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MINISTRY OF AGRICULTURE

Ethiopian Fertilizer and Soil Health Roadmap

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FOREWORD

Africa's rapidly growing population and rising food demand have placed unprecedented pressure on the continent's agricultural systems. For generations, African farmers relied on indigenous soil and environmental management practices—including long fallow cycles—to restore soil fertility and sustain crop production. These systems functioned effectively when population densities were low and land was abundant. Over the past decades, however, fallow periods have shortened dramatically or disappeared altogether as land became scarce. The consequence has been a steady decline in soil health across much of the continent. Widespread depletion of soil organic matter, nutrient mining, severe soil erosion, soil acidification, declining soil biological activity, and land degradation now threaten Africa's ability to meet its food security needs. Today, Africa loses an estimated USD 4 billion worth of soil nutrients annually, and per-hectare fertilizer use remains the lowest in the world.

Ethiopia reflects this continental challenge. Despite strong political commitment to food sovereignty and impressive progress in land restoration, many Ethiopian soils remain chronically depleted of sol organic matter and essential nutrients (mainly nitrogen and phosphorus). Soil acidity affects nearly half of the highland agricultural soils, erosion continues to remove millions of tons of topsoil each year, and fertilizer use efficiency remains low due to low rates of applications that cannot offset removals, limited soil testing and lack of site-specific recommendations, and inadequate integration of organic inputs. These constraints undermine national efforts to boost productivity, reduce import dependence, and build resilient farming systems.

The development of Ethiopia's Fertilizer and Soil Health Roadmap is therefore both timely and essential. This initiative is strategically aligned with the African Union's Africa Fertilizer and Soil Health Action Plan, endorsed by all AU Member States in 2024 in Nairobi, Kenya, and further reinforced through the historic Nairobi Declaration on Fertilizer and Soil Health. It provides a strategic framework to address soil degradation, promote balanced nutrient management, improve fertilizer use efficiency, expand integrated soil fertility management (ISFM), and guide targeted investments that restore the productivity and resilience of Ethiopia's agricultural landscapes. By aligning science, policy, and practice, this roadmap aims to unlock the full potential of Ethiopia's soils as the foundation for sustainable food systems, rural prosperity, and national development.

I wish to reaffirm the unwavering commitment of the Ministry of Agriculture of the Federal Democratic Republic of Ethiopia to fully implement the priority actions outlined in this Fertilizer and Soil Health Roadmap. This roadmap represents a national call to action—one that demands coordinated investment, scientific innovation, and strong institutional collaboration. To this end, I call upon our development partners, financing institutions, researchers, the academic community, and all relevant stakeholders to stand with us and rally behind this roadmap. Your partnership is essential to accelerate soil restoration, enhance fertilizer use efficiency, and unlock Ethiopia's agricultural potential.
If we join hands with determination and shared purpose, I am confident that by 2035 Ethiopia will realize its vision of healthy soils, a prosperous nation, and thriving, food-secure citizens.

Prof. Eyasu Elias (Ph.D.)
Natural Resources Sector
State Minister

ACKNOWLEDGMENT

The Ministry of Agriculture extends its sincere appreciation to all partners whose technical, financial, and strategic contributions made the development and finalization of the Ethiopian Fertilizer and Soil Health Roadmap (EFSH) possible.

The roadmap represents a collaborative effort built through the support of key national and international partners, including the following, listed in alphabetical order: AGRA, Alliance of Bioversity International and CIAT, ATI, CIMMYT, Development Gateway, GIZ-Soil Matters Project and the GF-funded SSHI project, ICRISAT, IFDC, IFDC/AU, OCP Nutricrops, and PELUM Ethiopia. Their combined financial and technical support ensured the scientific rigor, practical relevance, and national ownership that define this Roadmap.

We also appreciate the active engagement of all the participants in the Validation Workshop. Their thoughtful insights, constructive recommendations, and experience-based contributions significantly enhanced the quality and clarity of the final document. The national technical taskforce, established to guide the development of the roadmap, played a key role in drafting the document, collecting and integrating stakeholder feedback, coordinating independent reviews, incorporating reviewers' inputs, finalizing the draft, and advising management on the subsequent steps.

We extend our deep appreciation to the independent reviewers, whose rigorous assessments and insightful comments enhanced the quality, accuracy, and credibility of this document. Finally, the Ministry of Agriculture expresses its heartfelt gratitude to all institutions and individuals whose visible and behind-the-scenes support enabled the successful realization of the EFSH Roadmap. Your commitment to advancing fertilizer & soil health sector and sustainable agricultural productivity in Ethiopia has been indispensable.

Prof. Eyasu Elias (Ph.D.)
Natural Resources Sector
State Minister

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Abbreviation and Acronyms

ABC	Agricultural Business Corporation
AfCFTA	African Continental Free Trade Agreement
AFSH 24	Africa Fertilizer and Soil Health
AgBank	Agricultural Bank
AGRA	Alliance for a Green Revolution in Africa
AOSS	Agricultural One-Stop Shops
ARD	Agricultural and Rural Development Policy
ATI	Agricultural Transformation Institute
AU-DARBE	African Union - Department of Agriculture, Rural Development, Blue Economy and Sustainable Environment
CAADP	Comprehensive Africa Agriculture Development Programme
CALM	Climate Action through Landscape Management
CBOs	Community-Based Organizations
CGIAR	Consultative Group on International Agricultural Research
Coops	Cooperatives
CRGE	Climate Resilient Green Economy
CSA	Climate-Smart Agriculture
CSS	Central Statistics Services
ECPC	Ethiopian Coffee and Tea Production Corporation
EFFM	Ethiopian Fertilizer Financing Mechanism
EIAR	Ethiopian Institute of Agricultural Research
EthioSIS	Ethiopian Soil Information System
FSH	Fertilizer and Soil Health
FSRP	Food Systems Resilience Program
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft Für Internationale Zusammenarbeit (German Agency for International Cooperation)
ICT	Information and Communication Technology
IGAD	Inter-Governmental Authority on Development
ISFM	Integrated Soil Fertility Management
KPAs	Key Priority Areas
M&E	Monitoring And Evaluation
MELA	Monitoring, Evaluation, Learning and Adaptation

MoA	Ministry of Agriculture
MSMEs	Micro, Small, and Medium Enterprises
NFSHR	National Fertilizer and Soil Health Roadmap
NRD	Natural Resource Development
NSIS	National Soil Information System
PACT	Participatory Agricultural Climate Transformation
R&D	Research and Development
RARIs	Regional Agricultural Research Institutes
RboAs	Regional Bureaus of Agriculture
RLLP	Resilient Landscapes Livelihoods Project
SDGs	Sustainable Development Goals
SIA	Soil Initiative for Africa
SOM	Soil Organic Matter
SOPs	Standard Operating Procedures
SWOT	Strength Weakness Opportunity Threats
5R	Fertilizer Right Source, Rate, Time, Place and Right Agronomy

Executive Summary

Agriculture is the backbone of Ethiopia's economy, accounting for 31.8 % of GDP, with an annual agricultural growth rate of 6.9%. Yet, the sector faces critical challenges, including soil degradation, nutrient depletion, inefficient fertilizer use, and climate risks. These issues are exacerbated by weak supply chains, limited institutional capacity, and a lack of reliable and site-specific agronomic advice, particularly for smallholder farmers.

To address these challenges, a comprehensive 10-year Ethiopian Fertilizer and Soil Health (EFSH) Roadmap has been developed. This roadmap is aligned with the African Fertilizer and Soil Health (AFSH) Action Plan, as well as key continental frameworks including Comprehensive Africa Agriculture Development Programme (CAADP), the Malabo and Abuja Declarations, and Agenda 2063. It effectively translates continental commitments into a national strategy aimed at restoring soil health, optimizing fertilizer use efficiency, and establishing a climate-resilient and highly productive agricultural system.

By 2035, the roadmap aims to transform soil health and fertilizer use, driving sustainable agriculture, enhancing food security, and climate resilience. Its mission is to promote inclusive, climate-smart, and evidence-based soil and fertilizer management that empowers farmers and safeguards ecosystems. It focuses on five priority areas like policy and regulation, finance and investment, input supply and trade, research, innovation, and soil information systems, and institutional capacity-building, with a strong emphasis on youth and women.

A key focus is strengthening the National Soil Information System (NSIS). While foundational initiatives like EthioSIS have been launched, gaps in soil data and analytics still limit the delivery of targeted recommendations and suitable technologies, often leaving farmers with generalized advisories. Expanding the NSIS, establishing a national reference laboratory, and scaling digital tools are priorities to ensure data-driven, locally relevant solutions. The roadmap also supports Ethiopia's Digital Agriculture Roadmap (DAR) by providing critical soil health data, decision-support tools, and tailored advisory services, accelerating the country's digital agriculture ambitions.

By 2035, key targets include doubling land under sustainable soil management (from 5.8 to 12.5 million ha), expanding ISFM coverage to 60% of farmland, reclaiming 3 million hectares of acid soils, increasing rate of fertilizer application from 37.8 to at least 100 kg/ha, improving nitrogen use efficiency by 20%, raising soil organic carbon content, enhancing soil nutrient levels, and boosting cereal yields, for example, increasing teff yields from 1.8 to 2.7 t/ha and wheat yields from 3.9 to 4.9 t/ha.

Led by the Ministry of Agriculture's Natural Resource Development Sector and implemented through coordinated national partnerships, the roadmap is supported by a robust evaluation and learning system to ensure effective delivery. With a projected investment of USD 3.2 billion over the next 10 years of which USD 3 billion (93.75%) is allocated to establishing mineral fertilizer manufacturing through public-private partnerships, the Roadmap provides a strategic and nationally owned response to Ethiopia's soil health challenges. This ambitious investment initiative positions the country as a continental leader in sustainable agriculture, soil fertility management, and digital innovation.

1. Background and Context

Agriculture is the cornerstone of Ethiopia's economy, deeply embedded in its social and economic fabric. The agricultural sector, on average, contributed 31.8 % to the country's Gross Domestic Product (GDP) with an annual growth rate of 6.9 (MoPD,2023/24). It also provides employment for around 85% of the population, predominantly through small-holder farming (FAO, 2025). The agricultural sector is a major source of export earnings, accounting for about 60% of Ethiopia's foreign exchange. Key exports include coffee, oilseeds, pulses, and livestock products, with coffee being the largest foreign exchange earner.

Ethiopia is endowed with diverse natural resources such as agroecology, landscape configurations, soils, geomorphologies, water bodies, micro- and macro-fauna, animal biodiversity and precious minerals. It has well-differentiated wet and dry seasons, and diverse cultural and livelihood practices. Collectively, these offer diverse resources for agricultural development, which the country relies on heavily for its strategic growth.

Despite Ethiopia's vast soil resources and restoration efforts, persistent challenges such as nutrient depletion, land degradation, land fragmentation, soil acidity, alkalinity, sodicity, and organic matter loss hinder agricultural productivity and threaten the livelihoods of millions of people. These challenges are further aggravated by climate change, unsustainable land management practices and limited adoption of improved soil improvement technologies and innovations. While soil fertility management and soil health initiatives have been widely promoted, access to soil testing services with adequate standards remains inadequate, preventing farmers from making informed decisions about site-specific nutrient application and soil health management.

In many parts of the country, soil degradation and soil fertility depletion continue to threaten agricultural productivity and environmental health, as smallholder farmers struggle with limited access to balanced fertilization, integrated soil fertility management practices, and improved soil information services. Despite increased fertilizer consumption over the years in the country, fertilizer utilization efficiency for most cereal crops remains low and suboptimal, leading to increased costs of crop production, slow growth in crop yields and reducing the overall impact of agricultural investments on fertilizers.

Beyond soil-related constraints, systemic challenges also limit investment and implementation capacity. The country lacks standard operating procedures (SOPs) for soil analytics, input quality standards, regulations for private sector engagements and incentives, and implementation capacity for localized and soil problem-oriented extension services. For example, the country lacks a centralized reference soil laboratory that could ensure quality control and provide analytical services. Poor input supply chains and weak fertilizer distribution systems make the problem worse, preventing farmers from accessing fertilizers and other essential supplies.

These challenges are further aggravated by global upheavals, such as higher fertilizer prices resulting from the Russia-Ukraine war, which made it more difficult for smallholder farmers to secure the necessary inputs for soil improvement. Furthermore, poor coordination between research and extension services slows the adoption of soil health management technologies, hindering progress toward sustainable soil management. Limited involvement of the private sector in fertilizer and soil health innovations and input supply, along with inconsistent regulatory frameworks, restricts investment in this area.

By addressing these issues and leveraging available opportunities, Ethiopia can strengthen its soil health initiatives and achieve the long-term goals outlined in this National Fertilizer and Soil Health Roadmap.

Government and non-government actors in Ethiopia have been making efforts to reverse soil degradation focusing on a combination of physical and biological conservation practices. These measures include building soil and water conservation structures and implementation of integrated soil fertility management (ISFM) and sustainable land management practices, such as intercropping, crop rotation, and agroforestry. Community-led initiatives and engagement with local stakeholders are also crucial for successful land restoration efforts.

In May 2024, the Africa Fertilizer and Soil Health Summit was held in Nairobi, Kenya to address the critical issue of declining soil health and promote sustainable agricultural practices across the continent. The summit resulted in the adoption of several key documents, including the Nairobi Declaration, a 10-year Action Plan, and the Soil Initiative for Africa. These documents aim to guide African nations in developing policies and implementing programs to improve soil health and fertilizer efficiency, ultimately boosting agricultural productivity and food security.

Currently, many African countries are integrating the Action Plan into their national policies, strategies, and programs. This involves adapting the Action Plan to the specific context of each country, ensuring that it aligns with national development goals and priorities, and mobilizing resources and support for implementation. As part of this effort, the Natural Resources Development sector of the Federal Ministry of Agriculture of Ethiopia is developing its own road map.

2. Rationale and Purpose of the Roadmap

Ethiopia strongly supports regional and continental efforts to improve soil health and agricultural productivity. These include the following:

- The African Fertilizer and Soil Health (AFSH) Summit (2024) Nairobi Declaration which focuses on balanced fertilization, integrated soil fertility management promotes fertilizer value chains, and better access to quality fertilizers to improve farmers' lives.

- The Malabo Declaration (2014) which aims to transform agriculture to reduce hunger and poverty while improving food security and sustainable farming.

- The Abuja Declaration (2006) which emphasized increasing fertilizer use to boost soil productivity

- The AFSH Nairobi Declaration (2024) which promotes fertilizer value chains and integrated soil management to increase yields and improve farmers' lives.

Ethiopia's recognition and commitment to these declaration principles for fertilizer use and sustainable soil management are essential for long-term agricultural growth and food security. Ethiopia's participation in the Comprehensive Africa Agriculture Development Programme (CAADP) and support for the African Union's Agenda 2063 further demonstrates Ethiopia's commitment to building sustainable and resilient agricultural systems.

Given the country's participation in these initiatives and in response to increasing soil degradation, inefficient input use, and emerging climate-related challenges it is both timely

and necessary to develop a comprehensive National Fertilizer and Soil Health Roadmap. This roadmap is designed to translate regional and continental commitments into actionable national strategies. It provides a coordinated framework for enhancing fertilizer use efficiency, strengthening input supply and distribution systems, improving soil health monitoring, and addressing systemic challenges such as land degradation and climate change.

By implementing this roadmap, Ethiopia will be better positioned to sustainably manage its soil resources, improve agricultural productivity, strengthen resilience to climate impacts, and contribute to the broader goals of national development and continental transformation.

3. SWOT Analysis of Ethiopian Fertilizer and Soil health

Ethiopia's agricultural landscape is shaped by a complex interplay of systemic and soil resource-related bottlenecks that significantly influence soil health and agricultural productivity. Systemic bottlenecks encompass broader issues that affect the soil health and fertility as a whole, including governance, economic conditions, and institutional capacity. In contrast, soil resource-related bottlenecks are specific challenges that directly impact soil health, crop production and productivity.

Table 1 SWOT analysis for Ethiopian Soil Resources and Policy system

Strength	Weakness
• **Placement of Certain Policy Frameworks:** For example the Agricultural and Rural Development (ARD) policy, Soil Health and Fertility Improvement Strategy, Digital Agriculture Roadmap, Climate Resilient Green Economy (CRGE) strategy, Digital Land Registration Program, National Agricultural Finance Implementation Roadmap, and various flagship initiatives(Enset Flagship",10 in 10" flagship programs etc. • **Government Commitment in Establishing Agricultural and Affiliated Institutions:** For instance, MoA, ATI, EIAR and RARIs, ECPC, ABC, Ethiopian Agricultural Authority, etc. • **Global and Regional Collaboration:** Initiatives such as AFSH 24, SIA, and CAADP, SDG, etc. • **Soil Restoration:** Government-led initiatives, such as watershed management, the Green Legacy program, and land rehabilitation projects • **Availability of Generic Technologies:** Certain soil, water, and crop management technologies, including solutions for soil health improvement such as liming, composting, Vertisols management, bio-fertilizer, bio saline agriculture etc. • **Digital Soil Information Systems and Big Data:** Initiatives like EthioSIS, the National Soil Information System (NSIS), robust data infrastructure in the MoA ICT Tier-3 Data Center, and the AgriData Hub enable data-driven decision-making in soil health management. • **Progressive Use of Organic Fertilizers:** The increasing adoption of organic materials and biofertilizers • **Financial Support Mechanisms:** Government subsidies for fertilizers, and soil health projects (CALM, FSRP, PACT, RLLP)	• **Policy Gaps:** Delays in enacting key policies, such as the integrated land use policy, agricultural land management regulation, soil policy, digital finance policy, and the Fertilizer Quality Control Proclamation • **Limited Private Sector Engagement on Market Driven Soil Health and Fertility:** Weak input supply chain for soil health and fertility inputs (mineral fertilizers, organic fertilizers, lime, bio-fertilizers) • **Limited Institutional Capacity:** The dissolution of the Ethiopian Soil Resource Institute and weak regional soil testing facilities, lack of soil health problem-oriented extension service at grass root level (lack of Leading regular/periodical training, regular M&E etc.), lack of soil science graduate at BSc level in higher level education including ATVETs • **Weak Stakeholder Coordination:** Poor collaboration among government agencies, research institutions, and private sectors to support ISFM framework at all levels. • **Poor Private Sector Monitoring Mechanism:** Leading to Weak regulatory frameworks for soil health inputs. • **Limited Private Sector Incentives:** Insufficient tax breaks, import duties on equipment, poor market access, restricted land availability for production and limited incentives for organic input production • **Limited Funding for Soil Resource Management:** Absence of soil health fund • **Lack of a Reference Soil and Plant Analysis Laboratory:** poor capacity and inefficiency of the existing soil laboratories (MoA/BoAs, Research and universities) and lack of regional private soil laboratories. • **Inefficiency in Fertilizer Use and Application:** Blanket fertilizer application without adherence to the 5R principles (Right source, Right rate, Right time, Right place and Right management), absence of site-specific fertilizer use.

Strength	Weakness
• **Availability of Fertilizer (Phosphate & Potash) and Lime Resource**	• **High Dependence on Imported Inorganic Fertilizers:** The absence of locally produced fertilizer makes Ethiopia vulnerable to global market fluctuations. • **Poor Coordination between Research and Extension Services:** Weak linkages slow the dissemination of soil health management technologies. • **Inefficient Input Supply Chains:** Challenges in transportation, storage, distribution, and quality assurance limit farmers' access to essential fertilizers and other soil health inputs • **Limited capacity for Soil Reclamation:** Inconsistent input, technology and finance supply for reclamation of acid soils, saline/sodic soils and Vertisols management.
Opportunity	**Threats**
• **Commitment of IGAD to Establish Regional Center of Excellence for Soil Health Research:** This would enhance research, innovation, and capacity-building efforts. • **Development of a Continental Soil Information System (SIS):** This initiative enhances data integration and management. • **Strategic Partnerships with Regional and Global Organizations:** CGIAR, AGRA, IGAD, GIZ, AU-DARBE, and others • **Growing Interest of Financial Institutions**: For providing services such as Banks, Microfinance and Digital Financial Services • **Diverse Soil Types and Agroecology:** Support diverse agricultural production systems • **ICT Infrastructure:** Telecommunications and AI-driven analytics to improve soil health monitoring and decision-making • **Expansion of Agricultural Service Providers:** Platforms such as Lersha facilitate efficient input distribution	• **Climate Change and Natural Disasters:** Droughts, floods, Erratic rainfall, soil erosion, desertification and extreme weather conditions • **Macroeconomic Pressures:** Inflation, currency devaluation, and global economic fluctuations impact fertilizer import costs and soil fertility investments. • **Rising Fertilizer Prices:** Global cost impacts affordability and access for smallholder farmers. • **Declining International Support:** Shifting global priorities and nationalist policies reduce funding for Ethiopia's soil health programs. • **Cybersecurity:** Digital infrastructure vulnerabilities could compromise soil health data management.

4. Vision and Mission

Vision: By 2035, fertilizer use efficiency and soil health transformed for resilient agroecology and sustainable food systems

Mission Statement: To transform Ethiopia's agricultural productivity and sustainability by improving soil health and promoting efficient, equitable, and climate-smart use of fertilizers empowering farmers, protecting natural resources, and ensuring national food security.

Goal: Implementing the roadmap will help reverse soil degradation, increase fertilizer use and efficiency, speed up agricultural transformation, and improve food and nutrition security.

Overall strategy: Leveraging an enabling policy environment and multi-stakeholder partnerships to drive sustainable financing, research and development, market growth, and overall capacity for effective fertilizer and soil health management.

5. Expected Impacts:

- **Improved Fertilizer Access for all Regions:**

Strengthening the fertilizer supply chain will guarantee timely and affordable access to fertilizers and soil health inputs, especially in remote and underserved areas.

- **Enhanced Fertilizer use Efficiency:**

With the help of decision support tools and precision agriculture, fertilizer application will be optimized by using data-driven insights to apply the right amount of fertilizer which can improve crop yields, lower costs and minimizing waste and environmental impact.

- **Increased Agricultural Productivity:**

Efficient fertilizer application and sustainable soil health practices will result in higher crop yields, increasing farmers' incomes and ensuring better food availability.

- **Sustainable Funding and Investment:**

Continued government support, international partnerships, and private sector investment will ensure the long-term success and expansion of soil health and fertilizer programs.

- **Restored and Sustainable Soil Health:**

Promoting sustainable soil management practices will prevent further degradation, restore soil fertility, and maintain long-term productivity for agriculture.

- **Climate Resilience and Adaptation:**

Improved soil health will enhance water retention and crop resilience, helping farmers adapt to changing climate conditions and extreme weather events.

- **Enhanced Food Security:**

Improved fertilizer use, and soil health management will boost agricultural productivity, leading to a more stable and sustainable food supply.

- **Enhanced Climate-smart and Green Job opportunity:**

Increased demand for skilled labor in sustainable soil health and fertility management, and creation of green job opportunities for youth and women in rural and urban areas.

6. Theory of change

6.1. What Success Will Look Like in 10 Years

1) A national reference soil laboratory established
2) Mineral fertilizer manufacturing plant established
3) 45% of women and youth farmers/households benefit from soil health management
4) The national soil information system (NSIS) will be comprehensively enhanced
5) A standardized soil health and fertility assessment framework will be developed and implemented
6) Significant investment in sustainable soil health management practices through innovative practices and digital support tools will be achieved
7) Agricultural land under sustainable soil management practices will be expanded from the current 5,776,153 ha to 12,500,000 ha.
8) Agricultural land under ISFM practices will be increased from its current cover of 35% to 60%.
9) Integrated and scale-appropriate technology for Vertisols management expand ed from 979,470 ha in 2024 to 1.5 million ha
10) Soil acidity management and reclamation increases from 83,834 ha to 3 million ha
11) Fertilizer use increased from 37.8 kg/ha (World Bank in 2022) to 100 kg/ha
12) Soil organic carbon contents improved from 1.8% to 2.18 %
13) Nitrogen use efficiency improved by 20%
14) Increase in soil phosphorous content of agricultural soils from current average of 17.2 to 19 g/kg, and in soil potassium from 419.5 to 462.5 g/kg

15) Agronomic efficiency/Nitrogen use efficiency of major cereal crops increase by 20%
16) Increase cereal productivity (wheat from 3.9 to 4.9, maize from 4.2 to 5, barley from 2.5 to 3.2 and teff from 1.8 to 2.7 tone/ha)

6.2. Pathway to the Theory of Change for the NFSH Roadmap

IF Government of Ethiopia is committed to adopt the Key Priority Areas listed below;
AND IF national and international stakeholders play their respective roles significantly in implementation of the roadmap.
AND IF farmers are capacitated in evidence-based decision-making and appropriately implement improved soil health and fertility management practices,
THEN there will be improved soil health and fertility, ecosystem sustainability and resilience to ensure food and nutrition security for the nations.
Note: Baseline evidence data need to be verified and agreed to consider as benchmark using data from different sources (NSIS, CSS, MoA and RBoAs admin data).

7. Key Priority Areas (KPAs) of the roadmap

The Ethiopian Fertilizer and Soil Health Roadmap outlines strategic priority areas aimed at transforming the country's fertilizer and soil health management for sustainable agricultural productivity. Central to this roadmap are five key focus areas: strengthening the policy and legal environment to foster an enabling regulatory framework; enhancing finance and investment mechanisms to mobilize public and private sector resources; improving the fertilizer and soil amendment supply chain to ensure timely, affordable, and accessible inputs; advancing research, innovation, and soil information systems to generate and disseminate data-driven solutions; and bolstering capacity development and awareness raising to strengthen human and institutional capacities across all levels. These pillars collectively aim to create a resilient, inclusive, and sustainable soil health ecosystem that supports Ethiopia's food security and rural development goals.

Table 2 Key Priority Areas (KPA)

	KPA 1	KPA 2	KPA 3	KPA 4	KPA 5
Functions	**Policy and Legal Environment**	**Finance and Investment**	**Supply chain**	**Research, Innovation and Soil Information System (SIS)**	**Capacity Development and awareness raising**
Objective	Create national policy and regulatory frameworks	Establish innovative financing and sustained investment mechanisms	Ensure the accessibility and affordability of soil health and fertility inputs	Develop and implement evidence-based and context-specific soil health and fertility interventions	Strengthening the Institutional and Human Capacity for Sustainable Soil Health and Fertilizer Management
Outcomes	Improved Policy and legal environment	Increased and sustained FSH financial system	Improved availability, accessibility and affordability of FSH inputs	Enhanced efficiency, resilience, and sustainable use of soil health and fertility technologies and inputs	Enhanced Institutional, Human Capacity and Infrastructure
Output	1.1 Improved Policy Environment 1.2 Improved legal framework	2.1 Innovative financial resources secured 2.2 Innovative Investment in placed	3.1 Enhanced domestic production and distribution of FSH inputs 3.2 Enhanced continental fertilizer trade	4.1 Site-specific fertilizer and soil health recommendations developed, targeted to specific crops, soils, landscape and climate conditions 4.2 Agronomic use efficiency increased to an optimal level through ISFM, CSA and 5R approach 4.3 Comprehensive NSIS and sustainable soil management evidence enhanced 4.4 Soil and water management optimized across agricultural landscapes	5.1 Locally relevant soil health and fertilizer management technologies developed and promoted 5.2 National and regional networks for knowledge exchange established 5.3 Fertilizer and soil analytical services accessible for FSH analysis and scaling advisory services 5.4 National Fertilizer and Soil Health institutions established

8. Key Outcomes, Outputs and Actions

Outcome 8.1: Improved Policy and Legal Environment

Output 8.1.1: Improved Policy Environment

Action 8.1.1.1: Conduct comprehensive FSH policy reviews and prepare evidence-based policy briefs.

Action 8.1.1.2: Develop and enact soil protection act

Action 8.1.1.3: Develop and enact soil organic carbon strategy

Action 8.1.1.4: Revise and harmonize the Soil Health and Fertility Strategy to improve coherence and support market integration.

Action 8.1.1.5: Develop guidelines to promote viable commodity markets and encourage private-sector investment in fertilizer and soil-health services

Output 8.1.2: Improved Legal Framework

Action 8.1.2.1: Fast-track the enactment of the draft FSH input proclamation

Action 8.1.2.2: Design and implement fertilizer and soil health regulations and directives

Action 8.1.2.3: Adapt and apply ISO soil-quality standards to strengthen quality assurance systems

Outcome 8.2: Increased and Sustained FSH Financial System

Output 8.2.1: Innovative Financial Resources Secured

Action 8.2.1.1: Design and update the Ethiopian Fertilizer Financing Mechanism (EFFM)

Action 8.2.1.2: Establish a soil health research and innovation fund under EFFM

Output 8.2.2: Innovative Investment Mechanisms In Place

Action 8.2.2.1: Create innovative investment schemes (e.g., subsidies, incen tives)

Action 8.2.2.2: Promote gender- and youth-inclusive investments

Action 8.2.2.3: Facilitate private investment in low-carbon fertilizer, R&D, trade, and advisory services

Action 8.2.2.4: Implement de-risking strategies for farmer investments (e.g., insurance, credit, CSA)

Action 8.2.2.5: Upgrade local infrastructure to support smallholder and MSME-led organic fertilizer production and marketing

Activity 2.1.2.6 Establish mineral fertilizer manufacturing plant

Outcome 8.3: Improved Availability, Accessibility, and Affordability of FSH Inputs

Output 8.3.1: Enhanced Domestic Production and Distribution of FSH Inputs

Action 8.3.1.1: Map and analyze existing supply chains, and identify bottlenecks and mitigation measures

Action 8.3.1.2: Increase local production of organic inputs and soil amendments

Action 8.3.1.3: Initiate manufacturing of mineral fertilizers and green ammonia

Action 8.3.1.4: Establish mineral fertilizer manufacturing plant

Action 8.3.1.5: Enhance private sector engagement for improved and sustainable supply chain

Action 8.3.1.6: Incubate and strengthen youth and women MSMEs and other agrodealers (AOSS, Coops, CBOs, etc.) on the production and marketing of organic fertilizers and soil amendments

Output 8.3.2: Enhanced Continental Fertilizer Trade

Action 8.3.1.2.1: Leverage the African Continental Free Trade Agreement (AfCFTA) to benefit Ethiopian fertilizer trade

Action 3.1.2.2: Empower local producers to engage in continental fertilizer and soil health inputs export based on AfCFTA

Outcome 8. 4: Enhanced Efficiency, Resilience, and Sustainable Use of Soil Health and Fertility Technologies and Inputs

Output 8.4.1: Site-Specific Fertilizer and Soil Health Recommendations Developed

Action 8.4.1.1: Develop and validate standardized tools to assess soil fertility and health

Action 8.4.1.2: Synthesize and repackage site-, soil-, and crop-specific FSH applications

Action 8.4.1.3: Develop and update context-specific and climate-smart FSH digital advisory tools

Action 8.4.1.4: Develop agricultural soil pollution mitigation packages

Output 8.4.2: Agronomic Use Efficiency Increased

Action 8.4.2.1.: Upgrade and deploy packages for sustainable and optimized farming and cropping systems

Action 8.4.2.2: Promote 5R nutrient stewardship, ISFM, and CSA among smallholder farmers

Output 8.4.3: Comprehensive NSIS and Sustainable Soil Management Evidence Enhanced

Action 8.4.3.1: Conduct biophysical and socioeconomic baseline and endline surveys

Action 8.4.3.2: Harmonize legacy soil datasets using interoperability standards and update maps

Action 8.4.3.3: Conduct soil survey and mapping in selected woredas

Action 8.4.3.4: Develop a national soil spectral library

Action 8.4.3.5: Upgrade the spatial database with decision support systems

Action 8.4.3.6: Assess agricultural soil pollution comprehensively

Action 8.4.3.7: Assess agricultural soil erosion comprehensively

Action 8.4.3.8: Identify areas of high agricultural or ecological importance

Action 8.4.3.9: Develop standardized soil health monitoring framework and indicators

Action 8.4.3.10: Establish permanent soil monitoring sites in clusters and monitor indicators biannually

Action 8.4.3.11: Operationalize decision support tools at landscape and farm levels

Action 8.4.3.12: Upgrade EthioNSIS Geoportals with dynamic and interactive dashboards

Action 8.4.3.13: Enable custom MEL, reporting, and feedback tools

Output 4.1.4: Soil and Water Management Optimized

Action 4.1.4.1: Develop guidelines for land use planning and integrated soil and water conservation

Action 4.1.4.2: Promote integrated Vertisols management practices

Action 4.1.4.3: Promote preventive technologies for salt-affected soils

Action 4.1.4.4: Promote mitigation technologies for salt-affected soils

Action 4.1.4.5: Promote strategies for soil acidity prevention

Action 4.1.4.6: Implement integrated acid soil reclamation interventions

Action 4.1.4.7: Promote regenerative mechanization at small scale

Action 4.1.4.8: Update technical manuals and guidelines for FSH practices

Outcome 8.5: Enhanced Institutional, Human Capacity and Infrastructure

Output 8.5.1. Locally relevant soil health and fertilizer management technologies developed and promoted

Action 8.5.1.1: Strengthen regional and national agriculture research and education institutions

Action 8.5.1.2: Strengthen the national extension system and the private sector

Action 8.5.1.3: Review and upgrade tertiary training programs on soil and agronomy

Output 8.5.2 National and regional networks for knowledge exchange established

Action 8.5.2.1: Establish regional research and extension networks for the exchange of knowledge and technologies

Action 8.5.2.2: Establish and convene annual national FSH Conference

Output 8.5.3 Fertilizer and soil analytical services accessible for FSH analysis and scaling advisory services

Action 8.5.3.1: Re-innovate regional soil laboratories for FSH analysis

Action 8.5.3.2: Expand use of mobile soil testing laboratories (CARVAN)

Action 8.5.3.3: Establish public-private partnerships to foster FSH innovation

Output 8.5.4 National Fertilizer and Soil Health institutions established

Action 8.5.4.1: Establish a national FSH institute that coordinates and leads its mandates

Action 8.5.4.2: Establish a national reference soil laboratory that serve as a center of excellence for soil, plant, water and fertilizer analytic services

9. Implementation Framework

- The Natural Resource Development (NRD) sector of MOA will coordinate the implementation of the roadmap.

- The NRD sector will establish a Fertilizer and Soil Health Consortium for facilitating and coordinating partners and multiple sectors at national level.
- MOA's NRD sector will chair the consortium.
- The consortium will do fund raising and advocacy activities
- A national soil sector working group will be created and operationalized, bringing together multiple partners under the soil resources development executive to help implement the roadmap's action points.
- Monitoring, Evaluation, Accountability and Learning framework shall be developed
- The national soil sector working group will develop annual action plans to align with existing initiatives; these action plans shall be implemented in phases.

10. Stakeholder Engagement, Coordination and Governance Structure

Establish a National Steering Committee, regional coordination platforms, and private sector partnerships to align efforts and strengthen fertilizer and other soil health inputs supply chains.

1) **Capacity Building and Knowledge Transfer:**
   Train farmers, extension workers, and policymakers on the balanced use of fertilizers and sustainable soil management through targeted training programs and workshops.
2) **Digitalization and Data-Driven Decision Making**:
   Develop digital platforms and promote precision agriculture. Create a national soil health and fertilizer database to support informed decision-making.
3) **Research and Development (R&D):**
   Conduct soil health mapping, develop tailored fertilizer blends, and support research on alternative soil amendments to enhance sustainable fertility management.
4) **Strengthening Fertilizer Supply Chains**:
   Improve fertilizer distribution networks, encourage bulk purchasing through cooperatives, and support local production through investment incentives.
5) **Monitoring, Evaluation, and Feedback**:
   Establish a robust monitoring framework with key performance indicators, implement feedback mechanisms, and refine strategies based on data insights.
   - Monitoring implementation of planned activities against target
   - Monitoring impact of implemented activities against baseline
     - Establishing robust baseline
     - Evaluate the impact at regular time intervals (5 Years)
6) **Policy and Regulatory Framework:**
   Update existing policies, introduce sustainability incentives, and enforce regulations to ensure the quality of fertilizers and environmental safety.
7) **Regional Coordination and Continental Collaboration:**
   Coordinate with IGAD and align with the African Fertilizer and Soil Health Action Plan for knowledge sharing, funding, and policy support.

8) **Public Awareness and Advocacy:**
Launch national awareness campaigns and collaborate with media to promote best practices and showcase success stories in fertilizer use and soil health.

9) **Funding and Resource Mobilization:**
Secure financial support from donors, government agencies, and private investors, and leverage public-private partnerships for the sustainable implementation of soil health and fertilizer programs.

The effective implementation of Ethiopia's Fertilizer and Soil Health (FSH) Roadmap depends on strong, well-coordinated collaboration among government institutions, research organizations, the private sector, and development partners. The proposed governance structure outlines clear roles across all levels and acknowledges the vital contributions of development partners and an independent Think Tank in shaping policy, fostering innovation, and ensuring impact.

Table 3 Coordination and Governance

Governance Level	Lead / Core Institutions	Key Roles and Responsibilities
National Steering Committee	Ministry of Agriculture (MoA)-NR Sector (Chair) Ministry of Agriculture (MoA)-Input Sector (Secretary) Members: DGs of ATI, EIAR, RARIs, Heads of RboA	- Set national direction and policy oversight - Coordinate cross-sector strategies - Align with macroeconomic and agricultural plans
National Technical Committee	MoA – SRD Directorate (Chair), MoA – Input Directorate (Secretary) Members: Soil/NRM directorates of ATI, EIAR, RARIs, Universities	- Mobilize resources - Lead technical coordination - Develop annual work plans - Ensure quality control and standards in soil health actions - Coordinate multi-stakeholder implementation - Conduct bi-annual implementation reviews
Development Partners Advisory Group	AGRA, GIZ, FAO, DANIDA, Norway Emb., CGIAR Centers, World Bank, IFAD, NGOs, others	- Provide funding and technical assistance - Align donor programs with FSH priorities - Share international best practices and support capacity development
Thematic Working Groups	MoA, ATI, EIAR, Universities, ATVETs, MoILD (contributing to TWGs 4 & 5), Development Partners	- Generate tools, knowledge, and policy inputs - Strengthen soil & fertilizer testing services and quality control - Strengthen farmer services and institutional capacity - Integrate partner-funded pilots and tools
Regional Implementation	Regional Bureau of Agriculture Regional Research Institutes, Regional ATI transformation Centers	- Tailor roadmap to regional contexts - Coordinate district-level implementation - Report progress to national structures
Private Sector & Civil Society	Agro-dealers, MSMEs, Cooperatives, CBOs, Farmer Groups	- Produce and distribute inputs (organic/inorganic) - Provide advisory services and improve market access - Foster innovation and entrepreneurship
Monitoring, Evaluation & Learning	MoA M&E Unit, ATI, EIAR, Development Partners	- Monitor implementation and outcomes - Conduct short- and long-term evaluations - Generate evidence and feedback to adapt strategies

11. Monitoring, Evaluation, Learning and Adaptation (MELA) Framework

The Monitoring, Evaluation, Learning and Adaptation (MELA) framework forms a critical component of the Ethiopian Fertilizer and Soil Health (EFSH) Roadmap and Action Plan, which aims to transform the country's fertilizer and soil health systems into more efficient, sustainable, and inclusive sectors. To support this transformative agenda, the M&E framework provides a structured mechanism for tracking implementation across five strategic areas: policy and regulation, financing and investment, supply chains, research and innovation, institutional capacity, including governance.

The framework incorporates both process indicators, which track the execution of planned activities and outputs, and result indicators, which assess the effectiveness and broader outcomes of interventions. It is designed to enable continuous learning, accountability, and adaptive management, ensuring that all stakeholders remain aligned with national development goals and regional policy commitments.

Objectives

The objective of this MELA framework is to establish a coordinated, practical, and evidence-based system that:

- Measures progress against defined targets, ensuring timely and effective implementation of the Ethiopian Fertilizer and Soil Health Roadmap and Action Plan
- Monitors institutional and operational processes through clearly defined process indicators that reflect ongoing activities and stakeholder actions
- Assesses results and impacts, using outcome-level indicators to evaluate the effectiveness of interventions on soil health, fertilizer use efficiency, and agricultural productivity
- Supports adaptive learning and decision-making, enabling timely responses to emerging challenges and opportunities
- Ensures strategic alignment and accountability, in line with Ethiopia's national agricultural priorities and regional policy frameworks

Table 4 Monitoring, Evaluation, Learning and Adaptation Framework

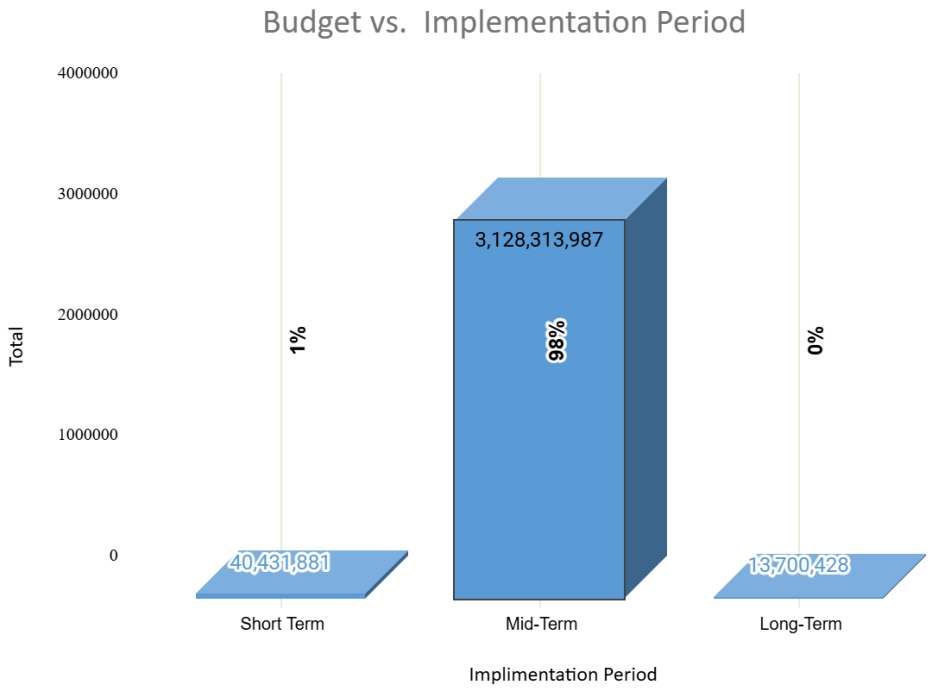
Strategic Area (KPA)	Key Outcome	Key Output Component	Process Indicators	Result Indicators	Data Sources	Lead Institutions	Timeframe
Policy & Regulation	Stronger national policies and enforcement	• Policy instruments reviewed and updated • Input regulation & enforcement	• No. of policy/law updates completed • No. of labs & compliance inspections conducted	•% alignment with continental/regional frameworks • % of inputs passing quality standards	ARD policy, legal gazette,	MoA Policy Directorate, ECAE, ATI, Agriculture Authority	2025–2028
Financing & Investment	Sustainable and inclusive investment	• Ethiopia fertilizer financing mechanism (EFFM) • Private-public investment initiatives	• EFFM established. • % of budget disbursed • No. of PPP schemes launched	•Amount of finance allocated • % increase in farm/SME finance access • Functional incentive mechanism in place • Increase in domestic fertilizer production capacity	MoF & MoA finance reports; Market data	MoA, MoF, Investment Commission, MoTRI	2025–2032
Supply Chain	Improved fertilizer access and affordability	• Strengthened domestic production & distribution networks • Enhanced regional fertilizer trade	• No. of producers/agro-dealers supported • No. of trade agreements signed, AfCFTA alignment	• % local fertilizer sourced/supplied • Volume/value of regional trade; price trends	MoA supply-chain data; Customs & trade reports	MoA, ABC, Cooperatives/unions/ agro-dealers, MoTRI	2025–2032

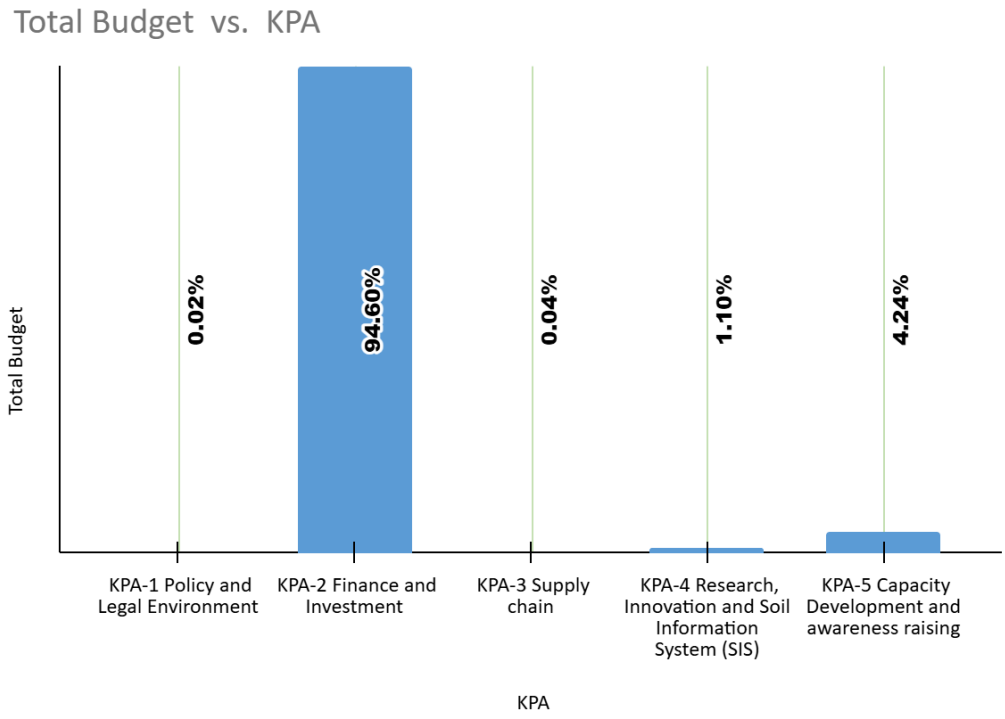
Strategic Area (KPA)	Key Outcome	Key Output Component	Process Indicators	Result Indicators	Data Sources	Lead Institutions	Timeframe
Research, Innovation & Soil information system	Efficient and sustainable fertilizer use	• Tailored recommendations & demo sites • Soil data systems & decision support • Soil & water management practices	• No. of ISFM/CSA packages developed • No. of dissemination tools developed	• % farmland under ISFM • % increase in N-use efficiency • % increase soil health metrics	MoA/NSIS, EIAR &RARIs Mini-datahub , MoA & RBoAs extension, ESS, Agriculture authority innovation registry, Satellite data	ATI, EIAR &RARIs, MoA & RBoAs, ESS	2025–2034
Capacity & Institutional Development	Strengthened human and institutional capacity	• Technology development & training • Expanded advisory services • National Soil Institute & Ref Soil Lab operational	• No. of innovations validated & training sessions held • No. of experts trained. No institutions established	• % uptake of new technologies • % farmers accessing advisory services • % soil labs service coverage	EIAR & RARI, Extension Records; institutional audits	EIAR &RARIs, ATI, Universities, MoA& RBoAs	2025–2032
Coordination & Governance	Effective multi-level governance and learning	• Functioning coordination committees & action plans • Active MEL system and stakeholder engagement	• No. of governance meetings held • Quality Action Plans; MEL framework established; reporting frequency	• % roadmap targets met • % roadmap revisions informed by MEL • Stakeholder satisfaction/alignment rate	Meeting minutes; MEL reports; feedback Reports	MoA NR Sector, ATI, EIAR, M&E Unit, Dev Partners	2025–2034

Table 5 Budget Summary By KPA and Output

KPA	Outcome	Output	10 Years Estimated Budget in USD
Policy and Legal Environment	Improved Policy and legal environment	Improved legal framework	200,726
		Improved Policy Environment	431,452
		Sub Total	**632,178**
Finance and Investment	Increased and sustained FSH financial system	Innovative financial resources secured	234,874
		Innovative Investment in placed	3,010,462,156
		Sub Total	**3,010,697,030**
Supply chain	Improved availability, accessibility and affordability of FSH inputs	Enhanced continental fertilizer trade	126,861
		Enhanced domestic production and distribution of FSH inputs	1,106,759
		Sub Total	**1,233,620**
Research, Innovation and Soil Information System (SIS)	Enhanced efficiency, resilience, and sustainable use of soil health and fertility technologies and inputs	Agronomic use efficiency increased to an optimal level through ISFM, CSA and 5R approach	7,390,708
		Comprehensive NSIS and sustainable soil management evidence enhanced	4,649,561
		Site-specific fertilizer and soil health recommendations developed, targeted to specific crops, soils, landscape and climate conditions.	7,428,065
		Soil and water management optimized across agricultural landscapes.	16,483,418
		Sub Total	**35,951,752**
Capacity Development and awareness raising	Enhanced Institutional, Human Capacity and Infrastructure	Fertilizer and soil analytical services accessible for FSH analysis and scaling advisory services	105,600,398
		Locally relevant soil health and fertilizer management technologies developed and promoted	744,093
		National and regional networks for knowledge exchange established	299,259
		National Fertilizer and Soil Health institutions established	28,179,022
		Sub Total	134,822,772
		Grand Total	**3,183,337,352**

Budget share by Implementation period




Total Budget vs. KPA
Total Budget
0.02%
94.60%
0.04%
1.10%
4.24%
KPA-1 Policy and Legal Environment
KPA-2 Finance and Investment
KPA-3 Supply chain
KPA-4 Research, Innovation and Soil Information System (SIS)
KPA-5 Capacity Development and awareness raising
KPA

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Annexes

Table 6 Activity Plan

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
KPA	**1**	**Policy and Legal Environment**													
Strategic Objective		**Create national policy and regulatory frameworks**													
Outcome	**1.1**	**Improved Policy and legal environment**													
Output	1.1.1	Improved Policy Environment													
Activity	1.1.1.1	Conduct comprehensive FSH policy reviews and prepare evidence-based policy briefs.	No of review-document produced	2	1					1					
Activity	1.1.1.2	Develop and enact soil protection act	No of policy doc developed and enacted	1				0.7	0.3						
Activity	1.1.1.3	Develop and enact soil organic carbon strategy	Number of developed strategy document	1		1									
Activity	1.1.1.4	Revise existing soil health and fertility strategy sectoral coherence and promote regional and continental trade	No of SHF strategy revised	1			1								
Activity	1.1.1.5	Develop guidelines to promote viable commodity markets and encourage private-sector investment in fertilizer and soil-health services	No of guideline developed	1		1									
Output	1.1.2	Improved legal framework													
Activity	1.1.2.1	Fast-track enactment of the draft FSH input proclamation	No of FSH input proclamation enacted		1	1									

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	1.1.2.2	Develop and implement Fertilizer and Soil Health Regulation and Directive	No of FSH regulation and directive developed and implemented		1		1								
Activity	1.1.2.3	Develop and enact soil organic carbon strategy	No of strategy developed		1		1								
Activity	1.1.2.4	Customize ISO soil quality standards	No of quality standard customized		2					1					1
KPA	**2**	**Finance and Investment**													
Strategic Objective		**Establish innovative financing and sustained investment mechanisms**													
Outcome	**2.1**	**Increased and sustained FSH financial system**													
Output	2.1.1	Innovative financial resources secured													
Activity	2.1.1.1	Develop and revise Ethiopian Fertilizer Financing Mechanism (EFFM)	No of EFFM documents developed and revised		2	1					1				
Activity	2.1.1.2	Establish a soil health fund for research and innovation under the EFFM.	National SH fund established		1		1								
Output	2.1.2	Innovative Investment in placed													
Activity	2.1.2.1	Develop innovative investment mechanisms (subsidy , incentives, etc)	No of innovative incentive mechanisms implemented		1	0.5	0.5								
Activity	2.1.2.2	Incentivize Gender and youth-centered investments	No of cooperatives/CBOs incentivized		100			25	50	25					
Activity	2.1.2.3	Incentivize enhanced private sector investments in low-carbon fertilizer production, R&D, trade and farmer advisory services	No of private sectors incentivized by type (low C fertilizer prod., R&D Trade, FAS)		5				1	3	2				

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	2.1.2.4	De-risk farmer investments in fertilizer and soil health (insurance, credit, CSA)	Percentage of farmers benefited from de-risking mechanisms		0.1				0.05		0.05				
Activity	2.1.2.5	Improve local infrastructure to incentivize smallholder farmers and MSMEs for organic fertilizer and soil amendments production and marketing	No of vermi-compost center established and maintained	372	40	8	8	8	8	8					
Activity	2.1.2.6	Establish mineral fertilizer manufacturing plant	No of manufacturing plant established		1					1					
KPA	**3**	**Supply chain**													
Strategic Objective		**Strengthen FSH Supply chain**													
Outcome	**3.1**	**Improved avaliablity, accessiblity and affordability of FSH inputs**													
Output	3.1.1	Enhanced domestic production and distribution of FSH inputs													
Activity	3.1.1.1	Map and analyze existing supply chains, and identify bottlenecks and mitigation measures	No of document produced		1			1							
Activity	3.1.1.2	Increase local production of organic inputs and soil amendments	%age of production increased	48.78MT	70			15			25			30	
Activity	3.1.1.3	Initiate manufacturing of mineral fertilizers and green ammonia	No of feasibility document prepared		1			1							
Activity	3.1.1.4	Enhance private sector engagement for improved and sustainable supply chain	No of private sectors engaged		200		50		50		50		50		
Activity	3.1.1.5	Incubate and strengthen youth and women MSMEs and other agro dealers (AOSS,	% of MSMEs and agro-dealers ventures engaged		20		5		5		5		5		

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
		Coops, CBOs, etc) on the production, marketing of organic fertilizers and soil amendments													
Output	3.1.2	Enhanced contientental fertilizer trade													
Activity	3.1.2.1	Leverage the African Continental Free Trade Agreement (AfCFTA), and benefit Ethiopian Fertilizer trade	Memmorandum of Agreement signed		1			1							
Activity	3.1.2.2	Empower local producers to engage on continental fertilizer and soil health inputs' export based up on AfCFTA	No of local producers participated		5				2		3				
KPA	**4**	**Research, Innovation and Soil Information System (SIS)**													
Strategic Objective		**Develop and implement evidence-based and context-specific soil health and fertility interventions**													
Outcome	**4.1**	**Enhanced efficiency, resilience, and sustainable use of soil health and fertility technologies and inputs**													
Output	4.1.1	Site-specific fertilizer and soil health recommendations developed, targeted to specific crops, soils, landscape and climate conditions.													
Activity	4.1.1.1	Develop and validate standardized tools to assess soil fertility and health (efficient fertilizer and water use, organic matter enhancement)	No of standardized FSH assessment tools developed and validated by type		3		1	2							
Activity	4.1.1.2	Synthesize and repackage site, soil and crop-specific FSH applications	No of FSH packages synthesized and updated		2		1				1				
Activity	4.1.1.3	Develop and update context-specific and climate-smart FSH digital advisory tools	No of digital advisory tools developed and updated		2			1					1		
Activity	4.1.1.4	Develop agricultural soil pollution mitigation packages	No of agricultural soil pollution mitigation packages developed		1			0.5	0.25	0.25					
Output	4.1.2	Agronomic use efficiency increased to an optimal level through ISFM, CSA and 5R approach													
Activity	4.1.2.1	Upgrade and deploy packages for sustainable and optimized farming and cropping systems	No of packages upgraded and updated		2		1					1			

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	4.1.2.2	Promote 5R nutrient stewardship, ISFM and CSA among smallholder farmers	Proportions (%) of smallholder farmers' adopted		85		5	10	10	10	10	10	10	10	10
Output	4.1.3	Comprehensive NSIS and sustainable soil management evidence enhanced													
Activity	4.1.3.1	Conduct a biophysical and socioeconomic baseline and endline survey for all FSH interventions	No of baseline survey conducted		2	1								1	
Activity	4.1.3.2	Harmonize legacy soil datasets using data interoperability standards, and update soil property and type maps at finer resolutions	No of soil map versions updated	1	2		1					1			
Activity	4.1.3.3	Conduct soil survey and mapping in selected woredas for evidence-based FSH interventions	No of Woredas surveyed and mapped		400		30	30	30	45	45	55	55	55	55
Activity	4.1.3.4	Develop a national soil spectral library for rapid estimation of FSH	No of soil spectral library developed		1		1								
Activity	4.1.3.5	Upgrade the spatial database coupled with a decision support system	No of spatial database coupled with DSS upgraded		1	1									
Activity	4.1.3.6	Conduct a comprhensive assessment on agricultural soil pollution	An assessment document produced		1		1								
Activity	4.1.3.7	Conduct a comprhensive assessment on agricultural soil erosion	An assessment document produced		1		1								
Activity	4.1.3.8	Identify areas of high agricultural or ecological importance and hotspot areas	No of map/atlas produced and updated at national level		2		1					1			
Activity	4.1.3.9	Develop a standardized soil health monitoring framework and indicators	No of SH monitoring frameworks and indicators developed		1			1							
Activity	4.1.3.10	Establish 18 permanent soil health monitoring sites across the country and bi-annual monitor the indicators	No of permanent SH monitoring sites established and monitored		5		1		1		1		1		1
Activity	4.1.3.11	Establish, operationalize and integrate analytical and decision support tools at landscape and farm levels	No of DST established and operationalized by type		2		1		1						

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	4.1.3.12	Upgrade EthioNSIS Geoportals with a dynamic and interactive dashboards	No of Geoportal with dashboard upgraded		1	0.5	0.25	0.25							
Activity	4.1.3.13	Enable custom monitoring, evaluation, learning (MEL), reporting and feedback framework and tools	No of MEL, reporting and feedback framework integrated in EhtioNSIS		2	1	1								
Output	4.1.4	Soil and water management optimized across agricultural landscapes.													
Activity	4.1.4.1	Develop guidelines for the implementation of appropriate land use planning and integrated soil and water conservation	No of integrated LUP & SWC guidelines developed and implemented		1		1								
Activity	4.1.4.2	Promote integrated Vertisols management technologies and practices	% of farmers adopted vertisol technologies and practices		85	5	5	10	10	10	10	10	10	10	5
Activity	4.1.4.3	Promote prevention of salt-affected soil technologiers and practices	% of farmers adopted salt affected soils technologies and practices		50	5	5	5	5	5	5	5	5	5	5
Activity	4.1.4.4	Promote salt-affected soils mitigations technologies and practices	Area (thousand Ha) rehablitated		2,000	100	100	200	200	300	300	200	200	200	200
Activity	4.1.4.5	Promote integrated soil acidity prevention strategies	% of farmers adopted acid soils prevention technologies and practices		85	5	5	10	10	10	10	10	10	10	5
Activity	4.1.4.6	Promote integrated acid soil reclamation interventions	Area (Million Ha) reclaimed	0.083	5	0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.8	0.8
Activity	4.1.4.7	Promote small scale regenerative mechanization practices	% of farmers adopted regenerative mechanization adopted		60				5	5	10	10	10	10	10
Activity	4.1.4.8	Update technical manuals and guidelines for FSH practices and approaches	No of FSH manuals and guidelines updated	1	1		1								
KPA	**5**	**Capacity Development and awareness raising**													
Strategic Objective		**Strengthening the Institutional and Human Capacity for Sustainable Soil Health and Fertilizer Management**													
Outcome	**5.1**	**Enhanced Institutional, Human Capacity and Infrastructure**													
Output	5.1.1	Locally relevant soil health and fertilizer management technologies developed and promoted													

Strategic Interventions/ Initiatives			Key Performance Indicator (KPI), Activity-based	Baseline 2025	10 year Target	Physical plan Targets									
						Short Term			Medium Term			Long Term			
						2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	5.1.1.1	Strengthen regional and national agriculture research and education institutions	No of experts trained		100		5	5	5	10	10	15	15	20	15
Activity	5.1.1.2	Strengthen the national extension system and the private sector	% of DAs trained in FSH ToT		100	20	20	20	20	20					
Activity	5.1.1.3	Review and upgrade tertiary training programs on soil and agronomy	No of tertiary training programs upgraded		10		5	5							
Output	5.1.2	National and regional networks for knowledge exchange established													
Activity	5.1.2.1	Establish regional research and extension networks for the exchange of knowledge and technologies	No of platform established		1	1									
Activity	5.1.2.2	Establish and convene annual national FSH Conference	No of NFSH conference conducted		9		1	1	1	1	1	1	1	1	1
Output	5.1.3	Fertilizer and soil analytical services accessible for FSH analysis and scaling advisory services													
Activity	5.1.3.1	Re-innovate regional soil laboratories for FSH analysis	No of soil labs re-innovated		16				8	8					
Activity	5.1.3.2	Exapand use of mobilie soil testing laboratories (CARVAN)	No of mobile testing labs introduced		12				6	6					
Activity	5.1.3.3	Establish public-private partnerships to foster FSH innovation	No of functional PPP established		10		2	3	3	2					
Output	5.1.4	National Fertilizer and Soil Health institutions established													
Activity	5.1.4.1	Establish a national FSH institute that coordinates and leads its mandates	No of NFSH institute established		1				1						
Activity	5.1.4.2	Establish a national reference soil laboratory that serve as a center of excellence for soil, plant, water and fertilizer analytic services	No of national reference soil lab established		1			1							

1. Budget Plan

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
KPA	**1**	**Policy and Legal Environment**												
Strategic Objective		**Create national policy and regulatory frameworks**												
Outcome	**1.1**	**Improved Policy and legal environment**												
Output	1.1.1	Improved Policy Environment												
Activity	1.1.1.1	Conduct comprehensive FSH policy reviews and prepare evidence-based policy briefs.	No of review-document produced	144,830	72,415	-	-	-	-	72,415	-	-	-	-
Activity	1.1.1.2	Develop and enact soil protection act	No of policy doc developed and enacted	85,711	-	-	-	59,998	25,713	-	-	-	-	-
Activity	1.1.1.3	Develop and enact soil organic carbon strategy	Number of developed strategy document	85,711	-	85,711	-	-	-	-	-	-	-	-
Activity	1.1.1.4	Revise existing soil health and fertility strategy sectoral coherence and promote regional and continental trade	No of SHF strategy revised	51,674	-	-	51,674	-	-	-	-	-	-	-
Activity	1.1.1.5	Develop guidelines to promote viable	No of guidline developed	63,526	-	63,526	-	-	-	-	-	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
		commodity markets and encourage private-sector investment in fertilizer and soil-health services												
Output	1.1.2	Improved legal framework												
Activity	1.1.2.1	Fast-track enactment of the draft FSH input proclamation	Workshop, Publication	31,007	31,007	-	-	-	-	-	-	-	-	-
Activity	1.1.2.2	Develop and implement Fertilizer and Soil Health Regulation and Directive	Workshop, Professional Fee, Publication	85,719	-	-	-	-	-	-	-	-	-	-
Activity	1.1.2.3	Develop and enact soil organic carbon strategy	Workshop, Professional Fee, Publication											
Activity	1.1.2.4	Customize ISO soil quality standards	Workshop, Short-term Training	84,000					42,000					42,000
KPA	**2**	**Finance and Investment**												
Strategic Objective		**Establish innovative financing and sustained investment mechanisms**												
Outcome	**2.1**	**Increased and sustained FSH financial system**												
Output	2.1.1	Innovative financial resources secured												
Activity	2.1.1.1	Develop and revise Ethiopian Fertilizer Financing Mechanism (EFFM)	Workshop, Publication, International Experience Sharing	162,459	81,230	-	-	-	-	81,230	-	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	2.1.1.2	Establish a soil health fund for research and innovation under the EFFM.	Workshop, Professional Fee, Publication, International Experience Sharing	72,415	-	72,415	-	-	-	-	-	-	-	-
Output	2.1.2	Innovative Investment in placed												
Activity	2.1.2.1	Develop innovative investement mechanisms (subsidy , incentives, etc)	Workshop, Professional Fee, Publication, International Experience Sharing	72,415	36,207	36,207	-	-	-	-	-	-	-	-
Activity	2.1.2.2	Incentivize Gender and youth-centered investments	Workshop, Short-term Training, Field supervision n/M&E, National Experience Sharing, FSH Inputs, Vertisols Mgt Technologies, Acid Soil Mgt Technologies, Irrigation Water Mgt Technologies	1,830,787	-	-	457,697	915,394	457,697	-	-	-	-	-
Activity	2.1.2.3	Incentivize enhanced private sector investments in low-carbon fertilizer production, R&D, trade and farmer advisory services	Workshop, Short-term Training, Field supervisions/M&E, National Experience Sharing	210,324	-	-	-	42,065	126,194	84,130	-	-	-	-
Activity	2.1.2.4	De-risk farmer investments in fertilizer and soil health (insurance, credit, CSA)	Workshop, Short-term Training Field supervision M&E, National Experience Sharing, International Experience Sharing, FSH Inputs, Vertisols Mgt Technologies, Acid Soil Mgt	5,150,130	-	-	-	2,575,065	-	2,575,065	-	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
			Technologies, Irrigation Water Mgt Technologies											
Activity	2.1.2.5	Improve local infrastructure to incentivize smallholder farmers and MSMEs for organic fertilizer and soil amendments production and marketing	Workshop, Short-term Training, Field supervision /M&E, National Experience Sharing, International Experience Sharing, Vermiculture Center Construction/maintenance, Storage Construction/maintenance	3,198,500	639,700	639,700	639,700	639,700	639,700	-	-	-	-	-
Activity	2.1.2.5-1	Establish mineral fertilizer manufacturing plant	Mineral fertilizer manufacturing establishment	3,000,000,000	-	-	-	-	3,000,000,000	-	-	-	-	-
KPA	**3**	**Supply chain**												
Strategic Objective		**Strengthen FSH suply chain**												
Outcome	**3.1**	**Improved availability, accessibility and affordability of FSH inputs**												
Output	3.1.1	Enhanced domestic production and distribution of FSH inputs												
Activity	3.1.1.1	Map and analyze existing supply chains, and identify bottlenecks and mitigation measures	Workshop, Publication, National Experience Sharing	65,519	-	-	65,519	-	-	-	-	-	-	-
Activity	3.1.1.2	Increase local production of organic inputs and soil amendments	Workshop, Short-term Training, Field supervision /M&E, National Experience Sharing	427,981	-	-	91,710	-	-	152,851	-	-	183,421	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	3.1.1.3	Initiate manufacturing of mineral fertilizers and green ammonia	Workshop, Short-term Training, Field supervision n/M&E, International Experience Sharing, Professional Fee, Consultancy, Publication	180,741	-	-	180,741	-	-	-	-	-	-	-
Activity	3.1.1.4	Enhance private sector engagement for improved and sustainable supply chain	Workshop, Short-term Training, Field supervision /M&E, National Experience Sharing, International Experience Sharing	184,259	-	46,065	-	46,065	-	46,065	-	46,065	-	-
Activity	3.1.1.5	Incubate and strengthen youth and women MSMEs and other agrodealers (AOSS, Coops, CBOs, etc) on the production, marketing of organic fertilizers and soil amendments	Workshop, Short-term Training, Field supervision n/M&E, National Experience Sharing, International Experience Sharing	248,259	-	62,065	-	62,065	-	62,065	-	62,065	-	-
Output	3.1.2	Enhanced continental fertilizer trade												
Activity	3.1.2.1	Leverage the African Continental Free Trade Agreement (AfCFTA), and benefit Ethiopian Fertilizer trade	Workshop, International Experience Sharing	29,556	-	-	29,556	-	-	-	-	-	-	-
Activity	3.1.2.2	Empower local producers to engage on continental fertilizer and soil health inputs'	Workshop, Short-term Training, Field supervision /M&E, National Experience	97,306	-	-	-	38,922	-	58,383	-	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
		export based up on AfCFTA	Sharing, International Experience Sharing											
KPA	**4**	**Research, Innovation and Soil Information System (SIS)**												
Strategic Objective		**Develop and implement evidence-based and context-specific soil health and fertility interventions**												
Outcome	**4.1**	**Enhanced efficiency, resilience, and sustainable use of soil health and fertility technologies and inputs**												
Output	4.1.1	Site-specific fertilizer and soil health recommendations developed, targeted to specific crops, soils, landscape and climate conditions.												
Activity	4.1.1.1	Develop and validate standardized tools to assess soil fertility and health (efficient fertilizer and water use, organic matter enhancement)	Workshop, Professional Fee, Short-term Training, National Experience Sharing, Field supervision /M&E, Publication, Field expermentation	6,364,037	-	2,121,346	4,242,691	-	-	-	-	-	-	-
Activity	4.1.1.2	Synthesize and repackage site, soil and crop-specific FSH applications	Workshop, Professional Fee, Short-term Training, National Experience Sharing, Field supervision /M&E, Publication, Consultancy, International Experience Sharing	539,722	-	269,861	-	-	-	269,861	-	-	-	-
Activity	4.1.1.3	Develop and update context-specific and climate-smart FSH digital advisory tools	Workshop, Professional Fee, Short-term Training, National Experience Sharing, Field supervision /M&E, Publication, Consultancy, International Experience Sharing	327,898	-	-	163,949	-	-	-	-	163,949	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	4.1.1.4	Develop agricultural soil pollution mitigation packages	Workshop, Professional Fee, Short-term Training, International Experience Sharing, Field experimentation											
Output	4.1.2	Agronomic use efficiency increased to an optimal level through ISFM, CSA and 5R approach												
Activity	4.1.2.1	Upgrade and deploy packages for sustainable and optimized farming and cropping systems	Workshop, Professional Fee, Short-term Training, National Experience Sharing Field supervision /M&E, Publication, Consultancy	378,417	-	189,208	-	-	-	-	189,208	-	-	-
Activity	4.1.2.2	Promote 5R nutrient stewardship, ISFM and CSA among smallholder farmers	Workshop, Short-term Training, National Experience Sharing, Field supervision /M&E, Soil sampling, Soil lab analysis, Publication, FSH Inputs, Vertisols Mgt Technologies, Acid Soil Mgt Technologies, Irrigation Water Mgt Technologies	6,948,292	-	408,723	817,446	817,446	817,446	817,446	817,446	817,446	817,446	817,446
Output	4.1.3	Comprehensive NSIS and sustainable soil management evidence enhanced												
Activity	4.1.3.1	Conduct a biophysical and socioeconomic baseline and endline survey for all FSH interventions	Workshop, Professional Fee, Consultancy, Short-term Training Field supervision /M&E, Soil sampling, Soil lab analysis, Publication	642,858	321,429	-	-	-	-	-	-	-	321,429	-
Activity	4.1.3.2	Harmonize legacy soil datasets using data interoperability standards, and	Workshop, Professional Fee, Short-term Training, International Experience Sharing, Publication	207,333	-	103,667	-	-	-	-	103,667	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
		update soil property and type maps at finer resolutions												
Activity	4.1.3.3	Conduct soil survey and mapping in selected woredas for evidence-based FSH interventions	Professional Fee, Consultancy, Short-term Training, International Experience Sharing, Field supervision /M&E, Soil sampling, Soil lab analysis, Publication, Human Resource, IT Infrastructure, Drone, Soil Survey Equipment	2,357,912	-	176,843	176,843	176,843	265,265	265,265	324,213	324,213	324,213	324,213
Activity	4.1.3.4	Develop a national soil spectral library for rapid estimation of FSH	Workshop, Professional Fee, Short-term Training, International Experience Sharing, Field supervison /M&E, Publication	155,148	-	155,148	-	-	-	-	-	-	-	-
Activity	4.1.3.5	Upgrade the spatial database coupled with a decision support system	Workshop, Professional Fee, Short-term Training, IT Infrastructure	138,852	138,852	-	-	-	-	-	-	-	-	-
Activity	4.1.3.6	Conduct a comprehensive assessment on agricultural soil pollution	Workshop, Professional Fee, Consultancy, International Experience Sharing, Publication, Field supervison/M&E											
Activity	4.1.3.7	Conduct a comprehensive assessment on agricultural soil erosion	Workshop, Professional Fee, Consultancy, International Experience Sharing, Publication, Field supervison/M&E											

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	4.1.3.8	Identify areas of high agricultural or ecological importance and hotspot areas	Workshop, Professional Fee, Short-term Training, International Experience Sharing, Field supervison/M&E, Publication	77,580	-	38,790	-	-	-	-	38,790	-	-	-
Activity	4.1.3.9	Develop a standardized soil health monitoring framework and indicators	Workshop, Professional Fee, Consultancy, Short-term Training, National Experience Sharing, International Experience Sharing, Field supervision/M&E, Publication	160,176	-	-	160,176	-	-	-	-	-	-	-
Activity	4.1.3.10	Establish 18 permanent soil health monitoring sites across the country and bi-annual monitor the indicators	Workshop, Short-term Training, Field supervision/M&E, Soil sampling, Publication	108,849	-	21,770	-	21,770	-	21,770	-	21,770	-	21,770
Activity	4.1.3.11	Establish, operationalize and integrate analytical and decision support tools at landscape and farm levels	Workshop, Professional Fee, Short-term Training, National Experience Sharing, International Experience Sharing, Field supervision /M&E, Publication, IT Infrastructure	157,389	-	78,694	-	78,694	-	-	-	-	-	-
Activity	4.1.3.12	Upgrade EthioNSIS Geoportals with a dynamic and interactive dashboards	Workshop, Professional Fee, Short-term Training, Mid-term Training, International Experience Sharing, IT Infrastructure, Publication	284,593	142,296	71,148	71,148	-	-	-	-	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	4.1.3.13	Enable custom monitoring, evaluation, learning (MEL), reporting and feedback framework and tools	Workshop, Professional Fee, Consultancy, Short-term Training, Publication	141,630	70,815	70,815	-	-	-	-	-	-	-	-
Output	4.1.4	Soil and water management optimized across agricultural landscapes.												
Activity	4.1.4.1	Develop guidelines for the implementation of appropriate land use planning and integrated soil and water conservation	Workshop, Professional Fee, Short-term Training, International Experience Sharing, Publication	134,926	-	134,926	-	-	-	-	-	-	-	-
Activity	4.1.4.2	Promote integrated Vertisols management technologies and practices	Short-term Training, Workshop, International Experience Sharing, National Experience Sharing, Publication, Professional Fee, Vertisols Mgt Technologies	1,237,037	72,767	72,767	145,534	145,534	145,534	145,534	145,534	145,534	145,534	72,767
Activity	4.1.4.3	Promote prevention of salt-affected soil technologies and practices	Workshop, Mid-term Training, National Experience Sharing, International Experience Sharing, Field supervision /M&E, Soil sampling, Soil lab analysis, Publication, Irrigation Water Mgt Technologies	361,824	36,182	36,182	36,182	36,182	36,182	36,182	36,182	36,182	36,182	36,182

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	4.1.4.4	Promote salt-affected soils mitigations technologies and practices	Workshop, Short-term Training, National Experience Sharing, International Experience Sharing, Field supervision n/M&E, Soil sampling, Soil lab analysis, Publication, Irrigation Water Mgt Technologies, FSH Inputs	2,296,219	114,811	114,811	229,622	229,622	344,433	344,433	229,622	229,622	229,622	229,622
Activity	4.1.4.5	Promote integrated soil acidity prevention strategies	Workshop, Mid-term Training, National Experience Sharing, International Experience Sharing, Field supervision /M&E, Soil sampling, Soil lab analysis, Publication, FSH Inputs		-	-	-	-	-	-	-	-	-	-
Activity	4.1.4.6	Promote integrated acid soil reclamation interventions	Workshop, Mid-term Training, National Experience Sharing, International Experience Sharing, Field supervision /M&E, Soil sampling, Soil lab analysis, Publication, FSH Inputs, Acid Soil Mgt Technologies	11,387,694	683,262	683,262	683,262	1,138,769	1,138,769	1,138,769	1,138,769	1,138,769	1,822,031	1,822,031
Activity	4.1.4.7	Promote small scale regenerative mechanization practices	Workshop, Mid-term Training, National Experience Sharing, International Experience Sharing, Field supervision /M&E, Soil sampling,	379,320	-	-	-	31,610	31,610	63,220	63,220	63,220	63,220	63,220

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
			Soil lab analysis, Publication, Small Scale Mechanization machinery											
Activity	4.1.4.8	Update technical manuals and guidelines for FSH practices and approaches	Workshop, Professional Fee, Short-term Training, Publication	230,926	-	230,926	-	-	-	-	-	-	-	-
KPA	**5**	**Capacity Development and awareness raising**												
Strategic Objective		**Strengthening the Institutional and Human Capacity for Sustainable Soil Health and Fertilizer Management**												
Outcome	**5.1**	**Enhanced Institutional, Human Capacity and Infrastructure**												
Output	5.1.1	Locally relevant soil health and fertilizer management technologies developed and promoted												
Activity	5.1.1.1	Strengthen regional and national agriculture research and education institutions	Mid-term Training, Long-term Training, International Experience Sharing, Publication, FSH Inputs	296,296	-	14,815	14,815	14,815	29,630	29,630	44,444	44,444	59,259	44,444
Activity	5.1.1.2	Strengthen the national extension system and the private sector	Short-term Training, Workshop, National Experience Sharing, Field supervision/M&E, Professional Fee, Consultancy	367,981	73,596	73,596	73,596	73,596	73,596	-	-	-	-	-
Activity	5.1.1.3	Review and upgrade tertiary training programs on soil and agronomy	Workshop, Professional Fee, International Experience Sharing, Publication	79,815	-	39,907	39,907	-	-	-	-	-	-	-
Output	5.1.2	National and regional networks for knowledge exchange established												

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	5.1.2.1	Establish regional research and extension networks for the exchange of knowledge and technologies	Workshop, Publication, Professional Fee, IT Infrastructure	299,259	299,259	-	-	-	-	-	-	-	-	-
Activity	5.1.2.2	Establish and convene annual national FSH Conference	Workshop, Publication, Professional Fee	-	-	-	-	-	-	-	-	-	-	-
Output	5.1.3	Fertilizer and soil analytical services accessible for FSH analysis and scaling advisory services												
Activity	5.1.3.1	Re-innovate regional soil laboratories for FSH analysis	Workshop, Professional Fee, Consultancy, Short-term Training, Mid-term Training, National Experience Sharing, International Experience Sharing, Field supervision/M&E, Soil lab equipment	105,123,594	-	-	-	52,561,797	52,561,797	-	-	-	-	-
Activity	5.1.3.2	Expand use of mobile soil testing laboratories (CARVAN)	Workshop, Short-term Training, Consultancy, Mobile soil testing	369,137	-	-	-	184,568	184,568	-	-	-	-	-
Activity	5.1.3.3	Establish public-private partnerships to foster FSH innovation	Workshop, International Experience Sharing, National Experience Sharing, Short-term Training, Publication	107,667	-	21,533	32,300	32,300	21,533	-	-	-	-	-
Output	5.1.4	National Fertilizer and Soil Health institutions established												
Activity	5.1.4.1	Establish a national FSH institute that coordinates and leads its mandates	NFSH institute establishment	5,185,185	-	-	-	5,185,185	-	-	-	-	-	-

Strategic Interventions/ Initiatives			Cost drivers	10 Year Budget USD	Estimated Budget (USD)									
					Short Term			Medium Term			Long Term			
					2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Activity	5.1.4.2	Establish a national reference soil laboratory that serves as a center of excellence for soil, plant, water and fertilizer analytic services	Reference Soil lab establishment	22,993,837	-	-	22,993,837	-	-	-	-	-	-	-

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