



## **AFRICA AGRICULTURAL MARKETS PROGRAM**

### **Fertilizer Symposium**

**“Getting Fertilizers to Farmers: How to do it?  
Who should do it? and Why it Should be Done?”**

**David Livingstone Hotel, Livingstone, Zambia  
15-16 June 2009**

## **“Getting Fertilizers to Farmers: How to do it? Who should do it? and Why it Should be Done?”**

The African Agricultural Markets Programme (AAMP) is a partnership between the Secretariat of the Common Market for Eastern and Southern Africa (COMESA) and the World Bank. The program aims to enhance regional capacity, policy dialogue, and coordination on agricultural input and output markets through a series of policy seminars, training, and analytical work. The first event which took place in Nairobi, Kenya in December, 2008, looked at regional trade in food staples. This second meeting in Livingstone, Zambia focused on input market development. This meeting is not just about discussing policy but coming up with practical recommendations.

### **SESSION I: OPENING ADDRESS**

The proceedings were addressed by Dr. Chungu Mwila, Director of IPPSD (representing COMESA Secretary General), Bernard Namachila, Permanent Secretary of Marketing & Cooperatives (representing Honorable Brian Chituwo, MP, Minister of Agriculture and Cooperatives, Republic of Zambia) and Dr. Maria Wanzala, Agricultural Advisor (representing NEPAD).

In his opening remarks, Dr. Mwila informed the meeting that the COMESA Heads of State Summit had taken place in Zimbabwe, where the Customs Union had been formed. Dr. Mwila said despite the increase in COMESA trade volume, most of it was still with the outside world mainly because the products are raw materials. He noted that the theme of the summit this year was on value addition and food security to contribute to increasing trade within the region. Dr. Mwila encouraged the team to continue their work on AAMP to benefit farmers, traders, and other stakeholders in the region.

Officially launching the seminar, Mr. Namachila on behalf of the Minister of Agriculture in Zambia, Dr. Brian Chituwo emphasized the importance of agriculture for poverty reduction in the COMESA region and especially the importance of fertilizer for increasing productivity and growth. He expressed his hope that policy makers would have opportunities to dialogue with other stakeholders through AAMP and make good and timely policy changes.

Dr. Chituwo noted that the Zambian Government wanted the agricultural sector to take centre stage and be the number one contributor to GDP, wealth creation and poverty reduction. He however, noted that the Zambian agricultural sector had been stagnant over the last few years. His hope was that COMESA’s agricultural programs including AAMP will contribute immensely to the design and implementation of effective marketing policies in member States.

In her opening remarks, Dr. Maria Wanzala noted that this meeting was pertinent to the creation of an enabling policy environment for the agricultural sector. She noted that in order to achieve the CAADP agricultural growth target of 6%, farmers in the region ought to increase use of fertilizer.

### *Summary of program*

Following the opening session, the next session centered on issues and challenges in fertilizer market development. High fertilizer prices in the region are a source of concern. These challenges were covered through two presentations. The first presentation addressed challenges in developing agricultural input markets in Africa and presented key constraints affecting the functioning and performance of the fertilizer market. The second presentation in this session covered current issues on promoting fertilizer use using empirical evidence from the COMESA region.

High fertilizer prices arise, in large part, because of small countries, small individual markets, hence inability to buy and handle fertilizer in bulk. Poor transport and port infrastructure contribute to high procurement, handling and transport costs. Credit constraints limit the number of firms able to participate in fertilizer markets, while high collateral requirements lead to long lead times and force poor farmers to incur price risk that ensues. Unpredictable government policies likewise discourage private competition that would drive down price margins.

The next session was on issues and options of regional fertilizer procurement. The issue of regional fertilizer procurement is not clearly understood. Many in the industry feel there is little to be gained from such an approach, but the idea is popular among many public sector people in the region. A discussion of the pros and cons of regional procurement was covered at this symposium. A different perspective on this issue was presented by a former World Bank staffer.

In the next session participants reviewed a rich set of country experiences in promoting fertilizer market development in Ethiopia, Kenya, Tanzania, and Zambia. The presentations addressed the objectives of fertilizer subsidy programs including the new policy of voucher-based fertilizer subsidies; trends in fertilizer use; fertilizer use by crop and by region; cost breakdown; and evidence on profitability of fertilizer use on the main food crops. The country cases provided clear contrasts in approach, in the level of private sector involvement and in the level of subsidies provided.

The session that followed focused on fertilizer subsidy programs in Sub-Saharan Africa. The role of subsidies (smart or not-so-smart) was discussed explicitly. Input subsidies have proven politically popular as a means of reducing fertilizer costs to farmers. Yet questions remain about the efficiency and fiscal sustainability of these subsidies. The main subsidy program design issues addressed were: sustainability; targeting; crowding-in or crowding-out the private sector, that is, does government intervention kick start the market or displace it; exit strategy; effectiveness and cost-effectiveness in meeting program objectives; long term and short term trade-offs. Part of this session also addressed market friendly input support to resource poor farmers.

The final session covered progress and challenges of implementing the Abuja declaration made in 2006. The final activity summarized the key messages of the symposium. A panel of representatives from the private sector and public sector were assembled and each panelist commented on the summary of key messages.

## **SESSION II: ISSUES & CHALLENGES IN FERTILIZER MARKET DEVELOPMENT**

*Presentation by Balu Bumb, IFDC,  
“Challenges in developing agricultural input markets in Africa”*

There are short term and long-term challenges to developing input markets in Africa. The short-term concern is about managing the high global fertilizer prices. Prices in 2008 increased and reached unprecedented levels due to high oil and other commodity prices. Panic in the market and other psychological factors also contributed to higher fertilizer prices. The US Gulf price of DAP was below \$500 per ton in October 2007. This price rose to \$1,200 per ton around April 2008. Even though prices came down considerably in 2009, they are still above the 2006- 2007 levels.

The high global fertilizer prices forced some importers to procure less fertilizer while others had to seek additional credit to maintain the volumes they supplied the previous years. For farmers, profitable use of fertilizer especially on domestically consumed crops was seriously reduced.

The reaction to high fertilizer prices by most African governments was to subsidize fertilizer. The policy to subsidize the product and not the farmer was not “market smart”. Fertilizer subsidies created market distortions and rent-seeking and were not “market smart” as the response by-passed the private sector. The long run challenge for Africa is about developing fertilizer markets to allow improved access by smallholder farmers. Solutions are to be tailor-made to deal with country specific conditions.

Over the last five decades, cereal production and fertilizer use in developing countries is trending upwards. Unfortunately, fertilizer use in SSA has stagnated for the last three decades. SSA has the lowest (9kg/ha) fertilizer use per ha cropped in the world. The average for the world is 118kg/ha. It can be deduced then that SSA has a serious problem of unsustainable nutrient extraction from its cropped lands. Nutrient mining poses a serious threat to future food security.

Agricultural input markets in Africa have largely not been developed. Where markets exist, they are patchy and characterized by high operation costs and high prices, limited access in rural areas and poor quality products. The major constraints are related to the FIVE pillars of market development which are: policy; human capital; finance; market information services and regulatory framework. The intensity of each constraint varies from one country to the next. Quality control is crucial for developing markets. Fertilizer markets were liberalized and privatized before regulations for quality control were established. This not the correct approach.

Taking a closer look at the fertilizer cost sequence, Africa’s importers pay fertilizer producers the same prices as Asian importers. However the onward handling and distribution costs including transport costs, taxes and levies, finance costs, overheads and margins take up to 50% of the final retail price. Transport cost alone takes up 32% of retail price. In Asia, these onward costs take up only 11% of the retail price.

To promote profitable fertilizer use by smallholder farmers, marketing costs should be reduced. This could be done in the short-run through removal of fertilizer taxes, tariffs and levies and improving availability of finance for importers, input dealers and farmers. In the medium term, focus should be on developing input markets by focusing on the FIVE pillars of market development. This has the effect of increasing supply and reducing prices. In the long run, focus should be on improving infrastructure such as ports, railways and rural roads and investing in new fertilizer production facilities and crop research and development.

One major policy lesson is to avoid interventions that cause markets to collapse. This can be possible if subsidies are targeted at empowering farmers rather than supporting the product. Efforts should be directed at making markets work better. Another lesson is to develop indigenous resources for fertilizer production oriented at supplying regional rather than thin national markets. The region should consider producing fertilizer as many countries have natural gas. However, nations should not pursue independency in fertilizer supply because there is enough fertilizer being traded in the global market.

The experience with fertilizer plants in the region is not impressive. Most plants are operated as government entities and their management is generally poor. Resources and revenues are often diverted and maintenance of facilities is low resulting in regular shut-downs. Partnerships between government and the private sector have proved to be effective as is the case with India Fertilizer Company where government only controls 30% stake.

*Presentation by Thom Jayne, MSU,  
“Promoting fertilizer use in Africa:  
Current issues and empirical evidence from the COMESA region”*

The 1-4 ton maize yield gap between what farmers obtain and what researchers at research stations get is a serious efficiency challenge. About 50-80% of potential yield is not being realized by farmers. The challenge for policy is how to close this gap through increased and efficient use of fertilizers. A holistic approach focusing on public investments in infrastructure, crop science, extension and crop marketing could deliver productivity growth.

Fertilizer use is limited to a minority of farmers in the region. There are several reasons why the majority of the farmers do not use fertilizer. Lack of fertilizer profitability is one major limiting factor. Fertilizer use can result in income loss if used inappropriately. Whenever, fertilizer is not profitable for farmers, farmers will not express any demand for it. There are instances where it is, however, profitable to apply fertilizer. In such circumstances, lack of cash limits the majority of farmers from using fertilizer. Farmers without access to credit and cash constrained will always fail to procure fertilizer no matter how profitable fertilizer use is. Finally, some fertilizer markets are poorly developed and in other cases completely absent. Fertilizer may be profitable and farmers may be willing to pay but retailers are unable to make fertilizer available.

National fertilizer use is trending upwards in most countries particularly in the last decade. Ethiopia, Kenya, Malawi, Uganda, Tanzania, Zambia and Mozambique continue to increase the level of fertilizer use. The table below shows the level of fertilizer use in different countries.

Table: Volumes of fertilizer product imports for selected countries, 2006

Country	Use levels (tons)
Ethiopia	500,000
Kenya	450,000
Malawi	300,000
Zambia	200,000
Tanzania	100,000
Uganda	25,000
Mozambique	?

Commercial fertilizer imports have featured strongly in Kenya whereas government induced imports and distribution have trended upwards in Malawi and Zambia. Local production of fertilizer is still very insignificant. Production plants such as those in Zambia which produced over 200,000 tons in the 80s are presently not in use. Active involvement of donors in fertilizer imports has also declined. Overall, the bulk of the fertilizer importation and distribution is conducted by the private sector.

While trends in fertilizer use and percentage of farmers using fertilizer are increasing, there is only a modest improvement in maize yields. Considerable resources are being spent to support subsidy programs but there is less than balanced gain in maize productivity. This has been attributed largely to inefficient distribution which has led to untimely deliveries and inefficient fertilizer use by farmers. Farmers need to use fertilizer in combination with improved seed cultivars and other cultural practices in order to achieve the full productivity potential. Presently, use of improved cultivars is low. The majority (60%) of farmers in the region plant non-improved seed cultivars. Kenya, Zimbabwe and to some extent Zambia are among the few countries where farmers uptake of improved seed cultivars has been impressive.

The challenge is to identify strategies that will ensure the gap between potential yields and existing yields is closed. A holistic approach should be pursued. The first element of this approach is to accelerate public investments which raise the profitability of fertilizer use. Interventions should, therefore, address three areas (1) reducing the price farmers pay for fertilizer, (2) raising the prices farmers receive from crop sales and (3) increasing the additional crop yield from fertilizer application. The second element of this holistic approach is to address credit market constraints. The existing subsidy programs should be well targeted to (a) support the poor who have no cash to purchase fertilizer but can use fertilizer fruitfully and (b) minimize displacement of commercial fertilizer sales.

The discussion identified challenges of developing agricultural input markets in Africa to include the lack of financial and economic viability of production facilities in Africa. A number of fertilizer production projects in several countries including Nigeria have produced “white elephants”. The other challenge identified was how to break the myths that African soils are

inherent fertility (Uganda example) and begin to design technologies for managing nutrient systems.

Comments on promoting fertilizer use in Africa addressed the need to assess whether countries are complying with the Maputo CAADP declaration to allocate 10% of their national budget to agriculture. Comments further highlighted the need to understand the composition of national agriculture budgets and analyze whether public investments to increase agricultural productivity were taking place. The private sector's response to develop fertilizer markets varies across countries. There is need to understand why this is the case and identify the incentives that drive the private sector to invest in fertilizer markets.

### **SESSION III REGIONAL FERTILIZER PROCUREMENT**

*Presentation by Julius Mathende, COMESA  
“Fertilizer Joint Procurement: Issues and Options”*

Africa's fertilizer consumption level is not worth mentioning at a global level. Africa and SSA's consumption share of global fertilizer is 3% and 1%, respectively. As much as 25 countries in SSA consume less than 25,000 tons of fertilizer products each year. Twelve countries consume between 25,000 and 125,000 tons. Only seven countries consume fertilizer product amounts above 125,000 tons. High procurement and distribution cost have rendered fertilizer orders low.

The rationale for regional joint procurement is to allow several small country markets take advantage of economies of scale from a regional purchase and distribution. The AU fertilizer summit in Abuja Nigeria requested for the establishment of regional procurement and distribution facilities. A multi-country procurement can be done using various approaches. A number of private companies such as, Omnia, Nyiombo and others are currently procuring fertilizer to supply several countries.

One of the issues around regional procurement is that the private sector is not in favor of this approach. Direct government procurement suggests that the capacity and efficiency issues have been resolved. Yet, governments have never been competitive suppliers of fertilizer operating either as state trading enterprises or with agents. Besides, the operations of the private sector could be paralyzed because of uncertainties surrounding procurement decisions and the displacement effect. Lessons for implementation could be taken from the “petroleum model” where public and private sector partnerships have been used.

The cost reduction from quantity discounts is negligible. The main area where significant cost savings can be realized is in transport and the suggested strategy is that of backhauling. Backhauling reduces transport cost per unit of fertilizer product. Bulk inputs will be transported cheaply if there are bulk outputs to haul as return loads. This could be feasible along those transport routes targeted for corridor development. Other strategies include investment in bulk

holding warehouses in strategic locations for use by regional stakeholders and establishment of an input credit fund for use by importers, dealers and farmers.

*Presentation by Ron Kopicki, K Squared International  
“Suggestions for Developing Efficient Fertilizer Supply Chains in COMESA”*

This presentation was about using integrated supply chain management concepts to improve efficiency in fertilizer chain operations in COMESA. This concept is structured around three elements: supply chain infrastructure – “hardware”; management competence - “software”; and supply chain finance. These core elements are critical for process harmonization. Coordination of production with shipment, storage, blending and transportation is essential. Competence is also required for the market to supply the right product, right quantity, right packaging at the right timing. Finance provides the glue to securitize the inventories, allow flow planning and provide trade credits.

Through supply chain management, considerable value is delivered to the farmer in the form of reduced costs and better advisory services. Supply chain management reduces costs by providing economies of scale in regional marketing, facility utilization and vertical integration. Supply chains deliver value addition to the farmer by supplying high product quality; trade credits; financial risk management and advisory information through agro-dealers. Well managed chains show market alertness by precisely matching supply and demand and providing faster turnover of working capital. Finally, supply chain management offers opportunities to farmers to adapt quickly to new plant science and relative changes in input/output prices.

The COMESA region stands to benefit from a stronger fertilizer supply chain if incentives for integration are created. Competition in thin markets is based on spot price and availability only. With adequate incentives for structural change, fertilizer markets can be transformed. Efficient supply chains, value adding services and reliable supply become the basis for competition.

Public Private Partnerships offer an attractive framework of risk transference allowing governments and private sector to work together to provide a service neither party can provide alone. Enhanced value is achieved by leveraging private sector competencies (controls and management skills) and allocating various risks to those best-suited to manage them. This framework can be applied in fertilizer supply chains to improve and expand service. Government can attend to legislation, permitting, licensing and certification while the private sector can focus on design and construction, supply chain operation and maintenance and financing.

An integrated COMESA Fertilizer Market Utility could emerge from a project corporation with a multinational long-term concession agreement. Its business charter would have specific objectives of (1) capturing economies of scale and vertical integration (2) increased local value addition and (3) reduced operation costs (4) local prices based on border-prices. This corporation would own or lease a deep water ocean terminal, control railway trackage rights and inland fertilizer storage facilities.

To create such a utility, full diligence analysis is required to (1) develop a regional market strategy; (2) identify a set of service components to integrate; (3) develop business plans for each component and (4) integrate each component into a supply chain. Critical to this process is the definition of the agenda of supporting reforms which will become investor pre-conditions for the business deal.

Comments and questions from the floor included:

- Regional procurement offers some interesting and feasible options. It will be necessary to leave some competitors in the market and encourage local/regional production. Large investments in the order of US\$ 150-200 million are needed for port facilities and bulk transfer terminals to avoid congestion.
- A fully integrated market is a radical idea. Would donors support such an idea? Development partners can play a role in terms of financing and by providing credit guarantees.
- Has there been an analysis of the weaknesses of private sector? There is a tendency to see weakness just from government.
- Is regional fertilizer procurement really feasible? Even within countries there is so little capacity and agreement on the procurement process. Isn't there are big risk in appointing one or two companies to be in charge of fertilizer procurement? Development partners with IFDC could take this up to the point of having a feasibility study. Conceptual plans could be developed as well to have something concrete to discuss.
- Are there good examples of regional procurement outside Africa? Successful examples can be found in the European Union and there some plans being explored by the World Bank in South East Asia.
- What will be the new role of current fertilizer importers?

#### **SESSION IV SELECTED COUNTRY EXPERIENCES**

*Presentation by Shahidur Rashid, IFPRI  
“Fertilizer in Ethiopia: Policies, Achievements and Constraints”*

The fertilizer market in Ethiopia has evolved through periods of policy change which resulted in various market structures obtaining at different time periods. Government has been an active player in the fertilizer market for at least the past four decades. The industry (imports and distribution) was run entirely by government between 1971 and 1992.

The policy change that followed allowed the entry of regional holding companies (political party owned not-for-profit companies) and private firms into the fertilizer market. Early on, only one private firm and one holding company entered the fertilizer market even though government continued to have the major share of the market. Gradually the number of firms and holding companies increased with the latter taking a large share of the market from government. Holding

companies accessed government credit and were given priority access to foreign currency. They subsequently distributed fertilizer to farmers on credit. Privately owned companies could not compete with these preferentially treated holding companies. Since 2002, private importers exited the market. Despite having played a significant role in fertilizer imports, holding companies also exited the market after 2004.

Over the last five years, cooperatives began importing fertilizers. Cooperatives are unions of associations with regional apex bodies. Cooperative unions became the dominant importers and distributed fertilizer to their members. Unlike holding companies, cooperative unions have a membership networks and were expected to do a better job managing distribution of fertilizer on credit. Most recently, there are no private firms in the chain and cooperatives are the most dominant players.

Fertilizer imports (DAP and Urea) have trended upwards for the past four decades. The increase in the past 15 years has been extraordinary. Imported volumes increased from 100,000 tons to over 500,000 tons during this period. For much of the last ten years, over 60% of the imported volumes were comprised of DAP. Over three quarters of the fertilizer imported is targeted at Amhara maize and Amhara wheat. Utilization of fertilizer by the dominant staple crop, teff, appears to be negligible at national level.

Regionally, only two regions, Oromia and Amhara utilize over 80% of the fertilizer. Oromia region, the central highland plateau, is the main crop producing region. Amhara in the north-west is the second important region for fertilizer use. The Southern Nations and Nationalities People's region in the south and other regions such as Tigray utilize about 15% of imported fertilizer. Distribution centers are concentrated in the main crop producing regions.

Purchase and shipping of fertilizer to port absorbs 75% of the farm gate price of fertilizer. Shipment from port to inland central warehouses in Addis Ababa, Nazarete, Shashemene takes up 15 % of the final cost of fertilizer. Distribution from warehouses to cooperative unions take up 7% and the final 4% of cost is incurred by distributing fertilizer from cooperative unions to primary cooperatives. Domestic marketing costs for DAP and Urea have reduced by over \$60 per ton over the last twelve years. Reduction in marketing costs is instrumental in making fertilizer use profitable for farmers. This can be evidenced by increases in average value-cost-ratios during the same period. Average value-cost-ratios for fertilizer used on maize in 1997 and 2008 were 1.4 and 1.8-4.0, respectively. The output price and the additional crop yield due to fertilizer application are also key determinants of fertilizer profitability.

*Presentation by Thom Jayne, MSU*

*“Trends and Patterns in Fertilizer Use by Smallholder Farmers in Kenya, 1997 – 2008”*

National average fertilizer use intensity in Kenya was 43kg/ha between 1996 and 2002. Fertilizer use intensity grew by 67% between 1997 and 2007. The high intensity levels and rapid rise in fertilizer use in Kenya is matched only by Malawi across the continent. Commercial fertilizer imports and overall use have consistently trended upwards over the last two decades. During the same period, imports by donors have declined.

There are a number of factors driving the increase in fertilizer use between 1997 and 2007. First, the government of Kenya has maintained a stable fertilizer policy system since 1990. Import and price restrictions were eliminated and the market has operated free of large scale subsidy programs. Second, Government of Kenya has invested heavily on public goods to stimulate complementary private investments. Distance from farm to the nearest input dealer, extension service, health provider, roads, electricity and telephone has been reduced. In-land marketing costs from port to central warehouses have reduced tremendously. Third, the private sector responded to these conditions by expanding fertilizer distribution network. The number of importers, wholesalers and retailers more than doubled during this period. Fourth, the easy entry of firms improved competition among importers and wholesalers greatly lowering marketing costs.

Fertilizer use varies across Kenya. Over 90% of the smallholder farmers in Western and Central Highlands and the High Potential Maize zone use fertilizer on maize. The Western Transitional zone has seen remarkable increase (39 to 81%) in the percentage of farmers using fertilizer on maize. Application rates in these zones ranges from 47 to 75kg/ha. The majority of maize producers in Coastal and Eastern lowlands and the Marginal Rain Shadow do not apply fertilizer on maize. Application rates in these low rainfall areas are a small fraction of the rates applied in the rainfall gifted zones. Overall, maize yields have increased during this period and this can be attributed to higher fertilizer use on maize.

Evidence seems to suggest that fertilizer application rates are not driven by size of farm. While the majority of the farmers have land holdings less than 4 ha, there is no real difference in fertilizer application rates with farmers holding more than 4 ha. The asset gifted farmers apply marginally higher fertilizer rates than less gifted farmers. Using fertilizer in combination with other practices, such as, hybrid seeds improves the efficiency of fertilizer use.

The prevailing world price conditions have reduced incentives for profitable fertilizer use. These conditions can be reversed by reducing costs of supplying fertilizer, raising efficiency of fertilizer use and providing targeted subsidies to areas where use is profitable.

*Presentation by Nicholas Minot, IFPRI  
"Fertilizer Policy and Use in Tanzania"*

From independence to the mid 80s, fertilizer importation and distribution was under state control. Fertilizer prices were highly subsidized and the common problems of delays and shortages hounded the industry. Following the economic crisis of the mid 80s, economic reforms were introduced. The fertilizer market was liberalized and private importation and distribution was legalized. Prices were decontrolled and subsidies were phased out between 1991 – 1994.

In 2005, slightly over 100,000 tons of fertilizer nutrients were applied across the country. Fertilizer use intensity in Tanzania is relatively low (4.8 kg/ha) and declined by 47% between 1997 and 2007. This declined was precipitated by the phase out of subsidies. Subsidies have been reintroduced in Tanzania and fertilizer use intensity increased to 8kg/ha. Use is

concentrated in South-west highlands region and West central zone. In parts of the south west region, over 60% of farmers use fertilizer and in other parts 30-60% use fertilizer. A range of 15 – 30% of the farmers in the west central zone use fertilizer. Fertilizer use in the north and eastern zones is very low. Less than 5% of the farmers use fertilizer in the north and east regions of the country.

Over 80% of farmers growing tobacco use fertilizer. Between 20 and 40% of the farmers growing horticultural crops such as carrots, onions, potatoes, tomatoes use fertilizer. Only 12% of the maize producers apply fertilizer in Tanzania. The majority (81%) of farmers purchasing fertilizer procure it from private fertilizer dealer. Farmers use proceeds of crop sales to finance fertilizer purchase.

Fertilizer subsidies were re-introduced in 2003. Between 2003 and 2007, the subsidies took the form of transport subsidies. The objective was to subsidize use in remote parts of the country by subsidizing transport costs. Prices and distribution margins were fixed and government was in charge of the physical distribution. Fertilizer use increased but deliveries were delayed. Price controls were not effective at retail level and part of the subsidized fertilizer leaked to neighboring countries.

From 2007, the subsidy took the form of a voucher scheme. The objective was to offset rising cost of fertilizer and stimulate use, production and support the private distribution network. Under the National Agriculture Input Voucher Scheme (NAIVS), selected farmers in selected districts received a bag of urea and DAP and improved maize or rice seed. The voucher is worth 50% of price and farmers co-finance the other half. The vouchers were handled by trained agro-dealers. A range of complementary services, such as, agro-dealer training, seed sector support, monitoring and evaluation also received support. In 2008, the program had 700,000 beneficiaries and the program cost US\$60 million. Between 2009 and 2011, the World Bank will support an expanded program with up to 2 million beneficiaries costing US\$ 100 – 150 million.

The challenges are whether this program can be replicated in the region given the high cost, will it be politically feasible to phase it out and/or is it fiscally feasible to continue with it at an expanded scale and whether welfare benefits exceed the cost of intervention.

When procuring fertilizers, the major (72%) cost component is purchase and shipping to port. Bagging and port charges take up 7% of the cost. Local transport and handling absorb about 10% and the remainder is taken up by financial and administrative costs.

*Presentation by Hyde Haantuba, Agricultural Consultative Forum,  
“Proposed Reforms of Zambia’s Fertilizer Support Program”*

Zambia’s fertilizer Support Program (FSP) has operated each year for the past seven years. A total of 422,000 tons of fertilizer worth ZK1.36 trillion have been distributed. The objectives of the program are (1) to improve household and national food security; (2) improve access to agricultural inputs by smallholder farmers; (3) build capacity of the private sector in input marketing and (4) cushion farmers from past adverse effects of unfavorable weather conditions.

Government and other stakeholders have been concerned about FSP's performance especially poor targeting of beneficiaries, distribution delays, inefficient fertilizer use, limited private sector participation, lack of sustainability and absence of a monitoring and evaluation system. To assist government resolve these concerns, a study tour was planned.

The study tour was undertaken in Malawi, Kenya and Tanzania. A representative team of government, private sector and civil society took part in the tour. The objectives were to study various designs and implementation approaches of government-led input distribution systems. This was meant to assist FSP achieve its objectives. After the tour, the team reviewed and recommended proposals to reform FSP.

The recommendations included the following:

1. Change program name to Farmer Input Support Program (FISP) and focus the overall objective on increasing farm productivity
2. Introduce an electronic input voucher system to distribute inputs under FISP. This will reduce direct government involvement and minimize administrative burden and costs. Besides, this change will focus support on the farmer who will be empowered to choose the service provider to supply inputs
3. Strengthen links between farmers, extension and training system and agro-dealers on complementary yield enhancing technologies and appropriate fertilizer application practices
4. Reduce the size of the pack to four 50kg bags per beneficiary and support other crops such as rice and oilseeds
5. Use the farmer register at camp level to select and target beneficiaries. Beneficiaries are expected to graduate after two years and the amount co-paid increase gradually from 50% to 75% and 100% in third year
6. Develop linkages for graduating farmers and trained agro-dealers with financial institutions to finance input procurement
7. Design and establish a performance based M&E system to improve implementation and achievement of objectives.
8. Appoint a lean management structure independent of government to implement FISP reporting to a appointed board representative of the stakeholder community

Suggested Key Action Areas were:

1. Ministry of Agriculture and Cooperatives to make a policy pronouncement of the reforms
2. Begin start-up planning and organizational and training activities to implement reforms in 2010/2011 agricultural season

Comments and questions on the country presentations included:

- Complexity of programs which have multiple and varied objectives.
- Are people with less than 1 ha ever going to be economically sustainable
- Preparedness for vouchers schemes, for example Bank's being ready to receive the vouchers and pay the bearer.
- Developing and strengthening the private sector, for example, investing in agro dealer network and retailer density to reduce the distance to an outlet. If the policy displaces private sector retailers, it locks government into retailing for the long term.
- Exit strategy: Experience with subsidies is often that when the subsidy is removed usage collapses. But in the case of vouchers in Tanzania it is anticipated that it will be politically feasible to exit as long as capacity is built, private sector is developed, different farmers are targeted each year.

## **SESSION V FERTILIZER SUBSIDY PROGRAMS**

*Presentation by Nicholas Minot, IFPRI  
"Fertilizer Subsidies in Sub-Saharan Africa"*

Fertilizer application rates in SSA are low (10 – 12kg/ha) and are trending downwards for the past three decades. Average application rates are highest for industrial crops such as sugarcane, tobacco, coffee, tea and vegetables. Application rates for maize are in the intermediate range. For less industrial crops such as cassava, yams, sorghum and millets, application rates are negligible. There is considerable variation of fertilizer application rates across SSA. Mauritius, Kenya and S. Africa have high application rates. The lowest rates are in countries in the high-rainfall and semi-arid zones.

The economic grounds for fertilizer subsidies take two forms. First, the efficiency argument suggests that subsidies could raise use to optimal levels where additional crop value is worth more than the cost of the subsidy. Lack of information, liquidity, risk aversion and externalities may be the factors driving sub-optimal use of fertilizer.

The second rationale is based on fairness. Smallholder farmers are among poorest members of society and deserve income transfers. Fertilizer subsidies represent, therefore, an income transfer to the extent that they are targeted at the poor segments of the farming population.

Fertilizer policy over 1970 – 1995 essentially involved subsidies. Procurement and distribution was a legal monopoly for state-owned agencies. Although the distribution modes varied across countries, state entities sold fertilizer at uniform subsidized prices. Though costly and inefficient, these programs stimulated fertilizer use and crop production. The typical problems of late delivery, shortages and high fiscal cost characterized the performance of state entities.

Fertilizer policy over 1985 – 2005 was characterized by subsidy withdrawal and market liberalization. Economic crisis which led to high inflation, foreign exchange shortages and general fiscal imbalance forced SSA countries to accept IMF/WB structural adjustment programs as a condition for emergency financial assistance. Fertilizer markets were liberalized and universal subsidies eliminated. The subsidy removal propelled fertilizer application rates to decline further. Some countries (Benin, Mali, Madagascar) experienced a rise in fertilizer use during subsidy removal but others (Ghana, Senegal, Tanzania) experienced a fall in fertilizer use. Subsidies and fertilizer prices were not the only factors driving fertilizer use.

While some markets were fully liberalized (Tanzania, Kenya, Ghana), other markets (Nigeria, Zambia, Ethiopia, Malawi) were not fully liberalized. Government and donors continued to import and distribute subsidized fertilizer through parallel channels. Zambia, Ethiopia and other countries were innovative enough to distribute fertilizer using subsidized credit schemes after phasing out blanket subsidies.

After the announcement of market liberalization, attention turned towards fertilizer market development. Though sincere, these efforts were a little at a time and rather ineffective. Besides, there was policy reversal which meant risks to private investment in commercial fertilizer markets.

Since 2005, the interest in fertilizer subsidies has been renewed. The IMF and World Bank no longer insist on market reforms when giving financial assistance. The interest to use input vouchers to target the poor and high food and fertilizer prices in 2007-2008 are factors behind this policy reversal. Trying out “market-smart subsidies” that is, targeted subsidies using private sector for distribution has not only been received keenly by national government but financial support from the World Bank has bolstered this change.

Subsidies could stimulate fertilizer use if properly designed. Subsidies could also promote private distribution networks. Despite the interest to target subsidies, implementing a targeted fertilizer subsidy program is fraught with political difficulties. Preliminary evidence seems to suggest that a voucher scheme is a good investment and could support market development but questions of financial sustainability remain.

*Presentation by Balu Bumb, IFDC  
“Market Friendly Support to Resource Poor Farmers”*

Nearly half of the population in SSA is poor, live in rural areas and eke a living through agriculture. Productivity for this vulnerable population is low because of rudimentary production methods. Market development will not eliminate the poverty trap as long as resource poor farmers have no capacity to participate in the market. Non-market mechanisms are needed to get the poor out of poverty. However, these mechanisms should not affect the pricing and distribution of commercial inputs and should not create a dependency syndrome.

Food and cash aid have been provided to the vulnerable populations. But these mechanisms have no long-term positive production and market impact. Input aid, on the other hand provides a

means of increased production. Depending on how input aid is implemented, it could distort commercial markets and create secondary or parallel markets. The market friendly input aid mechanism is to use input vouchers redeemed by private agro-dealers. As long as dealers can access credit and fraud is avoided, targeted voucher programs can develop markets and agro-dealers.

IFDC has experience in implementing market friendly input support programs for resource poor farmers in Malawi, Nigeria, Rwanda, Mozambique and Afghanistan. The main objective of these programs is to transfer targeted benefits in a manner that develops private sector input market network. Beneficiaries are required to participate in public works programs such as working on local feeder roads. Since these work programs are physically demanding, they tend to be a strain on women participants. Besides, women want cash or food in addition to receiving agricultural inputs. Input dealers benefit from training in business and technical skills, get commission and improve their capacity to conduct business in the future.

Overall, input aid to the most food insecure population segments through vouchers is a flexible intervention with low risk to developing commercial markets. Vouchers can be targeted at food insecure farmers and agro-input dealers to alleviate poverty whilst developing markets. Input aid should not be a “free lunch” and support should not be “free-for-all”.

Comments and questions from the floor included:

- Whether the IFDC’s input aid program could be converted to private sector program? It was felt that while cash crop inputs might be distributed through contract farming, it is not likely that such an approach would work for staple crops. Given that there are multiple buyers of staple crops there is a chance that the fertilizer provider will not get repaid.
- The challenges of teaching farmers to use fertilizers. Is the coupon the right way, doesn’t it create dependency?
- There is need for experts to recommend long-term policy options that won’t create pressure on politicians to maintain expensive subsidies and options to address short term problems without creating dependency.
- Why do governments subsidize fertilizer and other inputs for maize production? Industrial crops have been well served by the input distribution system. Large scale farmers access inputs from commercial distribution systems. Viable but vulnerable farmers need access to credit at certain times of year to acquire inputs. The poor who are not in the market and cannot produce enough to feed themselves need specific help. Different groups of farmers need different policies.
- Experts were called upon to perfect and develop models that can be piloted and if successful scaled up. Strategies are also needed for successful exit from subsidy programs.

## **SESSION VI PROGRESS AND CHALLENGES IN THE ABUJA DECLARATION**

*Presentation by Maria Wanzala, IFDC/NEPAD*

*“Implementation of the Abuja Declaration on Fertilizers for an African Green Revolution:  
A Progress Report”*

In June 2006, AU/NEPAD convened the Africa Fertilizer Summit to address the fertilizer crisis. The key outcomes of the summit were the Fertilizer Declaration and fertilizer strategies at national and regional levels.

At the regional level, three resolutions were passed:

1. Harmonization of legislation and trade policy
2. Regional fertilizer procurement
3. Promotion of fertilizer production and intra-regional fertilizer trade

There are initiatives to study, develop and adopt a regional framework to harmonize national fertilizer regulations in ECOWAS, IGAD and ECCAS. Overall, there has been little concrete progress with respect to regional policy development and harmonization.

A regional Joint Procurement Working Committee laid groundwork for a pilot project in COMESA but this initiative is stuck. Very little progress has been recorded on this regional procurement resolution. But COMEA has made substantive progress on initiatives to enhance intra-regional trade in fertilizers.

SADC with assistance of IFDC has completed technical and economic examination of utilization of fertilizer production capacities in member states and is now examining the potential of establishing new fertilizer plants using raw materials found in the region. Though limited, there is reasonable progress on implementing this resolution.

At the country level, the following were the recommendations passed at the summit:

1. Urgently develop accurate and up-to-date data on fertilizer consumption levels
2. Increase awareness among private sector stakeholders to achieve a critical mass of buy-in on regional procurement
3. AU/NEPAD to work with AfDB to bridge the US\$2.5 million gap for the African Fertilizer Financing Mechanism
4. Comprehensively study the different types of fertilizer subsidies and develop guidelines for how to implement them in a market-friendly and sustainable manner
5. Deepen the capacity of Ministries of Agriculture to engage farmers in technical skills transfer
6. Assist countries update fertilizer legislation to improve fertilizer regulation and quality control
7. Assist policy makers identify alternative revenue sources while doing away with direct and indirect taxes on fertilizer

8. Quantify and value existing trade flows in fertilizer with and endeavor to increase the volume of this trade

Comments and question on implementation of the Abuja Declaration included:

- Given that regional procurement of fertilizer has been a priority issue for about 3 years, why is the Fertilizer Regional Procurement facility to be established by the AfDB still not approved by the board of Governors? Until the establishment of the facility is approved by the board, AfDB cannot pursue more pledges because they do not have the legal right to do so.
- Why are governments dragging their feet in the support of the African fertilizer financing mechanism (AFFM)?
- Suggestions that government facilitate the private sector to have bulking centers.

### **KEY POLICY MESSAGES**

African farmers pay the highest fertilizer prices in the world. This contributes to the lowest fertilizer application rates and the lowest agricultural productivity in the world. How can COMESA countries reverse this situation and stimulate agricultural productivity gains?

A variety of types of fertilizer subsidies have been used to reduce fertilizer prices and increase fertilizer use. The universal subsidies and state-controlled distribution systems of the 1970s and 1980s proved to be fiscally unsustainable and inefficient. After a period of market liberalization, there is a renewed interest in fertilizer subsidies, particularly the use of input vouchers. The experience with input vouchers in various countries shows that properly designed and implemented voucher system can be used to provide purchasing power support (PPS) to resource poor farmers while promoting, rather than displacing, the private-sector distribution network.

It is important that private agro-input dealers be allowed and encouraged to participate in these schemes. The appropriate targeting strategy depends on whether the objective is to boost output or to help the poor. One approach to targeting to the poor is to provide input vouchers in exchange for participation in labor-intensive public works or in-kind payment at harvest time. However, there remain questions whether voucher-based subsidy schemes are fiscally sustainable and whether the returns, in terms of additional crop production, exceed the cost of the subsidy. In addition, it is necessary to consider the opportunity cost of subsidy schemes in terms of foregone investments in agricultural research and infrastructure.

An alternative approach to increasing fertilizer use and farm productivity is to take steps to reduce inefficiency and transaction costs in fertilizer procurement and distribution. This implies providing complementary investments in human capital development, research on fertilizer-responsive varieties, extension services to promote improved agronomic practices, infrastructure, and regulatory institutions. Investment in improved infrastructure -- notably deep water ports, bulk handling facilities and transport systems from the ports to key interior -- will drive down

both procurement and distribution costs. Relieving credit constraints will require access to improved financial services.

Policy reforms are needed in some countries to improve predictability, reduce market displacement and promote competition and efficiency in fertilizer marketing (marketing implies improvements at all levels- wholesale and retail). The removal of trade barriers within the region are necessary to enable firms and governments to benefit from the economies of scale in fertilizer procurement and distribution.

Regional initiatives that COMESA could promote to reduce marketing costs through economies of scale in the fertilizer supply business include establishment of facilities for finance and warehousing; ensuring competitive private sector involvement; and coordinating public and private investments that will lower regional and domestic distribution costs e.g., expanding capacities at ports and transport networks to allow for bulk handling. A constructive role for COMESA would be to provide policy support, to increase the capacities of the regulatory agencies and distribution chains to ensure affordable prices and expanded choices for producers. COMESA can also help in eliminating non-tariff barriers for cross-border movements.

Participants discussed various options for regional procurement. Continent-wide or region-wide large scale fertilizer procurement by a centralized agency was not supported, nor was procurement by national governments or donors endorsed. Rather, establishment of regional holding warehouses for economies of scale in procurement, consolidation of private sector-based orders, and strengthening of business and market linkages among small and large importers through regional procurement platforms should be encouraged. Improving availability of finance and risk-sharing arrangements for imports and marketing should also receive priority in COMESA program.

#### *Views from the public sector*

Farmers face different circumstances and participate in markets in varying degrees. For the resource poor farmers who are not in the market, subsidies are needed to assist them learn use of modern technologies and deal with short to medium term food emergencies. Governments will not phase out such purchasing power support. What is of concern to government is how to improve implementation and targeting of support to resource poor group. Private sector involvement in public fertilizer distribution programs is needed to avoid crowding them out and ensure service continues long after the subsidy program ends. Subsidies for the resource poor group need not be for free. An in-kind contribution from beneficiaries e.g., supply of labor in public works activities can assist in self targeting.

The assertion that investments in infrastructure generally have a higher social payoff than fertilizer subsidies need to be supported by empirical evidence. In SSA, there is no empirical work to inform this debate. Analysis on returns to various public investments done outside the region has shown that fertilizer subsidy programs achieve much less in terms of poverty reduction and increasing GDP when compared to investments in roads, education and research and development. However, the issue of returns or sustainability should be addressed broadly. Social rather than financial returns/sustainability should drive policy choice. When governments

spend on subsidies, the objective is not just to improve returns to public resources, but to improve food security and avoid social and political instability.

Governments are concerned about the risks that regional food markets pose to political stability. Rather than enjoy the benefits of regional and international trade in food staples, governments have consistently chosen to pursue food self-sufficiency. Subsidies are not only popular with politicians but with benefitting farmers and fertilizer firms. The targeted farmers appreciate the production increment while distributing firms deliver fertilizer at minimum risk. The emphasis in analysis need not be on political benefits alone but should address impacts on reducing poverty levels and boosting private sector capacity even though the latter impacts are for selected beneficiaries.

It is very important to understand that spending on subsidies does not suggest diversion of funds from agricultural research and infrastructure investment. Investment in research and infrastructure remain a priority for government. It is also simplistic to think that cutting subsidies will increase resources to research and infrastructure. Cutting back on subsidies could simply divert resources from agriculture to other economic and social sectors.

#### *Views from the private sector*

The regional procurement arrangements for financial support and physical bulking centers will be attractive to the private sector if they can reduce the existing domestic import parity prices. The goal of introducing these institutions is to reduce marketing costs otherwise the private sector will shun them. Investment to upgrade existing ports will definitely make an immediate impact on distribution costs and reduce farm gate prices of fertilizer. While the focus maybe on reducing costs of imports, incentives should be available to enhance economically viable domestic fertilizer production. Domestic production will utilize local resources, add value, create jobs and earn countries much needed foreign exchange.

There have been significant improvements in fertilizer technology. Rather than continuing with existing products, there is need to support adaptive research and development of new fertilizer products. This new fertilizer technology has potential to reduce costs for the farmer and increase crop responsiveness. Such direct impacts could result in increased fertilizer use and output levels. In addition, blending plants are an essential part of the fertilizer supply strategy in future. Blending requires government support in terms of expanding capacity of soil testing laboratories. If soil tests can be conducted conveniently and regularly, it will ensure delivery of high quality blended fertilizer products.

Fertilizer prices in the COMESA region are based on the same FOB price but vary across Member States because of different transport costs. Generally, domestic transport costs add 50% -75% of the FOB price due to the poor state of distribution infrastructure. Our ports are shallow and can only accommodate smaller 10000 ton vessels resulting in high per unit freight cost. The only deep port at Mombasa is congested.

Finance for fertilizer importers and agro-dealers is a major bottleneck. Importers are obliged to extend credit to agro-dealers. Financing agro-dealers is not a business fertilizer importers are good at as it adds costs. Agro-dealers and farmers need the support of equity banks so that

business for importers is made easy. The whole fertilizer value chain require financing if fertilizer use is to increase in the future.

Government fertilizer subsidy programs in some member states are negatively affecting fertilizer dealers. At the time of making their orders, dealers do not have information on the extent of government programs. Dealers are forced to sale at a loss when subsidized fertilizer is introduced in the market. If dealers had full information of the impending subsidy program, they would have stopped making their orders and avoided such losses. Fertilizer subsidy programs and other government interventions should be predictable to allow other stakeholders to plan and reduce on avoidable losses. Fertilizer subsidy programs should continue to utilize the private sector to import but should avoid using government agencies or marketing boards in distribution. To build capacity and ensure sustainability, agro-dealers should be the sole distributors instead.

#### *Other views*

Over the past few years, the policies in the region have been biased towards subsidies. It is now time to move away from general subsidies and move towards supporting the FIVE pillars of market development, that is, policy, human capital, finance, market information, and regulation (quality assurance) as well as infrastructure improvement. Generally, subsidies tend to harm the market. Farmers who participate in the market can benefit from market development. Those farmers that cannot participate in the market should receive targeted support in the form of public works programs. For the sake of market development, free fertilizer should be avoided.

## **CLOSING REMARKS**

Josef Leoning, World Bank, expressed happiness on the meeting and the issues discussed particularly, regional fertilizer procurement. The sharing of divergent experiences and lessons enriches these debates. He noted that participants were very active and he was happy to see that some participants who attended the first meeting were in attendance in this second meeting. Continuity in participation is important in building a network and fostering interaction and common understanding among stakeholders.

He reminded participants that the performance of the program is judged on informing and enhancing knowledge sharing on decisions that are highly and politically contested. The program is laying a foundation for deeper discussions. He stressed his hope that participants will report and share the knowledge extracted from this meeting and use the improved understanding to implement national programs. Knowledge sharing is critical in replicating successes and avoiding a repeat of mistakes. He reminded participants that AAMP is available to support Member States conduct follow-up policy debates at country level. Josef thanked the research network for good presentations and for teaming up with IFDC and NEPAD.

Dr. Mwila noted that the seminar was timely and useful. A lot of lessons were generated and participants were exposed to what is happening to fertilizer value chains at country and regional level. The important messages came out even though debate continues. He reminded governments and firms of their responsibility to take the needs and requirements of smallholder farmers seriously. The seminar has clearly shown the reasons why inputs should be provided and why it is beneficial to both governments and private sector. He summarized that subsidies have a role to play. Governments should support the farmer not the product and the end point of these support programs should be very clear. A sustainability plan should be built in order to ensure there is progression after the subsidies are phased off.

As COMESA, we take note of the key messages. COMESA will follow-up these proceedings and will communicate to Member States suggestions of what they could do to assist the smallholder producer access inputs. The Director expressed thankfulness of having brought together decision makers from the public and private sector to attend this meeting.

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