



MINISTRY OF AGRICULTURE AND IRRIGATION

SOMALI NATIONAL FERTILIZER POLICY

May, 2019

Foreword

The agricultural sector has been, and continues to be, the backbone of the Somalia economy. Livestock and crops remain the main sources of economic activity, employment, and exports in Somalia, despite the numerous challenges that are faced. Frequent droughts and the negative impact of two decades of conflict have hampered the sector's potential. The government is determined to recover and restore the full productive capacity of the sector so that it can play its role in achieving food security and building peace and political stability through, among other strategies, job creation, and, eventually, sustainable economic growth for the country.

To support economic growth, the government intends to remove a number of major constraints limiting agricultural productivity through a range of public policy interventions. Interventions include improving security across the country, resettling of the rural population and farmers displaced from the countryside, restoring agricultural research and extension services, rehabilitating riverine irrigation infrastructure, testing and introducing modern agricultural technologies, and creating an enabling business environment through the development of policies, laws, and regulations for agricultural inputs. The Federal Ministry of Agriculture and Irrigation (FMAI), in collaboration with state ministries, has developed a fertilizer policy with the intention of enacting legislation to stimulate profitable fertilizer use in an environmentally sustainable way. At present, there is neither a fertilizer policy nor any laws and regulations for fertilizer in Somalia. This poses significant economic, health, and environmental risks.

I take the opportunity to thank the European Union Commission for supporting the development of this policy through the OUTREACH project. I also thank Adam Smith International and the Somalia Agriculture Technical Group (SATG) who implemented the OUTREACH project in partnership with the Federal and State Ministries of Agriculture and Irrigation.

Mr Said Hussein Eid

Federal Minister of Agriculture and Irrigation

Table of Content

1. Introduction	4
2. Institutional Context	4
3. Policy Problem	6
4. Rationale for Developing National Policy on Fertilizers.....	6
4.1 Supporting Evidence	7
5. Scope of Policy	8
6. Guiding Principles of Policy.....	9
7. Policy Vision	11
8. Mission of Policy	11
9. Overall Policy Objective	11
9.1 Specific Policy Objectives.....	11
10. Governance and Institutional Linkages.....	12
11.Expected Outcome.....	13
12. Policy Direction	13
12.1 Production.....	13
12.2 Imports.....	14
13. Fertilizer Trade and Marketing	14
13.1 Improving Supply	14
13.2 Promoting Fertilizer Use	16
13.2.1 Extension Services.....	16
13.2.2 Research and Development.....	16
14. Environmental Sustainability and Climate Change	16
15. Regulatory Standards and Quality Control	17
16. Governance and Institutional Linkages.....	17
Annex 1: 2006 Abuja Fertilizer Summit for the African Union Ministers of Agriculture	19

1. Introduction

The agricultural sector has historically been, and continues to be, the backbone of the Somali economy. Livestock and crops remain the main sources of economic activity, employment, and exports in Somalia¹. It has a crucial role to play in Somalia's renewed pursuit to achieve peace and political stability through food security, job creation, and, eventually, sustainable economic growth. An estimated 70% of the country's population, or more than 8.5 million people, live in rural areas and derive their livelihoods from agricultural related activities. Therefore, development of the agricultural sector is central to any future interventions aimed at addressing the food and nutrition insecurity in Somalia, as well as tackling the widespread poverty, which is the prime driver for the resource-based social conflicts and the ensuing political instability throughout the country.

However, the sector's productivity is currently very low due to several interlinked factors, including conflict and insecurity in the main agricultural regions, frequent droughts which have resulted in displacement of a large proportion of the rural population to urban centres, poor irrigation and rural infrastructure, and limited adoption of modern agricultural practices such as the use of mechanisation, high quality seeds of superior varieties, fertilizers, and pesticides. The impact of all these constraints is exasperated by the poor infrastructure and lack of institutional capacity in the current post-conflict situation of Somalia.

2. Institutional Context

Somalia's government institutions ceased to function during the civil war that started in 1990. Key regulatory functions related to agricultural inputs, including seeds, fertilizers, and pesticides ended abruptly as the state collapsed. In addition, the technical and administrative capabilities to develop policies, enact and enforce laws and regulations were lost together with the supporting infrastructure and delivery of services such as laboratory facilities, research and extension services, and documentation archives. This has left farmers largely without access to the appropriate fertilizers needed to increase agricultural productivity, leaving the general public unprotected against potential risks associated with unregulated

¹ World Bank and FAO (2018) 'Rebuilding Resilient and Sustainable Agriculture in Somalia', <http://documents.worldbank.org/curated/en/781281522164647812/pdf/124651-REVISED-Somalia-CEM-Agriculture-Report-Main-Report-Revised-July-2018.pdf>

trade in fertilizer products. These risks can be diverted for dangerous uses and potential harm to the environment.

In recent years, the Somalia government, in partnership with the international community, has worked towards restoring peace and stability while rebuilding government institutions in order to provide basic services and stimulate economic growth. As part of this effort, the government wishes to develop a fertilizer policy that draws upon best practices from elsewhere on the continent and from the current and past experiences of Somali farmers to enhance agricultural productivity in a safe and sustainable way. The Federal Ministry of Agriculture and Irrigation (FMOAI), alongside its counterpart ministries in federal states, is responsible for the formulation, implementation, and monitoring of agricultural policies, laws, and regulations on fertilizers. An effective design and implementation of such a policy is prerequisite to establishing a business-enabling policy environment that encourages, facilitates, and promotes the development of and investments in agricultural value chains. Poor soil fertility is a major constraint to agricultural productivity in Somalia and indeed, throughout much of Africa. Research conducted before and after the civil war highlighted acute phosphorous deficiencies in addition to macronutrient deficiencies of nitrogen and potassium. High soil pH and salinity affect the nutrients available in some areas, and micronutrient deficiencies reduce both productivity and quality of horticultural crops.

In 2006, the African Union Ministers of Agriculture convened in Abuja for the Africa Fertilizer Summit, which made some important declarations on the desire to create an environment for an African Green Revolution. In order to achieve this, access, availability, affordability, and the use of fertilizers were central to the declarations. Given the strategic importance of fertilizer in achieving an African Green Revolution to end hunger, the African Union Member States agreed to increase the level of fertilizer use from the average of 8 kilograms per hectare to an average of at least 50 kilograms per hectare by 2015. They have agreed to take appropriate measures to reduce the cost of fertilizer procurement at national and regional levels, especially through the harmonization of policies and regulations to ensure duty- and tax-free movement across regions and the development of capacity for quality control. The details of the Abuja declaration are in Annex 1.

Somalia desires to build upon these commitments in developing a regulatory policy governing the trade and use of fertilizers for Somalia. Indeed, creating an enabling regulatory environment to promote the use of fertilizers is critical for achieving the overarching National Development Targets of (a) 20% increase in cereal production by 2019 and (b) improved

food security and alleviation of widespread rural poverty through income stabilisation². Somalia faces a chronic food crop deficit, as local production meets only 22% of per capita cereal needs³. Even in the best agricultural seasons, domestic production provides only about 40–50% of per capita cereal needs. Consequently, farming communities suffer from high rates of chronic malnutrition given the seasonality of the production and frequent natural environment shocks, including floods and droughts.

3. Policy Problem

At present, there is no national legal framework governing official controls of trade and use of fertilizers in Somalia. The lack of regulatory mechanisms may result in the import of substances which may not be of the stated nature and quality standard (e.g. Di-Ammonium Phosphate (DAP). In addition, some of the fertilizers, such as ammonium nitrate, can be misused as explosives for terrorist activities once imported in the country. On the one hand, the unregulated imports of these products leave farmers exposed to fraudulent activities because counterfeit fertilizer formulations would have little or no positive impact on yield. However, these formulations can potentially contain harmful substances, which expose consumers of agricultural produce to health risks and/or cause environmental damages, if not carefully used. Furthermore, fertilizers could, in certain instances, be used for purposes other than those for which they were intended.

4. Rationale for Developing National Policy on Fertilizers

Fertilizers (organic and inorganic), along with the use of GAP (good agriculture practices), are the basis of increasing crop yield and enhancing economic growth. The fertilizer market is highly fragmented, poorly developed, and there are no legal and regulatory frameworks in place that harmonizes and streamlines the operations of all actors in the fertilizer sub-sector.

The soils in Somalia have been exposed to continuous cultivation for many decades by using a mono-cropping system where cereal and fruit crops are grown continuously for several years without adding nutrients to the soil to support the crop production. This farming system leads to soil nutrient depletion, resulting in acute food shortages, malnutrition, and poor

² NDP final, 2017-2019, Dec. 2016, <http://mop.gov.so/wp-content/uploads/2018/04/NDP-2017-2019-1.pdf>

³ World Bank and FAO, Rebuilding Resilient and Sustainable Agriculture in Somalia, 2019 <http://documents.worldbank.org/curated/en/781281522164647812/pdf/124651-REVISED-Somalia-CEM-Agriculture-Report-Main-Report-Revised-July-2018.pdf>

economic growth on commercial crops. The long-term average yield recorded in maize and sorghum is only 1 and 0.4 tons/ha, respectively (FSNAU 2018). This is extremely low when compared to the potential yield production of 15 tons for maize and 10 tons for sorghum. SATG conducted comprehensive soil analyses and fertilizer application studies in the Lower Shabelle region in 2014 and 2015 using an on-farm research participatory approach. These studies revealed that soils in Somalia lack phosphorous and nitrogen, and maize yield could be increased by 70% when proper fertilization (DAP, NPK and Urea) is applied⁴.

In addition to the low yield, the lack of official control leaves farmers and the general public exposed to economic and security risks. Unscrupulous traders are benefitting from the lack of regulatory controls in fertilizer trade, knowing well that farmers who are purchasing these products cannot easily ascertain their quality and safety. Some of these products may also fall into the wrong hands and be used in the production of improvised explosives devices. Similarly, farmers inadvertently may use fertilizers in an unsafe manner, thus resulting in environmental pollution. Therefore, a continued lack of fertilizer regulations creates significant risks to public safety, health, and the environment. Such potential market failures clearly warrant government intervention to legislate the trade and use of fertilizers. Evidence from the OUTREACH project on value chain analyses have highlighted an acute need for such legislation⁵.

Evidence also highlighted the need for policy intervention. Following extensive consultations between FMoAI and Federal States Members (FMS), it was agreed that the federal government must develop regulation governing official controls of fertilizers. Furthermore, evidence from consultation undertaken by the OUTREACH programme⁶ showed that there are acute needs for regulatory governance in these two areas, in particular to create a business-enabling environment with regard to ensuring the quality and safety of fertilizers and pesticides in Somalia.

4.1 Supporting Evidence

The evidence emerging from these consultations leads the conclusion that:

⁴ On farm irrigated maize production in Somalia. African Journal of Crop Agriculture Research, March 2018.

⁵ During extensive consultations on strategic agriculture policy priorities for different federal states fertilizer policy emerged a key area of policy priority. Similarly, the analyses of agricultural value chains across the states highlighted widespread concerns about the quality and safety of agrochemicals, including fertilizers.

⁶ OUTREACH project, which is funded by the European Union, is intended to increase the competitiveness of agriculture value chains through effective public-private-producer partnerships and policy support to federal and regional Ministries of Agriculture responsible for creating an enabling economic environment.

- a) There are acute needs for regulatory interventions to verify the quality of imported products, create a register of input suppliers, and improve use and handling practices to protect public health and environment. Indeed, reported asymmetry of information about the quality, resulting in a lack of trust among actors of the agricultural supply chains suggests that regulatory controls for fertilizers can help create a more business-enabling environment in Somalia.
- b) It is important to recognize that the current limited institutional and technical capacity within the federal and state ministries to enforce regulation makes it challenging to effectively develop and enforce comprehensive legislation in this area. Whilst the government could enact legislation that requires registration of suppliers, sets guidelines for good agricultural practices with regard to input use and handling, and legally allocates responsibility for inspections at the port of entry, it would be a challenge to enforce the rules fully, at least in the short run. Building testing facilities, setting up public extension services, recruiting staff, and building technical and administrative competencies requires time and money.
- c) Therefore, there is a need for drafting flexible legislation which can be implemented gradually as government capacity increases, realistically allowing the government to use existing capacity of regional agencies in exporting countries (e.g. Kenyan and Middle Eastern countries). This could potentially be done through bi-lateral agreements with those agencies to coordinate and verify quality and safety of imported products through certifications, whilst developing a full enforcement capacity overtime.
- d) The legislation shall also create a scope for public-private partnerships in regulating the agricultural sector, allowing the government to tap into the existing industry's technical capacity and resources within the private sector.

5. Scope of the Policy

The scope of this policy is to promote and prescribe guidance on the development of regulatory controls of the trade and use of inorganic fertilizers. As such, organic fertilizers are outside of the scope the policy.

At present, there are no official controls of fertilizer imports at the port of entry, or a national register of approved substances and traders of fertilizers. In addition, there are no controls for

inland (re) processing or (re) labelling of these fertilizers once imported into the country. There are also no controls on their handling and use inland. Certain products, like ammonium nitrate, could be hazardous and could, in certain instances, be used for purposes other than those for which they were intended. This could endanger the security of persons and property. As a result, there are considerable security, economic, public health, and environmental risks posed by the current unregulated imports of fertilizers. The scope of the policy is therefore to legislate the import, production, and use of fertilizer in Somalia. Such legislation will:

- a. Specify the labelling and packaging of the product and place a responsibility on the manufacturer to declare the nutrient content of the product.
- b. Prescribe official methods for enforcement authorities when taking, handling samples, and checking the accuracy of the nutrient declarations of fertilizers.
- c. Specify the qualifications of those who can take samples and the form of certification of analysis.
- d. Registration of fertilizer suppliers and training on the potential and risks associated with fertilizer use.
- e. Set out guidelines for the handling and use of fertilizers at a farm level.
- f. Set enforcement processes and penalties for non-compliance.

6. Guiding Principles of Policy

The Federal Ministry of Agriculture and Irrigation should lead this policy within the broader agenda guided by the 2019 National Development Plan (NDP) to increase the food production in the country by 20%. With the prevailing peace and stability in many parts of Somalia, the government is building its institutions and gradually gaining institutional capacity to enforce complex policy intervention measures involving the regulation of multifaceted issues, including ensuring efficient and use of fertilizers across the emerging federal governance model. An alternative option is to form a Fertilizer Regulatory Body that leads the process. Under the current condition where the country is transiting from emergency to development interventions, a flexible regulatory approach, building on existing regional regulatory capacity and commercial and technical skills of the local private sector, is advisable. The guiding principles behind the choice of policy instruments are articulated as follows:

Ownership: The realization of effective performance of the national fertilizer policy requires commitment of all stakeholders. Ownership entails both the formulation and successful implementation of actions and shared roles of the policy. All stakeholders in the fertilizer sub-sector will be constantly involved in the implementation, monitoring, and evaluation processes of the policy instruments.

Credibility: This requires that the fertilizer policy should be credible in terms of the due process for its formation, appraisal, implementation, and practical application in the context of the federal systems of governance.

Proportionality: This pertains to the fact that farmers, importers, and traders affected by this policy are different in their nature of business, risks associated with their activity, and their ability to meet the requirements imposed by this policy. Therefore, the policy should adopt a differential approach to avoid placing disproportionate requirements upon these entities.

Market Friendliness: The policy instrument should be consistent with the promotion of a competitive fertilizer market.

Legality: The policy instruments require appropriate legislations to back them up.

Regional Consistency: The national policy instruments should be in harmony with regional policy dispensation on fertilizer.

Partnership and Dialogue: All stakeholders in the fertilizer sub-sector should be constantly involved in the implementation, monitoring, and evaluation processes of the policy instruments.

Gradual Approach to Policymaking: Whenever necessary, policy reforms and changes on fertilizer should be gradual within the time frame agreed upon by stakeholders.

Fiscal Responsibility: Fiscal responsibility requires that necessary resources committed to the implementation of fertilizer policy should be allocated on a cost-benefit analysis.

Transparency in Labelling: All fertilizer products offered for sale in Somalia are properly labelled with a guaranteed analysis and net weight, and the quality control of the products is based on the truthfulness of the claims on the label.

Balanced Fertilization: This requires the provision and use of macro and micronutrients in balanced proportions based on soil testing and crop requirements for different agro-ecological zones.

Environmental Integrity: Environmental integrity calls for efficient fertilizer use based on the need to protect and conserve the environment.

Balanced Fertilizers: Balanced fertilizers can be achieved through the use of macro and micronutrients in reasonable proportions based on soil testing and crop requirements for different agro-ecological zones.

Risk Management: This calls for informed decision making that explicitly addresses uncertainty.

7. Policy Vision

The policy vision is to support the development of an efficient fertilizer market that is responsive of farmers' needs and the environment.

8. Mission of Policy

The mission of the policy is to support the development of a competitive and profitable fertilizer supply chain that ensures access and affordability at the farm gate, promoting greater fertilizer use by farmers for increased and sustainable agricultural productivity and farm incomes.

9. Overall Policy Objective

The objective of the policy is to contribute to increased agricultural productivity, economic growth, and incomes through increased and sustainable access to and use of fertilizers.

9.1 Specific Policy Objectives

- I. Create an enabling business environment for the development of an integrated supply chain for fertilizer importation and a distribution system that fosters competition and innovation.
- II. Strengthen the capacity of the suppliers to deliver the right amount of fertilizers and promote fertilizer trade by introducing appropriate and effective incentives that encourage investment by the private sector to increase access and affordability of fertilizers.
- III. Establish a flexible regulatory and monitoring system capable of building on the technical capability of the private sector to ensure the supply of high-

quality fertilizer products along the supply chain in a manner that safeguards farmer interest, human health, public safety, and the environment.

- IV. Strengthen the capacity of the farmers to engage in safe, profitable, and sustainable fertilizer use while creating awareness to improve knowledge of the benefits of fertilizers.
- V. Promote diverse fertilizer products, sustainable technologies (improved seeds, irrigation, soil conservation), and application of good agriculture practices that enhance the efficient utilization of fertilizers.
- VI. Support agricultural research to test soil nutrient deficiencies and help identify specific recommended rates and methods of fertilizer application in various cropping systems and agro-ecological zones. Equally important is to develop extension services to disseminate the research findings (through demonstration plots and media outreach) throughout the country.
- VII. Create a regulatory capacity that is in line with the existing regional standards and enforcement capabilities to ascertain the quality of imported fertilizers.

10. Governance and Institutional Linkages

Developing an effective and efficient fertilizer policy requires coordination in both design and implementation of such policy. Somalia has a relatively new federal governance system, in which the central government is envisaged to work with federal states to develop, implement, monitor, and evaluate regulatory policy interventions across the sectors of the economy. However, constitutional arrangements for this multilevel governance system are still under development. Without clearly defined roles and responsibilities, including import inspection, certification of importers and sellers, environmental impact monitoring, and regulation enforcement, the fertilizer policymaking may be challenging. Therefore, in the current circumstances, it is advisable that the fertilizer policy is coordinated under ad hoc memorandum of understanding between federal and state governments to clarify the roles and responsibilities in enforcement and supporting services. Without such coordination, overlaps, duplications, and lack of the appropriate level of technical and financial capacity across a federal system, amongst other factors, could lead to ineffective enforcement actions, as well as inefficient public investment in the development capacity of official controls of fertilizers and other agrochemicals. This would thereby reduce the capacity to boost sector productivity

growth, address the wider spread food insecurity, and improve social and environmental conditions of the country.

11.Expected Outcome

1. Import of high-quality fertilizers that are in line with regional and international standards.
2. Total ban on fertilizers, such ammonium nitrate, which can be used as explosives by terrorist organizations.
3. Fertilizer importers and traders are registered, trained, and licensed so that all actors in the fertilizer business are accounted for;
4. Improved use of fertilizer to achieve an average fertilizer use of 100 kg/ha of urea and 100 kg/ha of Di-ammonium phosphate by 2030, so that Somalia can address the poor soil fertility (nitrogen and phosphorous in particular) and low agricultural productivity.
5. Public institutions and the private sector will partner to respond to national fertilizer needs and ensure the sustainable availability and access of appropriate fertilizers that are affordable for farmers.
6. Research and development and extension services underpinning site and crop specific recommendations.
7. Balanced fertilizers and advanced techniques promoted to improve the efficient, effective, and environmentally sustainably fertilizer use.

12.Policy Direction

In line with the vision, mission, objectives, and guiding principles articulated above, the following shall be the policy direction for fertilizer subsector in Somalia.

12.1 Production

The government of Somalia shall encourage the development of local fertilizer production capacity, through promoting the exploration of available natural resources to manufacture fertilizers in the long run (10-20 years). This shall be backed by feasibility studies to encourage investments into the production of fertilizers from the country's raw materials.

The government of Somalia shall also encourage the production of fertilizers by providing incentives available for international investments in the country. Foreign investments into fertilizer productions shall comply with requirements in relevant policies, laws, and regulatory instruments existing in the country. The production of fertilizer formulations from

raw materials or through blending shall be based on crop nutrient requirements for the different soil types, soil fertility zones, and agro-ecological zones.

12.2 Imports

The importation of fertilizers shall be the responsibility of the private sector in partnership with the government, which have an overall oversight of the trade. All private companies are free to import fertilizers, but shall adhere to the legal and regulatory framework to be set for business licensing, registration, and qualifications.

The government shall advise companies to import required fertilizer types and quantities according to the timeliness of cropping seasons, and in line with the national development policy priorities.

The government of Somalia shall encourage the private sector to consider bulk procurement of fertilizer imports to benefit from economies of scale and reduce cost. The government shall consider taking advantage of membership to regional bodies (such as EAC⁷ and COMESA⁸), which provide a platform for bulk procurement initiatives.

Importers shall conform to the requirements in all existing laws and regulations, and request for a permit for fertilizer consignments being imported into the country. Each fertilizer consignment imported into the country shall be accompanied by a manufacturer's certificate, a bill of lading, and a pre-shipment inspection certificate. Additional requirements may be required by MoAI.

13.Fertilizer Trade and Marketing

The private sector shall be primarily responsible for fertilizer trade and marketing. The government shall facilitate the private sector and perform a regulatory role.

13.1 Improving Supply

All private wholesalers (distributors) and retailers (agro dealers) are free to trade and market fertilizer within the country, however, they must operate under the legal and regulatory framework set for fertilizer trade.

In order to increase productivity, the government shall consider introducing support mechanisms to facilitate increased fertilizer use by farmers by introducing interventions such as subsidies through tax relief. However, these interventions should not distort the market.

⁷ East African Community

⁸ Common Market for Eastern and Southern Africa

The private sector shall participate in the trading of fertilizers subsidized by the government in a transparent and competitive environment based on clear agricultural policy.

In addition to the fertilizer traders, development organizations like FAO import massive amounts of fertilizer into the country and distribute it as subsidies to their beneficiaries. In some cases, this ends up in the local markets where it is sold below cost for fruits and vegetable growers. While this is helping the farmers, it is distorting the market price of fertilizers. The government should control all importing fertilizers in order to stabilize the market price.

Generally, market forces shall govern fertilizer prices. When the government provides subsidies through tax relief to support farmers, a fertilizer price relaxation approach shall be introduced, i.e., move away from fixed tax rates, to the introduction of upper limit fertilizer prices (ceiling import prices above which tax rate is reduced) and finally, the removal of price controls.

The government shall introduce support mechanisms for the private sector to invest in fertilizer trade and marketing, partnering with financial institutions and stakeholders to provide finances and reduce the risk associated with accessing finances. The government shall routinely provide reliable price information on regional and international markets.

Distribution of fertilizers shall be informed by district fertilizer requirements in terms of crop requirements and quantities as coordinated with state governments. The fertilizer distribution channel existing in the country (supply chain from importer-distributor/agro dealers to farmers) shall be monitored and fertilizer will be inspected along the distribution chain to ensure quality is maintained and delivery is timely.

An effective and efficient information system linking importers, distributors, and agro dealer networks to the FMoAI and its counterparts in state governments will be established to improve fertilizer trade and market efficiency.

Support facilities to improve fertilizer use, such as target subsidized fertilizer that is priced in partnership with government, should be monitored by local governments and district/extension officers to ensure that the subsidies go to the targeted beneficiaries.

13.2 Promoting Fertilizer Use

13.2.1 Extension Services

The government shall establish the Somalia Fertilizer Board (SFB) through which it shall provide technical guidance in developing and implementing extension programs aimed at promoting fertilizer use.

The local government, the private sector, and relevant stakeholders shall partner with SFB to establish and implement a Farmer Field School (FFS), demonstrations, field days, and a training course to educate all stakeholders on the benefits of fertilizers, thereby promoting their use.

MoAI and its partners shall provide training for field extension agents (farmer promoters and FFS facilitators) and provide fertilizer use guides to farmers to improve knowledge on fertilizer use best practices.

13.2.2 Research and Development

Research and development of fertilizer formulations/blends and fertilizer recommendations shall be the primary responsibility of the government through the SFB and its research affiliates, the private sector and universities.

The government shall commission periodic nationwide soil sampling and analyses to update the soil nutrient requirements for the various regions in the country.

Based on these soil nutrient maps, SFB and partners shall periodically develop fertilizer application recommendations appropriate for the crop requirements and soil fertilizer status of these regions.

Updated fertilizer recommendations shall be provided to fertilizer blenders to produce the appropriate fertilizer formulations.

Since soils vary from field to field depending on topography and cropping history, farmers shall be encouraged to conduct soil testing for tailor-made site-specific fertilizer recommendations.

14. Environmental Sustainability and Climate Change

It is recognized that inappropriate use of fertilizers could have a negative effect on the environment, such as leaching to underground water sources and the emission of “greenhouse gases,” which are contributing to global warming and climate change. With respect to climate change, the inappropriate use of urea is identified as a significant source of greenhouse gas

emissions⁹. The policy shall contribute to tackling climate change, environmental safety and sustainability as follows:

- i) Farmers shall be trained on the appropriate handling, judicious use, and proper application of fertilizers. Fertilizer traders shall be trained on how to store, handle, and transport fertilizers safely and appropriately. Awareness shall be created among value chain actors to prevent air and water pollution, soil degradation, and food produce contamination due to inappropriate handling or use of fertilizers.
- ii) Soil maps shall be updated periodically to ensure changes in soil nutrient deficiencies and requirements for different crops and agro-ecological zones identified to facilitate updating fertilizer recommendations.
- iii) The use of organic and bio-fertilizers together with inorganic fertilizers shall be popularized and an integrated approach to plant nutrient management that counters soil degradation and maintains soil fertility.
- iv) Establish guidelines for fertilizer manufacturers/blenders to implement environmental safety standards to properly dispose of waste products (e.g. solid wastes, effluents, and fumes) emanating from their production plants.

15. Regulatory Standards and Quality Control

The government shall be responsible for regulating fertilizers to ensure that procedures and traders are registered and quality fertilizer products are traded in the country. To regulate the fertilizer trade and use, the government shall enact laws governing fertilizer and prepare Ministerial Instructions regulating the control of fertilizers. This will provide the legal and regulatory framework by which the fertilizer sub-sector is regulated and quality is controlled throughout the supply chain.

16. Governance and Institutional Linkages

To implement this policy, there will be linkages between government agencies and private sector organs, development partners, Community Based Organizations (CBOs), and farmer organizations. Although the FMoAI shall be the lead implementer, linkages shall be maintained with:

⁹ Fabián G. Fernández, Richard E. Terry and Eric G. Coronel (2015), Nitrous Oxide Emissions from Anhydrous Ammonia, Urea, and Polymer-Coated Urea in Illinois Cornfields, Journal of Environmental Quality Abstract - Special Section: Improving Nitrogen Use Efficiency in Crop and Livestock Production Systems, Vol. 44 No. 2, p. 415-422.

- a. Other ministries, such as the Ministry of Livestock and Rangeland and the Ministry of Energy and Water, environment agencies, universities, district production departments, and the private sector, such as the banking industry.
- b. Development organizations such as Food and Agriculture Organization (FAO), international NGO's, and the private sector to ensure harmonization and compliance with the regulatory frameworks on procurement, distribution, and use of fertilizers.
- c. Seed companies and research institutions to ensure the production of high-quality seed that is capable of producing satisfactory yields in the presence of fertilizer, in addition to developing proper agronomic packages.

END

Annex 1: 2006 Abuja Fertilizer Summit for the African Union Ministers of Agriculture

- Recognizing that Africa needs a Green Revolution, which is long overdue, and yet constitutes the way of getting African farmers out of the poverty trap by achieving food security and other relevant the Millennium Development Goals.
- Recognizing that fertilizer is crucial for achieving an African Green Revolution in the face of rapidly rising populations and declining soil fertility.
- Realizing that most farmers in Africa are poor, have virtually no access to fertilizer, and that the poorest of them urgently need special attention.
- Recognizing the urgent need for a strategic investment program to increase the availability and use of fertilizer alongside with other inputs to usher in a Green Revolution on the African continent.
- Declare fertilizer, from both inorganic and organic sources, a strategic commodity without borders.
- Resolve that the African Union Member States will accelerate the timely access of farmers to fertilizers.
- Given the strategic importance of fertilizer in achieving an African Green Revolution to end hunger, the African Union Member States resolve to increase the level of fertilizer use from the current average of 8 kilograms per hectare to an average of at least 50 kilograms per hectare by 2015.
- By mid-2007, the African Union Member States and the Regional Economic Communities should take appropriate measures to reduce the cost of fertilizer procurement at national and regional levels, especially through the harmonization of policies and regulations to ensure a duty- and tax-free movement across regions, and the development of capacity for quality control. As an immediate measure, we recommend the elimination of taxes and tariffs on fertilizer and on fertilizer raw materials.
- By mid-2007, the African Governments must take concrete measures to improve farmers' access to fertilizers by developing and scaling up input dealers' and

community-based networks across rural areas. The private sector and development partners are hereby requested to support such actions.

- By 2007, the African Union Member States must take concrete measures to specially address the fertilizer needs of farmers, especially women, and to develop and strengthen the capacity of youth, farmers' associations, civil society organizations, and the private sector.
- With immediate effect, the African Union Member States must improve farmers' access to fertilizer, by granting, with the support of Africa's Development Partners, targeted subsidies in favor of the fertilizer sector, with special attention to poor farmers.
- The African Union Member States should take immediate steps to accelerate investment in infrastructure, particularly transport, fiscal incentives, strengthening farmers' organizations, and other measures to improve output market incentives.
- The African Union Member States should establish national financing facilities for input suppliers to accelerate access to credit at the local and national level, with specific attention to women.
- The African Union Member States hereby request the establishment of regional fertilizer procurement and distribution facilities with the support of the African Development Bank, the Economic Commission for Africa, the regional economic communities, and the regional development banks, through strategic public-private partnerships by the end of 2007.
- Given the extensive fertilizer raw material resources in Africa and the fact that they are underutilized in many parts of the continent, the African Union Member States undertake to promote national/regional fertilizer production and intra-regional fertilizer trade to capture a bigger market and take advantage of economies of scale through appropriate measures such as tax incentives and infrastructure development. This should be supported by the African Development Bank, the Economic Commission for Africa, the regional development banks, the regional economic communities, other development partners, and the private sector.
- The African Union Member States should take specific action to improve farmer access to quality seeds, irrigation facilities, extension services, market information,

and soil nutrient testing and mapping to facilitate effective and efficient use of inorganic and organic fertilizers, while paying attention to the environment.

- By 2007, the African Development Bank, with the support of the Economic Commission for Africa and the African Union Commission, is called to establish an Africa Fertilizer Development Financing Mechanism that will meet the financing requirements of the various actions agreed upon by the Summit. We, the African Union Member States, undertake to support the establishment of this facility and will pledge resources for its immediate operation.
- The African Union Member States request the African Union Commission and the New Partnership for Africa's Development to set up a mechanism to monitor and evaluate the implementation of this resolution. This should be done in collaboration with the Economic Commission for Africa and the African Development Bank. The African Union Commission should give progress report to the African Heads of State at every sixth-monthly African Union Summit, starting in January 2007.