases can occur alongside high prevalence of hunger and malnutrition in the same country. Dealing with the co-existence of obesity and under nutrition at a national, regional, and household level is a increasingly important challenge that we will face as we look ahead.

6. Concluding remarks

We concluded the conference with a sense of satisfaction, that we as a profession had actively contributed to the debates of the day, and with a sense of expectation for the enormous agenda ahead of us, both for the problems of the developing world as well as those of the developed world.

Our toolkit is well developed and the issues we are applying our tools to are current and highly relevant, yet our influence on policy debates could be improved through better communication with those responsible for policy at the global, national and local levels. The translation of results derived from rigorous analysis to effective policy is a challenge that we need to face up to if we want to enhance our relevance.

As agriculture is back on the agenda of the policy community, we need to ensure that we as agricultural economists have a place at the table. I see this decade as a period of renewal and renaissance of agricultural economics and not one of irrelevance and of being an endangered species.

Prabhu Pingali

I want to address here one key question: what, in this conference, did we learn that is relevant to addressing the major issues faced by our societies in the field of agriculture, very broadly defined? Admittedly, this formulation is very broad and my time is limited. Thus, I deliberately accept the risk of being perceived as superficial as I present here a set of subjective and personal assessments. But such is the price to be paid if one wants to be synthetic, as one must try to be in a synoptic session.

Totally accepting the challenge, raised by Minister Thoko Didiza at the opening of our conference, that "professionals in the field of agricultural economics should guide governments," I will highlight a few points where I believe we, or at least I, learnt something useful for this purpose during this conference. A significant point was on the role of small farms. It is clear that, because our profession, notably thanks to TW Schultz, was right to point out several decades ago that small farms are efficient, we may have oversimplified the case for small farms. Recent experience in Eastern Europe, in Russia in particular, shows that very large farms are able to survive and prosper, while there has been little development of family farms as they exist in Western Europe and even North America. The debates and even controversies on this topic at this conference finally led to a clear conclusion,

which is a little more sophisticated than perhaps we would have formulated a few years ago: small farms are often efficient indeed, but small farmers may be very poor; and with economic development, it is good that many small farms disappear. In addition, institutions are very important in determining farm size, something we may have tended to neglect in the past.

The second important lesson we learnt here is that there is hope for Africa. The success stories, which were presented in the special session on African agriculture, are powerful testimonies in this regard. Being relatively familiar with several of them (cassava, cotton, and maize in particular), I know that these successes are indeed very significant. I was much interested to note that in most of these stories, overall success was made possible by prior successes in technology development. Agricultural research played a key role. Why is it then that agricultural research does not receive more attention and more support from policy makers and from the donor community?

We, agricultural economists, may be partly to blame for this. Of course, we often point out the high rates of return to agricultural research investments and conclude that most societies, particularly in sub-Saharan Africa, underinvest in agriculture. We may be right, but we certainly have not been very effective communicators or persuasive policy advisers. Could it be because our analyses are not perceived as socially relevant? Another development in our profession, reflected at this conference, would lead to a similar conclusion. I want to refer to work on total factor productivity (TFP) and on production frontier analysis. I am aware that TFP is an intellectually attractive concept to relate change in total production to change in total production costs. But is such a concept relevant for agricultural situations where many factors of production are directly provided to the firm by the family, so to speak, without any market transaction, thus leaving us without solid reference prices to compute an index of total factor use? As for production frontier analysis, it appears very appealing in that it seems to have direct policy implications for the choice between research and extension investments. After 10 years of direct involvement with those issues at the World Bank, I can, however, testify that the choice between research and extension does not figure among the most difficult policy questions. In most situations both are needed. The main problems have to do with very poor institutions for both research and extension. How can these institutions be improved? Because of the multiple and ubiquitous problems of perverse incentives, it would seem that economists would have much to contribute to the improvement of research and extension institutions. Yet I did not hear much on this topic at this conference. Perhaps, in this field of technological change we have not been very good at using our static concepts to explain dynamic processes. A counterexample may be provided by the analysis of poverty issues, where the distinction between chronic and transitory poverty—clearly a truly dynamic dimension—was shown to be critical for policy analysis and policy advice.

International trade issues and related domestic policy issues did not play a prominent role in our program. I would like, however, to highlight a point that was made regarding the use of producer support estimate (PSE) indicators in the policy debates. We know that this indicator, promoted by one of ours, Tim Josling, was devised to give an order of magnitude of the support received by farmers because of market interventions, adding together public budget costs and costs borne by consumers through higher prices. Thus, we know, or should have known and said loudly, that PSE indicators are not good measures of trade distortions. Yet, we have let politicians, civil servants, and journalists widely use numbers based on PSE calculations, mainly those of the OECD, to denounce the "subsidies" received by farmers in OECD countries. I suspect this is because, as a profession, we do not like those subsidies. But it remains the case that these numbers are often misleading in the way they are used in international negotiations about trade policy reform. They did contribute, for example, to the recent failure of the WTO Cancun meeting.

Regarding the policy debate, which is a central piece of the policy process, the paper on the media and the information market by Swinnen, McCluskey, and Francken was probably the most interesting of the conference for me. It provided a beautiful explanation of why consumers and citizens are flooded with new information and yet are often very poorly informed. Their analysis of the media is valid well beyond the domain of food safety, for which they provide empirical evidence. The paper is very interesting as it properly emphasizes the role of such an important actor in the policy process, and an actor that had curiously not been subjected to much rigorous economic analytical

work in the past. In this respect, I would suggest that it would be worthwhile extending the static approach used and putting it in a dynamic political economy context. I am convinced this would improve our understanding of the public policy process and thereby enhance the social relevance of our professional work.

Michel Petit

In the few minutes that I have for what are necessarily brief remarks, I want to focus on a few points that in my view were some of the highlights of this conference. They were chosen considering their analytical interest and their policy relevance today, and according to what, I anticipate, will be influential in shaping the research agenda of the profession in the near future. Of course, there were other attractive topics discussed, and one person's view of the conference's program is inherently a narrow one, considering the large number of parallel sessions in the program—one does not know what one is missing.

The four issues are the following: (i) The Bruce Gardner "shock" in his Elmhirst Lecture on the direction of causality between agricultural growth, overall growth, and impact on rural and farm incomes. (ii) The debate on the fundamental changes occurring in food systems and their policy implications, particularly for small farmers in developing countries. (iii) The "small farm is beautiful" debate. (iv) The analysis on rural viability and the need for a more territorial focus, in contrast to a traditional sectoral focus.

Before discussing these four points, one suggestion on the structure of the program for future conferences. I would like to see more panel sessions with invited speakers, and the encouragement of greater debate within panels, in addition to some time for questions from the floor.

Briefly on the four issues:

1. Agriculture or economy-wide growth as the engine of rural income growth

Bruce Gardner's thesis in his Elmhirst lecture would appear to contradict most of the empirical work showing agriculture as a major engine of income growth (and thus rural poverty reduction). Am I right in interpreting Gardner's conclusions as contradicting, for example, Peter Timmer's conclusions in his survey article published in 2002 entitled "Agriculture and Economic Development"?[1] For the United States at least, Gardner concludes "I found real income growth in the non-farm sector to be more fundamentally important in increasing low farm incomes than any specifically agricultural variable." Discussing the experience in East Asia, Gardner concludes that in spite of the strong growth in agricultural productivity experienced in that region, it is apparent that the strong performance of agriculture per se would not have generated a sustainable increase in rural household income. "What is necessary is real average income growth in the economy as a whole." More generally for the developing world, and based on his cross-country regressions, his analysis is consistent with the view that growth in the economy-wide demand for labor is the most critical factor, under which "a growing real wage is a sufficient condition for rural income growth."

Agricultural economists, in my view, have been rather fundamentalist in their belief in the direction of causality—traditionally we look to agriculture as the main engine. Gardner has challenged this view. Is Gardner's work applicable mainly to developed countries? It certainly fits with his own analysis for the United States in his recent book entitled *American Agriculture in the Twentieth Century*.[2] Is it applicable to middle- and low-income countries? The thesis and empirical analysis in his Elmhirst Lecture are important and very provocative, and—rightly so in my view—it will be strongly challenged as it applies to developing countries. I anticipate that it will generate great interest among researchers.

2. On the fundamental changes affecting food systems. A 'shock wave' as presented by T. Reardon

Changes occurring on both the international and the domestic front would seem to have accelerated during

[1] Chapter 29 in *Handbook of Agricultural Development*, 2002, B. Gardner and G. Rausser (eds.), North Holland, Amsterdam.

[2] Gardner, B. (2002). *American Agriculture in the Twentieth Century: How It Flourished and What It Cost*. Cambridge, MA: Harvard University Press.

these last decades. This has been associated with trends toward vertical integration and the expansion of information technology. And it has been influenced by globalization, and in developing countries it has been linked directly to domestic economic reforms.

On the *international* front, I would highlight three major issues: (a) declining world prices for farm commodities, (b) WTO negotiations, and (c) regional and bilateral agreements, including what has happened in the EU. On the *domestic* front, which was the novelty in Reardon's paper, we observe the results of trade liberalization, deregulation, privatization and foreign direct investment, all part of the economic reforms. And we observe the effects of the economics of vertical integration.

What I found very interesting in Reardon's study is what he calls the supermarket revolution during the 1990s, and the perhaps related increasing concentration in agro-processing observed both in rich and middle-income countries. This seems to be a long-term structural trend, deeply affecting the conditions under which farmers produce and sell. The impact of these changes is not scale neutral. Specifically, as a result of these forces, small farmers appear to be facing an enormously difficult challenge. The question of the future of small farming in a globalized world would not have been raised 10 years ago. And I expect this will be a fruitful topic for future research. This leads to the third issue of scale and development more generally.

3. The "small farm is beautiful" debate

Ten years ago, whoever challenged the notion that the small farm is beautiful faced a hostile reaction, and was often labeled reactionary. Today, the debate is less ideological, and this calls attention to what seems to be a profound underlying structural change, with important policy implications. It appears that farming is becoming an increasingly more complex business, likely to favor more modern and somewhat larger farm operations. This is due to more open trade regimes for imports, the presence of the so-called supermarket revolution and the increasing concentration in agro-processing, and the increasing capital intensity in farming (Mundlak).[3]

In this conference, we heard presentations by Koester, Otsuka,[4] Hazell, Maxwell, and Fan and Chang-Kang, all addressing this apparent dilemma between the preference for small is beautiful and the structural changes in farming that seem to favor medium and larger-sized firms. The typical statement—of the existence of an inverse relation between farm size and efficiency—that a few years ago was dogma, now no longer closes the debate. It is partly an issue of technical efficiency. It is also an issue of whether or not, below a certain production scale, farms can generate a "livable income." It may also be the case that now it takes larger production units to generate sufficient income to stay in farming, given opportunity costs determined elsewhere in the economy. The prevalence of off-farm employment opportunities in some areas (such as in the United States) has been an essential component of the small farm adjustment issue. But off-farm employment develops selectively, only in certain areas—those with better infrastructure and closer to markets. To expect significant off-farm employment opportunities is not realistic in many areas in poor countries. The debate during the conference on this issue showed strong disagreements, but we all learned much from it. For example, Hazell argued "as countries get richer, farmers get bigger." And he called for not neglecting small farmers: too fast a transition can be a problem. Particularly for middle-income countries, the issue of farm adjustment is currently very complex and politically sensitive. Research on this issue will generate great interest on the part of policy makers.

4. Rural viability and the need for a more territorial approach rather than an overly sectoral focus

Our profession has been biased toward viewing the sector in isolation. If our aim is to revitalize the rural economy, should public investments be targeted at favorable areas, where synergisms and agglomeration economies might generate self-sustained growth? Are there strong, inherent disadvantages in areas with low density of economic activity? What should be the strategy toward less-favored areas? Have we considered the

[3] Mundlak Y. (2001). *Agriculture and Economic Growth*, Harvard University Press: Cambridge, MA.

[4] Kei Otsuka led the discussion on the second plenary session relating to small farms.

possible negative externalities of an excessively rapid urbanization as part of the equation?[5]

It seems to me that surrounding the broad theme of territorial development we have many critical and challenging questions confronting us. Territorial development and the interaction between urban and rural growth are areas of study to which our profession has not contributed significantly beyond platitudes. In my view, our research focus has not been drawn to this issue due to its inherent interdisciplinary nature—it combines urban economics, agricultural economics, geography, and political economy. Although this was not a topic covered by this conference, I believe there were some presentations that are relevant to this theme, which I believe will become more important in the future. I would like to highlight the presentations by Simon Maxwell, who emphasized the need for a multisector and territorial approach, and by Alain de Janvry, who stressed a territorial view of rural development.

In closing, I found the conference both interesting and challenging, and an excellent way of catching up with the profession's interests. It was also an opportunity to meet with many colleagues that I do not have the opportunity to see except in the IAAE conferences. My brief comments here present what are, in my view, some of the highlights of the conference. The four areas I mention are themes that should—and I believe will—attract the special attention of researchers in the future.

Alberto Valdés

This conference of the IAAE once more took place on the African continent as the continent and the host country, South Africa, are facing major challenges. In Africa as a whole the challenges include issues such as the implementation of the NEPAD philosophy, good governance, and enhancing the role of private finance—all with the major aim of improving growth and alleviating poverty. In South Africa the challenges are similar, with a strong emphasis on issues related to land reform, rural poverty, and Black Economic Empowerment—all largely a function of the country's legacy.

Agricultural issues on the continent remain largely focused on rural poverty, food security, the general failure to alleviate poverty, and the stagnation of the rural economy. However, countries now also have to deal with large and growing cities. Increasing inequality also remains a major worry for most countries asking therefore for more well-designed policies to avoid increasing inequality. The argument by Joachim von Braun that we need to unpack the distributional effects of policy should therefore be taken seriously.

The conference raised a number of issues and debates of specific relevance for African agriculture. Questions were raised about the role of agriculture in economic development. Can agricultural and rural growth reduce poverty? Bruce Gardner was rather pessimistic about agriculture's role, but there were also other papers showing the positive contribution of agriculture to GDP growth. The debate nevertheless challenged our standard orthodoxy.

At the same time some doubts were raised about the future of smallholders. Do they stand a chance in an environment characterized by (i) growing industrialization of agriculture, (ii) the growing role of supermarkets, (iii) a stricter application of quality and food safety rules and regulations (SPS, EUREPGAP, etc), and (iv) the failure of current WTO negotiations to reduce developed country subsidization and restrictive market access.

We have also heard that transaction costs are the real culprit inhibiting smallholders' performance. In this respect a number of issues are relevant: (i) How can public good provision in rural areas reduce transaction costs? (ii) More should be explored about the potential role of agribusiness and institutional arrangements such as contract farming in creating market opportunities for smallholders. (iii) There is a new role for small village level cooperatives and other local institutions in reducing transaction costs.

The real issues for African agriculture are set in a context of market failure, missing markets, and high transaction costs with, therefore, a limited opportunity for the application of neoclassical economic models of behavior. There is thus a great need for the application of the New Institutional Economic theory

[5] For discussion on this theme, see the analysis by J. Vernon Henderson, "Urban Primacy, External Costs, and Quality of Life," *Resource and Energy Economics*, 24, 2002, pp. 95–106.

to the problems of Africa. However, it was disappointing to see how few papers at the conference addressed the problems of developing countries from this theoretical perspective. There remains a need to shift paradigms in the agricultural economic discipline if we as agricultural economists want to remain relevant and not to become extinct. I maintain that the lack of an appropriate theoretical framework is the reason why we do poor research, design poor strategy, and why we have limited success with implementation.

It is therefore time to challenge the consensus and to think of a more theoretical framework so that our proceedings at these conferences do not merely reflect orthodoxy but challenge our thinking. I trust that 2006 will live up to this task.

Johann Kirsten