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Agricultural input business development in Africa: Opportunities, issues and challenges

Report presented by ECA-SA during the working lunch on Public- Private Partnerships in Agribusiness and Agro-industry Development in Africa through Regional Value Commodity chains

Abuja, Nigeria, 9 March 2010

Food and Agriculture Organization of the United Nations

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Executive Summary

Economic growth and poverty reduction in Africa can be achieved by enhancing the productivity and profitability of agriculture through the development of agricultural input sector. This paper reviews the current state of agricultural input production, marketing and consumption in Africa, with the goals of identifying primary business opportunities and constraints, risks and challenges from the private sector perspective. The paper also summarizes the major existing partnerships and initiatives in the agricultural input business sector in Africa, especially Public-Private Partnerships (PPPs), cooperatives and joint ventures in order to address the factors that impede agricultural input use in Africa and document best practices, lessons and challenges in fostering agricultural input business development in the region. Furthermore, the paper sheds more light on prospective and potential successful business alliances and partnerships in agricultural input sector in order to tap the under-exploited market opportunities in Africa.

The findings of the paper show in more detail that the constraints preventing a successful agricultural input market in Africa occur on both the demand and supply sides and are unique to the African context. For one, the general isolation of rural farmers from markets makes marketing costs prohibitively high for most suppliers. In addition, perceived demand for inputs is low, despite the contrary. Direct interventions of governments in providing inputs can be more disruptive than supportive, and in almost all cases the resources used can be better spent elsewhere. Ensuring that complementary public goods–transportation infrastructure, communication, research and extension, irrigation – are provided can foster a more successful commercial market for inputs. The private sector is more capable of providing inputs to farmers at lower prices and in reliable quantities, but only if the supply side constraints are also overcome.

The return to 'smart' input subsidies is worrisome. Although there are situations in which subsidies may be the most effective strategy (for example, in the immediate aftermath of an emergency), they are often difficult to phase out and present opportunities for capture and rent-

seeking. In addition, they discourage private investment in the sector. However, guidelines for avoiding the disadvantages of input subsidies are available to guide government insisting on subsidy policy.

Revolutionizing the input supply system in Africa requires a holistic approach that addresses, among other issues, access, affordability, availability, and incentives. It is not surprising that the use of vouchers as an alternative distribution strategy for agricultural inputs is now rampant in many African countries but under-delivery and the disruption of agricultural input marketing pose enormous challenges. Strengthening agricultural input supply system through public-private partnerships, and strengthening capacity for appropriate distribution of inputs are top priorities.

1. Introduction

Despite Africa's rich agricultural resource endowment, the continent remains the only region of the developing world where agricultural input business is not well-developed. Consequently, there have been segmented markets of sub-optimal size of agricultural inputs, which do not ensure profitability of sizeable private investment in the different stages of the commodity chain.

Despite the importance of agriculture in their economies, many countries on the continent are yet to establish a systematic focus in their agricultural planning history that shows a conscious effort to purposely prioritize the development of agricultural input business. Ordinarily, many African countries should have adopted a prioritization scheme in which, for some specified time periods, they would consciously emphasize on one or more of the areas of agricultural input production, marketing, consumption and institutional support services for agro-industry.

Consequently, the focus of Africa's agricultural input business development priorities should be based on (a) a comprehensive stock taking of existing information and knowledge that can be used to advance agricultural input business development in Africa; (b) a common understanding of priority actions needed to overcome the main constraints that are impeding the successful development of agricultural input business; and (c) a shared vision for harmonizing and aligning efforts between the public and private sectors, for the purpose of achieving greater agricultural input business development effectiveness. The key issues for such prioritization should include awareness of improved use of improved inputs (fertilizer, seeds, irrigation) by private investors, improved management knowledge, reliability of input supplies, returns on investment, favorable business climate, availability of business credit and market access opportunities among others. These key issues are highlighted in various sections of this report.

Following chapter one, chapter two focuses on opportunities in the agricultural input sector in Africa. Chapter three examines the major trends in agricultural input production, marketing and consumption

in Africa. Chapter four reviews existing partnerships and initiatives in agricultural input business sector in Africa with a clear focus on on-going Public-Private-Partnerships (PPPs) and a summary of the lessons learnt from them. Chapter five assesses some prospective and potential successful business alliances and partnerships in agricultural input sector based on the lessons learnt from the existing ones. Chapter six concludes with policy recommendations and strategies for the business community, policy makers and other stakeholders in order to strengthen agricultural input business development in Africa.

2. Opportunities in the Agricultural Input Sector in Africa

In order to draw insights for agricultural input business development in Africa, four separate categories of business opportunities and strategies can be described: financial, economic, social and political (Kelly et.al, 2003 and Crawford et al, 2003). Financial consideration deals with increases in the net income of farmers, marketers, processors and other private investors in the agricultural input supply chain. Economic opportunity is about increases in real income for the overall society based on costs and benefits in terms of opportunity cost. Social objectives include improvements in indicators of welfare that are not amenable to quantification and equity, which deals with the distribution of social benefits and costs. Central to the social dimension is the analysis of the range of formal and informal organizational and institutional factors that influence input business outcomes. The fourth dimension of political consideration provides explanation on how agricultural input business is potentially affected by any government intervention in the level or distribution of input benefits through subsidies and other interventions in order to maintain political balance and build political support.

Broader and more accurate understanding of agricultural input business opportunities usually depends on the objectives that are being pursued. From the private sector perspective, agricultural input business development can be viewed as sacrificing certain present values of consumption for future consumption. It is the commitment of money in order to earn future benefits. Hence, financial returns to input use at the farm level by primary producers (farmers) and profitability of input supply by input suppliers (traders) are crucial for the private sector.

In a situation where financial analysis illustrates unprofitability of input use and supply, a careful examination of the various factors influencing yields, prices and costs is required to increase profitability of input use and supply. Such analysis should be based on inter-sectoral linkages within the economy as agricultural inputs needed for business are obtained from the different sectors of the economy or from abroad. Unprofitability of

agricultural input may also occur as a result of high input prices or low output prices. Among others, high transport costs, transaction costs, policy incentives or disincentives through interventions such as subsidies, non-competitive behavior of marketing agents and suppliers tend to adversely affect private input markets and increase marketing costs and the uncertainty of input marketing. Agricultural input supply also tend to be limited by marketers' perceptions of low farmer demand, which implies high costs and risks in building a supply network.

Agricultural input business needs to be profitable for the private sector. Despite the numerous constraints that the private sector faces in agricultural input business, there is ample evidence that the business could be highly lucrative and profitable. Participation in input business has the potential of being financially attractive to the private sector if there are adequate funding and cost-recovery mechanisms in place. Increasing profitability of input business will require investments in the entire commodity chain—from production through processing and storage to marketing—in order to add value and produce the quality the market demands.

Two broad categories of investment in agricultural input are available. They are the domestic and foreign sources. The local sources include public and private investment while the foreign sources include multilateral, bilateral and private investment. The capital from various sources creates investment that, in turn, creates increasing commercialization and generates increasing returns of various kinds as driven by the pattern of demands. Available data on domestic private investments are scanty than those on foreign investment. The fluctuating movements in both domestic and foreign investments have been highly correlated with the changing states of political, economic and policy instability, discontinuity and inconsistency on the continent.

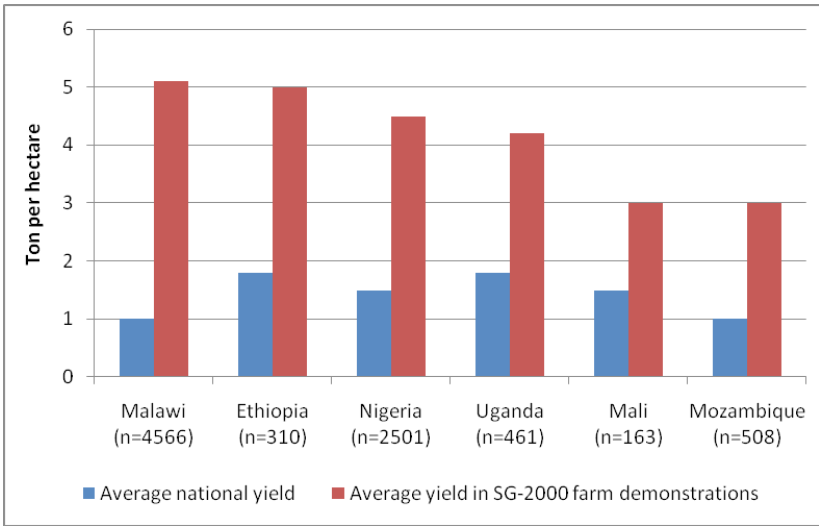
Local and international banking institutions, non-bank financial institutions, and local producer organizations are available to assist in increasing financing for the production, processing, and trade of agricultural inputs through the use of credit facilities, where appropriate, to reduce risk. The opportunities for the private sector to be both a source of investments in input business and a contribution to an environment

where all investments yield higher returns reside in investment in their capacities and execution and monitoring of public regulations in public-private partnerships. The private sector in Africa is very large and diverse and can be a major source of setting standards, training and financing input business. The private sector can also serve as medium and small-scale enterprises and service providers to enhance the efficiency of agricultural input marketing and deal effectively with the costs and risks of developing the market.

3. Major Trends in Agricultural Input Production, Marketing and Consumption in Africa

By reviewing major trends in agricultural input consumption, production and marketing in Africa in comparison to other world regions and within Africa itself, there is ample evidence that although much has been done to increase the use of yield-enhancing inputs in Africa, there is still great untapped potential in productivity and a lack of wide-spread adoption of these inputs (Figure 1).

Figure 1. Gap between actual and potential maize yields



Source: Jayne et al. 2009.

3.1. Fertilizer

Fertilizer is a key agricultural input that shows immediate response and direct impact on crop yields. One kilogram of nitrogen delivered through fertilizer increases crop yields by 7-10 kg on average. Fertilizer production and consumption in sub-Saharan Africa (SSA) are much less

on average than in many other world regions (Tables 1-2). In 2006-07, for instance, total fertilizer production in Africa was 5.6 million mt. of nutrients, compared to 78.8 million mt. of nutrients in Asia, 85.5 million mt. of nutrients in all developing countries and 77.3 million mt. of nutrients in developed countries (Table 1). The corresponding figures for total fertilizer consumed during the same period were 4.7 million mt. of nutrients in Africa, 92.1 million mt. of nutrients in Asia, 108.6 million mt. of nutrients in developing countries and 52.7 million mt. of nutrients in developed countries (Table 2). Levels of fertilizer production and consumption in Africa are not only low but they are also growing at relatively slow rates.

Table 1: World: Fertilizer Production by Region

Area	1995/96				2005/06			
	N	P_2O_5	K_2O	Total	N	P_2O_5	K_2O	Total
	(million mt of nutrients)							
North America[b]	18.3	10.9	8.8	38.0	10.8	10.1	8.9	29.7
Latin America	3.2	1.8	0.3	5.3	3.1	1.8	0.8	5.6
Western Europe	9.3	2.5	5.3	17.1	6.9	1.5	4.4	12.8
Eastern Europe	4.8	1.0	0.0	5.7	4.1	0.7	0.0	4.8
Former Soviet Union	8.5	2.7	5.7	16.8	9.5	3.3	11.3	24.1
Africa	2.6	2.3	0.0	4.9	2.9	2.6	0.0	5.6
Asia	39.5	11.7	2.6	53.9	55.4	17.9	5.5	78.8
Oceania	0.4	0.7	0.0	1.0	0.5	1.0	0.0	1.5
Developed[c]	42.5	18.6	21.1	82.2	32.9	17.6	26.8	77.3
Developing[d]	44.0	14.9	1.6	60.5	60.2	21.3	4.0	85.5
World	**86.5**	**33.5**	**22.7**	**142.7**	**93.2**	**38.9**	**30.8**	**162.9**

a. Totals may not add due to rounding. Calendar year data for 2005 are included with 2005/06.
b. Mexico included in Latin America.
c. Developed countries include North America, Western Europe, Eastern Europe, Eurasia, Israel, Japan, South Africa, Australia, and New Zealand.
d. Developing countries include Latin America, Asia (except Israel and Japan), Africa (except South Africa), and Oceania (except Australia and New Zealand).

Source: IFDC Africa Fertilizer Situation Report, January 2008

Within Africa, regional fertilizer consumption and production trends are heterogeneous (Figures 1-3). In general, North Africa has been the main consumer of fertilizer, utilizing more than triple the total amount of any other region. Looking exclusively at Sub-Saharan Africa, East Africa is the largest consumer of fertilizer. While all of the regions in Africa consume at least a small amount of fertilizer, they produce low quantities of fertilizer. The exception here is also North Africa, which is the only region in Africa to produce fertilizer material in sufficient quantities to satisfy domestic

consumption needs. In fact, most of the remaining regions in Africa do not produce any fertilizer material, except for West Africa

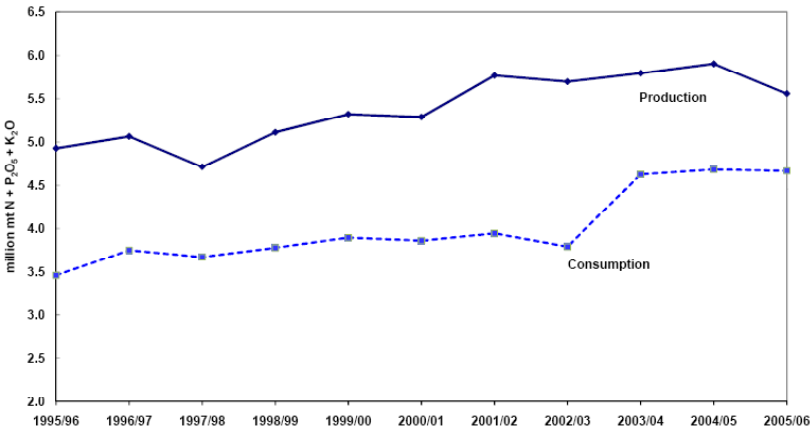
Table 2. World: Fertilizer Consumption by Region

Area	1995/96				2005/06			
	N	P_2O_5	K_2O	Total	N	P_2O_5	K_2O	Total
	(million mt of nutrients)							
North America[b]	12.7	4.8	5.1	22.6	12.7	4.8	4.6	22.1
Latin America	3.9	2.2	2.4	8.5	5.8	4.3	4.4	14.4
Western Europe	9.7	3.6	4.3	17.6	8.5	2.6	2.9	14.0
Eastern Europe	2.0	0.7	0.6	3.3	3.6	1.3	1.3	6.2
Former Soviet Union	2.6	0.8	0.9	4.3	2.0	1.1	1.5	4.6
Africa	2.1	0.9	0.4	3.5	3.3	1.0	0.4	4.7
Asia	44.5	16.3	6.5	67.3	57.0	21.0	14.0	92.1
Oceania	0.8	1.4	0.4	2.6	1.4	1.5	0.4	3.3
Developed[c]	28.8	12.1	12.0	52.9	29.2	12.2	11.4	52.7
Developing[d]	49.5	18.6	8.7	76.8	65.1	25.5	18.1	108.6
World	**78.4**	**30.7**	**20.7**	**129.7**	**94.2**	**37.6**	**29.5**	**161.4**

a. Totals may not add due to rounding. Calendar year data for 2005 are included with 2005/06.
b. Mexico included in Latin America.
c. Developed countries include North America, Western Europe, Eastern Europe, Eurasia, Israel, Japan, South Africa, Australia, and New Zealand.
d. Developing countries include Latin America, Asia (except Israel and Japan), Africa (except South Africa), and Oceania (except Australia and New Zealand).

Source: IFDC Africa Fertilizer Situation Report, January 2008

Figure 1. Africa: Total fertilizer production and consumption, 1995/96-2005/06



Source: IFDC Africa Fertilizer Situation Report, January 2008

Figure 2. Sub-Saharan Africa: Total fertilizer production and consumption, 1995/96-2005/06

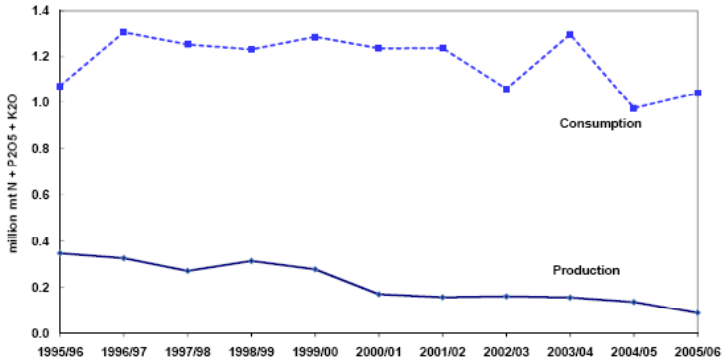
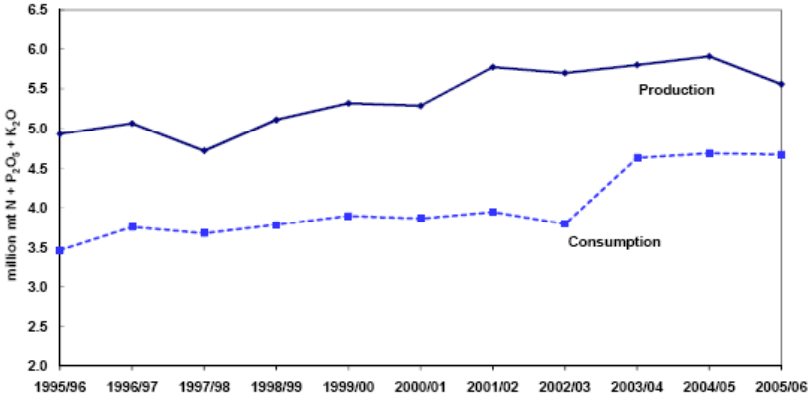


Figure 3. Non-Sub-Saharan Africa: Total fertilizer production and consumption, 1995/96-2005/06



Source: IFDC Africa Fertilizer Situation Report, January 2008

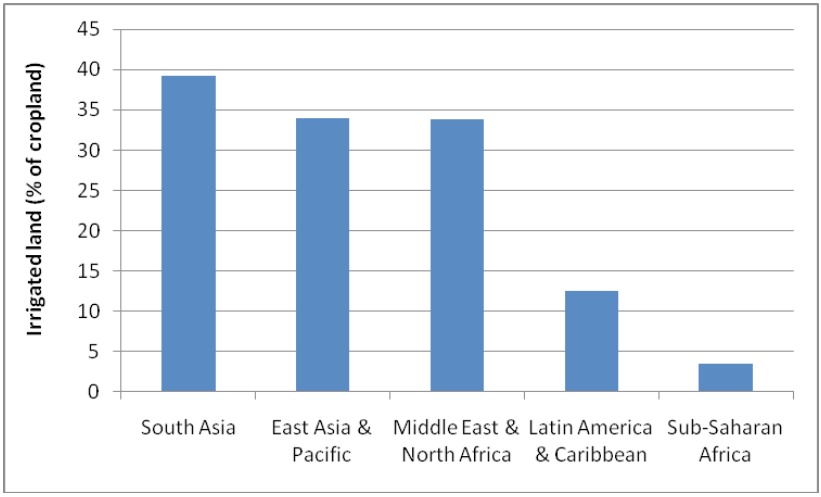
Since most African regions do not produce their own fertilizer, they are dependent upon imports. The largest consumers are also the largest importers, with North Africa and East Africa topping the list. Yet despite the lack of much domestic fertilizer production, and the total reliance on imports for consumption needs, many African regions also export fertilizer. The data seem to indicate that any imported fertilizer that is

left over after annual consumption needs are met is then recycled back into international markets as exported material. Some countries do not do this, and instead use the surplus in the following year, but with few exceptions.

3.2. Irrigation

The UN World Water Assessment Programme (2003) estimates that about 20 percent of global arable land is irrigated and contributes about 60 percent of the global production of cereal crops. Irrigation levels in Africa are also low compared to other world regions with just 3.5 percent of total crop land currently under irrigation compared to 39.2 percent in South Asia (Figure 4). Not only are levels low compared to other regions, but the rate of expansion is also slower than in any other region. Over the last forty years, only 4 million hectares of new irrigation has been developed in Sub-Saharan Africa (SSA), compared to 25 million new hectares in China and 32 million in India (African Development Bank, 2007). Irrigated cereal yields achieved by smallholders in SSA are also generally low and growing slowly by global standards (African Development Bank, 2007).

Figure 4. Share of crop land that is irrigated by world region, 2003.

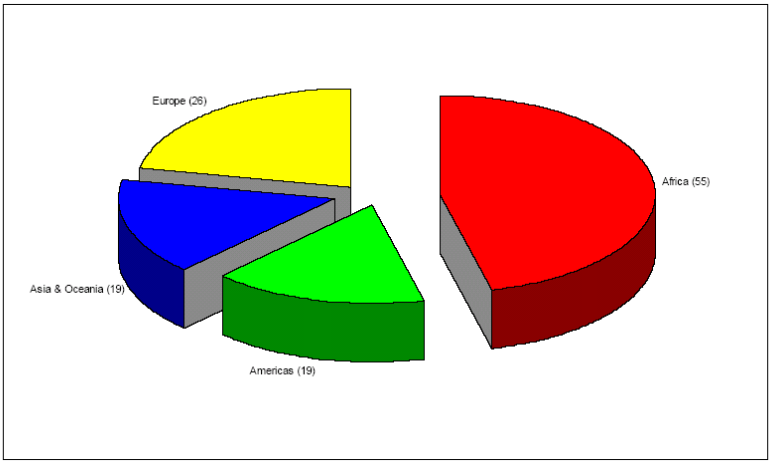


Source: WDI, 2008. Figure for East Asia and Pacific is from African Development

Bank, 2007.

The world's net irrigated area was 229 million hectares in 1988. 62 percent or 143 million hectares of the global total irrigated area is accounted for by the Asian continent alone. Figure 5 presents the number of people per irrigated hectare in four major regions of the world: Africa, the Americas, Asia and Oceania, and Europe. If access to irrigated land is considered as a rather crude measure of a region's well-being, then the rest of the world is two or three times better off than Africa.

Figure 5: Regional Populations per Irrigated Hectare

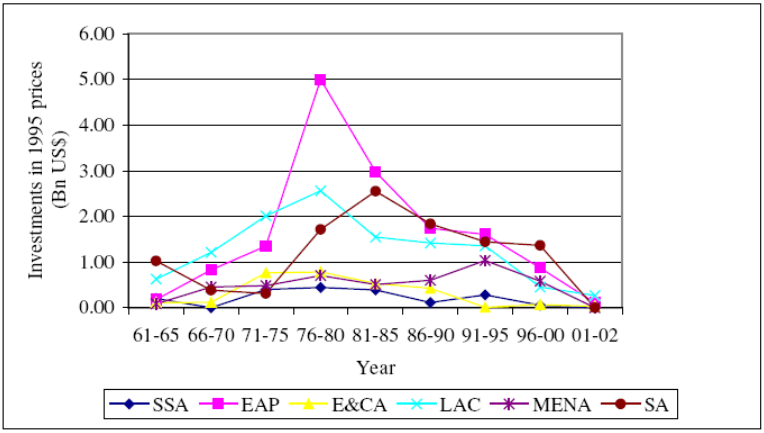


Source: Carter (2003)

As shown in Figure 6, there were general declines in historical figures on lending for irrigation development and drainage in all regions of the world between 1961 and 2002. In particular, donor lending for investments in large-scale irrigation development in sub-Saharan Africa has also witnessed a decreasing trend in irrigation investments between 1981 and 2002, having enjoyed increasing trend in irrigation investments between 1971 and 1981. The amazing failures of many large-scale irrigation schemes in Africa have led to the promotion of the informal sector, small-scale irrigation. This is because the areas of land irrigated by farmers, without help from governments and donor agencies, in many developing countries using traditional systems of water management far

surpassed those developed by the latter via large-scale irrigation schemes, and at much lower cost. While very small-scale irrigation schemes managed by individual private investors are at one end of the range, large government-managed irrigation schemes are at the other end. The relations between scale and form of control in irrigation also show that while some individual farmers control small and large commercial farms, governments also deal with small-scale irrigation schemes.

Figure 6: Trends in Investments in Irrigation and Drainage, 1961-2002



Source: IWMI (2004)

3.3. Improved seed

Improved seed is an important yield-enhancing input, because it is the delivery vehicle for modern plant varieties. The development and spread of modern plant varieties was the technological force behind the green revolutions that occurred in China, India, Southwest Asia, and many parts of Latin America. In Africa, demand for improved seed rose steadily during the 1970s and 1980s. Despite this growth in demand, however, only about 5–10% of the potential demand for improved seed is currently being met. Most farmers continue to plant unimproved seed obtained from local sources, including seed saved from the farmers' own crops, seed obtained from neighbors or relatives, or seed purchased in local markets.

The commercial sector for seed provision is underdeveloped in Africa. Less than 2 percent of the estimated levels of international seed trade occur in the national and regional markets in Sub-Saharan Africa (SSA). In addition, the majority of this occurs in just one region – Southern Africa – and in just a handful of countries. South Africa alone accounts for nearly one third of all commercial seed sales in SSA, with Kenya and Zimbabwe respectively accounting for 18 and 5 percent (International Seed Federation, 2003). Beyond being concentrated in just a few countries, commercial seed sales in Africa are also concentrated in a narrow range of crops, particularly hybrid maize. Strikingly, the production and distribution of improved seed in Africa continues to be the domain of public agencies. Although a number of private companies have developed agro-dealer networks for the sale of improved seeds on the continent, the volume of seed being sold through private companies is relatively modest. Only about 10–15% of agro-dealers distribute improved seeds in Africa. Because of the lack of a well-developed network of seed agro-dealers in Africa, it has been difficult to achieve large-scale adoption of improved seed varieties.

In terms of market structure and performance, procurement and marketing of seeds by the private sector in Africa is dominated by several large companies, most of which receive support from their parent companies based in Europe and America. The companies supply African governments, which in turn distribute seeds through field offices. The companies also sell directly to registered local distributors. The registered distributors, who act as wholesaler-retailers, supply to large-scale farmers either directly or through local retail agents. In recent years, the volume of seeds distributed in Africa has declined, reflecting weak demand on the part of farmers that in turn has undermined the profitability for suppliers.

4. Existing Public-Private-Partnerships (Ppps) in Agricultural Input Business Sector in Africa

Recent trends in Africa indicate several existing Public-Private Partnerships (PPPs) in agricultural input business development on the continent. Table 3 provides a summary of 15 major existing PPPs in the agricultural input sector with their names, countries covered, actors involved in partnerships, crops or inputs supported, amount of money involved where there is available information, and expected impacts or benefits from the partnerships and alliances. Public-private partnerships, defined broadly as any collaborative effort between the public and private sectors in which both sectors contribute to the planning, resources and activities to accomplish a mutual objective, are critical in developing a sustainable agricultural input business in Africa.

Based on the identified existing PPPs in Africa, some general lessons and challenges are observed. In order to ensure competitive, sustainable and healthy agricultural input business in Africa, the input industry should be private-sector-driven in which the private sector stakeholders handle various components of agricultural input marketing continuum, namely: input raw material collection and delivery, processing/semi-processing, packaging, storage, transportation, and final sale/trade. Within these partnerships, the specific roles and responsibilities of the public sector tend to include (i) support for rural infrastructure development; (ii) research and development of appropriate technologies; (iii) support for input supply and distribution, input industry development, input law enforcement and quality control; (iv) maintenance of favorable tariff regime for agricultural inputs; (v) coordination of agricultural input data and information management systems; and (vi) promotion and development of marketing institutions and appropriate micro-and credit institutions and other financial facilities for administering credit to the private sector.

Although many people now call for a complete removal of the public sector from input provision, the existing PPPs show that there is a crucial role for governments to play in this process by enabling and supporting

commercial input development rather than directly intervening. Thus, for instance, while the Yara's Africa Partnership Programs in Ghana, Malawi, Mozambique, and Tanzania support the agricultural input development by focusing on business development, the governments of these countries act as catalysts in providing supportive and complementary public goods. These public goods are in form of investments in roads, irrigation, basic education, market information systems and research and extension as well as in improving institutions (contract law and enforcement, systems of quality grades and standards).

Recent trends in Africa indicate that some countries are returning to subsidies, especially since private sector entry into the market has been so unimpressive. Thus, for instance, in the 2005/06 season, the government of Malawi began implementing the Agricultural Input Support Program (ASIP) to improve smallholder productivity and reduce hunger and food insecurity. The program consisted of allocating seed and fertilizer coupons to targeted households in areas with the potential to produce maize and tobacco. The coupons were redeemable for approximately 72 percent of the costs of two 50 kilogram bags of fertilizer and for the full costs of 2 kilograms of hybrid seed or 3 kilograms of open-pollinated varieties (OPV). Since the coupons were redeemable for a relatively large amount of inputs, they were targeted to households that had the capacity to handle the amount of inputs. Therefore, the program was not meant to reach the poorest. Coupons were redeemable at six private retailers and distribution was handled by large dealers who already had an established network and experience of working with the government. There was substantial report (but not proven) of diversion of coupons in some areas. The program resulted in a 30 percent increase in maize output from the previous year. In addition, food prices were temporarily lower than they would have been without the subsidy. The increased output was immediately exported to Zimbabwe but halted after domestic maize prices skyrocketed several months later.

Table 3. Key existing Public-Private Partnerships (PPPs) in the agricultural input sector in Africa

Name	Countries covered	Actors in partnerships (public/private, NGOs, donors, etc)	Crops or inputs supported	Amount of money involved	Expected impact or benefits
Stanbic Bank Uganda, AGRA and Kilimo Trust Partnership	Uganda	Public and private actors	The entire value chain of different food crops: maize, sunflower, barley, rice, sorghum, beans and soybeans. Inputs include fertilizers and seeds.	AGRA and Kilimo Trust are providing a $2.5 million loan guarantee fund and technical support, while Stanbic Bank will lend $25 million over five years. 40% of this amount will cater for agri-businesses in the value chain.	To finance Uganda's farmers and small/medium businesses and strengthen their access to inputs.
AGRA's Innovative Financing Initiative agreements with commercial banks	Kenya and Tanzania	Public and private actors	General agricultural development	Plans to mobilize US$4 billion in affordable credit	To support agricultural development
AGRA, Standard Bank and other partners	Uganda, Ghana, Mozambique and Tanzania	Public and private actors	Different types of crops and inputs	US$100 million worth of affordable finance, leveraged through credit guarantees	To finance farmers and agricultural businesses as part of regional partnerships
Equity Bank and Amiran Kenya Limited Partnership	Kenya	Private actors	Inputs such as drip irrigation, farmer's green houses, quality seeds, fertilizers, agro-chemicals and tailored training from Amiran's team of expert agronomists	Credit ranging from KShs40, 000 to KShs100, 000 depending on the specific requirements of the farmer.	To enhance small scale farmers access to credit from Equity Bank to finance modern agricultural inputs provided by Amiran Kenya

Name	Countries covered	Actors in partnerships (public/private, NGOs, donors, etc)	Crops or inputs supported	Amount of money involved	Expected impact or benefits
The Ministry of Food and Agriculture and the Environmental Protection Agency of Ghana in collaboration with AGRA and IFDC	Ghana	Public and NGO actors	Inputs such as seeds and fertilizers and training of approximately 2,200 agro-dealers and seed producers in business management skills	Unknown	This is a three-year initiative established to rapidly increase farm productivity and incomes for 850,000 smallholder Ghanaian farmers by increasing access and affordability of quality seeds and fertilizers
IFDC in collaboration with National Agency for Food, Drug Administration and Control (NAFDAC) of Nigeria, Crop life Nigeria, AGRA, Fidelity Bank of Nigeria and National Food Reserve Agency of Nigeria	Nigeria	Public, private and NGO actors	Inputs such as fertilizers and agro-dealer certification training on crop protection products	US$5.5 million	To train more than 10, 000 agro-dealers in Nigeria on agro-chemical safety over a three year period
The Tanzania Agricultural Partnership (TAP) between YARA and the Government of Tanzania	Tanzania	Public and private actors	Agricultural inputs like seeds and fertilizers	US$2.7 million	Established in 2006 to reduce poverty by improving the use of agricultural inputs like seeds and fertilizers throughout the value chain (import of farm inputs like seeds and fertilizers)
The YARA-led Ghana Grain Partnership (GGP), which now encompasses 10 public and private organizations	Ghana	Public and private actors	Farm inputs such as high-yield seeds, chemicals and fertilizers	US$2.25 million with YARA contributing US$1 million and Africa Enterprise Challenge Fund (AECF) contributing the remaining US$1.25 million	To strengthen the Ghanaian grain market by improving collaboration throughout the maize value chain (market infrastructure development)

Name	Countries covered	Actors in partnerships (public/private, NGOs, donors, etc)	Crops or inputs supported	Amount of money involved	Expected impact or benefits
The YARA-led Malawi Agricultural Partnership (MAP), which now involves partners like AGRA, IFAD, the Norwegian government and local authorities such as the African Institute of Corporate Citizenship (AICC)	Malawi	Public, private, donors and NGO actors	Fertilizers and the entire value chain	Unknown	To reduce costs along the fertilizer supply chain in order to build on the success of Malawi's fertilizer subsidy program, and engage the entire value chain in a coordinated program of initiatives related to agricultural development
The YARA-led Agricultural Growth Corridor	Tanzania and Mozambique	Public and private actors	Fertilizers and improved inputs efficiencies and infrastructure management	Unknown	The development of port facilities in Beira, Mozambique and Dar es Salaam, Tanzania as regional distribution hubs for agricultural inputs as a catalyst for wider agricultural sector growth across various interconnected agricultural value chains

Name	Countries covered	Actors in partnerships (public/private, NGOs, donors, etc)	Crops or inputs supported	Amount of money involved	Expected impact or benefits
The Yara Prize for a Green Revolution in Africa	Africa	Public and private actors	The entire food system with a focus on agricultural inputs such as fertilizers and seeds	US$ 100,000 grant, a glass trophy and a diploma. Winners are chosen by The Yara Prize Committee.	Launched in 2005, the Yara Prize honors work that increases food productivity, security or availability through improvements in food systems, advancements in sustainable agriculture and development of local markets. The prize aims to encourage innovation and entrepreneurship.
National Microfinance Bank, Tanzania and the Government of Tanzania	Tanzania	Public and private actors	Products such as Sugar out growers and ware house	Unknown	Development of new products related to the various stages of the agricultural supply chain to meet the needs of the industry
The West African Seed Alliance (WASA) involving MONSANTO, AGRA, USAID, PIONEER (A DUPOINT COMPANY) and five West African Governments	Five West African countries	Public and private actors and donors	Affordable, timely, and reliable access to high-quality seeds and planting materials	US$61 million alliance with USAID contributing US$14.3 million over a five-year period	To ensure growth and development of viable agricultural inputs systems in West Africa, and build the capacity of existing and emerging seed companies while expanding agrodealer networks. WASA also addresses seed trade harmonization laws across the five countries it works in, facilitating cross-border trade.

Name	Countries covered	Actors in partnerships (public/private, NGOs, donors, etc)	Crops or inputs supported	Amount of money involved	Expected impact or benefits
The African Agricultural Capital (AAC), established by the Rockefeller Foundation, the Gatsby Charitable Foundation and Volksvermogen NV as a venture capital investment fund	East Africa	Public and private actors and donors	Businesses within the agriculture value chain with a particular focus either on inputs and service provision to farmers or on providing farmers with improved access to market opportunities	Largely unknown	To invest in small and medium-sized agriculture-related businesses and improve the livelihoods of small-holder farmers in East Africa
Africa Seed Investment Fund (ASIF), managed by the African Agricultural Capital (AAC)	Eight countries in Eastern and Southern Africa (Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda and Zambia)	Public and private actors and donors	Seeds or vegetatively propagated products for delivery to markets	Largely unknown	To improve the delivery of quality certified seed to smallholder farmers and build healthy, long-term viable businesses that can attract additional capital to the seed sector

By properly synchronizing the partnerships between the public and private sectors in the Malawi subsidy program, the diversion from commercial sales would have been lessened and overall maize output would have improved by a greater amount. In addition, since the program worked with so few retailers, many smaller rural retailers were essentially put out of business by the competition. Including them in the process would have ensured less disruption in the commercial market and greater equity in distributing the program's benefits. Morris et al. (2007) provide ten guiding principles for public-private partnerships in subsidy programs for countries that insist on them:

1. Promote the factor or product as part of a wider strategy that includes complementary inputs and strengthening of markets
2. Favor market-based solutions that do not undermine incentives for private investment
3. Promote competition and cost reducing barriers to entry
4. Recognize that effective demand from farmers is critical to long-run sustainability
5. Insist on economic efficiency as the basis for fertilizer promotion efforts
6. Empower farmers to make the decisions about soil fertility management
7. Devise an exit strategy to limit the time period of public interventions
8. Pursue regional integration in order to benefit from the economies of market size
9. Emphasize sustainability as a goal when designing interventions, and
10. Promote pro-poor growth, in recognition of the importance of equity considerations

5. Prospective and Potential Successful Alliances and Partnerships in Agricultural Input Business Sector in Africa

The three main constraints facing agricultural input business sector in Africa include knowledge constraints, financial constraints and risks. These are faced by both purchasers and suppliers. Successful prospective and potential business alliances to address these constraints should focus on a combination of the three at the same time. These partnerships and alliances Should bring together resources and expertise from a wide variety of actors, including the private sector, international organizations, government agencies from developing and industrialized countries, multilateral and bilateral donors, philanthropic foundations and non-governmental organizations, and some of the largest agricultural input and agro-industry companies in the sector.

Another key supportive role for the government to play in the process involves changes that will reduce marketing costs. Marketing costs of agricultural inputs are high in African countries and constitute at least 50 percent of the farm gate price. High input costs can be reduced by investments that lower the costs of transportation and marketing, which will not only make prices lower for farmers but will also increase the profitability for suppliers. Several ways to do so include reducing port fees, coordinating the timing of input clearance from the port with up country transport, reducing transport costs and reducing high fuel taxes.

In some regions where governments are still heavily involved in agricultural input marketing, they can be encouraged to do so in a way that still fosters commercial competition. In a number of countries in West Africa, the governments control fertilizer distribution but introduce some competition by contracting private importers and distributors to actually supply the fertilizer. In Benin, a farmer-owned organization selects suppliers and negotiates prices, while also serving as a clearing house to ensure farmer repayment of government-provided input credit. These examples of private-public cooperation can serve as models for strengthening competition in markets during the transitional period.

Since each country's demand for agricultural inputs is relatively low, regional markets should be exploited in order to achieve economies of scale and lower marketing costs. Governments can reduce regulations that restrict regional input trade and can focus on policies that harmonize standards across countries. As of 2003, Eastern and Southern Africa had made progress on harmonizing variety release procedures for seeds across countries so that breeders could market their products to similar agro-ecological climates that happen to cross national borders. West Arica had also made some progress towards standardizing and simplifying phyto-sanitary procedures and regulations for cross-border seed trading. By allowing suppliers to pursue multi-country variety releases, they can more easily capture economies of scale and lower prices.

Aside from complementary investments to reduce risk indirectly, there are also innovative public-private programs that can address these constraints more directly. Seed and fertilizer distribution programs have had much success in the use of small, more affordable packages often referred to as mini-packs. These smaller packages allow farmers to experiment with new technologies without making a major financial commitment which not only increases their knowledge of available yield-improving inputs, but also allow them to find a combination that works specifically for their situation.

During the implementation of the Structural Adjustment Programs (SAPs), many African governments withdrew from procurement, supply, and distribution through a regime of deregulation, and market forces largely determined prices. Subsidies on agricultural inputs stopped. The private sector responded very weakly to the extent that they could not meet the short term challenge. Private companies have yet to enter the input market in the numbers expected. Consistent implementation of many government policies and an expanded role for the private sector in agribusiness activities generally will encourage private-sector participation in the sector.

As a result of Africa's weak market infrastructure, input markets are often localized with weak transmission of prices between the markets and hence sharp fluctuations in prices. One often finds acute input shortages in one sub-region while there is surplus elsewhere, within the country

or region. One response to addressing such marketing problems is to set up Market Information Systems under the joint alliances of both the public and private sectors. Such partnerships can offer the private sector access to mechanisms for developing, and distributing inputs and financial resources that are otherwise increasingly difficult to obtain; while providing the public sector access to new, cutting-edge scientific expertise and knowledge and technologies held by the private sector.

6. Policy Recommendations and Strategies

Although agricultural inputs have great potential to increase productivity in certain contexts and for certain crops in Africa, adoption remains relatively low in most cases. This is a product of shifting policy environment over the past forty years that has led to an underdeveloped commercial market for inputs. The strategies for accelerated investment in Africa's agricultural input business development should directly address issues related to the harmonization of agricultural input policies, clear description of functions and responsibilities of the various actors in the agricultural input business, and strengthening of the private sector's capacity and incentives to engage where it can perform. African governments need to work with international private companies and domestic private investors, along with local and international Non-Governmental Organizations (NGOs), foundations, donors, national and regional agricultural research organizations to scale up and expand public-private alliances in input business. Both the public and private sectors also need to develop alliances that mobilize the capacities and resources of universities and think-tanks to support advanced training for African scientists, policy makers, and business leaders. Linkages among producers, traders, processors, and consumers will reduce vulnerability and encourage markets to respond to shocks.

Increasing regional trade in agricultural inputs is important in order to improve the operation of key trade and transport corridors, improve market structures, expand financial services, and facilitate the free flow of inputs from surplus to deficit areas. Long distances and poor roads, combined with man-made impediments such as export restrictions, cumbersome customs procedures, and unpredictable government marketing operations need to be dismantled. It is crucial to link farmers with improved private sector distribution, processing and storage. Establishing multi-partner value chain alliances, supporting agricultural input value chain development and increasing access of the private sector to capital, including expanding credit availability and reducing the risks to commercial banks for lending will increase profitability of key agricultural input value chains.

Bridging information gaps and strengthening agricultural input market exchanges are crucial in capturing trade information for major inputs in Africa. Improving agricultural input marketing, will lead to the dissemination of critical market information such as prices, regional input statistics, supply and demand figures and the regulations and procedures that govern trade in different countries. This will ensure a continuous flow of information on topical and emerging issues in input trade and will ensure the availability of reliable and timely market information that will help private investors make informed choices and understand the peculiarities of the agricultural markets in the region.

The organized private sector need to be mobilized, encouraged and given incentives to actively participate in the production and distribution of agricultural inputs through the provision of credit and micro-credit strategies. Integration and linkage of rural financial institutions to the formal banking sector and regulation of the growth of non-bank financial institutions with emphasis on savings mobilization at the grassroots level will go a long way to reduce transaction costs. Modification of terms of credit such as interest rate, eligibility criteria and legal requirement to enhance market access is pre-requisite for resource mobilization.

Strengthening the capacities of the existing agricultural market exchanges and encouraging the establishment of exchanges in countries where they do not exist will strengthen information flows and create wider market networks in Africa. This will also lead to strong supportive frameworks that enhance competitiveness in the agricultural input trade. If African countries want to achieve potential gains of agricultural input business, emphasis should be in areas where they have comparative advantages to ensure efficiency of resource use. Further reforms in input supply should be adapted to each country's specific economic and social characteristics, priorities, and level of development.

Multiple, duplicative and overlapping protocols, structures and mandates of institutions involved in regional trade arrangements should be dismantled to expeditiously clear and facilitate movement of inputs across national borders, and building the capacity of trade associations to identify and advocate for needed improvements along the trade and transport corridors. The capacities of government agencies, regional

bodies, private sector trade associations, farmer organizations, and other development partners should be strengthened in order to identify and address the main bottlenecks to the marketing of agricultural inputs.

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