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AERC Conference on Agriculture for Development in Sub-Saharan Africa: Introduction.

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AERC Conference on Agriculture for Development in Sub-Saharan Africa: Introduction[1]

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The objective of this introduction is to put the conference in perspective of current and expected changes in the broad process of using agriculture for development in Sub-Saharan Africa. This is to help the conference achieve its two main purposes: assess the frontiers of research in economics applied to agricultural development and smallholder competitiveness; and establish research priorities for future efforts in that direction. It uses the WDR 2008 as a starting point for this task.

1. Toward a new paradigm in using agriculture for development in the "agriculture-based" countries

The agriculture-based countries have, by definition, a high share of total poverty in the rural sector and a high share of GDP growth originating in agriculture, the latter fundamentally because agriculture accounts for a large share of GDP. They include all the SS-Africa countries else than South Africa as a transforming country and some mineral-rich countries. The current role of agriculture in the development of these countries is not only for industrialization (as in the well known dual economy models and the classical models of "agriculture on the road to industrialization" and "agricultural-demand-led industrialization") and for economic diversification away from agriculture (following the regularities of the structural transformation with a declining share of agriculture in GDP and in the labor force). Instead, in the emerging paradigm, agriculture has multiple functions for the development of these countries in helping trigger growth at early stages, reduce poverty, increase food security, equalize gender status, reduce rural-urban income disparities, conserve resources, and provide environmental services. These multiple functions can be win-win, but more generally imply trade-offs and the consequent need for country-level priority setting in deciding how to effectively use agriculture for development.

Claim 1: Using the multiple functions of agriculture for the development of the agriculture-based SS-Africa countries offers an important option that should not be missed. How to do this must be designed at the country level.

2. Inconvenient facts about the comparative performance of Sub-Saharan Africa

Agricultural growth in SS-Africa has been lagging relative to other regions of the world, especially in value added per capita. The latter has stopped declining since 1994 but remains sluggish in a comparative perspective (Figure 1). Area expansion has been the main source of output growth in cereal production in SS-Africa, by contrast to East and South Asia where rising yields were the main source of growth, and to Latin America where area expansion that was initially the main source of growth has also given way to rising yields (Figure 2). However, more than in most other parts of the world, rising land

[1] Conference held in Mombasa, Kenya, May 28-30, 2009.

scarcity has become a stark reality for SS-Africa, compromising reliance on area expansion as a future source of growth, and calling for emulation of the Latin American growth reversal (Figure 3). Yet, cereal yields have been overall stagnant while those in other regions have increased steadily (Figure 4), with some better performers such as South Africa, Côte d'Ivoire, and Zambia showing the way forward. Accelerated growth thus requires, and will increasingly require, gains in land productivity that have to this date not materialized at an aggregate level, i.e., a "Green Revolution" for Africa.

Two important reasons for lack of progress in land productivity are continued low adoption of chemical fertilizers and lack of expansion of area under irrigation (Figure 5). Similarly, there has been lack of progress in labor productivity in agriculture, when labor productivity gains are essential for poverty reduction in the farming population (Figure 6).

While there has been intense displacement of the labor force out of agriculture, this has in most cases not been associated with growth in GDP per capita, resulting in truncated structural transformations compared to normal patterns of growth as observed cross-sectionally and in East and South Asia (Figure 7). Nigeria, Côte d'Ivoire, Cameroon, and South Africa are illustrative of large scale labor displacements out of agriculture without GDP per capita growth. China shows the opposite pattern with rapid GDP per capita growth but delayed official transfers of labor out of agriculture.

As a consequence, rural poverty has been persistent, with an actual absolute increase in the number of rural poor (Figure 8), and 70% of the poor remaining rural. Largely because they have been too slow relative to population growth, land and labor productivity gains in the recent period have not been associated with a reduction in rural poverty, again compared to what productivity growth has achieved in South Asia and especially East Asia (Figure 9).

Claim 2: Agriculture in SS-Africa is still used far below potential, with gains in land and labor productivity lagging below those of other regions. Releasing pent-up growth in agriculture offers a major opportunity for development that is still to be captured.

3. Recent evolution and combined crises

The food crisis with higher and more volatile international market prices is particularly threatening to SS-Africa where most countries are net food importers and where most of the population spends a high share of its income on food staples. Propagation of the global food crisis to the national level is however far from straightforward. The transmission from international to domestic prices has been highly uneven across countries and commodities, ranging from high transmission for rice in Senegal, Cameroon, and Ghana to low transmission in most other countries, in particular Madagascar, Guinea, Niger, and Malawi, with Uganda an intermediate case (Figure 10). Higher transmission for a particular commodity tends to be associated with greater import dependency and lower diversification in consumption, but the determinants of transmission are also highly idiosyncratic to countries depending on policy interventions,

real exchange movements, transactions costs on markets, and the competitive structure in imports and processing. Frequently assumed full transmission has led to overblown predictions of impact.

There is a price policy dilemma originating in the contrast between: (1) more stable consumer prices for imported foods (such as rice in Mali and Senegal as seen in Figure 11) with eventual shocks as in the 2007-08 food crisis where there is high transmission as in Senegal, and (2) prices disconnected from the international market for local cereals (with little transmission through substitutions in consumption) but with very high and visibly rising variability (such as millet in Mali and Senegal as seen in Figure 11).

The food situation for the world, and especially for SS-Africa, has changed drastically in the last five years. New pressures have emerged both on the demand side associated with continued rapid population growth, income effects, demand for biofuels, and on the supply side originating in fluctuating energy prices, climate change, water scarcity, soil depletion, and pandemic zoonotic diseases. With rising international market prices signaling that supply is overall not keeping up with demand, and rising price volatility in a context of low international grain stocks, defensive trade policies, and speculative movements on commodity markets, much greater focus needs to be placed on the supply side of food, and in particular on achieving sustainable productivity gains and greater resilience to shocks.

Dealing with international market price volatility and domestic yield instability raises anew the issue of food security as a major policy concern, when it had slipped off the policy agenda following structural adjustment and trade liberalization. This requires revising policy decisions regarding trade when international market prices for staple foods are more volatile, use of national food reserves, social safety nets for the vulnerable, supply response in agriculture for greater domestic self-sufficiency, and promotion of subsistence farming for "farm-financed social welfare" for those beyond the reach of social safety nets when exposed to shocks.

Securing access to food thus requires focusing not only on chronic poverty but also on vulnerability to transitory poverty, with a need to adjust current social assistance programs that are better equipped to deal with the former than with the latter. Assessment of the welfare incidence of price changes needs careful identification of net sellers and net buyers among rural households, most often revealing the surprising fact that a large majority of landed households are in fact net buyers of food, and thus negatively affected by higher and more volatile prices.

Claim 3: There is both increased urgency and rising difficulty in using agriculture for development. Changing conditions imply that greater attention needs to be given to the supply side of agriculture and to food security strategies, with increased productivity gains in agriculture, combined trade and food reserves policies, social safety nets for the vulnerable, and reliance on subsistence farming for net buyers not covered by formal safety nets.

4. The continued neglect of agriculture

In spite of greater public concern with agriculture created by the food crisis, the resilience of rural poverty, and the contributions of agriculture to climate change, public budgets allocated to agriculture in Sub-Saharan Africa still fall short of the 10% NEPAD guideline and of the 15% allocated to agriculture by successful Asian countries (Figure 12). Similarly, overseas development assistance allocated to agriculture in SS-Africa remains at historically low levels with only modest improvements after 2006 (Figure 13). There is also continued under-investment in agricultural research when comparing rates of return on investment to the opportunity cost of capital shows that there are high pay-offs from such investments.

The neglect of agriculture is also apparent in structural adjustment programs that have been highly detrimental to the institutional infrastructure of agriculture, followed by highly incomplete reconstruction of an alternative institutional structure. This includes market facilities, financial services, property rights, producer organizations, and governance for agriculture. An improved performance of agriculture clearly depends on greater attention to the institutions that serve the sector.

While reversing the neglect of agriculture requires increased public expenditures and overseas development assistance to agriculture, the financial crisis is likely to make commitments to agriculture by governments and international donors more difficult to be met. Greater emphasis must consequently be directed at improving the quality of public expenditures and of foreign assistance to agriculture, an area with considerable room for improvement. There are also encouraging new initiatives in progress including the CAADP policy guidelines, a more pro-active role for GFAR, increased budgets for the CGIAR, successful disbursements under the World Bank's Global Food Crisis Response Program, and the Gates-Rockefeller Foundations' Agra program. These initiatives need to be supported by high quality monitoring and impact evaluations for guidance and improvement, a support still largely incipient.

Claim 4: The continued under-performance of agriculture is due to policy neglect and insufficient attention by donors that can all be reversed.

5. Toward a productivity revolution in smallholder farming

One of the reasons for poor past performance of public investments in agriculture has been insufficient recognition of the difficulty in doing so. There should be no illusion that successfully using agriculture for development is a complex and multi-pronged enterprise that requires conceptualization, resources, capacity, coordination, political commitment, and time. Short run impacts on poverty are easier and faster to achieve via transfers (that have often been made conditional on behavior toward child education and health), explaining the rising popularity of transfers over rising autonomous incomes as instruments, but they cannot be sufficient and adequate to solve the rural poverty

problem. Rising autonomous incomes for the rural population has to be the main focus of sustainable poverty reduction strategies.

Rainfed agriculture, that accounts for 88% of SS-Africa's cultivated area, is characterized by a high degree of heterogeneity of conditions (highly varied agro-ecological environments, multiplicity of crops and farming systems, and differential exposures to risks). Managing this heterogeneity requires decentralization and participation in order to design and implement local solutions. Heterogeneity also originates in highly varied social systems with a great diversity of institutional arrangements. Multiple constraints require a multisectoral approach. Key issues to be addressed include exhausted soils, insufficient infrastructure (roads, water), low levels of education and health, a private sector limited by an uninviting investment climate, incipient producer organizations, and weak governance for agriculture. Small countries and large economies of scale in such investments as R&D and infrastructure invite regional cooperation.

In using agriculture for development, the process through which growth in agriculture is obtained is as important as the outcome, in particular to achieve poverty reduction, gender equality, and environmental sustainability. Smallholder farming must for this reason be the dominant approach in spite of some advantages associated with large scale farming and the contracting out of land to international agribusiness that has recently been advocated by some development economists and pursued by some governments.

The challenges of a productivity revolution in smallholder farming in SS-Africa are daunting, yet need to confronted, and there are good signs that success can be achieved. There are basically six aspects to this challenge:

- It must succeed where it has failed before, and success must be rapid to avoid major human disasters. Old recipes will consequently not work. Innovations have to be part of the solution.
- It must be specific to the conditions of SS-Africa characterized by a great degree of heterogeneity and weak broader supporting conditions in terms of markets, institutions, and public goods, thus requiring participatory multi-pronged approaches, that can be designed as integrated territorial approaches (as explored for example in the Millennium Development Villages). Territorial approaches are also important to help coordinate agriculture with a broad array of rural non-farm activities that can offer expanding income opportunities to the local population.
- It must deal with the challenges of sustainability and environmental friendliness that were not concerns in the original Green Revolution in Asia (viz. the environmental consequences in the Indian breadbaskets with extensive chemical pollution, depletion of aquifers, and loss of biodiversity). The classical seed-fertilizer-water package will not suffice and needs to be complemented by environmentally sustainable approaches such as agro-ecology and conservation agriculture.
- It must go beyond cereals to include high value activities -- including fruits and vegetables, livestock, fish, and forest products -- and provide opportunities to link

to integrated value chains for high value products in catering to non-traditional exports and supermarkets.

- It must address brand new challenges such as climate change (particularly vulnerability to climate shocks and risk management) and the forces of globalization (particularly volatile prices and rapidly changing demands of value chains).
- It must redefine the role of the state in support of agriculture for development. This includes the issues of property rights over land that are still incomplete for security of access in many parts of the continent, use of "smart" subsidies to induce productivity change and cope with price shocks, public-private partnerships in the delivery of public goods and productive investments, redesigned functions for ministries of agriculture, and an active role for civil society in participating to public affairs.

We see these challenges being successfully addressed in large number of locations. The list of success stories is long and varied (see for example the World Bank's *Agriculture Investment Sourcebook*). It ranges from land certification schemes that provide security of access and support land rentals, to technological innovations in dealing with drought resistance and improved nutrition, more complete financial services that combine credit with savings and insurance, commodity exchanges to improve domestic market performance and create links with international commodity markets, extension systems that more effectively cater to clienteles in using IT capacities, community-driven development schemes with local participation to the delivery of public goods, and producer organizations able to not only serve their membership but acquire voice in the definition of public policy. These success stories need to be better identified, understood, and scaled up so they become reflected in aggregate statistics. Opportunities exist for profitable investments in agriculture, as can be seen in impressive gains achieved in the production of non-traditional exports. And there is a clear renewal of interest in the private sector for the investment opportunities offered by agriculture.

Claim 5: Successful use of agriculture for development will require much greater attention to agriculture by governments and donors, supported by greater scholarship and learning. The economics profession has an important role to play in helping re-conceptualize in a new paradigm the role of agriculture for development, design and evaluate new approaches, contribute to capacity building, and participate to policy advice and the mobilization of political support.

6. Need for social science scholarship in support of agriculture for development

We cannot assume that we know the answers as to how to use agriculture for development in SS-Africa since a productivity revolution has to be idiosyncratic and locally adapted. Useful lessons can be derived from historical successes in other regions and from widespread local achievements in SS-Africa. There is a huge deficit of good social science scholarship applied to issues of agriculture for development in helping identify answers. For this reason, the objective of this AERC conference is to explore

research frontiers and priorities in six fields of importance in support of agriculture for development:

Access to assets and property rights
Technological change for smallholder agriculture
Institutional innovations for smallholder competitiveness
Vulnerability and resilience in the context of shocks and crises
Smallholder participation to markets and value chains
Collective action in support of smallholder competitiveness

Claim 6: The objectives of this conference are to help assess the frontiers of the field and develop agendas for research in economics on how to better use agriculture for development. To yield results that can make a difference, it needs to be part of a broader sustained effort in learning to use agriculture for development.

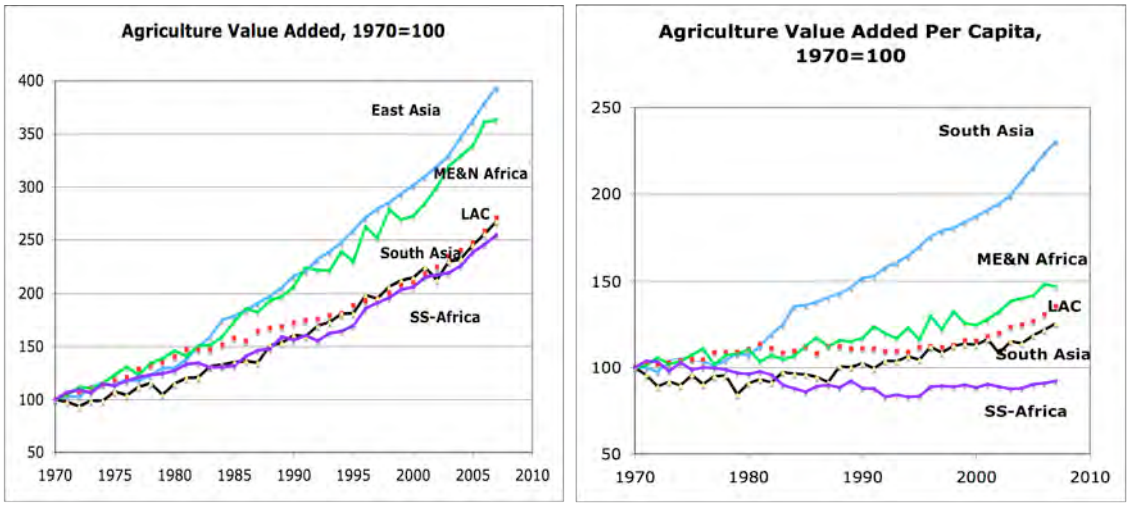

Figure 1. Agriculture value added by region, 1970-2007

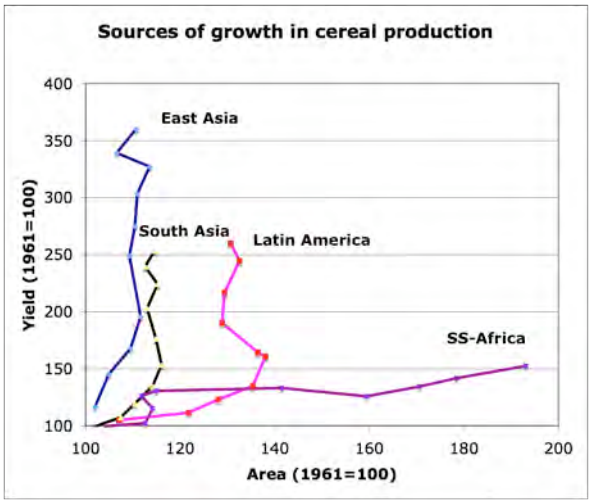

Figure 2. Sources of growth in cereal production: Area expansion and yield growth, 1961-2007

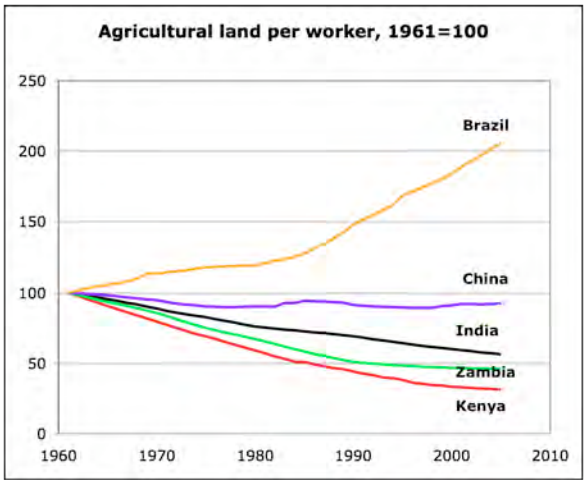

Figure 3. Arable land per agricultural worker in selected countries, 1961-2005

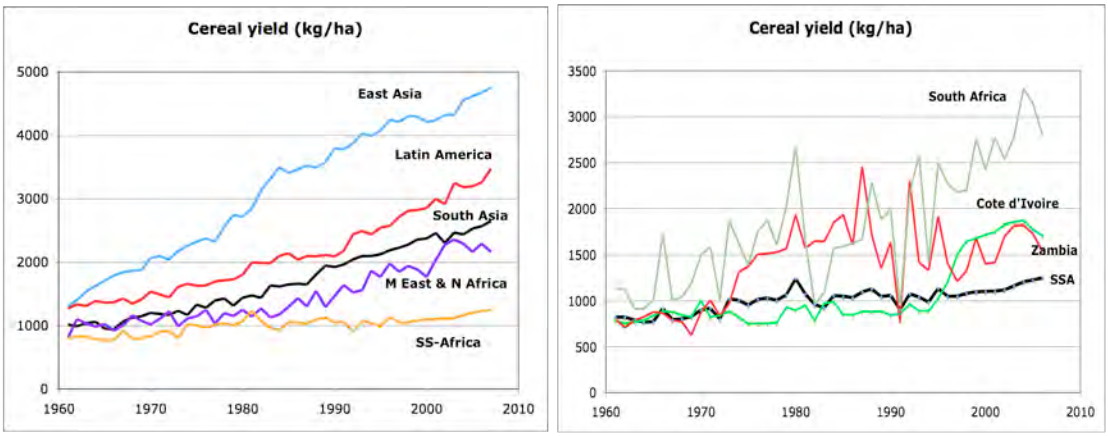

Figure 4. Land productivity in agriculture

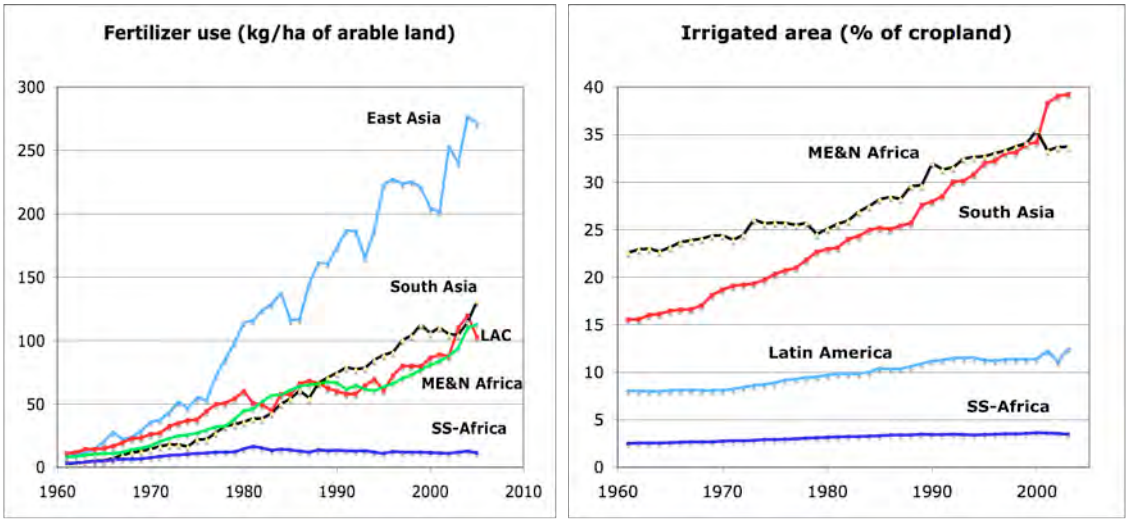

Figure 5. Fertilizer and irrigation use

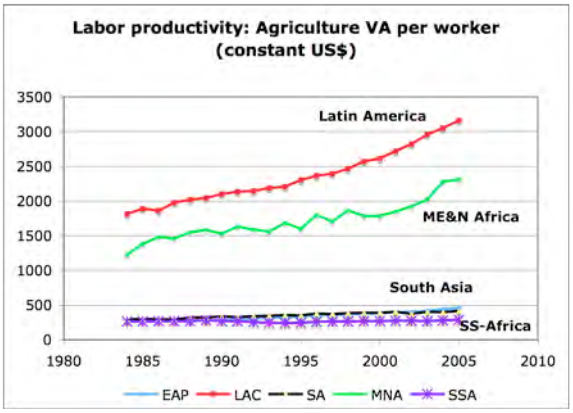

Figure 6. Labor productivity in agriculture

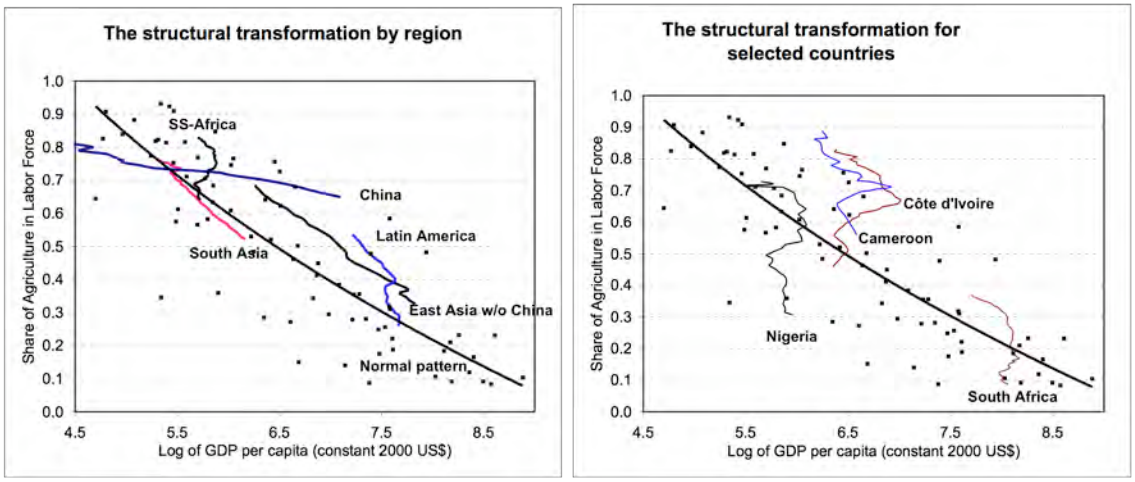

Figure 7. Structural transformation by region and selected SS-Africa countries

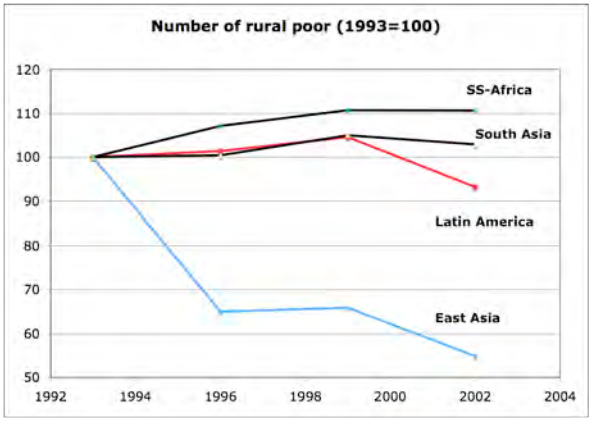

Figure 8. Rural poverty

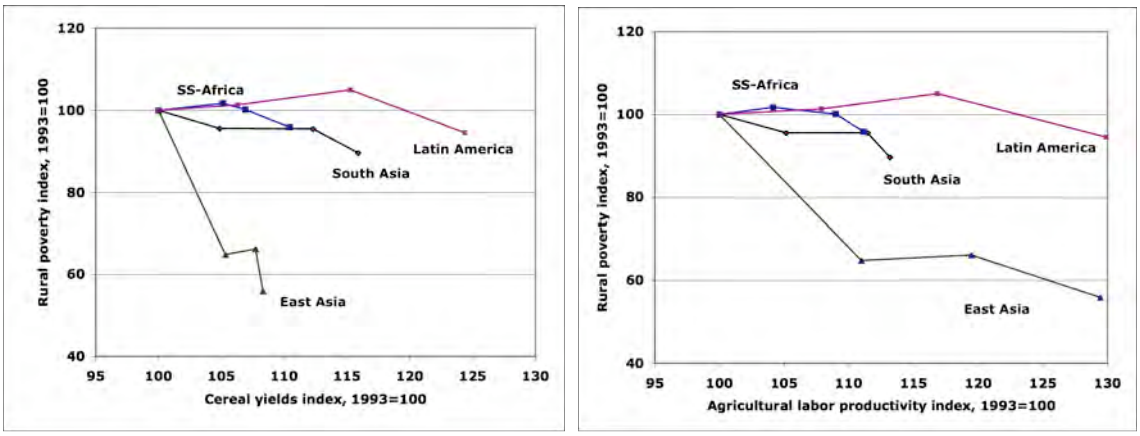

Figure 9. Land and labor productivity gains and poverty reduction

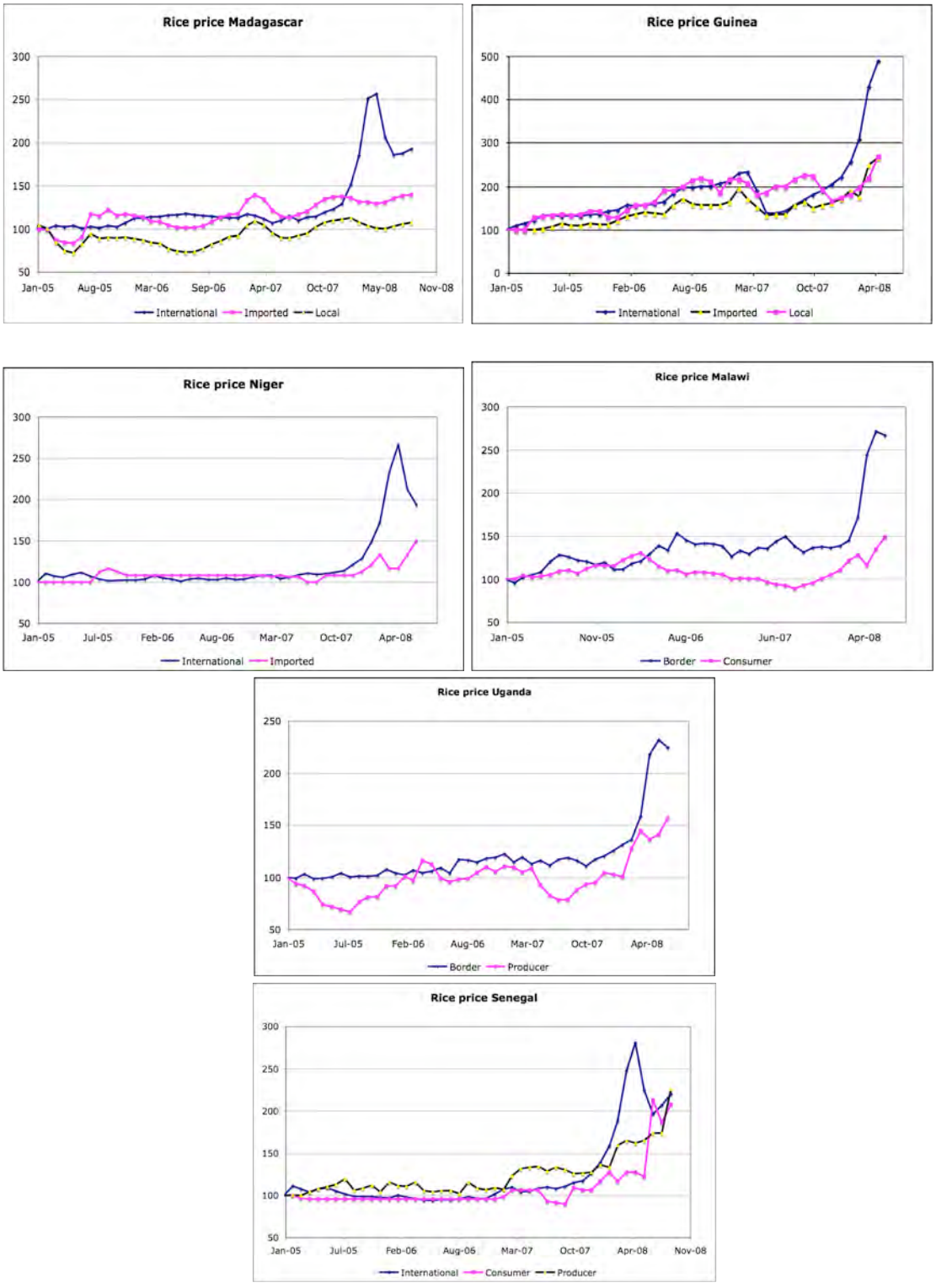

Figure 10. Price transmission for rice from international to domestic market

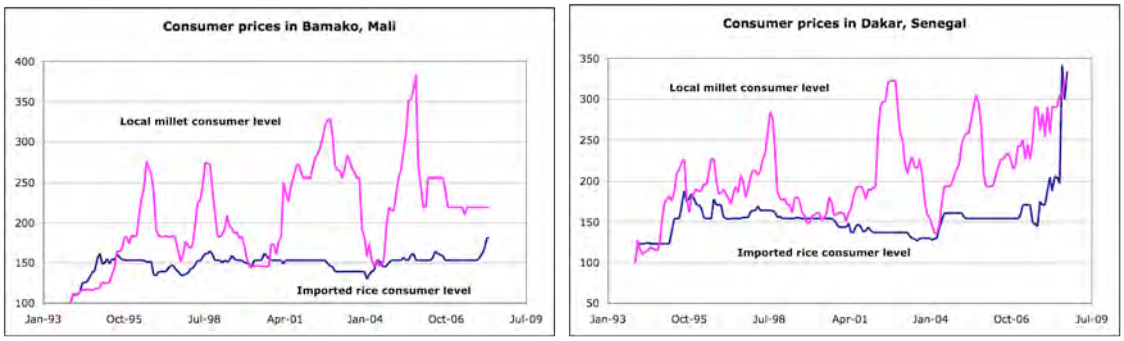

Figure 11. Consumer prices for imported rice and local millet, Mali and Senegal

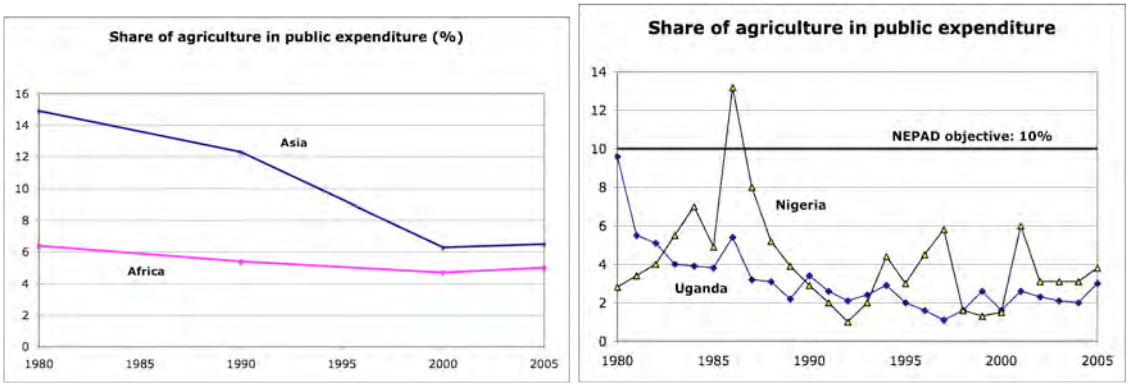

Figure 12. Public expenditures on agriculture

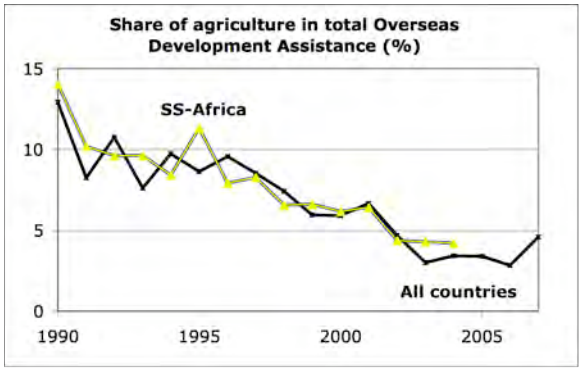

Figure 13. Overseas development assistance to agriculture