THE REPUBLIC OF UGANDA

NATIONAL FERTILISER POLICY

Regulatory Impact Assessment

APRIL 2016

FOREWORD

VISION 2040 for Uganda envisions the transformation of the country from a predominantly rural, low-income country to a competitive upper-middle income country by 2040. The transformation of agriculture remains central to fostering economic growth and poverty reduction, which is consistent with the Vision. However, the agricultural sector has been growing at a dismal rate of 1.5 percent, which threatens the prospects of future prosperity for nearly 80% of the country's population that depends on agriculture. Uganda depends on its soil for agricultural production. The Government intends to improve the productivity of its people through a revitalisation of the soil such that more food will be produced for consumption at home and a surplus, together with other cash crops, is produced for export. However, over-mining of the soil over the last century has depleted key nutrients in the soil, and this factor has caused the production of key crops to decline considerably over the years. In most parts of the country, a large proportion of the soil is unable to generate the volumes of produce that was recorded over a decade ago. This decline has been exacerbated by droughts and floods that have appeared as a result of climate change and an ineffective agriculture extension service to support a typical farmer by replenishing the soil with nutrients to maintain its texture and health is needed for productive farming.

The use of both organic and inorganic fertiliser is recognised worldwide as the most viable mechanism for bolstering soil productivity. The problem of the decline in soil fertility was noted at the Abuja Fertiliser Summit in 2006, where African countries (including Uganda) signed a commitment to ensure that fertiliser is applied at a level of 50 kg of nutrients per hectare per year. However, due to the high level of depletion of the soil, Uganda will require approximately 200 kg of phosphorus nutrients per hectare per year.

Research conducted in Uganda by key institutions, including the Kawanda Research Centre and other universities, presented a projection that 30 kg of nutrients per hectare per year is a feasible target for Uganda by 2020. This would put Uganda on a path to achieving the Abuja target and revitalising productivity, subsequently increasing production and income for a Ugandan farmer. To improve Uganda's soil to a level of fertility that will support agriculture, it was judicious to implement a National Fertiliser Policy (NFP) to regulate the fertiliser sector; support production, importation, and management; and oversee the extension of knowledge on fertiliser application to the farmer. This is in line with the aspiration of the National Agriculture Policy, the second National Development Plan and the evolving Agriculture Sector Strategic Plan.

To postulate on the likely implications of the NFP, a Regulatory Impact Assessment (RIA) has been conducted in fulfilment of a cabinet requirement pursuant to policy guidelines that have directed the creation of a policy in 2004. This report presents the problem that the policy has been put in place to address, the extent to which the policy will impact a range of stakeholders, the level of consultation that has been undertaken to arrive at the various strategies to implement the policy, the cost of the policy and the anticipated benefits, as well as the monitoring and evaluation and implementation framework. We would like to thank the Economic Policy Research Centre for spearheading the development of the RIA — a key requirement for the passage of this policy by the cabinet.

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Hon. Tress Bucyanayandi (MP)
Minister Agriculture, Animal Industry and Fisheries

ACRONYMS AND ABBREVIATIONS

ACB	Agricultural Chemicals Board
ACDP	Agricultural Cluster Development Project
AGRA	Alliance for Green Revolution in Africa
ASSP	Agricultural Sector Strategic Plan
CAADP	Comprehensive Africa Agriculture Development Program
CSOs	Civil Society Organisations
EAC	East African Community
EPRC	Economic Policy Research Centre
FAO	Food and Agricultural Organisation of the United Nations
FMDU	Fertilizer Market Development Unit
GDP	Gross Domestic Product
ICT	Information and Communication Technology
IFA	International Fertilizer Industry Association
IFDC	International Fertilizer Development Centre
Kg	Kilogram
LG	Local Government
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
M&E	Monitoring and Evaluation
MoING	Ministry of Information and National Guidance
MoGLSD	Ministry of Gender, Labour and Social Development
MoLG	Ministry of Local Government
MoPS	Ministry of Public Service
MTEF	Medium Term Expenditure Framework
MTIC	Ministry of Trade, Industry and Cooperatives
MoWE	Ministry of Water and Environment
NAADS	National Agricultural Advisory Services
NAP	National Agricultural Policy
NARO	National Agricultural Research Organization
NDP	National Development Plan
NEMA	National Environment Management Authority
NFP	Uganda's Fertilizer Policy
NGOs	Non-Government Organizations
PPS	Purchasing Power Support
RIA	Regulatory Impact Assessment
TTA	Technology Transfer Agent
UBOS	Uganda Bureau of Statistics
UN	United Nations
UNBS	Uganda National Bureau of Standards
URA	Uganda Revenue Authority
USD	United States Dollars
UGX	Uganda Shillings
WHT	Withholding Tax

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CHAPTER 1: ASSESSMENT OF THE POLICY PROBLEM

1.1 ASSESSMENT OF THE SIZE AND SCALE OF THE PROBLEM

1.1.1 The Size of the Problem

Uganda has a diverse range of soils, with relatively good soil such as Andosols & Nitisols found near the Albertine rift (including Mount Rwenzori) and on the Eastern rift (including Mount Elgon). However, the majority of Ugandans soils are Ferralsols & Acrisols with inherently poor fertility levels. These soils are generally low in phosphorus (P) and have relatively low pH levels and cation exchange capacities due to the low soil organic carbon and low activity clays. Together, these features lead to low available exchangeable cations and related deficiencies of potassium (K) and occasionally calcium (Ca) and magnesium (Mg). This is responsible for the declining trends in per capita food production nationwide.[1]

The Regulatory Impact Assessment (RIA) appreciates the scope of the problem, and from the policy document, the main reference that speaks to the fundamental fact is that 'while Ugandan soils have one of the highest rates of nutrient depletion in sub-Saharan Africa, estimated at approximately 80 kg of nutrients per hectare year, it is also one of the lowest users of fertilisers in the world, using approximately 1-1.5 kg of nutrients per hectare per year.' In other words, Uganda takes 80 kg of nutrients out of the soil in hectares and replaces it with only 1-1.5 kg of nutrients, creating an unsustainable scenario. Consequently, over the next decade, the soil will need much more investment in replenishment if nothing is done now.

1.1.2 The Scale of the Problem

The policy has clearly and accurately stated that nitrogen and phosphorous are highly deficient in Ugandan soils. It is imperative that the proposed National Extension Policy highlights the role inter-cropping can play in increasing the input of nitrogen into the soil. In addition, the policy document mentions the investment Uganda is making to build a phosphate factory in Tororo that will help to bridge the gap and reduce the depletion problem. Timing is especially critical for agro-input dealers and farmers alike in this plan. Farmers will be required to reach a certain level to be able to apply fertiliser. The anticipation of input demand, volume and price has a strong bearing on eventual uptake. While priority should be placed on the most required nutrients, making the nutrients readily available upon demand has been a problem for many agro-input dealers and farmers. The policy has noted that knowledge expansion will be critical in stimulating this demand – but with a caution to 'start from where the farmer is', including appreciation of some local technologies.

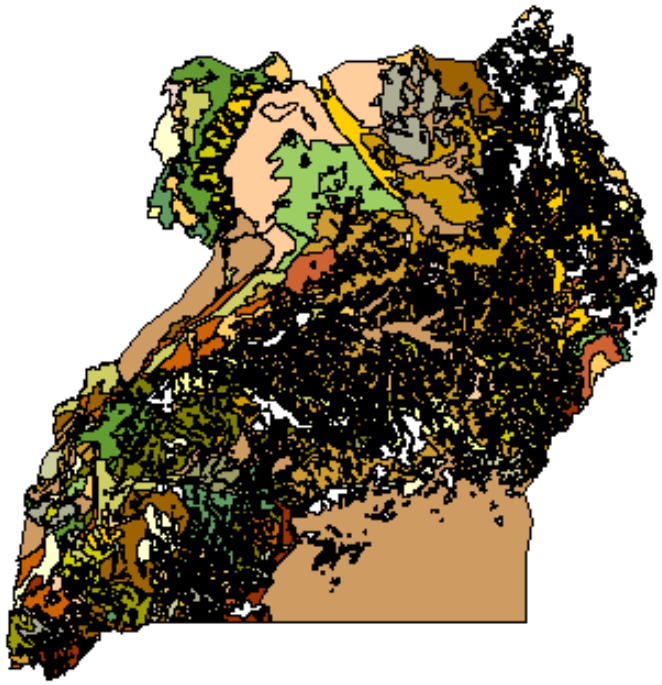
1.2 POLICY CONTEXTUALISATION

The policy has correctly focused on the problem for a typical Ugandan farmer, but it also needs to be outward-looking in the context of regional and international trade. Increases in fertiliser uptake will be key to Uganda's export strategy in which the following products are prioritised: coffee; cotton; tea; maize; rice, cassava, and beans; beef; milk; and citrus and bananas The policy has been established to demonstrate its link to the national efforts to contribute to reduce malnutrition, increase incomes, and support the export of strategic agricultural commodities.

[1] . IITA, EPRC IFPRI, NARO and GoU: *The Land that feeds us by soil and fertile soils – should we be guided by the national anthem*; Kampala 2012).

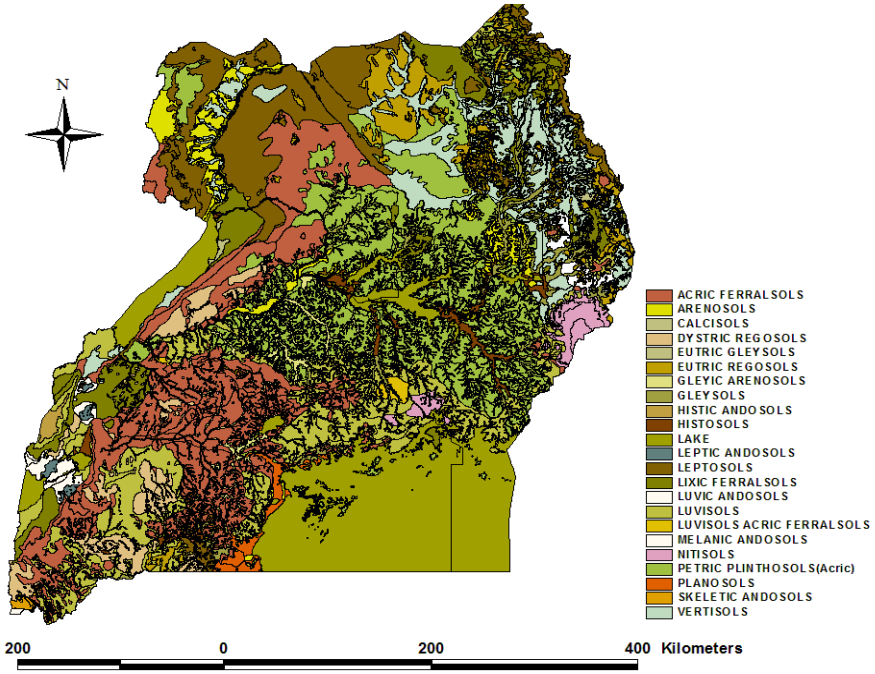
Figure 1: Soil map for Uganda showing the trends in depletion over the last 10 years

The maps reveal the extent to which the level of loam fertile soil has declined between 2002 (left) and 2012 (right).



Source: http://www.geography.vt.edu/people/Uganda-tutorial/u-arc7.htm
Done by Makerere University and IPM Tech Virginia National Agricultural Research Organization USA

Map construction Date: **Feb 2002**



Source: www.yeildgap.org – 1057

Coverage of different soil in Uganda based on FAO classification to the right of the map

Map construction date**: June 2012**

CHAPTER 2: POLICY OPTIONS

The Cabinet has three options to consider when implementing the policy:

i) If the existing policies and legislative framework are sufficient to address the issues in the policy proposals, the Cabinet may decide to do nothing and therefore dismiss the policy. The Cabinet may decide that the proposals made in the policy should be integrated into existing policy frameworks, which should be improved to include the points being proposed.

ii) The Cabinet may maintain the status quo and instead enhance an on-going implementation of the National Agriculture Policy and strengthen the aspects related to fertilisers in that policy and other strategies without necessarily having a new policy in place; and

iii) The Cabinet may decide to adopt the policy and implement the proposal in the policy under a new policy framework. This will depend on the merits of the policy and the urgency required to act on the issues it raises.

2.1 OPTION 1: DOING NOTHING

The description of the problem analysis in Chapter 1 has presented a situation in which the urgency to act immediately is imperative; not acting means that the country will face intermediate double challenges to domestic food security and dwindling foreign exchange receipts from weaker export bases. The option of doing nothing is very costly and will make the agriculture sector very unsustainable with the current rates of soil nutrient depletion. The current situation has seven fundamental challenges, and these will be sustained if nothing is done:

i) The cost of fertiliser will continue to increase, making it impossible for subsistence farmers to access critical nutrient inputs (especially inorganic ones) in the years to come;

ii) The current level of policy fragmentation in the implementation will continue, and the enforcement mechanism of the respective regulations will remain weak. As a consequence, more adulteration of the fertiliser will continue (with porous borders), making the sector cost-inefficient in the years ahead;

iii) The current level of farm productivity and productivity in future years will continue to decline, and this will require a much higher nutrient input in the years to come at a cost that is much higher than the amount needed today to replenish the soil. This will mean that agriculture will be less productive and rewarding as a sector in the future if the soil fertility continues to decline at a rate that is almost 80 times the rate of the current nutrient input;

iv) Uganda is in the process of drafting the National Extension Policy, and fertiliser will be one of the aspects required for farmer knowledge extension. Without this policy in place, the Government will miss the opportunity to advance soil health issues within this framework;

v) As the country develops, more foreign currency is needed for the importation of goods that are not locally produced. Because agriculture is a key sector of the economy and the shilling strength depends on the buoyance of our exports, dwindling product volumes that are exported due to low farm productivity will reduce Uganda's foreign exchange receipts and keep the shilling weaker in the years to come; and

vi) With the current low utilisation of fertiliser, coupled with weak extension service support, inadequate efforts to regulate this sector and support its progression, under-use, misuse and exposure to conditions that are negative to the environment will continue.

In light of the issues raised above, the RIA implores the Government to adopt this policy and avert the challenges currently being faced by the agricultural sector.

2.2 OPTION 2: MAINTAINING THE STATUS QUO

The National Agriculture Policy (NAP) 2013 notes that a challenge exists that is related to different land tenure systems, which leads to land fragmentation, and goes on to state that sustainable land management (SLM) is fundamental to the future development of agriculture. More fundamentally, the NAP states that supportive policies under this system will be needed for its operationalisation, including the fertiliser policy. As shown in section 2.1 above, the status-quo will only sustain the challenges facing the agriculture sector and will prolong the quest for solutions to on-farm productivity, including the following issues:

i) Poor knowledge of the extent of the nutrient deficiency, both at macro and micro levels for the farmer, will cause a gradual reduction in farm productivity (at the household level) and lower export values (at the national level);

ii) Maintaining the status quo will mean that the weak enforcement on fertiliser (the current level of fragmentation) will be sustained;

iii) Costs will remain high for the farmer in the form of high input prices that are charged by agro-input dealers who have to import inorganic fertiliser, which itself is a costly international commodity;

iv) Poor quality fertiliser will continue to enter the market as there is very limited capacity in-country (especially at border points) to verify the conformity to standards of the various forms of fertiliser entering Uganda; and

v) Critical investment to undertake site-specific soil testing may not receive wide coverage as government, private sector and development partners need legislation that empowers scientific research, as recommended by the Agricultural Chemical Control Act, 2006.

The situation is not sustainable, and the RIA recommends that the policy be put in place to improve the conditions in Uganda and ensure an increase in soil productivity in line with Vision 2040 and national agriculture policy.

2.3 OPTION 3: PASSING THE POLICY

If a new policy is introduced and passed, it will:

i) Bring together all the related fragmented regulations into a single and comprehensive policy framework on fertiliser;

ii) Enable Uganda to meet the continental commitments of Abuja 2006 Declaration target of 50 kg per hectare per year and the UN Sustainable Development Goals 2; and

iii) Increase farm productivity of the 12 strategic enterprises and in turn increase household incomes and support the export strategy.

This policy is also important for other policies (see Chapter 10) in providing the much needed complementarity and holistic growth. As a way of demonstration, Uganda will be at a loss not to meet its goals if it targets the exportation of 20 million bags of coffee by 2020 without addressing the soil fertility gaps.

CHAPTER 3: POLICY FOCUS AND INTENT

3.1 POLICY VISION MISSION GOALS AND STRATEGIC OBJECTIVES

3.1.1 Policy Vision

The Policy Vision is aligned to the NAP with a focus on replenishing the soil sustainably to ensure a level of fertility that will support domestic production and exports. The Vision is in consonance with the aspirations of the Vision 2040 and the second National Development Plan (2015/16 - 2019/20).

3.1.2 Policy Mission

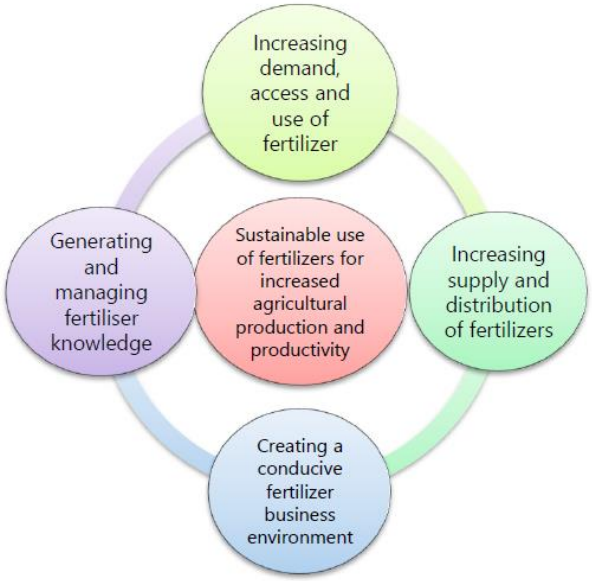
The mission statement is clear, concise, and farmer-centred. The mission is based on three key aspects: focusing on ensuring access (which will be elicited by farmer knowledge and subsequent demand for various fertiliser inputs, availability of supplies and affordability — a correlation of the price of the products and farmer incomes), increasing productivity, and ensuring that this process is sustainable for the current and future generations.

3.1.3 Policy Goal

The policy goal is aligned with Uganda's commitment to the 2006 Abuja Declaration, and while Uganda lags with regard to the 50 kg of nutrients per hectare per annum target, the policy aims to have at least 30 kg of nutrients per hectare per annum by 2020. This goal of reaching 30 kg of nutrients per hectare per year refers to an optimal mix as recommended for organic and inorganic fertiliser and bio-fertiliser.

3.1.4 Strategic Objectives

The policy has outlined key strategic objectives (as shown in Figure 2 to the right) with an emphasis on the sustainable use of fertiliser, increased agricultural production and productivity. The policy will regulate the fertiliser sector and create a supportive and conducive environment for the fertiliser business, generate and manage fertiliser knowledge transfers through various methodologies that are farmer-centred, and increase demand and access. The policy aims to support interventions throughout the fertiliser value chain. Core among the strategic objectives is increasing and strengthening the supply and distribution channels to make fertiliser accessible, especially at the grass root level.



CHAPTER 4: IMPACT – Who will be the Winners and Losers?

The assessment of the impact is an attempt to assess whether the policy will negatively impact some stakeholders (making them losers in this case) and whether there are measures within the policy framework to both anticipate and minimise or diminish this eventuality. The Government proposes to implement policies basing on a 'no-harm' principle, and the goal is that no stakeholder is adversely affected by the NFP implementation.

4.1 WINNERS/ASSOCIATES' GAINS FROM THE POLICY

The RIA notes that, overall, the policy will provide a winning platform for a range of stakeholders depending on the scope, financing and efficacy of its implementation. The following will be the associated gains (which will accrue for the 'winners' of the implementation in this regard):

i) **The Government** will, for the first time, establish a coherent NFP and unify all the fragmented aspects of the current fertiliser sub-sector regulative structure. The newly unified NFP will streamline oversight and management.

ii) **Local Governments** (utilising the newly established Directorate of Agricultural Extension Services) will have both the policy and its implementation strategy as a reference point for direct interventions at the local level, especially the mobilisation of farmers, to embrace new farming technologies, including fertiliser application. As of now, there has been no unified coherent regulative reference, and farmers have had to cope with conflicting messages on fertiliser use from a range of public and private sector entities.

iii) **Agro-input dealers,** both local and international, will stand to benefit from incentives that have been implemented under the Purchasing Power Support (PPS) provision within the policy. This support will extend to smallholder farmers who are under contract with agro-input dealers and, depending on the terms of the contracts, will see a much more streamlined supply system for various high quality fertiliser types. The RIA notes that the Government agreed to exempt Value Added Tax (VAT) from fertilisers and other agro inputs in FY 2013/14, and this will be implemented as an incentive for agro-dealers. Second, the Ministry will work with the Uganda Revenue Authority (URA) to establish a financial reporting capacity for agro-dealers to meet their tax obligations and file their returns on time so that the Withholding Tax (WHT) is claimed and not transferred in the form of higher prices to the farmer.

iv) **Other broader private sector** will benefit from the increased volumes produced as a result of higher fertiliser uptake. The policy projects that increase in terms of foreign exchange from higher export receipts for products such as cash crops may see a positive impact on the performance of the Uganda shilling against the United States dollar, which is key for balancing the current state of the balance of payments (which accrue as a result of better terms of trade). Projects, such as the pilot project on urban waste that is supported by the World Bank, National Environmental Management Authority (NEMA) and urban councils, will ensure that improvements are made in waste-sorting methods and the packaging of matter that is used for compost by farmers.

v) **Academia and research organisations will also be winners** in this regard because the policy formulations processes will help them popularise their works and products, particularly the soil test kits and the Fertiliser Optimiser that has now concluded trials.

vi) **Ugandan farmers,** under this policy, will obtain knowledge on soil productivity, SLM and the importance of both organic and inorganic nutrient application. Once this knowledge is obtained, it is envisaged that more organic matter that is currently wasted (and could have been used as compost manure) will start being utilised. As awareness of the importance of the use of inorganic fertiliser increases, farmers will see higher yields and eventually have higher household incomes.

4.2 LOSERS/ASSOCIATED RISKS OF THE POLICY

The Government will implement the fertiliser policy in ways that do not adversely affect any of its intended beneficiaries. This will require that associated (potential) risks be noted early and that mechanisms be put in place for their mitigation as the implementation of the policy strategy commences. The RIA notes that the following will be the associated risks that may pose a loss to some stakeholders if the policy is not implemented as desired:

i) Farmers: The current level of farmer knowledge on the application of both organic and inorganic fertiliser is very low (approximately 32%) in as much as the awareness is high (approximately 61%)[2]. The newly established extension service support system needs to orient new agriculture staff toward ideal methods for the application of various forms of fertiliser for various crops (a training manual has been developed to this effect).

a) Some of the matter (especially the inorganic matter) has the potential to cause bodily harm if not used in the correctly prescribed volumes.

b) Second, there is limited knowledge regarding the level of nutrient deficiency in the soil. It is widely believed that the majority of farmers have never done soil testing on their farms. Therefore, the possibility that farmers may misapply the fertiliser and fail to match the nutrient input with the site-specific deficiencies exists. It is important, therefore, that soil testing becomes core to the implementation of this policy so that the correct nutrients are applied to the correct farms to maximise the benefit.

c) Last, it has been widely documented that there is a substantive volume of counterfeit fertiliser[3] that has entered the market via certain unscrupulous agro-input dealers who take advantage of poorly informed farmers and sell bogus products. While there are concerted efforts to address this problem, it is possible that the low level of farmer knowledge may be exploited by a few dealers to cheat the farmer and increase the cost of farming (and sustain yield levels as opposed to increasing them).

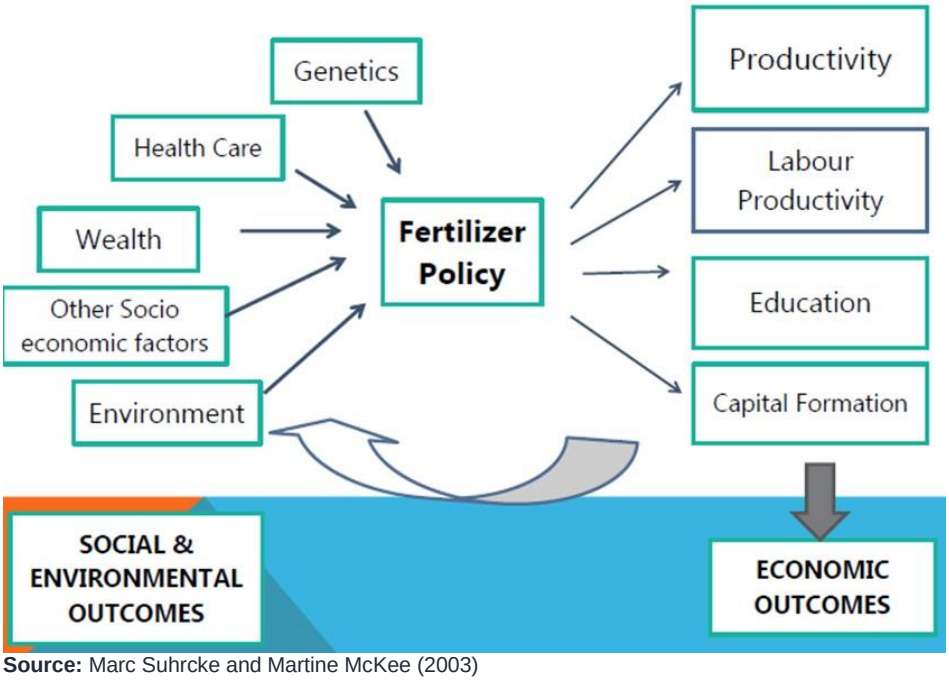
ii) Agro-input dealers have been facing significant business risks associated with import of fertiliser for products whose output prices have been volatile in the national, regional and international markets. There is a high correlation between the price of products (and their profitability) and the demand for fertiliser for their production. When prices fell for vanilla in early 2000s, the demand for its fertiliser plummeted, generating losses for agro-input dealers.[4] The fertiliser trade is seasonal, and agro-input dealers must cope with risks to match the yield performance per season with fertiliser sales if price volatilities come into play. The assumption of the policy is that a higher uptake of fertiliser will result in higher yields, but this is only achieved in combination with high product prices domestically and internationally for agro-input dealers to make the projected profit margins.

2 AGRA (2010) Baseline Survey for Uganda on Market Access and Soil Health
[3] Mbowa S. and C. Luswata, 2015. "Revisiting Uganda's Inorganic Fertiliser Supply Chain: Need for a stronger regulatory system. EPRC Report #13.
[4]Info-Trade (2008): Market Dynamics and the fall of product prices- the case of Vanilla in Uganda

4.3 DISTRIBUTION OF IMPACTS

The operationalisation of the NFP is poised to generate more positive than negative impacts/risks if the strategic plans are implemented with sufficient financial, logistical, technical and human resources. These impacts are projected to spread in various ways, as shown in Figure 3. At the fore, there will be a projected bounce in farm productivity because the farmers will harvest more from the same land due to the increased soil fertility; increased labour productivity; greater amount of resources at the household level, which will allow them to hire extra labour to work on other farms; increase in farmer education as part of the agricultural extension service as well as new capital formation. The impacts will also be non-monetary. As more is produced, more farmers will focus on on-farm production rather than the sprawl of agriculture (which, in most cases, includes a promotion of intensification due to the population pressure on resources, including wetlands, forests, etc.). According to NEMA, the more that Uganda adopts improved farming practices, the better it will be for the environment. As more farmers use fertiliser, crop yields on the same operated arable land will increase and be sustained rather than creating a sprawl into new land openings, which is the status quo. There is a widely held belief that opening new land opens new fertile grounds, and while this may be true, in most cases, farmers feel compelled to focus on opening new land rather than increasing the fertility of the current land. This policy may cause a positive mind-set change in this regard.

Fig: 3 Distribution of Impacts from NFP implementation



Source: Marc Suhrcke and Martine McKee (2003)

Finally, the RIA notes that as farm yields improve, farming households will begin to look at superior seed varieties and better breeds for maximising the potential brought about by more fertile soils as well as improved seeds. The issue of expansion in genetics regarding the number of seed varieties will be improved by higher farm productivity levels as the demand for better varieties is projected to increase.

CHAPTER 5: LEVEL OF POLICY CONSULTATION

The RIA is interested in the assessment of the extent to which the process that led to the elaboration of this Policy was consultative. This is in line with the National Communication Strategy that ensures that policies are designed as an output of people's aspirations and enlist their participation during implementation at various levels, including the national, sub-national and grass root level.

5.1 MULTI-LEVEL STAKEHOLDER ENGAGEMENT PROCESS

The RIA notes with satisfaction that the process that led to the elaboration of the NFP was highly consultative and obtained views from farmers, community leaders, district technical and political leaders (national and regional). The process also included consultations with the private sector, non-state actors (Civil Society Organisations (CSOs), and Non-Governmental Organisations (NGOs), both local and international) as well as technical and political leaders at the Ministry and Agency levels (the national level). The policy was reviewed by a highly qualified team led by the Economic Policy Research Centre (EPRC) in collaboration with Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) with financial support from the Alliance for a Green Revolution in Africa (AGRA), which itself has a strong reputation as an Africa-wide body supporting soil fertility in Africa. Final versions of the policy have been submitted and discussed by Members of Parliament and the Cabinet. A certificate of financial implications will be submitted as part of the requirements for approval of the policy.

5.2 KEY STAKEHOLDERS THAT PARTICIPATED IN THE POLICY FORMULATION

During the drafting process of the RIA a wide range of stakeholders were consulted and the list appears below. While not all the participants are listed below, the list shows the diversity of the stakeholders that were consulted.

5.2.1 NATIONAL LEVEL CONSULTATIONS (GOVERNMENT)

Name	Sex	Organisation	Title/Position
Okaasai S	M	MAAIF	DCR
Byantwale T. Stephen	M	MAAIF	Assistant Commissioner
Bulegeya Kamoyombi	M	MAAIF	Commissioner
Obbo James	M	MAAIF	MRO
Kasigwa Moses	M	MAAIF	SIE
Karyeija Robert	M	MAAIF	Commissioner Crop Inspection
Vincent Kayanja	M	NAADS Secretariat	Technology & Innovation Officer
Teddy Alako	F	Ministry of Finance	Acting Senior Economist
Berocan Epiphany	M	Ministry of Finance	Senior Economists
Mpuga Charles	M	UNBS	Inspector
Prosie Kikabi	F	UIA	Senior Investment Executive
Ronah Serwadda	F	Ministry of EAC	Commissioner
Seth N. Mayinza	M	UBOS	Director Agriculture & Env't Stats
George Wilson Ssonko	M	Bank of Uganda	Senior Researcher

Name	Organisation	Location/District
Joan Kakwenzire	Senior Advisor to the President/State House	Kampala
Byamugisha Andrew	MAAIF	Kampala
Franco Oyara A.	Senior Safety Inspector/MGL&SD	Kampala
Komayombi Bulegeya	Commissioner/MAAIF	Kampala
Alex Lwakuba	Assistant Commissioner/MAAIF	Entebbe
Michael Odong	Assistant Commissioner/MAAIF	Kampala

Name	Organisation	Location/District
Annet Musiimenta	Consultant/MAAIF	Kampala
Simon Peter Nsereko	Economist Office Of the Prime Minister	Kampala
Zakayo Muyaka	AC/SWC/MAAIF	Kampala
Tumuboine E	Assistant Commissioner Phytosanitary and quarantine/MAAIF	Entebbe
Tugume Joab	Agricultural Inspector/MAAIF	Entebbe
Byantwale T.S	AC/MAAIF	Entebbe
Mwanje John	Senior Agricultural Inspector/MAAIF	Entebbe
Per Hartmann	Senior Advisor/MAAIF	Entebbe
Byarugaba Beatrice	CCPM/MAAIF	Kampala
Mugisha Grace	General Manager/UGAROSE Flowers Ltd	Entebbe
Nsubuga Emmanuel	Assistant Commissioner/Director of government Anal. Lab	Kampala

5.2.2 NATIONAL CONSULTATIONS (NON-GOVERNMENT)

Name	Organisation	Location/District
Rubangula Anastase	General Manager/Crop-Life and Evergreen	Kampala
Joan Kakwenzire	Senior Advisor to the President/State House	Kampala
Mubangizi Emmaunuel	Director/UNADA	Kampala
Caleb Gumisiriza	Policy Officer/UNFFE	Kampala
Happy Richard	Appropriate Technology Uganda	
Nannyonga Olivia	Managing Director/Nsanja Farm Stores Ltd.	Container Village
Pamella Lakidi. A.	Agricultural Specialist USAID/EEA	Kampala
Gerenge Samuel	Assistant Manager Agronomy/Kinyara Sugar Ltd.	Masindi
Esther Nekambi	UFEA	Entebbe
N.S.R. Swamy Babu	Operations Manager/Victoria Seeds Ltd	Kampala
David Slane	Chief of Party/IFDC	Kampala
Dr. Magunda	SPRO/NARO	Kawanda
Ndijjo Hakiim	Chief Executive Officer/West Nile Seed Company	Adjumani
Mudduli Fredrick	Managing Director/Keith Associates Ltd	Kampala
Adolf Sabiiti	General Manager/Mpanga COTFL	Fort Portal
Vicent Owor Adipa	HR/Oil Palm (U) Ltd 37 Kalangala	Kalangala
Rosette K. Bankunda	Program Manager/SLI 2000 Sasakawa	Kampala
Rita Laker Ojok	Executive Director/AT Uganda	Kampala
Nangulu Moses	Executive Director/UNADA	Kampala
Swaibu Mbowa	SRF/Economic Policy Research Centre	Kampala
Moses Mbona	Chairperson/Environment Action For Development	Jinja
Sylvia Kyeyne	General Manger/Simlaw Seeds	Kampala
Robert Kizito	Uganda Project Implementation Centre	Kampala-Kamwokya
Joseph Ssebunya	Coordinator/Youth Empowerment Services	Jinja
Dennis Serunkuma	Finance and Administration Manager/FICA seeds	Kampala
Julian Nyachwo	Livelihoods Programme Advisor/Goal Uganda	Kampala
Musinguzi Jotham	Human Resource and Administrative Manager/Kayonza Growers Tea Factory	Kampala
Mugisa Johnson	Production and Marketing Officer/Sinlaw Seeds co. Uganda Limited	Kampala
Ibyisintabyo Chris	Executive Secretary/Uganda Seed Trade Association	Kampala
Vuzzi Azza Victor	Senior Advisor Agriculture/DANIDA	Kampala
Kabisanga Emmanuel	Coordinator/New Horizon	Kampala
Turyahabwe Medard	Sales Manager/Agasha Group Ltd	Kampala
Roland Ojilong	Mityana Farmers Association/Advocacy	Mityana
Byarugaba Beatrice	CCPM/MAAIF	Kampala
Mugisha Grace	General Manager/UGAROSE Flowers Ltd	Entebbe
Kazibwe Abbey	Director/Nsanja Agro-chemicals Ltd	Kampala
Ramma	Marketing Manager/ETG	Uganda
Chris Magezi	Operations Officer/BH Group East Africa	Kiira Town
Sempa Henry	Business Man/Owino Market	Kampala
Peace Nagawa	KMS/EPRC	Kampala
Kasumba Geofrey	Marketing Manager/Global Agro inputs limited	Wakiso
Frederick Musisi Kabuye	Chairman/CEO IICED/DCAA	Kampala/Wakiso

5.2.4 RESEARCH AND ACADEMIA

Name	Organisation	Location/District
Dr. Ssewanyana Sarah	ED/Economic Policy Research Centre	Kampala
Dr. Swaibu Mbwa	SRF/Economic Policy Research Centre	Kampala
Dr. Mildred Barungi	Research Fellow/Economic Policy Research Centre	Kampala
Dr. Magunda	SPRO/NARO	Kawanda
Kizza Charles Luswata	Assistant to Consultant/Makerere University	Kampala
Senkosi Kenneth	Associate Consultant/Makerere University	Kampala
Kayuki. C. Kaizin	Senior Research Officer/NARO/NARL	Kawanda
Muyambonera Ezra	Research Fellow/EPRC	Makerere
Stephen Kasirye	ICT Specialist/EPRC	Kampala
Peter Ebanyat	Lecturer/Makerere University	Kampala
Birabwa E.	Program Manager/EPRC	Kampala
Lawrence Bategeka	Senior Research Fellow/EPRC	Kampala

5.2.3 SUBNATIONAL LEVEL

Name	Organisation	Location/District
Baligeya Tom	CEO/Simba Seeds Ltd	Bugiri/Iganga
Chin Pit Te	General Manager/Oil Palm Uganda Limited	Kalangala
Tumwekwase Berkman	Managing Director/Toro and Mityana Tea Co. Ltd	Toro and Mityana
Professor Julius Zake	Head of Production Unit/PIBID	Bushenyi
Gerenge Samuel	Assistant Manager Agronomy/Kinyara Sugar Ltd	Masindi
Ndijjo Hakiim	Chief Executive Officer/West Nile Seed Company	Adjumani
Adolf Sabiiti	General Manager/Mpanga COTFL	Fort Portal
Vicent Owor Adipa	HR/Oil Palm (U) Ltd 37 Kalangala	Kalangala
Moses Mbona	Chairperson/Environment Action For Development	Jinja
Joseph Ssebunya	Coordinator/Youth Empowerment services	Jinja
Mugisha Grace	General Manager/UGAROSE Flowers Ltd	Entebbe
Chris Magezi	Operations Officer/BH Group East Africa	Kiira Town
Kasumba Geofrey	Marketing Manager/Global Agro inputs limited	Wakiso
Frederick Musisi Kabuye	Chairman/CEO IICED/DCAA	Kampala/Wakiso

5.2.4 MEDIA

Name	Organisation	Location/District
Nakawuma Louise	News Reporter/CBS FM	
Habimana Deo	Editor/UBC TV	Kampala
Atusinwize Jonan	News Reporter/Pearl FM	Kampala
Batanda David	Media/ARL/MAAIF	Entebbe
Jeff Lule	Writer/New Vision	Kampala
Kisige A	Photographer/New Vision	Kampala
Olive Eyotaru	Reporter/KFM	Kampala
Ronnie Mayanja	Presenter/Reporter/Prime Radio	Wakiso
Arinitwe Brian	Reporter/Record TV/Radio	Kampala
Ntege Williams	Reporter/WBS	Kampala
Stephen Wandera	Photographer/Daily Monitor	Kampala
Ian Ortega	Social Media/Big eye-Ug	Kampala
Kyambadde Francis R	Social Media Admin/Fused Creatives.com	Kampala

CHAPTER 6: COST BENEFIT ANALYSIS

6.1 POLICY COST

Owing to a low baseline in the application of fertiliser in Uganda, the RIA notes that MAAIF has earmarked the highest proportion of the budget (see Table 1) for three key areas:

i) **38.9%** (UShs 52.2 billion per annum) of the budget is dedicated to reducing the cost of importation and the distribution of fertilisers and respective materials;

ii) **20.9%** (UShs 28.1 billion per annum) will be spent on targeting resource-poor farmers to increase fertiliser uptake through a purchasing power support program as start-up assistance to enable access to various forms of fertiliser at the grassroots; and

iii) **19.6%** (UShs 26.4 billion per annum) will be earmarked for organising farmers to ensure that they take advantage of bulk purchases and input-output market access to benefit from the economies of scale.

The RIA notes, however, that more resources would have been earmarked for strengthening knowledge transfer and technology distribution. However, it is noted that while only 1.6% of the budget was earmarked for this purpose, more resources will go to the implementation of the wider National Agriculture Extension Services Policy, which is also being drafted.

Table 1: Breakdown of the Policy cost

Main Item	Total Cost UShs million per annum	% of the total budget
1. Creation of awareness	5,098.70	3.8
2. Organising farmers to ensure access	26,356.25	19.6
3. Targeting poor farmers to increase uptake	28,087.50	20.9
4. Reduction of the cost of importation and distribution	52,296.00	38.9
5. Ensuring the quality and standards of the fertiliser supply	340.00	0.3
6. Initiatives for the exploration and exploitation of local resources	1,700.00	1.3
7. Strengthening the regulatory functions for the fertiliser system	3,190.00	2.4
8. Establishing and operationalising the regulatory support system	8,170.00	6.1
9. Budget for a favourable tax regime and regional harmonisation	570.00	0.4
10. Promotion and support for research on soil fertility management	5,703.00	4.2
11. Strengthening knowledge and technology dissemination	2,216.00	1.6
12. Developing and implementing an M&E and learning framework	800.00	0.6
TOTAL	134.527.45	100%

The RIA notes with satisfaction that the Government of Uganda, through the Ministry of Finance Planning and Economic Development (MoFPED), has already embedded the cost estimates of the implementation of the NFP in the Medium Term Expenditure Framework (MTEF) 2015-2020. This means that the Government will implement the policy within the confines of the national budget

framework as it galvanises the contribution of development partners and local NGOs to play a complimentary role. The Government has already invested in the development of a phosphate factory in Tororo, which will significantly alleviate the phosphate deficiency in Ugandan soils, paving the way for a focus on other nutrients that are imported from outside of the country.

6.2 ASSESSMENT OF RETURN ON INVESTMENT (BENEFIT)

The RIA has noted that an increase in fertiliser application, especially an optimal nutrient mix, will be critical in assisting a typical farmer attain a level of productivity that will guarantee improved incomes for the farmer, food security for communities and higher export volumes for the country. In broad terms, the RIA notes that there will be 10 broad benefits:

i) **Increased farmer awareness** of fertiliser application;

ii) **Rejuvenation of the farmer groups** that had gone silent after the end of the NAADS 2 phase, which now can serve as the launching pad for organising farmers around the currently established extension service system;

iii) **Increased access to fertiliser by smallholder farmers,** who will take advantage of the investment of between UShs 40-66 billion in purchasing power support that is within the policy implementation budget as part of a strategy to peg this investment to crop intensification and the prioritisation of key flagship projects for domestic and export markets (mentioned earlier in this report);

iv) **Improving the financial incentive framework for agro-input dealers/importers** to purchase fertiliser in bulk, hence making it available to farmers at prices that are lower than the prevailing prices;

v) **Increased oversight for fertiliser management and the trade and logistics system to ensure that poor quality fertilisers are removed from the system**, which will reduce costs to the farmer and ensure that only quality products are purchased. More investment, however, will be needed for laboratory installations at border posts;

vi) **The Government will have resources and a renewed focus to examine the potentiality of tapping into local resources to support the fertiliser sub-sector (including investing in sorting urban waste to make it more potent for agricultural use)** while also supporting public hygiene and sanitation. There is optimism that with this policy, the government may see a reduction in waste disposal into Lake Kyoga, Lake Albert and Lake Victoria if the waste water is utilised;

vii) **Harmonisation of the tax regime and building capacity of business operatives** to take advantage of tax incentives under withholding taxes to file returns in June and keep the benefits rather than transferring them as price increases to the farmer;

viii) **Further investment will go into research** at NARO and Makerere University's College of Agricultural and Environmental Science, as well as other zonal agriculture research institutes, to enhance their capacity to develop fertiliser application options for site-specific use in the different zones.

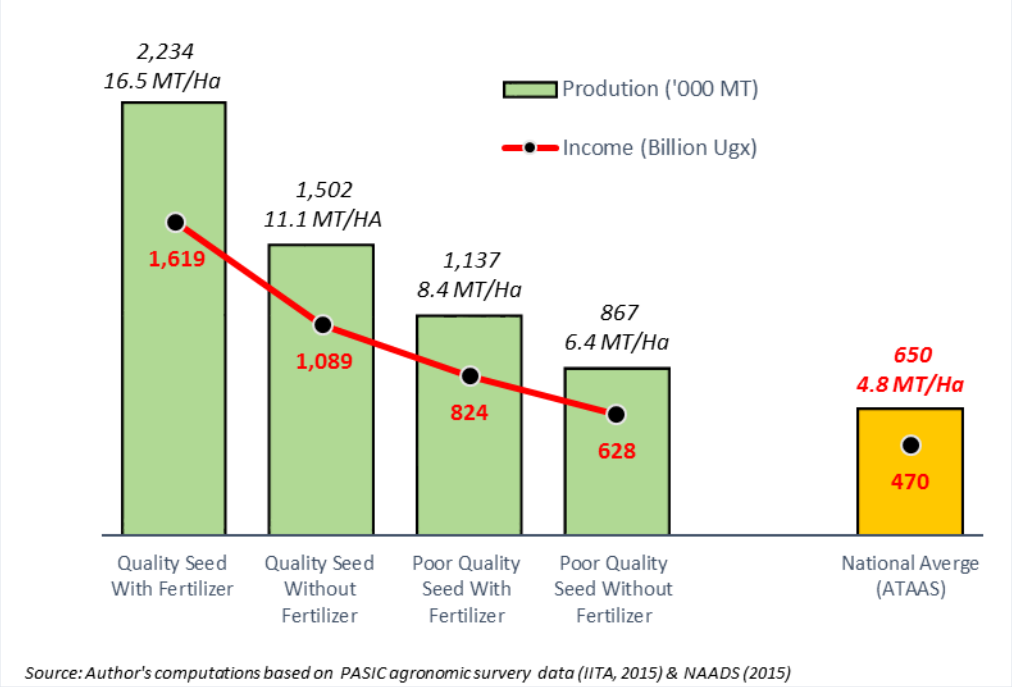
ix) **The policy will also see funding go towards data management,** which is poised to provide the first set of data on national scale fertiliser applications under the newly established National Agriculture and Food Statistical System under the Planning Department of MAAIF.

x) **Positive impact on the macroeconomic framework** as productivity leads to more exports, which in turn generates more foreign trade, stabilises the shilling and supports Uganda in importing goods and services needed to expand its productive base. More productivity will also incentivise producers to employ more people at the farm and firm level with a ripple effect into the financial sector and other social sectors.

6.3 QUANTIFICATION OF THE BENEFIT (Yield impact on Irish potatoes)

The information in Figure 4 shows that the use of poor quality seeds without fertiliser in potato farming yields only 6.4 metric tons[5] per hectare (from 135 thousand hectares[i] that known to be produced nationally). This level of productivity would result into approximately 867 thousand metric tons of potatoes per annum, valued at about UShs 628 billion (U$ 187 million). Using poor quality seeds with fertiliser can increase productivity in potato production to 8.4 MT per hectare (i.e., by 31% from 867 to 1,137 thousand metric tons). However, the use of good quality seeds without fertilisers can lead to a 73% increase in potato production and, hence, an increase in farm incomes nationwide. The use of quality seeds with fertiliser produces the best intensification technology options with a yield of 16.5 MT per hectare and, hence, a 158% increase from 867 to 2,234[6] thousand metric tons and farm income per annum nationwide valued at UShs 1,619 billion (U$ 485 million). Such estimates suggest that the country's potato sector is losing a potential income of approximately UShs 991 (U$ 298 million) per annum due to limited intensification at the production level of the value chain.

Figure 4: Indicative potato yield and value with and without an intensification of fertiliser use



Source: Author's computations based on PASIC agronomic survery data (IITA, 2015) & NAADS (2015)

[5] The 6.4 MT/Ha is the average yield in the Kigezi sub-region, which is based on estimates from an agronomic survey conducted by IITA in 2015. However, the average national yield is 4.8 MT per hectare (NAADS, 2015). The 4.8MT/Ha is cited in the most recently concluded Agricultural Technology and Agribusiness Advisory Services (ATAAS) survey report, commissioned by the National Agricultural Advisory Services (NAADS, 2015)[5].

[6] If the national average potato yield of 4.8 MT per hectare were to be used as the base to illustrate the effects of intensification in the potato cropping system, the gap in productivity would widen (taking into account different technology packages)[6].

CHAPTER 7: ENFORCEMENT AND SANCTIONS

The RIA has verified that the policy and its accompanying strategy have included sufficient enforcement mechanisms to ensure implementation. However, more can be done to sanction stakeholders or players in the sector that contravenes the vision's goals and aspirations for this policy. For instance, the punitive clauses that are part of the Agricultural Chemicals Control Act, 2006 are not punitive enough to curtail the introduction of poor quality fertilisers to the market. More must be done to ensure enforcement. This paper notes the agreement to the process for introducing the draft of the National Fertiliser Regulations and a fertiliser user-training manual early in the process that will guide implementation of the regulations and indicates how enforcement will be adopted.

7.1 ENFORCEMENT

The policy has proposed to establish a Fertiliser Market Development Coordination Unit that will ride over the MAAIF's Agriculture Cluster Development Project (ACDP) implementation unit. Currently, ACDP manages agricultural inputs and has a component of the e-voucher system. As part of the implementation, this unit will undergo a functional analysis and capacity needs assessment so that its establishment helps anchor the proposed activities of the policy. The policy has also set out the mandate of the unit that will include, among other things, developing and disseminating information, overseeing farmer education and reviews of communication materials as well as working with the extension service system to reach farmers through grassroots structures and farmer organisations.

The policy has moved further to illustrate the roles that will be played by local governments and MDAs as well as by the private sector, development partners and farmers. All players will be required to report their responsibilities, and a review mechanism will be established under the proposed coordination unit to ensure that the performance contracts are issued and adhered to.

7.2 SANCTIONS

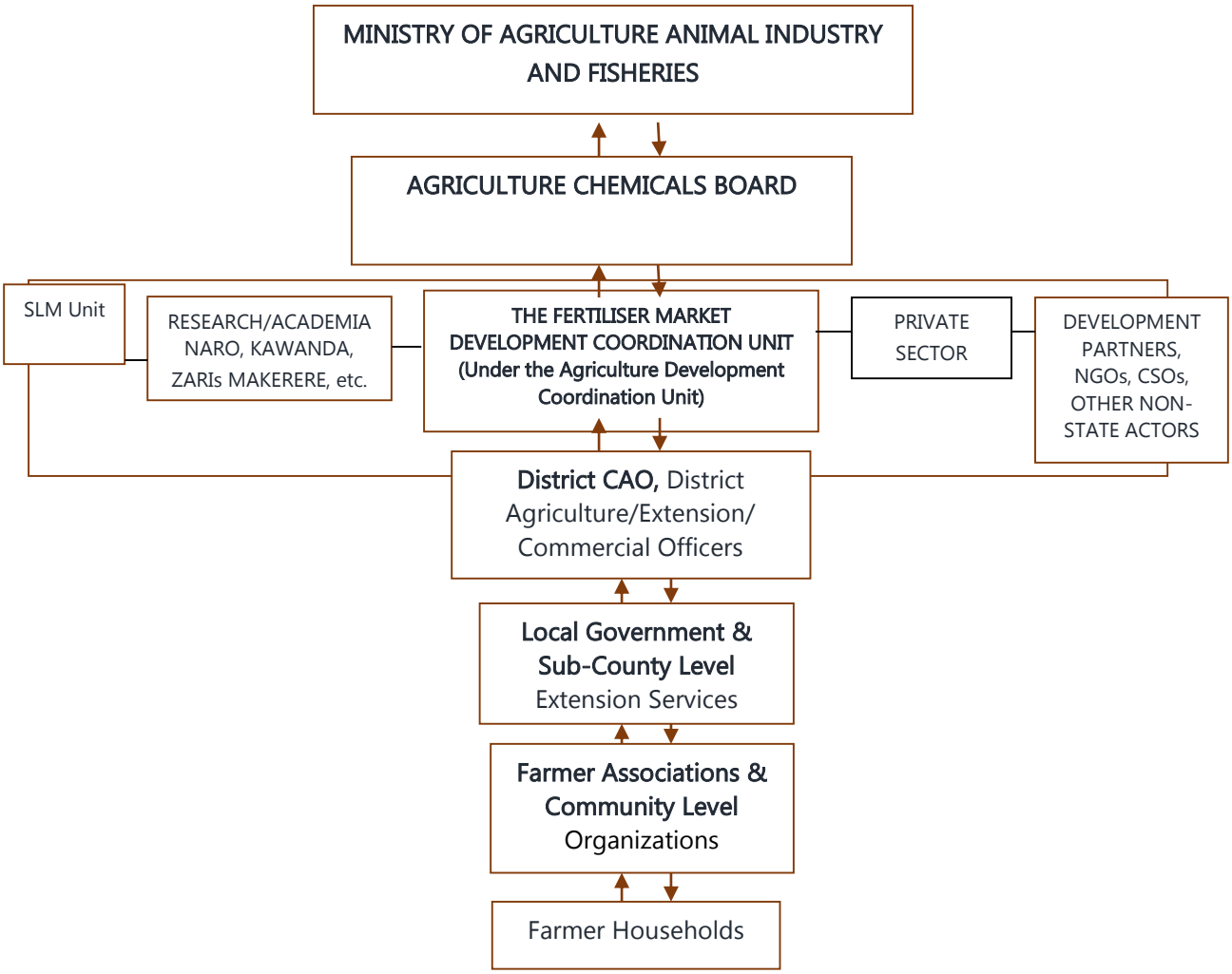
To ensure effectiveness and efficiency in implementation, MAAIF is required to audit the work done by various stakeholders to whom task assignments have been extended in as far as the implementation of this policy is concerned. The MoFPED will be required to ensure that the Government meets its financial obligation to finance the policy implementation strategy as planned.

Local Governments, through the merged Production and Marketing and Commercial Services Grant, should ensure that fertiliser extension is emphasised in the years ahead as an integral part of the agricultural extension services support to farmers. Non-state actors will be encouraged to play an active role in the implementation.

In addition, agro-input dealers will be supported in terms of procuring and distributing high quality fertiliser to the farmers in a timely manner while extending knowledge on its correct use. Farmers will also play a critical role in ensuring the application and proper use of the fertilisers.

CHAPTER 8: IMPLEMENTATION ARRANGEMENTS

The RIA has noted that the policy has ably provided a framework where key stakeholders have a clear role to play. This, however, will be further elaborated in the diagram below that will be included in the policy implementation strategy.



The RIA notes that the policy has involved implementation planning through a holistic strategy that will enlist the participation of the private sector, CSOs, NGOs, academia, research entities, zonal agriculture research institutions, district extension service networks as well as community based networks and farmer groups, all of which are geared towards reaching farming households with a diversity of approaches that are tailored to local needs. As shown in the diagram above and as elaborated in the policy, there will be an active role for development partners and local and international agencies in the implementation because international best practices and other learning options will be critical. The private sector will play a key role in partnership with government as well as in initiatives under the SLM framework. To support the coordination of this process, a Coordination Unit, as mentioned above, will be established and supervised by the Agro Chemicals Board under the overall oversight of MAAIF.

CHAPTER 9: REVIEW, MONITORING AND EVALUATION

The RIA deduces that the establishment of a fertiliser database will be maintained that includes total fertiliser requirements based on crops and regions of the country. It further notes that as part of the M&E framework, district production departments will be mandated to work with ACB, URA and UNBS to monitor fertiliser quality.

The RIA notes that the following information will be needed:

i) What types of fertiliser are needed in Uganda, in what volume, and for which agro-ecological zones?

ii) What is the current level of supply, who are the suppliers, and in which districts are they located?

iii) What is the level of farmer (client) satisfaction based on the use of fertiliser in the previous season?

iv) Are the indicators for reporting fertiliser use adequately captured in the district reporting in the Output Budget Tool (OBT), or do more indicators need to be included and should more information be gathered in this regard?

v) With an increase or reduction in yields, to what extent can we attribute these changes to fertiliser uptake or the lack thereof?

vi) What is the performance of the demonstration plots or Farmer Field Schools in knowledge extension?

A ten-step process can serve as a guide in establishing an M&E system over the course of the policy implementation, as listed below:

To strengthen the M&E system will register 10 steps

1. Conduct a readiness assessment.
2. Agree on outcomes to monitor and evaluate.
3. Develop key indicators to monitor outcomes.
4. Gather data on baseline indicators.
5. Plan for improvements and set realistic targets.
6. Monitor performance results.
7. Conduct mid-level and end-term evaluation to inform reviews, collaborative learning as well as decision making.
8. Analyse performance data.
9. Use findings for reviews
10. Sustain the M&E system within government by linking to the M&E grid under the UBoS.

CHAPTER 10: LINKING THE POLICY TO OTHER POLICIES

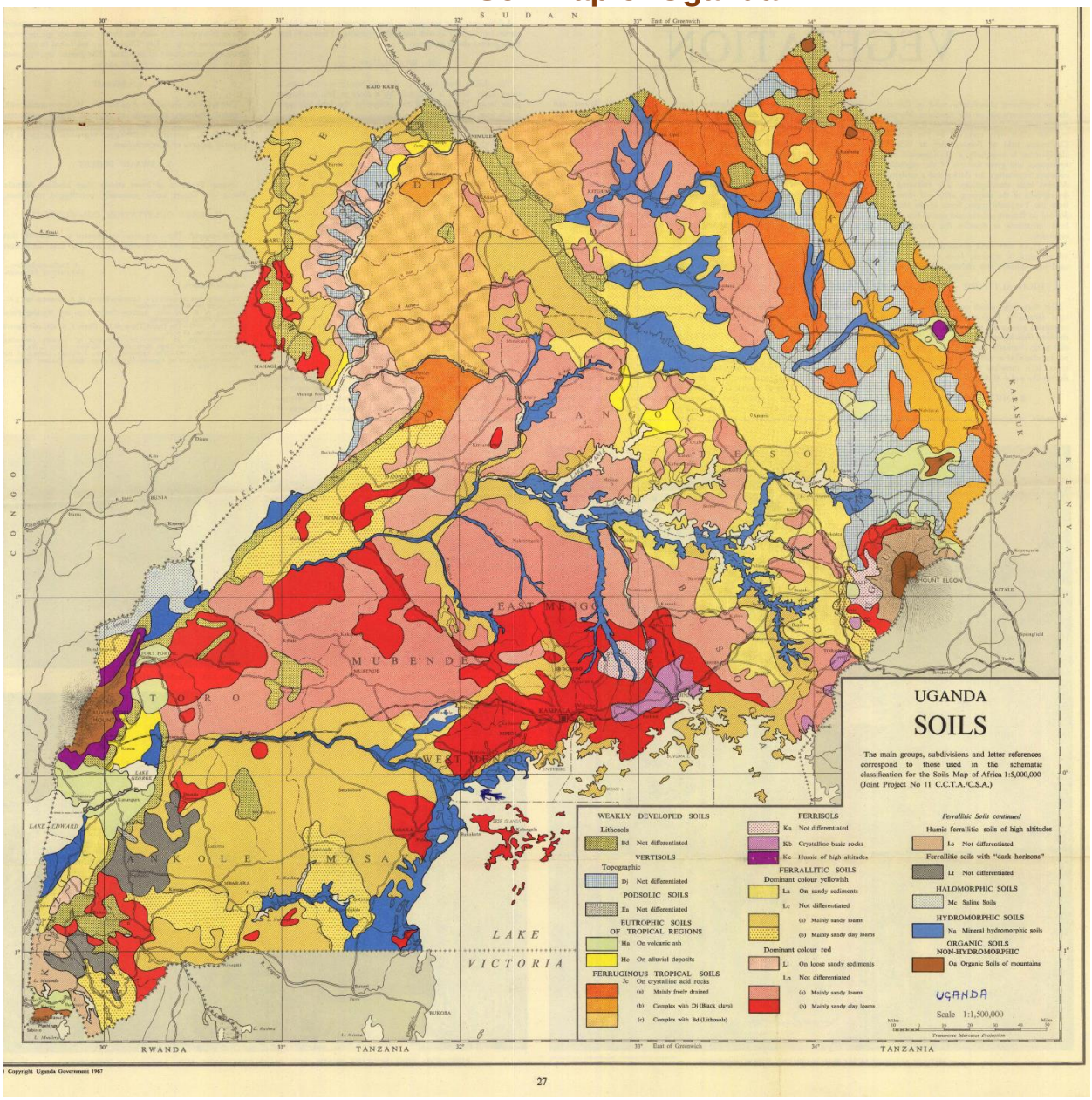
The assessment by the RIA certifies that the National Fertiliser Policy does not contradict nor overlap any current policies but rather operationalizes the National Agriculture Policy. Key policies that the NFP relates to include:

i) The National Agriculture Policy;
ii) The National Land Use Policy
iii) The Draft National Seed Policy
iv) The Sustainable Land Management Strategic Investment Framework (2010-2020)
v) The NAADS Act
vi) The NARO Act
vii) National Climate Change Policy Framework
viii) The National Coffee Policy
ix) The Draft National Agriculture Extension Policy
x) The National Health Policy (2010-2020);
xi) Uganda National Food Safety Policy and Guidelines;
xii) The Uganda Education Policy;
xiii) The National Trade Policy;
xiv) The National Social Protection Policy Framework (2014);
xv) The Uganda National Urban Policy;
xvi) The National Equal Opportunities Policy (2006);
xvii) The Uganda National Employment Policy (2011);
xviii) The National Youth Policy (2001);
xix) The Uganda Gender Policy (2007),
xx) The National Policy for Older Persons (2009);
xxi) The National Policy on Disability (2006)
xxii) The National Policy for Disaster Preparedness and Management (2010); among others

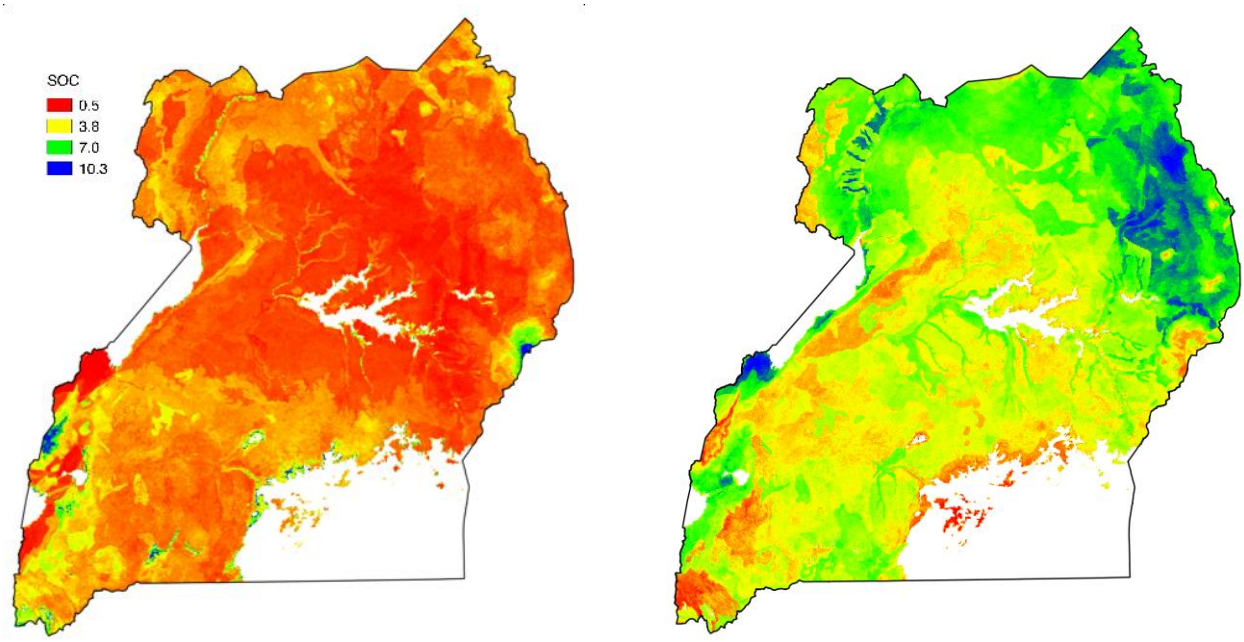
The policy text makes reference to:

i) Constitution (1995 Revised)
ii) Uganda Vision 2040
iii) National Development Plan
iv) National Agriculture Policy as the overall framework
v) The SLM POLICY FRAMEWORK
vi) Uganda's International Commitments (Abuja 2006, and the EAC and COMESA Guidelines)
vii) UN-SDG Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture. **Target 2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality**

ANNEX 1: Soil Map of Uganda

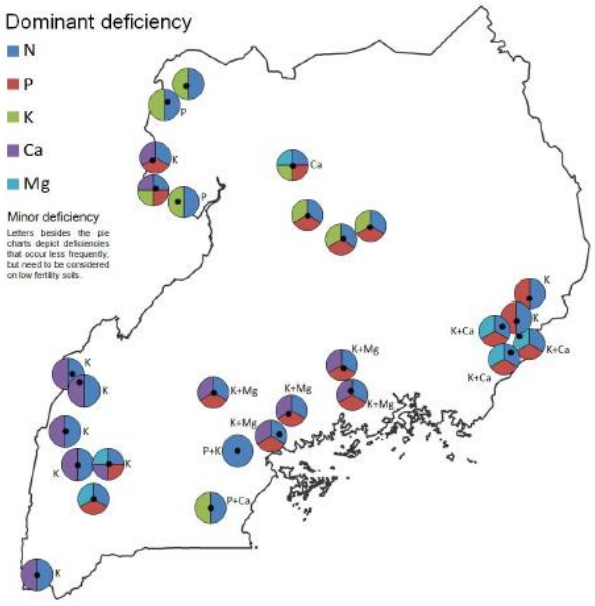


ANNEX 2: Maps showing Soil Organic Carbon and PH and below Coffee Nutrient Requirements



MAP A) SOIL ORGANIC CARBON

MAP B) SOIL PH



The top two maps above demonstrate a general deficiency in soil organic carbon and PH. In the map at the bottom is marked variations in limiting nutrients across coffee producing regions which calls for site specific rather than the current blanket recommendations.