

CHALLENGES AND OPPORTUNITIES FOR AFRICAN AGRICULTURE AND FOOD SECURITY

*Higher Agriculture Prices, Climate Change, Population Growth,
and HIV and AIDS*

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June 26, 2009

The approach of this paper

- A literature review
- No new data or results
- References are given in the paper

Robust Economic Growth Africa

Growth rates in GDP at constant prices, 2007–2011

Source: *IMF World Economic Outlook* (April 2009).

Region	2007	2008	2009	2010	2011
Advanced economies	2.7	0.9	-3.7	0.0	2.6
Emerging and developing economies	8.3	6.1	1.6	4.0	6.1
Africa	6.2	5.2	2.0	3.8	5.2
Sub-Saharan Africa	6.9	5.5	1.7	3.9	5.4
World GDP	5.2	3.2	-1.9	1.9	4.3

Other Positive Trends

- Agricultural growth around 3.5 percent
- Armed conflicts down from 15 in 2003 to 5 today
- 22 countries held elections in 2007 that were declared “free and fair”
- More civil society and participation
- Faster progress in business environment than LAC and MENA
- Accelerated efforts in building of Regional and sub-Regional Institutions

Outline

- The Resumption of growth in Africa
- Growing Demand and Higher Commodity Prices
- Climate Change
- Population Growth
- HIV and AIDS
- The Growing Technology Divide
- Markets and Smallholder Services
- Regional Cooperation

Economy-Wide Growth

Ndulu et al. and Collier

- Low growth has left a terrible legacy of poverty and hunger
- African growth has steadily accelerated
- A consequence of high commodity prices?
 - Non-commodity countries doing almost equally well

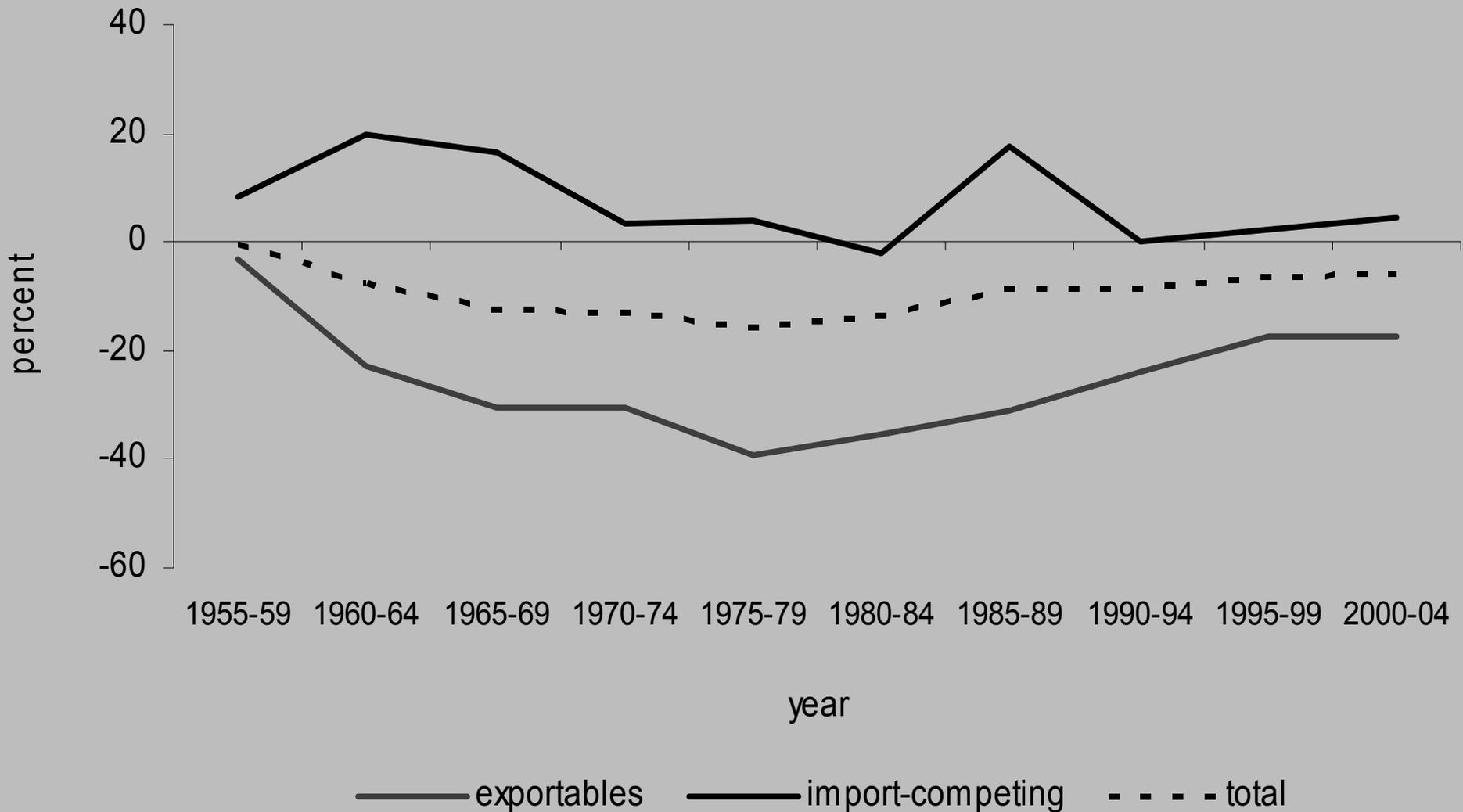
Determinants and Opportunities

- Macro-economic management and policies were critical in improving growth
 - but now present fewer additional opportunities
- Current major constraints:
 - Governance and business climate
 - Infrastructure and regional integration
 - Poor financial sectors, and low savings
 - Poor institutional capacities
 - Except in ministries of finance, central banks

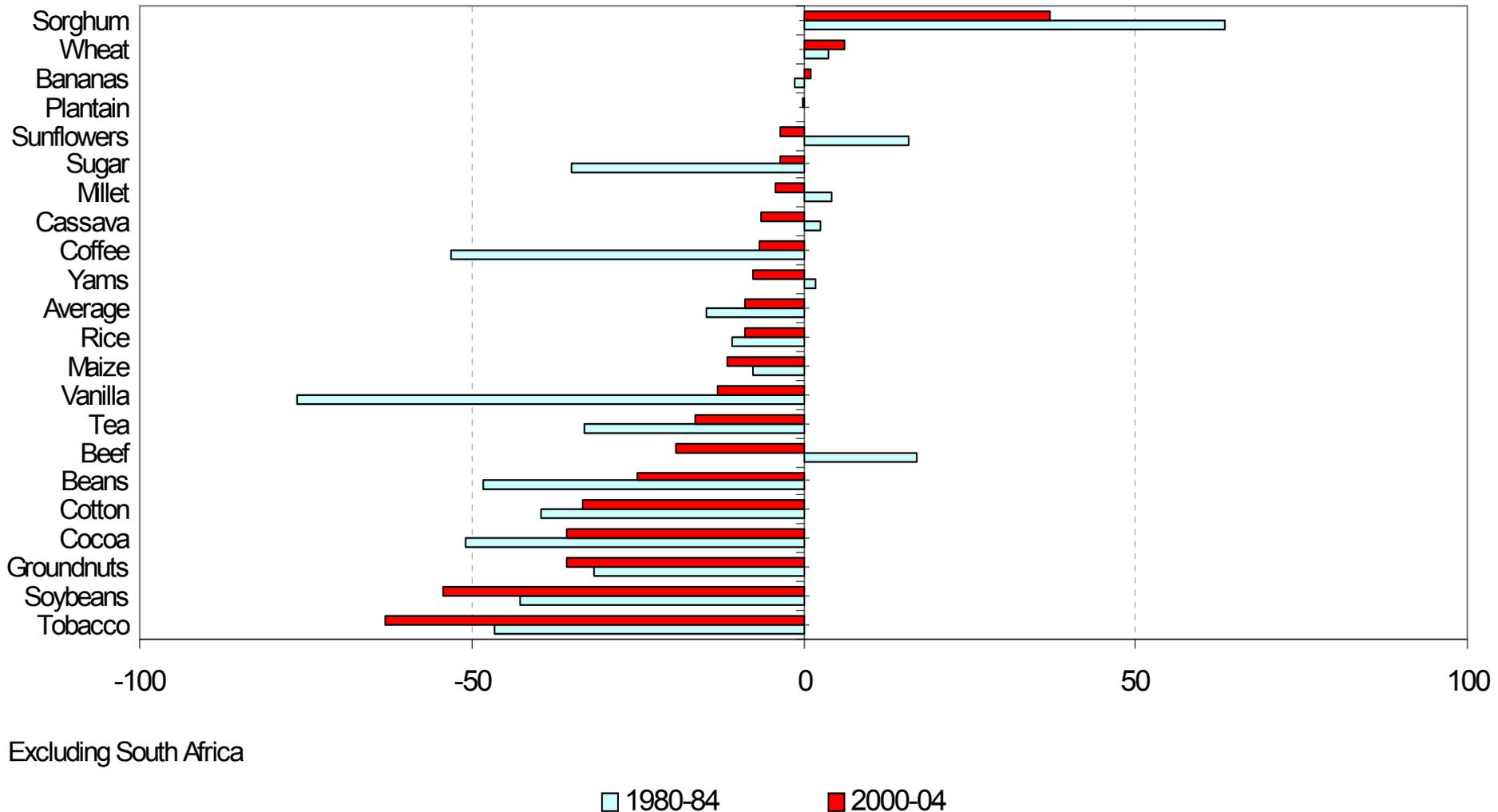
Agricultural Growth

- SSA **per capita** agricultural growth now at 1.5% per year
 - But by area expansion, not via yield growth
- Fuelled by the same factors as economy-wide growth
 - And not by private investment or special agricultural programs
- And fuelled by the reduction of taxation of agriculture
- *But sub-Saharan farmers still face the lowest incentives in the world*

Net Rates of Assistance for agricultural exports are still negative



NRAs still need improvement in many commodities



Excluding South Africa

Higher international prices: opportunities for Africa

- World prices are expected to settle at higher levels than in first half of decade
- They will transmit themselves to domestic economies in Africa
- Combined with better policies, they will lead to higher farm gate prices
- Higher profits, higher farm investments, higher farm growth
- Higher nonfarm incomes and rural wages
- *African agriculture may be at a turning point*
 - *If improvements in policies continue*

Where are market opportunities for Africa

- Food staples and livestock products for domestic and regional markets
 - Farmers can compete at import parity prices rather than lower export prices
 - Lower quality and phyto-sanitary standards
 - Farmers can re-conquer markets lost to the rest of the World
- Much larger opportunities than for niche developed country export markets
- Longer term opportunities
 - mainly in South-South Trade
 - Bio-fuels in sugar-ethanol, cassava, jathropa
- *Requires Regional Infrastructure & Integration*

Awakening the Sleeping Giant

- Large reserves of rain-fed land comparable in quality to the Cerrado of Brazil or NE Thailand
 - Both of these have had stellar performance in agriculture and export growth, and in poverty reduction
 - The Guinea Savannas cover three times the Cerrado, which has so far only utilized half of its agricultural land
- There are many opportunities for intensification and yield growth
- There is significant underutilized irrigation potential in other sub-regions
- *Mobilizing these potentials requires investment in infrastructure, irrigation and technology*

How competitive are African farmers in basic staples?

- African supply chains are generally competitive in domestic markets, but not in overseas markets
- That is not because of lack of competitiveness at the farm level
 - But because of high processing and logistics costs
- Small farmers tend to have lower shipment values at farm level than emerging and commercial farmers

But what about Climate Change

- Aggregate productivity reduction over this century of between 15 percent and 30 percent
- *An increase in TFP growth rates of third of a percent could offset the impact of climate change*

IPCC on Expected Climate Trends

- Higher temperatures
 - more so at night than during the day
 - more so at higher latitudes
- Rainfall either up or down
 - Down in Mediterranean and Southern Tip of Africa but up in Eastern Africa
 - Depending on the climate model, e.g. in the Sahel
- Extreme weather events likely to increase, but no clear trend in tropical cyclones
- Predictions of runoff vary widely
- Uncertainties around length of growing season

Adaptation to Climate Change

- African farmers have adapted to more extreme climate change in the past
- Scientific research, new technology, infrastructure, and higher growth and profits should make adaptation easier
- **Specific adaptations** needed are not predictable at this time
- **General capacity to adapt** to change and to extreme weather needs strengthening

Conclusion

- Climate change is a manageable challenge and presents opportunities for carbon sequestration
- Adaptation requires mainstreaming of climate change into a general agricultural development strategy: Technology, markets, risk management
- Aimed at improving *adaptation capacity, not specific adaptations*

Population Growth

- Population growth of SSA still at around 2 percent
 - HIV and AIDS have significantly reduced the population growth rates
 - But no country is projected to see its population go down because of HIV/AIDS
- Population is still expected to rise to more than 1.5 billion by 2050

Expected Growth Impacts

- “Population dividend” of declining dependency ratios is still a long way off
- Combined with rapid economic growth, population growth will sharply increase regional food demand
- Youth unemployment is an enormous challenge
Rapid smallholder growth is needed to feed the population and to provide direct and indirect employment

Population growth and land resources

- Land degradation seen by many as very serious, requiring urgent action
- But data on trends are hard to come by
- Longitudinal studies show that Boserup-Ruthenberg effects are occurring with population growth and market access
 - Intensification, crop-livestock integration, manure and compost, animal traction, soil conservation investments, tree planting
- *FAO's LADA will provide clearer answers*

Counterintuitive findings on HIV and AIDS and agriculture

- Better nutritional status does not significantly reduce HIV incidence, or prolong life after infection. Only prevention and ARV therapy do
- Most households which experience an AIDS death quickly replace adult members
- Both aggregate supply and demand for labor go down
- Affected household are as short of land and capital than labor
- Not all orphans are vulnerable: But households with more than one orphan are under-nourished. *Their number is growing rapidly*

Role of food and agriculture in HIV and AIDS

- Food intake of HIV and Aids patients is higher, therefore treatment is more effective with better food intake
- Agriculture and food interventions are most useful in mitigation and household recovery
- Prevention, prolonging life, and dealing with OVC requires expanding the badly lagging rural HIV/AIDS interventions

How to fight rural AIDS is fairly well understood

- Prevention, ARV therapy, and care and support are complex interventions that require deep community involvement
- Agricultural and rural development programs are becoming more and more participatory
- Scaling up ARV therapies in rural areas is both possible and a major priority
- Rural safety nets also require participatory approaches
- Rural prevention, treatment and care and support efforts must therefore be mainstreamed into CDD programs and approaches

FAO can play an advocacy and best practice role

The way forward for Agriculture

- The most pressing challenges are
 - Removing agricultural dis-protection in lagging countries and lagging commodities
 - Closing the widening technology gap
 - Development of Markets and Smallholder Services
 - Development of Regional Cooperation for Agriculture

On top of the current technology lag, a high risk of a growing divide

- Heterogeneity implies fewer opportunities to borrow from outside and within
- Private sector entry and intellectual property rights increases complexity
- There has been severe and persistent under-funding of public research
- Research is fragmented into
 - 400 public and private entities and universities
 - 3600 poorly funded agricultural scientists
 - 12 CGIAR institutions active in Africa
- The CGIAR has been growing slowly and pursued too many priorities

Impacts of Research in African Agriculture

- Median rates of return in Africa are 34 % compared to Global median of 46 %
- Adoption has been significant in maize, irrigated rice, root crops, pulses, some oilseeds...
- But adoption of new technology in SSA has resulted in lower yield gains than elsewhere
 - Because of low input use, limited irrigation
 - These are associated with poor delivery systems for inputs, high costs of irrigation, and high marketing margins of output
 - In turn these problems are caused by limited scale and competition in these markets

Focus on stressors that are hindering productivity is inadequate

- There are more crops, more environments more pests and diseases than in any other continent
- Ability to borrow internationally and within the Region is much more limited than elsewhere
- More research is needed, including more basic research than elsewhere - but trends are otherwise
 - Domestic and donor commitments have been declining
 - CRIAR priorities are no longer on genetic improvement to deal with the stressors
 - The Africa Challenge Program is not focused on these stressors
- Transgenic research and varieties are lagging badly
- Gates has started to fill the gap in some areas

Transgenic crops and Privatization of Agricultural Research

- Transgenic crops presents great opportunities to deal with the stressors
- Access to Transgenic Crops is complex and expensive, and requires access to intellectual property frequently held by private sector
- Critical mass in research and regulation requires Regional and sub-Regional collaboration

Technology problem is neither an issue of the why nor of the how

- NEPAD, FARA, and Sub-Regional Research Organizations have taken the lead in changing the situation
- But their proposals remain under-funded
- Funding problems of national institutions even more severe
- Excessive reliance on donors has been a break or progress in the past
- Unless African countries start paying themselves, they will not be in the lead
- They should use some of the greater fiscal space they now have

Family farms or commercial farms?

- Neither theory nor empirical evidence supports superiority of commercial farms
- Over 50 years of history are of fostering commercial farms show poor results except for plantation crops
- Where commercial farms have succeeded in Africa they have been subsidy-dependent
- Disadvantages of family farm can be overcome by contract farming, farm machinery rental, and farmers association

Possible exceptions

- Plantation crops where contract farming is difficult (e.g. sugarcane under irrigation)
- Horticulture for exports
- Low population density areas where immigration and/or farm machinery rental is infeasible or difficult

The Challenge of Improving Input, Output, and Financial Markets

- Their poor development are caused by unfavorable material factors
 - low population density
 - land-lockedness and poor infrastructure
 - covariance of risk
 - Small markets as a consequence of low input use
- Limited competition, and illegal extractions along the road are partly a consequence of the underlying conditions
 - *but also of poor policy choices and implementation*
- **There are a number of promising approaches in the making but they are still at the pilot stage**
 - *Support to input dealers, seed companies, processors....*
- *But policy measures to improve competition and reduce illegal extractions remain very important*

The imperative of strengthen regional and sub-regional capacities

- Too many small countries
- Regional trade is good for growth, farmer's income, regional foods security and the private sector;
- Requires harmonization of standards and sanitary measures, and sub-regional and regional capacities to implement them;
- Regional infrastructure is critical for access to regional and external markets;
- Reversing land degradation and desertification and preserving biodiversity require trans- boundary collective action;
- Defense against plant and animal disease epidemics require collective responses at sub-regional and regional levels;
- Agricultural research is far better done on a regional or sub regional basis –FARA and the SRO's are on the right track;
- Bio technology is complicated and expensive requiring a critical mass;
- Scientific capacity is better fostered by regional institutions which have critical mass and necessary financial support.

The problem of shirking on Regional Public Goods

*All countries have an incentive to shirk in
contributions to Regional Public Goods
Can only be overcome **by better Regional or
International Funding arrangements***

*These should be co-financed by multilateral donors
such as the AfDB*

*Probably in association with ECA, the African
Union, FAO for technical inputs*