AFRICAN UNION
الاتحاد الأفريقي
UMOJA WA AFRIKA

UNION AFRICAINE
UNIÃO AFRICANA
UNIÓN AFRICANA

Addis Ababa, Ethiopia P. O. Box 3243 Telephone: +251 115 517 700 Fax: +251 115 517 844
Website: www.au.int

AFRICA FERTILIZER AND SOIL HEALTH SUMMIT
7-9TH MAY 2024
NAIROBI, KENYA

AFSHS/3(II)
Original: English

AFRICA FERTILIZER AND SOIL HEALTH ACTION PLAN

Africa Fertilizer and Soil Health Action Plan: 2024-2034

Table of Contents

Summary: Africa Fertilizer and Soil Health Action Plan	
Background And Justification	The Africa Fertilizer Summit, held in Abuja, Nigeria, in June 2006, identified the critical need to increase the use of fertilizer and complementary inputs to stimulate sustainable agricultural productivity growth and economic development and to reverse declining soil fertility. The African Fertilizer and Soil Health Summit, to be held in Nairobi, Kenya, in May 2024, will focus on soil health in Africa from an Integrated Soil Fertility Management (ISFM) perspective. ISFM addresses the concept of production systems in which efficient fertilizers, both mineral and organic; other inputs, such as improved seeds; water use efficiency for irrigation; and other aspects of soil health and sustainable management are crucial to food security and agricultural sustainability. Africa as a whole has not yet reached the target of 50 kg/ha of fertilizer consumption that was set in the Abuja Declaration. Crop productivity levels remain at about 30 percent of global averages. As a result, food insecurity and malnutrition have been rising in the last ten years, and the continent is more dependent on global markets to meet its food demands, making it more vulnerable to external food systems shocks (e.g., supply chain disruptions from COVID-19 and the Russia-Ukraine conflict).
Vision	Implementing the Action Plan will contribute to reversing soil degradation, increasing fertilizer consumption and efficiency, accelerating inclusive agricultural transformation, and ending hunger, malnutrition and poverty on the continent.
Expected Impact	Implementing the Action Plan will contribute towards addressing soil degradation and building sustainable soil health, accelerating inclusive agricultural transformation with access to context relevant and adorable inputs, and ending hunger, malnutrition and poverty.
Strategy for implementation	The main strategy for success in implementing the Action Plan is harnessing multi-stakeholder partnerships and investments to drive drive enabling policy environment and sustainable finance, research and development (R&D), markets, and capacity for efficient fertilizer and sustainable soil health management.
Outcome 1: Improved policies, investment, finance, and markets for	Output 1.1: Improved policy environment
	Output 1.2: Improved financing and investment opportunities to scale soil health

fertilizer and for soil health management	Output 1.3 integrated climate-smart soil fertility investment plans developed in countries"
Outcome 2: Improved access to and affordability of mineral and organic and fertilizers	Output 2.1: Increased domestic production and distribution, and enhanced research for mineral and organic fertilizers
	Output 2.2: Enhanced intra-African fertilizer trade
Outcome 3: Greater efficiency, resilience, and sustainable use of mineral and organic fertilizers and recycled nutrient sources and scale up sustainable soil management practices and interventions	Output 3.1: Recommendations developed targeted to specific crops,
	Output 3.2: Agronomic fertilizer use efficiency increased to optimal levels
	Output 3.3: A digital soil monitoring database established with clear and comparable indicators to monitor soil health across Africa and accessible to governments, extension systems, farmers, and other stakeholders
Outcome 4: Enhanced institutional and human capacity for sustainable fertilizer and soil health management	Output 4.1: locally relevant and suitable fertilizer and soil health technologies and farm practices developed and promoted .
	Output 4.2: Improve the analytical capacity of soil and fertilizer laboratories and facilitate access to analytical services for a broad base of smallholder farmers, farmer organizations and rural agricultural networks
	Output 4.3: Regional networks for knowledge exchange established
	Output 4.4: Enhanced last-mile delivery systems of soil health solutions
Participating Countries	All 55 African Union (AU) Member States
Implementation Framework: Partners and Counterpart (s)	AUC, AUDA-NEPAD, Regional Economic Communities, governments, business and industry farmers and farmer organizations, financial institutions, civil society and development partners.
Preparatory Phase	June 2024 – November 2025
Main Implementation phase	January 2026 – December 2034

Abbreviations

AFAAS	African Forum for Agricultural Advisory Services
AfCFTA	Africa Continental Free Trade Area
AFFM	Africa Fertilizer Financing Mechanism
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AU	African Union
AUC	African Union Commission
AUDA-NEPAD	Africa Union Development Agency-NEPAD
CAADP	Comprehensive Africa Agriculture Development Programme
CCARDESA	Centre for Coordination of Agricultural Research and Development for Southern Africa
CORAF	West and Central Africa Council for Agricultural Research and Development
FAO	Food and Agriculture Organization of the United Nations
IFAD	International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
R&D	Research and Development
SIA	Soil Initiative for Africa
UNICEF	United Nations Children's Fund
WFP	UN World Food Programme
WHO	World Health Organization

Introduction and Scope

Sustainably increasing Africa's agricultural production without increasing the area of land under cultivation is critical for the continent to improve food and nutrition security, reduce and reverse land and soil degradation, improve livelihoods, improve resilience to climate change, protect and improve biodiversity, and more. Africa has set multiple goals related to increased agricultural productivity and production, environmentally sustainable and climate resilient production, improved water productivity and security, biodiversity conservation, and sustainable natural resource management under Agenda 2063, the Comprehensive Africa Agriculture Development Programme (CAADP), the Malabo Declaration, Africa's Climate Change Strategy, and more. A crucial requirement to achieving these goals is to improve soil health in all agricultural sub-sectors (i.e., arable, [inland] fisheries, forestry, and livestock sub-sectors) across the continent through a combination of sustainable agricultural practices and approaches and the balanced and efficient (and in many settings, expanded) mineral and organic fertilizer use.

1.1 Abuja to Nairobi – acknowledging existing and previous commitments.

The Africa Fertilizer Summit held in Abuja, Nigeria, in June 2006 identified the critical need to increase fertilizer use to stimulate agricultural productivity growth and reverse the trend of soil nutrient depletion. The Abuja Declaration positioned fertilizer and complementary inputs as vital and strategic resources to increase crop yields and address the associated challenges of food insecurity and poor incomes faced by smallholder farmers in Africa.

Seventeen years after the Abuja Declaration, fertilizer use has only increased marginally, although several countries registered a significant increase. However, low agriculture productivity, food insecurity, malnutrition and land degradation remain foremost amongst the challenges facing the continent. More than 278 million Africans, or 20 percent of the population, were classified as undernourished in 2021[1]. The COVID-19 pandemic, the Ukraine/Russia conflict, and a worsening climate change crisis with increasing frequency of extreme weather events, have all compounded the problem. These global shocks have exposed the vulnerabilities of Africa's fragile and import-dependent food systems and galvanized a renewed focus on ending hunger and malnutrition. At the same time, Africa's population is growing rapidly at over 2% annually. Immediate action is needed to accelerate agricultural growth to meet the food needs of a population that will reach 2 billion by 2040.

Mineral fertilizers alone are inadequate to reverse land degradation and sustainably increase the productivity of Africa's soils,.. There is consensus on the need to view soil health and soil fertility management in Africa from an Integrated Soil Fertility Management (ISFM) perspective that encompasses integrated production systems in which efficient fertilizers, mineral organic, biofertilizers and biostimulants, and reused and recycled nutrient sources and other inputs (improved seeds, water use efficiency in irrigation), aspects of soil health and sustainable management are crucial to food security and agricultural sustainability.

The 2024 Africa Fertilizer and Soil Health summit is an opportunity for the continent to take decisive steps towards sustainably increasing agricultural productivity to reduce hunger and malnutrition, improve livelihoods, adapt to the impacts of climate change. And mitigate, if possible, the agriculture- and fertilizer-related contributions to climate change, The trend of agricultural growth mainly driven by area expansion, resulting in soil nutrient mining, extensive land degradation and severe biodiversity loss, needs to be reversed. African governments and other stakeholders recognize that both mineral fertilizers and organic inputs used in an integrated soil fertility management perspective that addresses the aspects of healthy soils and their efficient management remain critical in advancing this objective.

Farming practices that build soil health not only ensure the efficient use of added nutrients but also yield environmental co-benefits. The 2024 Africa Fertilizer and Soil Health summit fully recognizes the opportunity for such win-win outcomes and emphasizes healthy soils as the foundation for sustainable and resilient agrifood systems needed for food and nutrition security, and for improving livelihoods and supporting inclusive economic development. Building soil health and restoring degraded soils is a long-term process, often with limited immediate economic and agronomic returns to farmers. Therefore, supporting mechanisms and incentives are necessary to enable farmer investments in soil health improvement.

1.2 Urgency, persistence of exogenous shocks, climate change

The Africa Fertilizer and Soil Health Summit (Nairobi, May 2024) is being held in response to continued urgency and persistence of overall conditions that have concerned the Heads of State (HoSs) and Government of the African Union (AU). In particular, the Summit builds on the Twenty-Third Ordinary Session of the AU Assembly in Malabo, Equatorial Guinea, from 26-27 June 2014, which led to the CAADP-Malabo Declaration on “Transforming Africa’s Agriculture for Shared Prosperity and Improved Livelihoods through Harnessing Opportunities for Inclusive Growth and Sustainable Development”. The CAADP-Malabo Declaration solidified previous decisions by the HoSs, in particular, the 2003 Maputo Declaration on CAADP; the 2004 Sirte Declaration on the Challenges of Implementing Integrated and Sustainable Development in Agriculture and Water in Africa; and the 2006 Abuja Declaration on Fertilizer for the African Green Revolution.

Today the challenges of food insecurity and the climate crisis persist and still require urgent attention. Increasing local food production is imperative for import substitution and to reduce the reliance on external food suppliers. The need for regional cooperation on the issue of fertilizer and soil health is greater than ever as opportunities for investment and inter- and intra-regional trade are now significantly enhanced by the successful launch of the African Continental Free Trade Area (AfCFTA).

Preparations for the Africa Fertilizer and Soil Health Summit were coordinated by AUC and AUDA-NEPAD working and consulting with key African stakeholders as well as development partners. The technical papers and framework documentation guiding this Action Plan provide important context and programme design guidance. These include, but are not restricted to:

- The continued reliance on area expansion at the expense of forests, wetlands, grasslands and savannahs and fragile ecosystems and continued stagnation of agricultural productivity, resulting in soil nutrient depletion, soil acidification, expansive land degradation and severe biodiversity loss.
- Increasing low yields from existing cultivated areas
- The area currently under sustainable soil and water management is limited.
- Africa's agricultural systems continue to be highly susceptible to the impacts of climate change, threatening agricultural production on the continent.
- Overdependence on imported fertilizer exposes Africa to external market shocks. The recent global fertilizer crisis has disproportionately affected Africa, with a decline of 25% in fertilizer consumption in 2022 from 2019 levels.
- The African continent, however, now produces approximately 30 million metric tons of fertilizer each year; twice as much as it currently consumes. Local mining, manufacturing, blending, and distribution investments must be encouraged to capitalize on the continent's resources rather than rely on foreign markets.
- Increasing the sustainable and efficient use of mineral and organic fertilizers, and soil health interventions is imperative for increasing productivity and soil health restoration.
- Efficiency and effectiveness of mineral and organic fertilizers and other complementary amendments must be enhanced to increase productivity, maximize profitability and returns on investment, improve soil health, better manage environmental impacts, and fertilizer-related greenhouse gas emissions, and enhance resilience to climate change. High quality soil maps are required to tailor inputs to meet local needs. Better targeting of inputs will require substantial investment in digitally enabled knowledge transfer systems.
- Building soil health and regenerating degraded soils is imperative to enhancing efficiency and effectiveness of fertilizer use and is a long-term process with limited immediate returns. Supporting mechanisms and incentives are needed to encourage and enable farmer investments in improving soil health.
- Water is a critical component of integrated soil fertility management and soil health improvement.
- Fertilizer access, affordability, and efficiency must be improved. Financing tools such as trade credit guarantees, working capital, and targeted subsidies must be consolidated to reduce market distortions, reduce costs, and strengthen input distribution supply chains.
- It is critical to increase support for last mile delivery of inputs and services for smallholder farmers, such as extension and agro-dealer networks. Of particular importance is reducing the farmer-to-extension agent ratio and reducing the distance farmers must travel to markets.
- The integrated nature of Africa's agricultural sub-sectors (arable, [inland] fisheries, forests, and livestock) and soil health concerns require the prioritization of integrated soil and water conservation and management at the watershed, landscape, or catchment level to improve soil health.

Development Challenges and Opportunities

2.1 Situational analysis

Since 2006, when the Africa Union (AU) Africa Fertilizer Summit was held in Abuja, Nigeria, the African fertilizer and soil health situation has changed dramatically. African fertilizer consumption was steadily increasing (over 8% per annum) until 2019.. This increase, combined with significant investments in the improved use of mineral deposits and natural gas, has led to a shift from a short-term trader perspective to one that is focused on the longer-term investments in domestic fertilizer production of fertilizers.

A significant achievement since the 2006 Abuja Africa Fertilizer Summit is that the private sector has invested over USD $15 billion in fertilizer, primarily focused on local manufacturing. The African continent now produces approximately 30 million metric tons of mineral fertilizer each year, twice as much as it consumes. Most of the potassium and nitrogen fertilizers are imported from outside the continent, whereas more than the two-thirds of phosphate fertilizers used in Africa are supplied by African producers. Over 70% of potash reserves are in the Northern hemisphere, so becoming self-sustaining in potash fertilizer production will be especially challenging. There is potential for increased nitrogen production on the continent. Due to large domestic natural reserves, Nigeria and Mozambique have the most significant capacity to increase nitrogen-based fertilizer production. Removal of the trade barriers will enable substantial growth in continental fertilizer production and distribution.

Most Member States are still net importers of mineral fertilizers, especially non-phosphate-based ones. Over the next 10 years, therefore, additional focus is required to leverage manufacturing and blending plant investments. Under this 10-year action plan there is increased focus on mobilizing greater public and private capital for the development of the continent's fertilizer value chains, both mineral and organic.

A renewed emphasis on soil health, sustainable soil management, balanced fertilizer use, and nutrient use efficiency has been developing on the continent. Market shifts are aligning public and private sector incentives, creating opportunities for public, private, and development stakeholders to address soil health constraints, fertilizer market development, and farm-level risk management.

There have been significant developments in various areas that provide a foundation for accelerated sustainable transformation of agriculture in Africa. These include:

- New investments in local fertilizer manufacturing and distribution networks in recent years.
- Increasing public-private partnerships to address the main challenges of fertilizers and nutrient use efficiency and sustainable soil health management.
- Investments in research and development, capacity building and production information and products that support improved decision-making in agricultural investment and management.

- Availability of digital tools and platforms to link farmers to advisory services and input and output markets.
- Development of bundled services to address multiple constraints faced by farmers.
- Growing understanding that scientific evidence and understanding of improved soil health are critical requirement to improve fertilizer and nutrient use efficiency and agricultural productivity.
- Approaches for scaling-up country-driven investment in sustainable land and water management
- Increased engagement of the private sector extension system, for instance, through supporting village-based advisors and access to digital services.
- Advancements in soil health monitoring, from field to lab to remote sensing to enable accurate soil data and mapping for targeting and tracking of interventions.
- Advancements in analysis of organic and mineral inputs.

There is overwhelming evidence that climate change is already a major threat to Africa's food systems, ecosystems, infrastructure, and people. Findings of the Sixth Assessment Report (AR6)[2] of the Intergovernmental Panel on Climate Change (IPCC) as published in 2022 show that climate change is a key driver of humanitarian crises affecting communities across Africa and other developing regions. Strong evidence of increasingly severe, interconnected and often irreversible impacts of climate change on ecosystems, biodiversity, and human systems is particularly concerning. The high frequency and intensity of extreme weather events has led to some irreversible impacts as natural and human systems are pushed beyond their ability to adapt. These changes are contributing to humanitarian crises at levels that have not been recorded before in human history. Several concepts, including agro-ecology and regenerative agriculture, provide core principles for agricultural system sustainability, that are recognized as key core components of sustainable soil health management in the action plan.

2.2 Problem/Challenge

The pace of soil degradation on the continent is unacceptably high and is threatening the sustainability of agricultural production. About 75-80% of the continent's cultivated area is reportedly degraded, with a loss of 30 to 60 kg of nutrients per hectare per year. This annual loss is valued at USD $4 billion[3]. More than 485 million people (65% of the population) on the continent are affected. Projections suggested that more than half of the currently arable land may be unusable by 2050. The pervasive crop production and land degradation challenges in SSA are underpinned by complex biophysical and socio-economic constraints at the farm and landscape level which cannot be adequately addressed through simple technological solutions. Sustainable crop production intensification and soil health management under the prevailing conditions will require innovative, relevant, economically viable, and locally adapted nutrient management technologies and practices.

Small family farms struggle to access sustainable soil management and fertilizers of good quality. As identified at the 2006 Africa Fertilizer Summit, fertilizer financing is a major constraint to the use of fertilizer by smallholder farmers. A key recommendation from the 2006 Summit was to mobilize financing on a large scale to support fertilizer importation, domestic blending, and local

manufacturing. Although Africa is now a net exporter of mineral fertilizer, the distribution of the input on the continent is still poor.

Despite increased local manufacturing, Africa's overdependence on imported fertilizer, especially non-phosphate-based ones, continues due to fractured intra-continental markets, poor transport/distribution infrastructure, and lack of regional trade policy harmonization. Producing nitrogen-based fertilizers is very energy intensive, and potash reserves on the continent are limited. High dependency on imports exposes the continent to external global market shocks. The recent global fertilizer crisis has disproportionately affected Africa, with a decline of 25% in fertilizer consumption from 2019 to 2022, which is expected to decrease food production by 30 million metric tons of grains — an amount sufficient to feed over 60-90 million people for a year.

Africa's agricultural productivity has been severely constrained for decades by widespread land and soil degradation. Declining soil health and soil degradation are leading to reduced productivity and negative environmental impacts. Small family farms struggle most in accessing both mineral and organic fertilizers and applying sustainable soil management practices. They also lack water access, an essential input for crop production. The Continent's soils have suffered loss of soil organic matter, loss of soil fertility,negative nutrient balance, water and wind erosion, soil acidification, loss of soil biodiversity, soil salinity, soil pollution, overgrazing, soil compaction and desertification. Moreover, poor agricultural management practices cause the eutrophication of watersheds. The decline in soil health and fertility across Africa has hindered not only agricultural productivity, but also food and nutrition security, rural livelihoods, and environmental sustainability across the continent. This decline significantly reduces the capacity of the soil to respond to the use of yield-increasing inputs such as fertilizers and improved crop varieties, and greatly increases the vulnerability of smallholder farmers and communities to the impacts of climate shocks. The insecurity of tenure of land and water further hamper the ability of farmers to invest in sustainable production.

It is critical to improve and sustain soil health if the goals and aspirations of multiple African agendas (Africa 2063, CAADP, Malabo Declaration, etc.) and priorities are to be achieved. The African Union Commission (AUC) tasked the Forum for Agricultural Research in Africa and the other xPillar4 agencies (CORAF, ASARECA, CCARDESA, and AFAAS) in collaboration with other specialized Agencies, especially FAO to develop a long-term framework for a Soil Initiative for Africa (SIA) to put a system in place to improve and maintain the health and productivity of Africa's soils across all agricultural sub-sectors (i.e., arable, [inland] fisheries, forestry, and livestock).

2.3 Opportunities

A renewed focus and impetus on improving soil health as a driver of sustainable transformation of Africa's food systems is an opportunity for win-win solutions that drive agricultural productivity while also protecting natural and agro-ecosystems. The synergies between enhancing fertilizer use efficiency and building soil health also offer opportunities for achieving both positive productivity and environmental outcomes. The specific investments detailed in this Action Plan are informed by integration of best principles from various frameworks, including

sustainable soil management, integrated soil fertility management, regenerative agriculture and agro-ecological intensification.

Over the next 10 years, additional focus will be required to leverage local mining, manufacturing, blending, and distribution investments to capitalize on the continent's resources rather than rely on global markets. Fertilizer accessibility, affordability, and efficiency must be improved. Financing tools such as trade credit guarantees, working capital, and targeted subsidies must be consolidated to reduce market distortions, reduce costs, and strengthen input distribution supply chains. Of particular concern are the taxes and tariffs imposed on fertilizers that must be substantially reduced or eliminated to reduce the price of fertilizers. There is also a need to address foreign currency constraints that limit and delay fertilizer procurement.The Abuja Declaration predominantly focused on the role of government rather than the private sector, which was not an active investor. Recommendations for fertilizer financing under a 10-year Action Plan should consider the current market dynamics and focus on greater mobilization of both public and private capital for the development of the continent's mineral and organic fertilizer value chains.

Opportunities for addressing challenges to African agricultural productivity and sustainable soil management are complex and vary between Member States and farming systems. Despite recent improvements, more effort is needed in critical areas. Specifically, soil health embraces the soil's continued ability to function as a vital living ecosystem that sustains healthy plants, animals, and humans. Improving soil health across Africa will therefore not only support improved agricultural productivity, but also continent-wide water, food and nutrition security, rural livelihoods, and environmental sustainability. Soil health also impacts animal and human health, and it is essential to adopt a holistic approach in the policy, regulatory and implementation frameworks. There is also a need for interventions that reduce the large on-farm food losses and wastage that contribute significantly to hunger.

Numerous initiatives, plans, projects, programs, policies, institutional frameworks, and other processes exist to address and reverse the persistent trend in soil degradation, often with important practical local achievements. This includes the Afrisoils programme (2019-2028) launched under the Food and Agriculture Organization's Global Soil Partnership to halt soil degradation, boosting soil productivity through the promotion and implementation of sustainable soil management (SSM) practices for increased food and nutrition security in 47 African countries. The Afrisoils programme was developed based on national priorities for SSM as provided by Countries' focal points under the Regional African Soil Partnership. Many of the building blocks for a solution are in place. However, they have not been sufficient, hence the continued steady decline in soil health across the continent, except in scattered localities. Coordinated attention and targeted resources are required to reverse the decline in soil health with all the benefits that this reversal would bring to the African continent.

Input subsidies have been adopted by several countries to supply fertilizers to farmers at reduced prices. The viability of most subsidy programs has been very limited due to poor planning and implementation. Targeted subsidies provide opportunities to overcome these limitations by aligning with private sector investments, focusing on areas and crops with the highest economic

and agronomic returns, and implementing subsidy programs as part of a broader agricultural support strategy.

Opportunities for cooperation and collaborative initiatives exist at all levels - at the farm, landscape/ institutional, and country/ regional/ continental levels. Farm-level opportunities include: multisectoral investments to reduce the high competition for organic resources between different uses (cooking fuel, livestock, soil fertility) and increase biomass production to improve the prospects of nature-based soil health rehabilitation; investments that increase accessibility, affordability, and efficiency of inputs by reducing the distances that farmers travel to buy fertilizers, reducing the transaction costs for fertilizers; shift from generalized to context-specific guidelines for effective nutrient management; investments in aggregation and agro-logistics for profitable access to input/output markets; investment in digitally enabled extension and advisory services to improve context-specific extension support on soil health and fertilizer management; optimizing integrated soil and water management planning and implementation across landscapes and agricultural sub-sectors; current, high-quality soil maps; and strengthening soil laboratory capacities, resources, and services to farmers. A specialized gender and youth integration program will be mainstreamed for ensuring equitable benefits for women and youth.

Cooperative and collaborative opportunities at country and regional levels include: harmonizing, enacting, and promulgating policies and incentives for farmers to adopt fertilizer use and effective soil health management technologies and practices; investments to increase the capacity of countries and the continent to produce organic and mineral fertilizers, biofertilizers and biostimulants, and reused and recycled nutrient sources coupled with easing cross-border trade; strengthening the national research and extension systems on soil management; establishing cross-country data management and data sharing mechanisms, and tool development at the national and regional (and continental) levels, and more.

Continental opportunities include: cooperation, coordination and harmonization in support of implementation by Member States and Regional Economic Communities (RECs); leveraging on Africa's common and shared position on building sustainable food systems; improved coordination of State and Non-state Actors across all actions, providing opportunity for results at scale; and leveraging and sharing of lessons learned. United Nations among other existing initiatives, Economic Commission for Africa (UNECA) and the African Export-Import Bank (Afreximbank), in collaboration with the African Union Commission and the AfCFTA Secretariat, have established the African Trade Exchange Platform (ATEX) as a digital business-to-business (B2B) and business-to-government (B2G) exchange platform the supports the bulk procurement of basic commodities, including fertilizers. ATEX is connected to the digital ecosystem supporting the implementation of the AfCFTA and provides buyers and Member States with quality products from verified suppliers in a more efficient way at average cost, thereby improving cross-border trade.

Programme Goal

The main goal is that African soils are healthier and sustainably contribute more to agricultural growth and environmental resilience.

3.1 Objectives

a. Increasing access, affordability, and use of sustainable usoil management practices, including efficiently using organic and mineral fertilizers.
b. Enhance capacity for soil health and sustainable soil management, including strengthening extension for the sustainable management and efficient use of organic and mineral fertilizers.

3.2 Overall strategy in addressing problem and opportunity

The main thrust for success in implementing the Action Plan is in harnessing multi-stakeholder partnerships and investment to drive policies, finance, markets, R&D, extension and capacity for efficient use of fertilizer and sustainable soil health management.

3.3 What will be achieved in 10 years

a. Within the existing Africa Fertilizer Financing Mechanism (AFFM) will meet the requirements of the various actions in the Action Plan;
b. Operationalizing a soil health fund, within the AFFM, for research, innovation, capacity building, and start-ups on efficient fertilizer use and soil health management actions implemented as part of the existing provisions of the Africa Fertilizer Financing Mechanism (AFFM);
c. Significantly increased investments in the local manufacturing and distribution of mineral and organic fertilizers, biofertilizers and biostimulants, and reused and recycled nutrient sources for local supply and towards "climate-smart farming" that better matches fertilizer types/ formulas with varied soil types, crop and climatic conditions;
d. Significant investment to enhance capacities of countries in soil and fertilizer analysis and soil mapping and monitoring;
e. Significant investment in improved integrated planning and management of soil health interventions across agricultural sub-sectors to support increased production of self-sufficiency and high-value agricultural plant and animal products;
f. Significant investment in sustainable soil health management practices, including water supply and use efficiency through infrastructure and innovative techniques of smart irrigation;
g. Triple fertilizer use from 18 kg/ha in 2020 nutrients to 54 kg/ha by 2034 and significantly improve fertilizer use efficiency and adapt fertilizer rates and sources to specific soil and crop needs to offset nutrient depletion, achieve cereal self-sufficiency;
h. Contribute to doubling cereal crop productivity from 1.7 t/ha in 2020 to 3.5 t/ha by 2034, along with investments in sustainable soil management by other partners;
i. Maintain cropland nitrogen use efficiency to at least 60% to support profitable farming and environmental sustainability;
j. Contribute to doubling agricultural annual growth rate from 4% in 2023 to 8% in 2034;
k. Develop extension and last-mile delivery services to enable 70% of the farmers to access effective agronomic, sustainable soil and fertilizer management advice; and

l. Expand the agricultural land under sustainable soil management practices from 8.2% in 2021 to 30% in 2034.

Action Plan

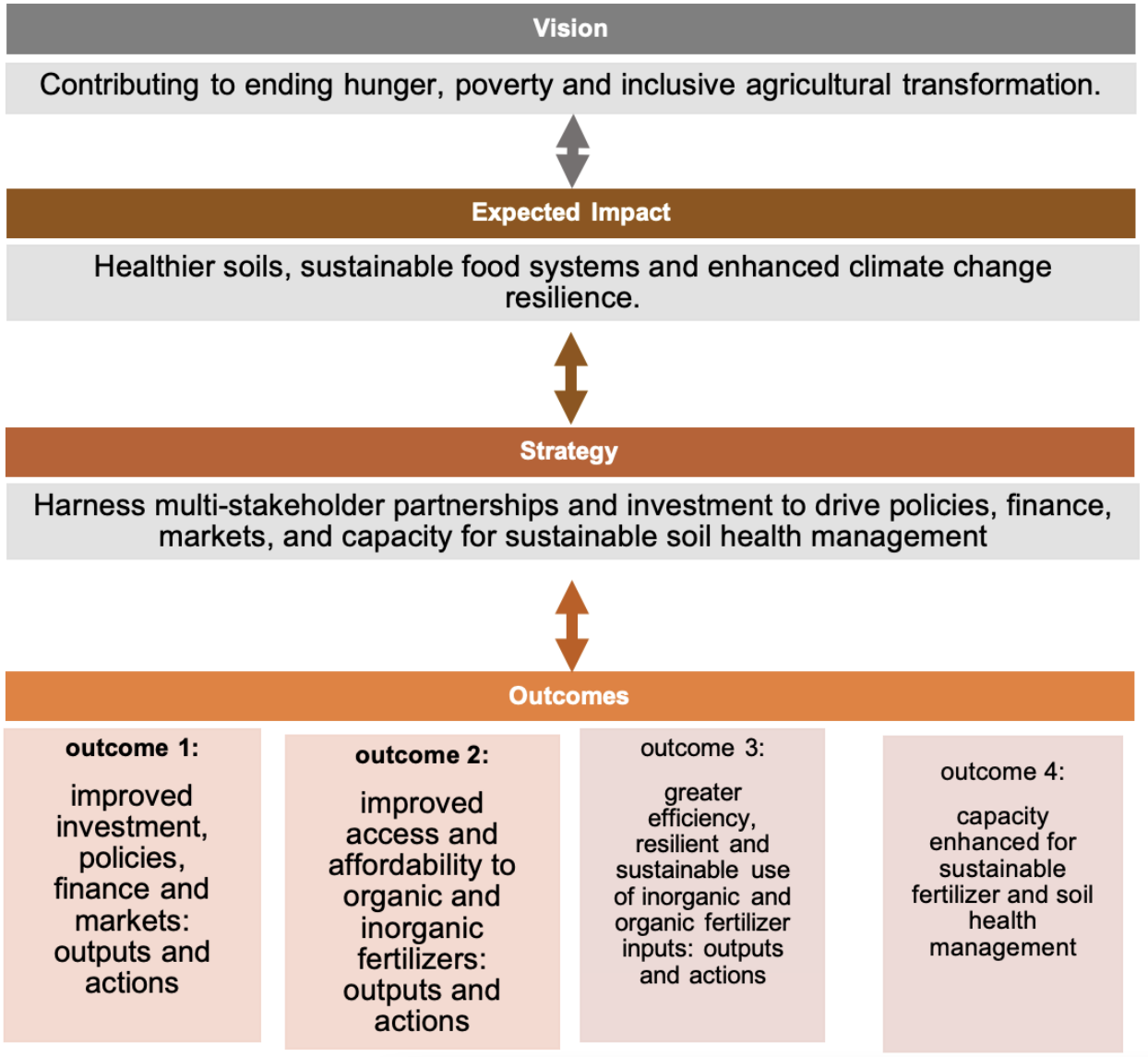
4.1 Vision

Implementing the Action Plan will accelerate inclusive agricultural growth and transformation and contribute to ending hunger and poverty.

4.2 Expected impact

Successful implementation of the Action Plan will be confirmed by increased soil health, increased crop productivity and production, sustainable agri-food systems, enhanced resilience to climate change, and a food- and nutrition- secured continent.

Africa Fertilizer and Soil Health Action Plan Results Chains



4.3 Priority Outcomes for Priority Actions

The main building blocks, pillars or key Outcomes that add up to the desired Expected Impact of the Action Plan are:

a. Strengthened policies, investment, finance and markets for sustainable soil health and efficient fertilizer management;
b. Improved access to, affordability of, and efficient use of organic and mineral fertilizers, biofertilizers and biostimulants, and reused and recycled nutrient sources;
c. Greater efficiency, resilience, and sustainable use of mineral and organic fertilizer inputs and enhancement of soil health interventions; and
d. Institutional and human capacity enhanced for sustainable soil health and efficient fertilizer management.

These Outcomes/Key Action areas determine the desired Outputs that add to the Outcomes/Impact. Actions or activities have been identified for each Outcome/Key Action area. Ultimately this process allows for results-based activity budgeting. It is envisioned that this Action Plan will undergo deeper and more detailed planning and budgeting at the implementation stage.

In the following sections, each Outcome/Priority Action Area is unpacked into its Outputs (intermediate Outcomes) and the indicative Actions/Activities that add to each Output.

5. Outcome 1: Improved Policies, Investment, Finance and Markets for Sustainable Soil Health and Fertilizer Management

5.1 Output 1.1 Improved policy environment

- Action 1.1.1 Develop context-specific, continent-wide guidelines for the formulation and implementation of relevant national policies that enable sustainable soil health and efficient fertilizer management.
- Action 1.1.2 Harmonize national policies and regulatory frameworks on fertilizer efficiency and soil health solutions to ensure cross-sectoral coherence and promote regional and continental trade.
- Action 1.1.3 Support smallholder farmers to access viable commodity markets and support improved security of land tenure and use rights to enable individual investments in efficient fertilizer use and soil health.
- Action 1.1.4 Enact Policies and regulation to support/promote the use of recycled organic fertilizer and soil improvers.
- Action 1.1.5 Identify areas of high agricultural or ecological importance for protection, restoration, and sustainable management to improve soil health.

5.2 Output 1.2 Improved financing and investment

- Action 1.2.1 Widen the scope of the Africa Fertilizer Financing Mechanism (AFFM) to improve the production, procurement, distribution, and efficient use of organic and mineral fertilizers, and soil health interventions.

- Action 1.2.2 Incentivize enhanced private sector investments in low-carbon fertilizer production, R&D, trade and farmer advisory services, towards "smart farming" that better matches various fertilizer types/ formulas with local soil types.
- Action 1.2.3 De-risk farmer investments in yields and soil health of current and targeted food security crops.
- Action 1.2.4 Support financing of infrastructure and logistics assets to improve availability of organic and mineral fertilizers, biofertilizers and biostimulants, and reused and recycled nutrient sources, and access to food markets for farmers.
- Action 1.2.5 Strengthen the soil health fund for research, innovation, and start-ups on efficient fertilizer use and soil health actions, including private sector investments, under the AFFM.
- Action 1.2.6 Incentives for building up local infrastructure for composting or anaerobic digestion of organic wastes to produce compost, including the decentralized composting options.
- Action 1.2.7 Deploy innovative incentive support mechanisms for Member States' greater use of technology to improve the efficiency of existing subsidy programs, with the end goal of encouraging soil health investments by smallholder farmers.
- Action 1.2.8 Establish the minimum threshold for the optimal functioning of AFFM and convene a partner's roundtable by the end of 2024, to mobilize the required resources.
- Action 1.2.9 Promote Gender-sensitive finance, technical support and information to enable women to implement sustainable soil health practices.

6. **Outcome 2: Improved Access and Affordability of Organic and mineral Fertilizers**

6.1 Output 2.1: Increased domestic production and distribution

- Action 2.1.1 Boost local production and blending of mineral fertilizers and lime using locally available raw materials.
- Action 2.1.2 Enable SME ventures, especially by youth and women, oriented to the production, distribution, and efficient use of mineral fertilizers.
- Action 2.1.3 Support Research and Development to produce organic fertilizers, biofertilizers and biostimulants, and reused and recycled nutrient sources and novel fertilizers with low carbon, including green ammonia.
- Action 2.1.4 Strengthen access, including to women and youth, through market linkages and promote agro dealerships.
- Action 2.1.5 Repurpose subsidies for manufacture and developing effective transportation networks so that rural small-scale farmers.

6.2 Output 2.2 Enhanced intra-regional fertilizer trade

- Action 2.2.1 Leverage the African Continental Free Trade Agreement (AfCFTA) increase intra-Africa fertilizer trade and enact sovereign guarantees agreements between importers and manufacturers.

7. **Outcome 3: Greater Efficiency, Resilience and Sustainable Use of mineral and Organic Fertilizer Inputs and Enhancement of Soil Health Interventions**

7.1 Output 3.1 Recommendations developed targeted to specific crops, soils and climatic conditions.

- Action 3.1.1 Develop digitally-enabled context-specific efficient fertilizer and soil health advisory recommendations
- Action 3.1.2 Develop and deploy standardized and appropriate tools for assessing soil fertility, soil health, and context-specific sustainable soil management and nutrient requirements.
- Action 3.1.3 Bundle fertilizer and soil health recommendations with Climate Information Services to reduce and address the risks associated with climate variability.

7.2 Output 3. 2 Agronomic fertilizer use efficiency increased to optimal levels

- Action 3.2.1 Promote integrated soil fertility management practices to enhance crop response.
- Action 3.2.2 Promote context-specific solutions for the use of the right sources of nutrients at the right rates, time, and place.
- Action 3.2.3 Promote access and affordability of liming for ameliorating acidic soils to enhance crop productivity and fertilizer use efficiency.
- Action 3.23 Promote context specific CSA innovations to ensure the cost-effectiveness of investments in fertilizer use, while mitigating the effect of climate change and variability
-

7.3 Output 3.3 A digital information platform and database established

- Action 3.3.1 Establish and operationalize continental, regional, and national soil health monitoring and soil information systems.
- Action 3.3.2 Establish and operationalize a soil health, fertilizer, crop, and climate dashboard for decision support on sustainable soil management.
- Action 3.3.3. Establish and operationalize analytical and decision support tools to guide investments at farm, national, regional, and continental level.

7.4 Output 3.4 Soil health and water management optimized across agricultural sub-sectors and landscapes

- Action 3.4.1 Promote integrated soil and water conservation, planning, and management across agricultural sub-sectors and landscapes/ watersheds.
- Action 3.4.2 Promote investments in smart irrigation as part of integrated water resource management for enhancing nutrient use efficiency and soil health conditions for climate change resilience.
- Action 3.4.3 Promote context-specific sustainable agricultural practices to support increased biomass, crop, and animal production in croplands, rangelands, forest lands and inland fisheries.

Outcome 4: Institutional and Human Capacity Enhanced for Sustainable Soil Health and Fertilizer Management

8.1 Output 4.1 Locally relevant soil health and fertilizer management technologies developed and promoted

- Action 4.1.1 Strengthen regional and national research and education institutions and capacity in soil health and sustainable soil management.
- Action 4.1.2 Strengthen national extension systems and public-private partnerships for soil health and efficient fertilizer advisory integrated with other farmer services (input and output markets, finance) to improve the quality of support to smallholder farmers.
- Action 4.1.3 Building the capacity of national Research and Development and Extension systems that will need to support and enable the implementation of the activities specified in the Action Plan.
- Action 4.1.4 Review and upgrade tertiary training programs for soil science and agronomy to include subjects relevant to sustainable soil management and efficient fertilizer use.
- Action 4.1.5 Develop a database coupled with a decision support system to promote locally, nationally and regionally relevant fertilizer and soil health management technologies.
- Action 4.1.6 Strengthen informal and in-service training modalities to strengthen research, extension, and implementation expertise on sustainable soil management.

8.2 Output 4.2 Scale appropriate advisory services on soils and crops available and affordable to smallholder farmers

- Action 4.2.1 Build, strengthen, and standardize soil analysis capacity of laboratories to rapidly and accurately analyze large sample volumes.
- Action 4.2.2 Establish public-private partnerships to foster innovation towards scalable, affordable, and localized soil and crop-specific advisory.

8.3 Output 4.3 Regional networks for knowledge exchange established

- Action 4.3.1 Establish regional research and development networks for the exchange of knowledge and technologies within the continent and with the North-South-South (global) regions.
- Action 4.3.2 Establish and convene a biennial Continental Fertilizer and Soil Health Summit.

8.4 Output 4.4 Fertilizer analytical services available for fertilizer quality assurance

- Action 4.4.1 Build, strengthen, and standardize the fertilizer analysis capacity of national and regional laboratories in accordance with fertilizer quality standards.

9. Implementation Framework

9.1 Implementation Context

The AFSH Action Plan presents the priority actions for the next 10 years to be implemented in the context of the Soil Initiative for Africa Framework. The Soil Initiative for Africa presents the long-term Framework for Africa to put in place a comprehensive system to improve, maintain, and scale soil health and productivity in all agricultural sub-sectors (i.e., arable, forestry, [inland] fisheries, and livestock systems) across the Continent.

9.2 Leadership and Coordination

The AUC will have ownership of the AFSH Action Plan and the SIA. The AUC and AUDA-NEPAD will coordinate the different stakeholder organizations within and outside the continent to ensure effective implementation of the AFSH Action Plan.

The AUC may require a coordination mechanism to facilitate the implementation of the AFSH Action Plan. Such a coordination mechanism may also be responsible for the long-term coordination of the SIA.

In carrying out its coordination role with regards to implementation of the AFSH Action Plan, an AU secretariat will, among others, have the following responsibilities:

- Establish the modalities for knowledge management, risk management, monitoring and evaluation for each of the implementing stakeholders.
- Support the domestication of the AFSH Action Plan into continental, regional, and national processes for development and investment planning.
- Support and facilitate effective communication and advocacy to generate public awareness, involvement, support, and ownership of the AFSH Action Plan by the African population and all relevant stakeholders in its execution.
- Establish a Monitoring, Evaluation, Accountability, and Learning process to track progress in the implementation of the AFSH Action Plan.

Details of how a coordination mechanism would function and how all the above processes will be managed, coordinated, and carried out will be developed during the implementation of the Action Plan. This would include provision for the identification of points of weakness in existing structures and interfaces and identifying solutions to strengthen these.

9.3 Stakeholder Engagement and Partnerships

As per the SIA Framework, stakeholders at the continental, regional, national, and local levels will be engaged through effective partnerships. The Guidelines for Non-State Actor participation in CAADP processes will be utilized to guide the effective establishment of partnerships and support accountability in the implementation of the AFSH Action Plan.

Responsibilities will be devolved to stakeholders with the requisite capacity to deliver the required outputs using open and competitive processes to ensure timeliness and quality of outputs.

9.4 Monitoring, Evaluation, Accountability, and Learning

Implementation of the AFSH Action Plan will be incorporated into the AUC CAADP monitoring and evaluation system, including incorporation into the digital CAADP biennial review dashboard.

Appropriate indicators will be defined with an emphasis on leveraging existing information and indicators to the extent possible. This will require additional support to the CAADP processes to accommodate additional requirements to support country level domestication, monitoring, evaluation, accountability, and learning. The monitoring plan will include tracking of the contributions of the private sector.

9.5 Phased Implementation

The AFSHS Action Plan will be implemented in 2 phases:

- Phase 1: Preparatory 18-month post-summit phase (June 2024-November 2025). The Inception Phase will be used for defining and establishing the coordination mechanism, aligning implementation with future developments under Agenda 2063 and CAADP, cultivating necessary partnerships and alliances, initial capacity building, piloting and proofing some interventions, and more. In line with continental coordination, country-specific action plans will be developed with the engagement of public-private partners and development stakeholders. Phase 1 is also essential for final planning, budgeting, and resource mobilization.
- Phase 2: The main implementation phase from January 2026 to December 2034.

Action Plan Matrix				
	Priority Area	**Outcome**	**Intervention/Recommendations**	**Metrics & Targets**
1	**Fertilizer**			
	1.1	Productivity and soil health enhanced with efficient use of fertilizer	● **Efficiently increase fertilizer use** across the continent – from the very low current level of 18 kg ha^{-1} to higher levels necessary for achieving optimal yield targets in specific regions depending on soil, agroecological and market conditions. ● **Support diversification** of nutrient sources and	Fertilizer use intensity Crop yields

			production to improve resilience and sustainability.	
	1.2	Fertilizer use efficiency enhanced to optimal levels	● **Efficiently apply fertilizer tailored** to specific farming conditions and **manage effectively manage** to increase yield, profitability, and nutrient use efficiency in the context of integrated soil fertility management. ● **Formulate recommendations** that create the conditions so that smallholder farmers	Agronomic fertilizer use efficiency Return on Investment at the Agroecological system-level

			can implement these recommendations at scale. ● Assess soil fertility status, use standardized and appropriate analytical tools to develop locally specific recommendations at scale. ● Support a comprehensive approach to promoting the adoption of efficient fertilizer and other technologies that take into consideration the entire system within which such	

			decisions are made. ● Use auxiliary interventions, such as integration of legumes and water conservation, in addition to fertilizer asrequired to raise low agronomic efficiency values.	
2	**Soil health in croplands, rangelands and forests**			
	2.1	Productivity and resilience enhanced by nature-based sustainable farming interventions	● **Promote sustainable soil management and integrated soil fertility management (ISFM)** as the gold-standard approach to improve soil health,	Yield stability Organic matter input intensity Soil organic carbon trends

			increase productivity, and support climate change adaptation, resilience, and mitigation	
	2.2	Soil health, nutrient, and water management	● Promote integrated **Water Resource Management** and water control as a critical component of soil health and nutrient management.	Water use efficiency
	2.3	Soil health planning, implementation, and monitoring	● Support **integrated land use planning and implementation** at the local and national level based on national priorities, production and	Continental soil health framework

			environmental needs, and natural resource conditions. ● Establish a **regional and national framework for soil health** assessment, monitoring, priority setting and road map development. ● **Map soil fertility status** (using appropriate analytical tools) and develop locally relevant soil health management interventions. ● Develop **investment strategies**	

			and **incentive mechanisms to increase biomass production** and efficient utilization in the farms and landscapes. ● Reduce **competition for biomass** between soil fertility and energy use through investing and expanding on small scale renewable energy sources (e.g., solar) in rural Africa. ● Create and stregnthen farmer capacity in **nutrient**	

			recycling, organic resources management and efficient utilization, along with market linkages.	
3	**Soil Information for sustainable soil management**			
	3.1	Establish a Soil Information Systems for evidence-based decision support	● Create **continental, regional and national soil information systems** utilizing modern **digital technologies.** ● Develop and make available information on **best practices for sustainable soil management** for specific crop	Continental, regional and national soil information systems

			production systems. ● Develop **continental, national, and local indicators and targets** that measure and track sustainable soil management implementation and impact. ● Set up a scale-appropriate soil health monitoring system, based on commonly agreed soil health indicators. ● **Decision support system** for sustainable soil management. ● Integrate the SIA dashboard into	

			CAADP biennial review framework. ● Strengthen national capacity to collect, analyse, interpret, and apply soil and agronomic information.	
4	**Policy, legal and regulatory frameworks**			
	4.1	Strengthening the policy enabling environment	● **Introduce policies and incentives** that increase investment in soil health restoration and enhancement strategies, including 'smart' fertilizer subsidies. ● **Champion investment** on sustainable soil managem	Awareness raising events at national or continental level such as World Soil Day

			ent practices. ● Develop **awareness of and political engagement** on the need to create the enabling environment. ● **Raise awareness** about enabling environment issues among key stakeholders.	
	4.2	Policy harmonization	● **Harmonise national policies** and regulatory frameworks to ensure coherence. ● Integrate sustainable soil management into agriculture, forestry, environment, industry,	Soil health laws or strategies National soil institutions mandated to monitor soil health status

			mining, urban planning and other policies. ● Align national policy with international commitments and voluntary guidelines. ● Establish and/or mandate a national institution to track, monitor and evaluate the implementation of policies and regulatory frameworks.	
	4.3	Repurpose some of the existing fertilizer subsidies to incorporate integrated soil fertility management to enhance soil health and productivity. Incentivize sustainable soil	● Link soil health and fertilizer efficiency policies with policies that support output market	Smart agricultural subsidies for integrated soil fertility and soil health management Incentives schemes on sustainable soil management and innovation

		health management policies	development. ● Facilitate farmers' access to local, national and international input and output markets. ● Establish reward mechanisms that encourage land users to adopt soil health restoration practices over the long-term. ● Repurpose **incentive schemes** to promote sustainable soil management. ● Incentivizes private sector to innovate and promote	

			SSM technologies and practices.	
	4.4	Mobilizing and allocating financial resources for SSM	● Regional and national level resource mobilization strategy for: - R&D&E; - Education and training; - Complementary infrastructure (irrigation, mechanization, ICT); - Establishment of a multi-stakeholder fund	Sustainable soil management financing mechanisms for R&D&E and implementation

			for promoting and incentivizing sustainable soil management and integrated soil fertility management; - Design of engagement strategies for private sector.	
5	**Markets**			
	5.1	Enhancing Fertilizer Supply Chain Efficiency	• Facilitate the establishment of small and medium-	Local and efficient fertilizer and alternative nutrient sources businesses

			sized entrepreneurial ventures, particularly promoted by youth and women, oriented to the production and distribution of fertilizers and other nutrient sources from locally available resources. ● Fertilizer financing mechanism ● Local markets ● Infrastructure ● Private sector ● Tariff and no tariff barriers ● Harmonized regional and local fertilizer production.	

			• Increasing density of agrodealers networks • Address economic yield gap by improving policy and access—to finance, inputs, and output markets, considering farmer's production objectives, beyond profitability, and resource endowments, land tenure impact, and other factors that affect the uptake of appropriate fertilizer and soil health recommendations.	

			● Combine incentives with short-term benefits that increase on-farm revenue.	
	5.2	Output markets relevant for fertilizer and soil health	● Link policies designed to enhance fertilizer use with policies that support output market development (infrastructure, post-harvest, commodity prices, import and export). This ensures that increased crop yields will translate into higher income	

			for farmers. ● Link farmers to profitable markets, thus encouraging farmers to reinvest in ISFM practices.	
	5.3	Continental fertilizer trade	● Implement the African Continental Free Trade Agreement (AfCFTA) to expand the market for African farmers and create new incentives for the private sector to invest in African food systems. This should be accompanied by governme	

			nt investments in transportation and communications infrastructure to lower the costs of food trade between African countries.	
6	**Capacity building and institutions**			
	6.1	Continental capacity to stimulate a shift in soil health management bolstered	● Farmers/ land users for management ● Extension for knowledge transfer ● Research systems for innovation ● Invest in training and research infrastructure for sustainable soil management. ● Strengthen	

			diagnostic capacity of laboratories for providing reliable data on soil health and fertilizer quality.	
	6.2	Public/private/NSA Advisory Services with expertise on soil management reach most land users with effective guidance Extension and advisory.	• Extension workers empowered with enhanced capacity to support soil management practices. - Introduce and scale up digital tools and scaling models, bundled with fertilizer infor	

			mation and access to agro-inputs, marketing, and financial services. - Educate extension workers, farmers, input suppliers and other value chain partners in relation to the above. Develop feedback systems (on the performance of recommended practices) to a central R&D body, for updating and fine-tuning	

			efficient fertilizer and soil health management options. ● Empower extension workers and other last-mile delivery actors in promoting locally relevant fertilizer and soil health recommendations at scale. ● Upgrade capacity of national agriculture extension services on soil health, including better training, stronger expertise, and ways to leverage digitally enabled tools and services. ● Standardize soil	

			analysis standards and harmonize extension services to ensure site-specific ISFM and SSM recommendations.	
	6.3	Development of human capital in soil science/sustainable soil management is significantly improved and expanded Vocational soil science/sustainable soil management Agric. Education and Training	• Through vocational training, tertiary education, and graduate (M.Sc. and Ph.D.). • Review and upgrade tertiary training curricula at the regional level for soil science and agronomy to include subjects relevant to sustainable soil	

			management in modern agriculture.	
	6.4	Agricultural Research, development and extension on addressing current and new challenges in sustainable soil management and related issues is expanded	• Expand training and R&D&E on addressing current and new fertilizer efficiency and soil health challenges. • Develop one or more African centers of excellence for training extension staff on sustainable soil management (both at degree-earning level as well as through	

			in-service training). ● Scale up and target **investments in agricultural R&D initiatives that promote smallholder climate adaptation**, **sustainable intensification**, fertilizer efficiency, or have dual benefits for **crop yields and the environment**. ● Link with One CGIAR Action Plan for Africa ● CGIAR directly contribute to strengthening the capacity of regional	

			and national partner agricultural institutions.	
	6.5	Laboratory infrastructure	● Build and strengthen the capacity of laboratories in soil analysis. ● Global, regional and national networks work to strengthen the capabilities of soil laboratories to provide accurate, reliable and replicable data.	
	6.6	Institutional structures, capacity, and resources	● Develop a centralized coordination	

			structure for implementation of action plan. ● Create a resource mobilization task force.	

Approved: GFS: Cary Fowler ()

Drafted By: AU Commission Drafting Team

Cleared By:

GFS: Mike Bittrick (ok)

GFS: John Leslie (ok)

GFS: Ben Muskovitz (ok)

GFS: Simone Passarelli (ok)

GFS: Vieshnavi Rattehalli

GFS: David Wisner ()

EB/TPN/AGP: Corey Watts (ok)

IO/EDA: Robert Boenish ()

USAU: Mika Cleverly/Michael Frazer ()

OES/EGC: Amanda McCarty ()

SPEC: Claire Henly ()

AF/ERA: Walter Parrs (ok)

AF/ERA: Monica Arriola (ok)