



National Circular Economy Roadmap of Ethiopia



July 2025

Clean Energy Circular Economy through Sector

National Circular Economy Roadmap of Ethiopia

July 2025

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Acronyms

7Rs	Refuse, Rethink, Reduce, Reuse, Repair, Refurbish, Remanufacture, Repurpose, Recycle and Recover (full scope of Circular Economy)
AACMA	Addis Ababa Cleansing Management Agency
ACEA	African Circular Economy Alliance
AfDB	African Development Bank
CE	Circular Economy
ACEN	Africa Circular economy network
CRGE	Climate Resilient Green Economy
EPA	Environmental Protection Authority
EPR	Extended Producers Responsibility
EU	European Union
GIZ	German Agency for International Cooperation (Gesellschaft für Internationale Zusammenarbeit)
GoE	Government of Ethiopia
IP	Intellectual property
IPDC	Industrial Parks Development Corporation
ISWM	Integrated Solid Waste Management
MoA	Ministry of Agriculture
NatuReS	Natural Resources Stewardship Program
PET	Polyethylene terephthalate
PIF	Policy and Investment Framework
PPP	Public Private Partnership
PSI	Policy Studies Institute
R&D	Research and Development
SME	Small and medium enterprise
SWOT	Strengths, Weaknesses, Opportunities and Threats
TVET	Technical and Vocational education and Training
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNIDO	United Nations Industrial Development Organization
NDC	Nationally Determined Contribution
UNFCCC	United Nations Framework Convention on Climate Change
GCF	Global Climate Finance
GEF	Global Environmental Funds
GGGI	Global Green Growth Institute
MoA	Ministry of Agriculture
EFD	Ethiopian Forestry Development
ATA	Agricultural Transformation Agency
EIAR	Ethiopian Institute of Agricultural Research
EFDA	Ethiopia Food & Drug Administration
FeSMMIDA	Federal Small and Medium Manufacturing Industry Development Agency
MFIs	Microfinance institutions
MoPD	Ministry of Planning and Development
BETIN	Bio and Emerging Technology Institute of Ethiopia

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We also extend our thanks to the ACEN Foundation for their expert technical assistance, knowledge sharing and dedication, which significantly contributed to the quality and strategic direction of this document.

Finally, we recognize and appreciate the contributions of numerous other governmental organizations, private sector, academic and research institutions, civil society organizations and individual experts who participated in consultations, provided valuable insights and shared their expertise. We are deeply grateful for the collaborative spirit and dedication of all contributors in the development of the National Circular Economy Roadmap, which we believe will be instrumental in guiding Ethiopia to transition towards a resource-efficient future.



H.E. ENGINEER LELISE NEME
Director General, Environmental Protection Authority (EPA)

Foreword

Dear Esteemed Colleagues, Partners and Stakeholders

This document marks a pivotal step in our nation's journey towards a resource-efficient and resilient future. In the face of growing environmental challenges and the imperative to achieve sustainable economic growth, the transition to a circular economy is no longer an option, but a necessity.

Ethiopia is committed towards environmental sustainability and resource efficiency. The Ethiopian Green Legacy Initiative, championed by H.E. Prime Minister Abiy Ahmed, is a nationwide reforestation and environmental conservation attempt aimed at combating deforestation, restoring degraded lands, and enhancing climate resilience. Complementing this, the Clean Ethiopia Initiative, organized by the EPA, focuses on tackling the pressing issues of waste and pollution reduction across the country. This initiative aligns strategically with the national circular economy roadmap developed by the EPA, which seeks to foster a sustainable economic system by promoting resource efficiency, minimizing waste generation, and encouraging the reuse and recycling of materials, thereby creating a cleaner and greener Ethiopia for future generations.

This roadmap outlines a strategic framework to transition from a linear "Take-Make-Dispose" model to a circular system that prioritizes resource efficiency, waste reduction, and the regeneration of natural resources. This roadmap is a testament to our commitment to building a green and prosperous Ethiopia, one that safeguards our environment while fostering inclusive economic growth. It identifies key sectors for intervention, including Agriculture, Manufacturing, and Construction; it outlines actionable strategies to promote circular practices, such as:

- Encouraging eco-design, promoting responsible procurement, and fostering consumer awareness.
- Investing in waste management infrastructure, promoting recycling and composting, and exploring innovative resource recovery technologies.

- Encouraging producers to take responsibility for the lifecycle of their products.
- Developing policies incentivizing circular practices and discouraging linear models.
- Supporting research and development, and building the capacity of businesses and communities to implement circular solutions.

The document will be regularly reviewed and updated to reflect evolving circumstances and emerging opportunities. We encourage all stakeholders to actively participate in the implementation of this roadmap and contribute to the realization of our shared vision of a circular Ethiopia.

With Sincere Regards

A handwritten signature in black ink, appearing to be 'Lelise Neme', written in a cursive style.

H.E. ENGINEER LELISE NEME
Director General, Environmental
Protection Authority (EPA)

Executive Summary

A Circular Economy holds great potential for accelerating a resilient economic transformation by improving resource efficiency, advancing environmental sustainability, and fostering social fairness. This National Circular Economy Roadmap for Ethiopia seeks to provide a strategic framework that steers the country from linear extraction and production patterns to a circular economy. It aims for a more resilient and sustainable future, while tackling pertinent challenges such as unemployment, and seizing new opportunities for creating wealth and social wellbeing. This roadmap thereby aligns with Ethiopia's national and international development goals, such as the Climate Resilient Green Economy 2030, the Paris Agreement on Climate Change, the Sustainable Development Goals and the National Development Plan.

Objective and Methodology

The objective of this roadmap is to provide a foundation to create a cohesive policy environment that encourages circular economy initiatives through regulations, incentives, and support mechanism across sectors, stakeholders and existing systems. It can serve as a planning document for stakeholder engagement, financing and the implementation process. It also intends to contribute to fostering and harmonizing collective and individual efforts and partnerships to maximize impact.

To achieve this objective, this Circular Economy roadmap identified and prioritized sectors of Ethiopia's economy that have relatively high potential for facilitating the Circular economy transition. The sectors assessment was based on the sectors' current contribution to the national gross domestic product (GDP); job creation and entrepreneurship opportunities; economic resilience and diversification; existing enabling policy frameworks, Multilateral Environmental Agreements (MEAs) and commitments to Circular Economy; and the overall contribution to the national sustainable development target.

For each of the identified priority sectors, this roadmap formulates sector-specific goals and action plans. These goals and action plans cover sub-action plans, targets for monitoring and evaluating progress of the transition, potential implementing partners, and a timeline of implementing identified actions. This aims to serve as a baseline for designing cross-cutting and integrated systems that can stimulate innovation by encouraging stakeholders to innovate

products designs and businesses, foster new market opportunities, create new jobs opportunities and generate wealth.

The goals were developed by consulting a team of both national and international experts, as well as the National Steering Committee, (NSC) which is composed of technical experts from relevant line ministries of the priority sectors and further stakeholders, and chaired by the Environmental Protection Authority. The team met for a series of in person and virtual NSC workshops to deliberate on the progress made and provide technical inputs. A final technical validation workshop was also held.



Figure 1: A validation Workshop Photo (Source: EPA, 2025)

To facilitate the transition from theory into practice, the EPA and other line ministries and their agencies have been equipped with key skills like, “How to develop bankable projects”, through a dedicated training session, addressing their capacity needs.

In short, this Roadmap comprises the following parts:

1. Goals and actions per priority sector, horizontal sector and enabling elements (Chapter 4)
2. Financial resource mobilization for actions (Chapter 5)
3. Governance and Role (Chapter 6)

4. Implementation Plan (Chapter 7)

5. Monitoring and Evaluation (Chapter 8)

The figure below visualizes the identified priority sectors as well as horizontal/cross cutting sectors, and the enabling elements for developing the goals and action plans.

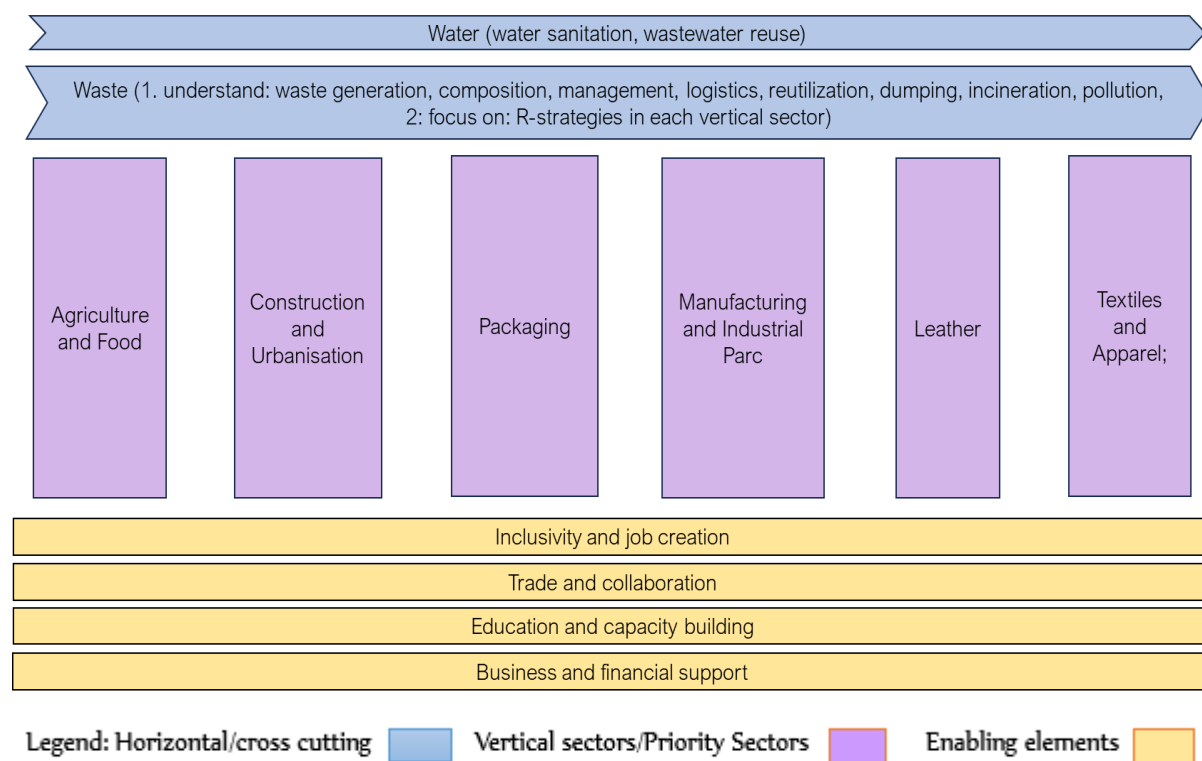


Figure 2: Overview of structure and Scoping of Sectors (Source: Author, 2025)

The following tables present the developed goals for both the horizontal and vertical sectors.

Table 1: Horizontal Sectors Goals

Waste	Water
Establish a solid policy, legal and enforcement framework for waste management on the national level	Establish a supportive regulatory and framework to enable sustainable water management and resource utilization.
Improve waste management and treatment infrastructure enabling circulation of material streams	Build capacity in wastewater management.
Integrate the informal sector into the waste management and recycling system, and offer support	Establish a financing framework to enable sustainable water resource utilization

for the transition (in an inclusive way while not hindering important bottom-up activities).	
Establish mechanisms to motivate stakeholders in contributing to efficiency and sustainability of the waste management and recycling sector.	

Table 2: Vertical Sectors

Agriculture and Food	Construction and Urbanization	Packaging	Manufacturing and Industrial parks	Leather	Textile and Apparel
Enhance the policy and regulatory framework in favor of circular economy in agriculture, good and forestry.	Establish a solid policy and legal framework that favors circularity as key principled in the construction sector	Develop incentive mechanisms to promote sustainable packaging and ultimately the reduction of plastic pollution.	Establish a supportive regulatory and financial framework to enable sustainable manufacturing (coherence)	Enhance Resource Efficiency and Cleaner Production (RECP)	Enhance resource efficiency and sustainability within the textiles and apparel industry
Strengthen the valorization of agro-waste.	Promote Circularity as an important academic, cultural, economic theme through revitalizing and encouraging Education, Research, and Innovation.	Promote low-impact production and considerate use of plastics.	Enhance capacity building and education initiatives to unlock circular economy potentials	Promote sustainable sourcing and production	Promote Sustainable Product Design
Support sustainable agricultural products and	Promote and stimulate the use of secondary,	Strengthen collaboration and partnerships	Encourage the development of public-private	Foster Innovation and	Achieve Zero Waste in production across the

circular food systems and supply chains.	sustainable and renewable materials as well as circular construction techniques.	amongst stakeholders to enable plastic packaging recycling.	partnerships (PPPs) to advance sustainable manufacturing practices	technology transfer	manufacturing lines and within industry parks
Promote the Bio economy to foster (economic) sustainability and resilience.	Plan urbanization and urban development in a way that considers circularity and sustainability criteria as well as tackled the urgent needs for affordable housing				Promote local Sustainable cotton production.

The following table presents the identified elements that contribute to enabling the transition to a circular economy in Ethiopia.

Table 3: Enabling Elements

Inclusivity and job creation	Trade and collaboration	Education and capacity building	Business and finance support
Facilitate the integration of informal waste collectors into the formal waste management system	Facilitate Industrial Symbioses	Enhance capacity for circular economy skills through CE-dedicated university and TVET curricula	Facilitate dialogues and visibility to promote and develop circular business models.
Facilitate the integration of integrating women and youth into the economy, in particular in circular activities.	Establish and protect regional markets on secondary raw materials and sustainable materials	Increase public awareness for CE	Explore new national financing mechanisms to support the funding of this roadmap.

Align green/circular jobs with National Development Strategy and NDC.	Ensure access to global markets.	Support tailored research and innovation for CE	Build capacity to develop bankable projects.
	Protecting the national and regional secondary / sustainable material market		Help linear businesses to transition to more circularity
			Increase the capacity and product offer of financial service providers

The implementation of the above introduced Goals and action plans in the roadmap requires a strategic and thorough approach to mobilize the necessary resources from internal and external resources. An essential element in the next implementation phases is the costing of the actions to make informed and concrete requests to selected financial sources and providers. Given the fact that the competition around financial resources are very high and thus their availability is rather limited, the importance of co-financing is becoming more relevant. Hence, a detailed resource mobilization strategy for addressing the financing is needed. This can focus on three major aspects, i.e. infrastructure investment, business and entrepreneurship development and capacity building.

This roadmap suggests to implement a multi-stakeholder governance model, consisting of four parallel structures: High level Inter-ministerial council, Technical Advisory Council (TAC), Multi stakeholder advisory council and Resource mobilization team. These four pillars can be implemented in parallel under an umbrella inter-ministerial council.

This report has further specified the possible roles and responsibilities of government / state actors and non-state actors as co-implementers, including non-governmental organizations (NGOs), private companies, and cooperatives. A governance model based on co-implementation suggests ensuring coordinated efforts, stakeholder engagement, and defined responsibility to strengthen leadership, ownership and accountability of the implementing partners.

In conclusion, the Ethiopian Circular Economy Roadmap provides a template for the delivery of a just and inclusive circular transition, starting with the identified priority sectors and beyond. This roadmap can be used as a living document to mainstream Circular economy into other emerging sectors and mobilize resources both from domestic and international sources.

1. INTRODUCTION

The Government of Ethiopia aims to build a carbon neutral and climate resilient middle-income economy by 2025. To achieve this, it is planned to implement sector-specific climate-resilience strategies and action plans for agriculture and forestry, water and energy, transport, industry, waste, and the construction sector.

One approach to achieving this goal is to implement a more circular economy. A circular economy can stimulate innovation in sustainable technologies and practices, and its implementation could position Ethiopia as a regional leader in green technology. Its implementation aims to tackle pertinent challenges such as unemployment, the increasing vulnerability to climate impacts, like recurrent droughts and floods or decreasing productivity of agricultural lands, leading to food insecurity, and decreasing quality and quantity of groundwater resources. Furthermore, by promoting local sourcing of alternative materials, and recycling of end-of-life materials, Ethiopia can reduce its dependency on imported raw materials for manufacturing goods and services, and, thereby, enhance its economic resilience. This also promotes sustainable Natural Resource Management and conservation of vital ecosystems. Hence, the transition to a circular economy could seize new opportunities for creating wealth and social wellbeing. It can help Ethiopia to implement solutions regenerating its natural capital, mitigating greenhouse gas emissions (GHG), and adapting to climate change.

Ethiopia requires USD 316 billion (Mitigation 87% and Adaptation 13%) by 2030 to implement its NDC. The Climate Resilient Green Economy Facility, hosted by the Ministry of Finance, serves as a government entity to coordinate and mobilize the required climate finance with technical support from the Ministry of Planning and Development, the Environmental Protection Authority, and other relevant line ministries and development partners, like UNDP, World Bank Group, FSD Ethiopia and Global Green Growth Institute. Integrating and aligning the action plan proposed in this Circular Economy Roadmap into the financing and planning of the NDCs can significantly enhance sustainability and resilience against climate change. It can also be used as a tool to attract innovative financing instruments and investments like Green Bonds, Carbon Credits, Debt for Nature swaps (e.g. Payment for Ecosystem services, Extended Producer Responsibility schemes, green tax), accessing bilateral and multilateral and

funds global climate finance (GCF) and Global environmental funds (GEF) as well as creating platform for attracting and engaging private sectors in climate finance.

Purpose of national Circular Economy Roadmaps (Including their present and future impacts and benefits)

The purpose of this National Circular Economy Roadmap is to serve as a guiding framework to facilitate the transition from linear extraction and production patterns to a circular economy. The roadmap aims to tap into the potential of improving resource efficiency, advancing environmental sustainability, and fostering social fairness, while aligning with Ethiopia's national and international development goals, such as the Paris Agreement on Climate Change, the Sustainable Development Goals (SDGs) and the National Development Plan.

This roadmap provides a foundation to create a cohesive policy environment that encourages circular economy initiatives through regulations, incentives, and support mechanism across sectors, stakeholders and existing systems. It will serve as a planning document for stakeholder engagement, the financing and implementation process. It also intends to contribute to fostering and harmonizing collective and individual efforts and partnerships to maximize impact.

Since a Circular Economy is a crosscutting system, its successful design and implementation requires a multi stakeholder approach. Hence, the national roadmap aims to develop clear goals and action plans to help identify areas of synergies and collaboration between business, public and government entities, academia, and the general society. For example, a strategic public-private partnership could leverage the legal and financial incentives schemes provided by the government to collaborate with the private sector companies adopting circular economy principles, thereby enhancing their brand reputation and attract environmentally conscious consumers and in the long run contributing to a resilient economy.

1.1. Scoping the Circular Economy Roadmap

1.1.1. Circular Economy

Circular economy is understood as an alternative model to the current unsustainable linear economy, which follows the take-make-waste approach. The desired circular system ideally produces neither waste nor pollution by circulating materials and products at their highest

quality within the production system and, if possible, feeding materials back into the biosphere to restore natural capital (biodiversity and ecosystems).

An inclusive and just circular economy transition requires a multidisciplinary approach. It is about designing interconnected complex systems, meaning, a circular economy involves rethinking entire production and consumption systems. This requires expertise from various fields such as engineering, economics, environmental science, and social sciences to understand and redesign these systems effectively.¹ Collaboration across disciplines ensures that solutions are comprehensive and considers all aspects of the supply chain. Developing new technologies and innovative business models is crucial for a circular economy. This necessitates input from fields like materials science, information technology, and industrial design. Transitioning to a circular economy also involves changing consumer behavior and business models. Insights from psychology, sociology, and marketing are essential to drive these changes.

Ultimately, a circular economy decouples economic development from finite resource consumption. In summary, the circular economy model is based on three overarching principles:

1. Designing out waste and pollution
2. Maintaining the value of materials and products and keeping them in use as long as possible
3. Regenerating natural systems.²

1.1.2. Geographical Area

The geographical scope of this roadmap is at federal level of Ethiopia. However, some actions may focus more on specific regions with short-term circular economy potential, for example related to waste generation, agricultural productivity including agro-waste generation and availability of waste generated from industry parks, such as from Bulbula Agro Industry park,

1 <https://sustainabilityuniversity.org/wp-content/uploads/2021/01/SSU-whitepaper-Different-approach-different-behavior.pdf>

2 Ellen MacArthur Foundation (2021) What is the circular economy

Mojo leather city, Hawassa Textile industry park.

1.1.3. Time period

The scope of the national circular economy roadmap for Ethiopia is defined by its timeline and themes it includes.

The Roadmap encompasses 10 years, starting from 2025. The goals and actions for each priority and crosscutting theme were structured in the following time-related measures:

1. 0- 2 years: soft measures and short-term plans. Examples are dealing with policy mainstreaming, drafting legislative directives and guidance documents, awareness raising and stakeholder engagement, feasibility and impact studies, business support, etc.
2. 2- 5 years: soft and hard measures, mid-term plans. Examples are introduction of CAPEX expenses, investment mobilization, improve or maintain long-term assets and infrastructure such as buildings, land, machinery or equipment.
3. 5+ years: soft and hard measures, long-term plans. Examples are continuation of mainstreaming circular economy into the National Development Plan through capacity building as well as large infrastructure and industry related investment projects.

1.1.4. Priority sectors

This roadmap covers crosscutting themes as well as dives into priority sectors. The selection of the priority sectors is further explained in section 1.2.

The horizontal sectors included are:

1. Waste management
2. Water and wastewater

The vertical sectors include:

1. Agriculture and food
2. Packaging
3. Construction and urbanization
4. Manufacturing and Industrial Parks
5. Textiles and Apparel
6. Leather

The enabling elements include:

1. Inclusivity and job creation
2. Trade and collaboration
3. Education and capacity building
4. Business and financial support

The figure below provides an overview of the sectors and themes covered in this roadmap.

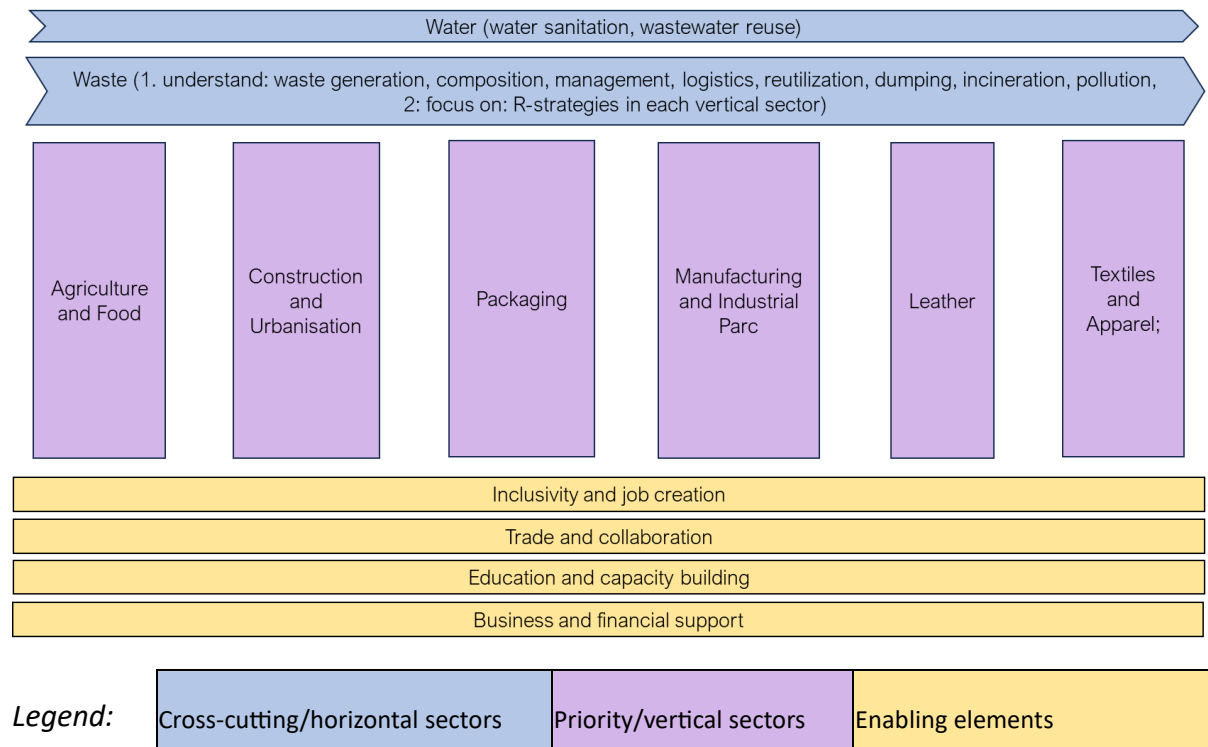


Figure 3: Overview of Structure and Scoping of Sectors (Source: Author, 2025)

1.2. Approach and Methodology

The applied multi-fold methodology to develop this roadmap is composed of the following approaches that have been used throughout the development phase:

1. Formation and frequent consultation with the National Steering Committee (NSC) (in a monthly or bi-monthly frequency). The NSC was chaired by the CE desk as part of the Environmental Protection Authority (EPA) of Ethiopia. NSC was composed of key ministries and governmental agencies, i.e. Ministry of Industry, Ministry of Water and Energy (MoWE), Policy Study Institute, Ministry of Urban and Infrastructure, Ministry of Innovation and Technology, Addis Ababa Cleansing Management Agency (AACMA),

Ministry of Agriculture, Ministry of Labor and Skills, and GIZ Ethiopia. The NSC has been consulted and engaged for inputting or validating each intermediate milestone to ensure the context on the ground is captured. This group of steering members is supposed to be maintained throughout the implementation of the roadmap while also being open for expansion.

2. **Additional stakeholder consultation:** Inputs from a wider group, representing society and market, additional to the National Steering Committee, were collected through three workshops to develop and validate the milestones defined in the roadmap. Further consultation was done on identifying institutional capacity needs to directly inform a workshop, aiming to equip the lead and supporting entities with the required skills for implementing the roadmap. This workshop included EPA and other key ministries and stakeholders.
3. **Desk research and data analysis by a qualified team of international and local experts:** an experts' team has investigated each milestone for this Roadmap. This step has been done by a systematic literature review and an analysis of the findings to develop relevant and contextualized guidance.
4. **Reporting of the findings in a concise and coherent document:** The findings from the different methods were structured and compiled to build this roadmap, representing the foundation of executing the next steps and actions.
5. **Capacity building for lead and supporting policy stakeholders:** To facilitate the transition from theory into practice, the EPA and other line ministries and their agencies have been equipped through a dedicated training addressing their capacity needs as well as educational material to follow up with.

To develop recommendations that can be translated into practice, this Circular Economy roadmap identified and prioritized sectors with relatively promising potential for a circular economy transition. The potential of sectors was based on different aspects: the sectors' current contribution to the National gross domestic product (GDP); job creation and entrepreneurship opportunities; economic resilience and diversification; and existing enabling policy frameworks, Multilateral Environmental Agreement (MEAs) and commitments in line with the Circular Economy concept and the overall sustainable development target of the nation. Based on this, sector-specific action plans were formulated. These intend to serve as a baseline for designing cross cutting and integrated systems that can stimulate innovation by

encouraging stakeholders to innovate product designs and business models, foster new market opportunities, create new job opportunities and generate wealth.

To formulate the roadmap, the methodology is based on several major steps (milestones), which are the following:

1. Investigating the status quo of Circular Economy in Ethiopia regarding the key elements of (i) the policy landscape, (ii) institutional capacities and implementation structure, (iii) stakeholder ecosystem and ongoing initiatives, (iv) materials flows and common practices in key economic sectors, as well as (v) enabling elements, such as digitalization, inclusivity or collaboration.
2. Developing SWOTs (Strengths, Weaknesses, Opportunities, and Threats) analyses for each element mentioned above.
3. Deriving goals and actions for key elements (i) the policy landscape, (iv) materials flows and common practices in key economic sectors and (v) enabling elements.
4. Elaborating key elements for facilitating implementation, including institutional arrangements and governance, implementation plan, monitoring and evaluation framework, and financial resource mobilization.

1.3. Structure of the Roadmap

The Action Plan (Chapter 4) identifies and prioritizes relevant actions based on a comprehensive assessment of the current status quo. It also categorizes short (less than 2 years), medium (2 to 5 years) and long-term (plus 5 years) actions. These actions will enable the respective implementing entities to plan their implementation. To support the implementation process, this document also provides a structured approach for mobilizing resources for financing the implementation (Chapter 5). It also recommends a framework to establish a functioning institutional support (Chapter 6), implementation framework (Chapter 7). Chapter 8 describes the defined targets and indicators aim to assist the evaluation of progress making. However, the implementing parties are encouraged to expand on measurable targets for waste reduction, resource efficiency, and sustainability.

In short, this roadmap comprises the following parts:

1. Goals and actions per priority sector, horizontal sector and enabling elements (Chapter 4)

2. Financial resource mobilization for actions (Chapter 5)
3. Governance and Role (Chapter 6)
4. Implementation Plan (Chapter 7)
5. Monitoring and Evaluation (Chapter 8)

2. CIRCULAR ECONOMY IN ETHIOPIA

2.1. Ethiopia's Current Efforts Towards Circular Economy

Ethiopia plays an active role in the global efforts to combat climate change, particularly through its commitment to the Paris Agreement. This is evidenced in its efforts to revise and submit its third Nationally Determined Contributions (NDCs) outlining its commitment to reducing its GHG emissions by 68.8% until 2030 with significant reductions in sectors, such as energy, agriculture, forestry, and waste management.

At national scale, the government of Ethiopia has launched a 10-Year Development Plan,³ based on the 2019 Home-Grown Economic Reform, which will run from 2020/21 to 2029/30. The Plan aims to sustain the remarkable economic growth achieved in the previous decade while facilitating the shift towards a more private-sector-driven economy. The development plan builds upon the progress made by implementing, the Climate Resilient Green Economy Strategy (CRGE), which was launched in 2011.⁴ The strategy aims to achieve middle-income status by 2025 while ensuring low-carbon development and climate resilience.

Ethiopia developed various enabling legislative frameworks to ensure that an effective and efficient solid waste management system is in place. This is especially relevant in light of the increasing and diversified waste stream⁵. Notable examples aligning with circular economy principles include The Addis Ababa City Waste Management Ten-Year Development Plan 2020-2030; The National Strategy and Roadmap for Plastic Waste Management 2024-2034 that outlines Ethiopia's approach to effective plastic waste management and Extended Polyethylene terephthalate (PET).⁶

³ https://www.mopd.gov.et/media/ten-year-document/ten_year_development_plan.pdf

⁴ https://www.mopd.gov.et/media/climate-documents/crge-strategy_2011.pdf

⁵ <https://www.epa.gov.et/downloads/strategies-and-programmes.html>

⁶ <https://www.epa.gov.et/images/2024/National%20Plastic%20Strategy%20and%20Action%20Plan.pdf>

Additional to legislative ambitions, Ethiopia invests in green interventions like:

1. Renewable energy projects, particularly hydropower, wind, and solar energy. The Grand Ethiopian Renaissance Dam (GERD) is a flagship project aimed at increasing energy generation and reducing dependency on fossil fuels;
2. The Green Legacy Initiative (GLI) a flagship environmental program launched by the Ethiopian government aimed at combating deforestation, restoring degraded lands, and promoting sustainable land management practices.

Public institutions, mainly the Ministry of Industry, the Ministry of Agriculture, and the Ministry of Urban Development and Infrastructure made significant changes to integrate circular economy-related components, like resource efficiency, cleaner production, and Industrial symbiosis, green skills in their long and short-term plan to attain the ambitious national goal.

Ethiopia's EPA is already leading the path towards a just, fair and equitable circular economy transition by setting up the necessary institutional ownership and accountability within its mandate and responsibility. Furthermore, EPA formed together with the Addis Ababa Cleansing Management Agency and development partners a stewardship multi-stakeholder partnership in Addis Ababa to advance circular economy initiatives. This partnership is currently designing and constructing a circular economy centre of excellence (CoE). The CoE is envisioned as a central hub to foster research, and demonstrate and transfer knowledge on circular economy practices, technologies, and business models, aiming to drive innovation in sustainable solutions.

Successful initiatives like GIZ-NatuReS⁷ have emphasized the need for stewardship partnership for effective circular economy transitions by addressing the shared risks for sustainable management of natural resources.

⁷ The Natural Resources Stewardship Programme (NatuReS), program is implemented by GIZ Ethiopia, funded by the German Federal Ministry for Economic Cooperation and Development (BMZ), and focuses on natural



Figure 4: Addis Ababa circular economy centre of excellence (Source: Soil and More Ethiopia, 2025)

Continuing this collaborative approach, such stewardship multi-stakeholder partnerships exemplified by the partnership for circular value chains in Addis Ababa, are crucial for effective circular economy transitions. These partnerships play an important role in facilitating collective action, for the coordination of sector-wide approaches, as well as the integration of marginalized groups in decision-making processes. Designing integrated solutions to multi-dimensional challenges faced in transitioning to a circular economy is benefiting substantially from engagement formats where different stakeholders can discuss and align on pathways to address shared risks and leverage emerging opportunities. Multi-stakeholder partnerships are

resource management and sustainable development in Ethiopia, with a focus on promoting partnerships for circular value chains and improving livelihoods.
<https://nature-stewardship.org/where-we-work/ethiopia>

effectively delivering on these critical needs and will be important cornerstones for the implementation of this CE roadmap.

These efforts set the ground for strategically position Ethiopia as an early adopter of Circular Economy transition and can allow harnessing its multifaceted opportunities.

2.2. Circular Economy Potentials and Opportunities in Ethiopia

In general, to unleash the full potential of circular economy, it requires ambitious actions related to optimizing and re-thinking common practices. This requires the establishment of suitable transition mechanisms and incentives, for instance to sustain the increasing demand for the supply of natural resources for industries such as textiles, leather, and water bottling.

The following sections present the identified potentials and opportunities to enhance circular economy in Ethiopia. This includes the areas of policy landscape, institutional capacity, the stakeholder ecosystem, and finance.

2.2.1. Policy Landscape

The core concepts and principles of circular economy mostly relate to eliminating waste and pollution, keeping products and materials in use, and regenerating natural systems. In Ethiopia, those are embedded in the different national strategies and plans, policy frameworks, and global multi-lateral environmental agreements and commitments developed, implemented, and ratified by the Ethiopian government. For example, those include Green Industrialization strategy, CRGE strategy, and the National Solid Waste management strategy.

Despite a solid foundation, there is stillroom for improvement. For example, for plastics, various studies ⁸ have demonstrated that the existing legal framework cannot effectively reduce the plastic waste throughout the country. Hence, existing regulatory and legal frameworks hold great potential to make a stronger link to circular economy. This could be

⁸ <https://www.epa.gov.et/images/2024/National%20Plastic%20Strategy%20and%20Action%20Plan.pdf>

done by defining favorable and less favorable activities to avoid grey zones and room for misinterpretation. The less favorable activities could be regulated to stimulate more circular upstream activities.

Further gaps in the existing policy and legal landscape relate to a dedicated construction and urbanization strategy to enhance sustainability and circular economy.

Additional to the lack of dedicated policies, there are also promising policy initiatives that yet need to be further pursued and downscaled to sub-national levels. This includes the National Plastic Waste Strategy and Action Plan, recycled Polyethylene terephthalate (PET)⁹.

Lastly, specific budget lines, financial incentives or subsidies as well as more effective enforcement mechanisms could be established to support implementation of supportive policies. This has the potential to encourage consumers and businesses to embrace circular behaviors (and be compliant). This could be targeted at stimulating both demand and supply.

2.2.2. Institutional Capacity

The institutional capacity in Ethiopia to support and implement the transition to a circular economy is at a decent level. There is a dedicated CE desk, responsible to further developing and coordinate circular economy in the country through close collaboration with other ministries and government agencies. The desk is also mandated to monitor and evaluate the various initiatives related to the Circular economy transition, including the implementation of the action plans in this roadmap and to make use of the full potential of these institutional structures, it is now key to build capacity and knowledge of these officers. This can multiply institutional intellectual capacity within the government and, as a next step, also across different stakeholder groups.

Additional to the capacity development, work and communication flows need to be enhanced in order to avoid working in silos. Circular economy is a holistic and multi-sectorial topic that requires an integrated approach. In addition, more transparent and complete implementation

⁹ <https://www.epa.gov.et/images/2024/National%20Plastic%20Strategy%20and%20Action%20Plan.pdf>

monitoring and evaluation could be implemented when improving the flow of information and reporting lines among higher-level institutions and implementing agencies and/or stakeholders.

2.2.3. Stakeholder Ecosystem

In Ethiopia, stakeholders are already engaging and implementing several good and promising initiatives. However, those initiatives lack integration with and collaboration among themselves. The effectiveness of current efforts could be improved when addressing the currently existing lack of sufficient engagement of stakeholders in fostering innovation and research, as well as the lack of financial incentives either from the government in the form of tax incentives, loans, or grants, or from private sector investors.

Moreover, existing best practices aligning with the circular economy concept are predominantly focused on resource efficiency, cleaner production, and waste reduction. Hence, there is a focus set on the treatment, and management of end-of-life waste, rather than higher-value strategies, such as designing out waste through upstream solutions.

Different overarching opportunities and potentials to move more towards up-stream solutions and enabling the closing of material cycles have been identified. Major initiatives are listed by theme and sector are listed in the following:



Policy: Stronger integration of circular economy principles (including resource recovery) in the entire policy landscape; increasing enforcement capacities for especially Polluter-Pays-Principle regulations; creation of effective financing mechanisms.



Agriculture: Usage of so far untapped waste resources, such as the 60-70% of organic waste in Ethiopia. For example, this could be facilitated by composting; promotion of sustainable and regenerative farming practices; focus on organic (local) fertilizer production; investments into innovative technologies, such as precision agriculture; improve storage facilities to reduce post-harvest food waste.



Waste: Establishment of Material Recovery Facilities to allow for proper sorting and processing of waste streams; maximizing waste collection through the integration of the informal sector and investments into infrastructures; development of a waste registry to manage waste flows more effectively.



Water: Regulation of water access rights to enable a sustainable planning of fresh water sources; increase enforcement on wastewater treatment across all sectors; invest into water

efficiency measures; further develop infrastructures for treating wastewater (advanced and basic treatments).



Industrial Parks: Enabling waste segregation systems and waste exchanges among industries; establishment of Reverse Logistic Networks; improve infrastructure and access to equipment in industrial parks; increase awareness for circular economy among industries.



Textiles: Establish a level playing field between imported textiles and locally produced Clothing; enhance the collaboration and knowledge exchange among industries; improvement of waste and water management and improved efficiency.



Leather: Increase repurposing of processing waste; investment into modern tanning facilities and cleaner production processes; focus on local sourcing.



Construction and Urbanization: Promotion of local construction techniques and materials; focus on modular and flexible construction designs; integrate the concept of circularity into urban planning.



Packaging: Investments into recycling infrastructures; promotion of alternative and renewable packaging materials; increase packaging waste segregation programmes; explore extended producer responsibility (EPR) systems as way forward to increase recycling.

2.2.4. Finance

Implementing a circular economy creates the opportunity to explore innovative finance schemes like ecosystem payment services, which could be used to finance projects to restore natural capital.

In summary, to tap the full potential of the above presented opportunities, this roadmap aims to pave the way for effective circular economy implementation in Ethiopia.

3. VISION AND MISSION

3.1. Vision

The vision of Ethiopia is to establish a resilient, competitive, and inclusive circular economy that fosters sustainable development; maximizes resource efficiency and cleaner production; and maximizes waste valorization. Thereby, it strives to create a thriving environment for innovation, economic growth, and social well-being.

A circular economy transition in Ethiopia predominantly aspires to:

1. Maximize resource utilization by promoting practices that ensure the efficient use of natural resources and reducing reliance on finite materials.
2. Transform all manufacturing sub-sectors to have ethical sourcing, eco-friendly production and globally competitive products and services using circular economy principles.
3. Enhance agricultural productivity by mainstreaming regenerative farming practices and ensuring food security.
4. Create an enabling environment for the growth of green businesses and industries those priorities circular economy principles.
5. Encourage Research and Development initiatives that drive innovation in sustainable technologies and practices.
6. Ensure social equity and inclusion by empowering all segments of society, particularly marginalized and vulnerable communities in the leap towards generating new circular economy employment opportunities.
7. Foster a culture of sustainability by integrating circular economy principles into educational curricula at all levels to raise awareness and build capacity.

3.2. Mission

To achieve the vision of a circular economy in Ethiopia, practical interventions are needed. Hence, it is suggest to:

1. Establish and strengthen sound policy/legal and institutional frameworks for the integration of the circular economy concept in the Environment Management Plan and National Development Plan of Ethiopia.

2. Promote circular economy in manufacturing industries to reduce waste, and support the sourcing from sustainable supply chains, ensuring benefits for local communities and workers while improving competitiveness and sustainability.
3. Promote the use of alternative renewable materials in manufacturing, energy production and sustainable practices in the agriculture sector.
4. Promote economic diversification by encouraging the growth of businesses that operate under circular economy principles, creating new markets and job opportunities.
5. Promote the use of alternative renewable materials in manufacturing, and energy production and sustainable practices in the agriculture sector.
6. Facilitate multi-stakeholder partnerships to attract investments for activities such as infrastructure enhancement, waste management, the sharing of best practices and experiences, and innovation in circular economy implementation

4. GOALS AND ACTIONS

This chapter presents the identified goals and actions that are needed to implement a circular economy in Ethiopia. It thereby covers both cross-cutting interventions and interventions per priority sector. Before describing the identified goals and actions, a general overview of the sector is provided.

4.1. Cross-cutting (Horizontal) Sectors, Goals and Actions

4.1.1. Waste Management

Solid waste management in Ethiopia has experienced significant changes over the years, mainly driven by rapid urbanization, population growth, and economic development. The daily waste generation has risen from 9,700 tons in 2015 to 12,200 tons in 2020, with projections indicating a doubling of 2015 levels by 2030.¹⁰ Especially in major urban centres like Addis Ababa, waste generation has intensified. The capital produces approximately 2,300 tons daily, amounting to nearly 839,000 tons per year.¹¹ The composition of municipal solid waste (MSW) in Ethiopia is primarily organic, with food waste accounting for 51% to up to 70%, followed by plastic waste, ash, hazardous materials, and paper.

Regarding the waste management practices, differences exist between urban and rural areas. In cities, municipal and private contractors perform door-to-door waste collection. Sometimes, designated collection points are established to facilitate a more efficient waste disposal. However, the overall collection rates remain insufficient, ranging from 40% to 60% in many cities, with secondary cities like Hawassa and Bahir Dar achieving 80% and 57% collection rates, respectively.^{12,13} In Addis Ababa, waste collection follows a two-tier system where micro and small and medium-sized enterprises (SMEs) handle primary collection from

¹⁰ GIZ (2023) *Sector brief Ethiopia: waste management and recycling*

¹¹ *ibid.*

¹² *ibid.*

¹³ <https://www.mdpi.com/2071-1050/13/20/11241#B55-sustainability-13-11241>

households to temporary collection sites. Then the municipal authorities oversee secondary collection from the temporary collection sites to landfills.

Despite efforts to improve waste segregation at the household level, implementation remains weak due to capacity constraints like lack of sufficient awareness, infrastructure and logistic gaps, leading to the mixing of originally separated waste during transfer. For example, it is now mandatory to segregate waste at household level but because there are not enough trucks available for transport, waste collectors mix the waste with balers to save space before transporting to the landfill sites. Additional to flaws in current waste management practices, the existing urban waste management infrastructure is inadequate, which contributes to the inefficient collection and heavy reliance on open dumping and landfilling. The available landfills are poorly managed, exacerbating environmental and health hazards for surrounding communities. For instance, residents near the Reppie landfill site experience air and water pollution, with heightened risks of respiratory and gastrointestinal diseases.

In rural areas, the current waste management situation is even worse. The waste management is rudimentary, and relies largely on open burning and informal disposal. However, agricultural waste, which forms a significant portion of rural waste, is often repurposed as animal feed, organic fertilizer, or bioenergy. Initiatives like the Dilla Briquette Factory are exploring the reuse of coffee husks for briquette production, providing an alternative fuel source while reducing environmental pollution.¹⁴

In general, waste valorization efforts, including recycling and composting, are gradually gaining traction in Ethiopia but remain limited in scale due to infrastructural and financial constraints. Composting is more widely adopted than recycling due to its lower technological requirements, yet it still faces challenges such as inadequate working spaces and funding. The formal recycling sector remains underdeveloped, with small-scale recyclers playing a crucial role in salvaging plastics, metals, and paper. In Addis Ababa and other major cities like Adama,

¹⁴ <https://www.thezerowastecoffeeproject.com/post/ethiopia-the-dilla-briquette-factory-turning-coffee-by-products-into-energy>

Bahir Dar, and Dire Dawa, recycling activities have expanded, supported by NGOs and community-led initiatives. However, a lack of proper facilities, low public awareness, and negative perceptions towards recycled products have hindered widespread adoption. The informal sector remains a key player in upcycling, with artisans repurposing materials such as wood and metal for construction and furniture making.

Ethiopia has implemented several initiatives to enhance waste recovery, particularly in solid waste management. Government policies promote sustainable waste management, while public awareness campaigns aim to encourage waste segregation at the source. Financial incentives, such as competitive rates for selling recyclables, are designed to foster community participation. Also, green entrepreneurs working on composting and recycling are exempted from paying taxes when importing equipment, the government also provides free space for making compost, some of their products are sold at exhibitions. Informal waste collectors are being integrated into formal systems through training and capacity-building programmes, and investments in modern recycling infrastructure are being explored. In Addis Ababa, specific incentives have been introduced to promote composting, including subsidies for compost-producing associations and plans to establish composting centres across the ten boroughs, called sub-cities.¹⁵ While smaller cities in the other regions of the country are beginning to replicate such initiatives, overall progress remains slow, and more comprehensive investments in waste recovery infrastructure are required to transition towards a circular economy.

¹⁵ https://en.wikipedia.org/wiki/Addis_Ababa#Relation_with_Oromia_Regional_State



Figure 5: A plastic waste recovery facility at Hawasa

In summary, while some efforts are already being taken, Ethiopia’s solid waste management faces persistent challenges that hinder its efficiency and sustainability. The lack of waste segregation at the source, coupled with inadequate collection capacity, leads to high volumes of waste being dumped or burned, posing significant environmental and public health risks. Strengthening waste valorization through improved recycling infrastructure and better integration of informal recyclers into formal waste management frameworks will be critical to advancing circular economy adoption. Addressing these issues will require coordinated efforts between government agencies, private sector actors, and community stakeholders to create a more sustainable and efficient waste management system in Ethiopia.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested period.

Table 4: Action plan for Waste Management

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Established solid policy, legal and enforcement framework for waste management on the national level.	Revise and update the existing waste management policy landscape on the national level and identify where policy updates and new policies are required to support circular economy.	1. Compose an overview of policies and legislations related to waste management. 2. Review identified policy documents and identify parts (1) where a stronger link to circular economy can be made (acknowledging circular economy as an essential means to reach improved/integrated waste management) and (2) that require revision and updates to support circular economy activities more effectively. 3. Make amendments in documents and submit to Parliamentary Council for approval. 4. Analyze where major policy gaps of existing legislative frameworks with focus on waste management and waste valorization 5. Draft policies and legislations that fill these gaps, providing effective regulatory tools to advance circular economy in the waste sector.	Federal Environmental Protection Authority (EPA), Ministry of Urban and Infrastructure (MoUI)	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	Apply, inaugurate and enforce waste management regulations and policies, and build capacity for enforcement agencies, incl. increasing understanding of the circular economy concept.	1. Developing Monitoring and Enforcement Mechanisms to monitor pollution levels and track sources. 2. Educating the public and businesses about PPPs and its benefits is crucial for building support and fostering a culture of environmental responsibility. 3. Provide Enforcement Agencies with necessary resources and tools.	Federal and regional EPA, MoUI and Regional Offices	Medium term
Improved waste management and treatment infrastructure enabling circulation of material streams.	Implement robust waste data management systems into which waste producers, pickers and processors have to feed input.	1. Ensure consistency and comparability of data across different stakeholders. 2. Provide training on data entry and reporting procedures for accurate and consistent reporting of waste data 3. Establish a centralized database for waste management data.	Federal and regional EPA, MoUI and regional Urban Development Offices and Municipalities and NGOs	Short term
	Prioritize composting, black soldier fly (SBF technology and biogas production through anaerobic digestion (AD) and necessary	1. Develop a national organic waste strategy that outlines targets for organic waste diversion, treatment methods and set target rate of these	Ministry of Urban & Infrastructure, private sectors, Municipalities and NGOs	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	infrastructure to cope with the large amount of organic waste, incl. separate collection; establishing a composting standard.	technologies in a staged manner over next 5-15 years. 2. Provide training and technical assistance to organic waste handlers and operators of the treatment facilities (composting, BSF, AD) as well as build capacity among local communities and businesses to operate and maintain these facilities effectively. 3. Establish a national composting standard with clearly defined quality parameters for compost products.		
	Investing in efficient collection systems, including segregated collection for different waste streams and encouraging public-private partnerships.	1. Design efficient routes using GPS tracking and performance monitoring. 2. Conduct assessments and impact studies to minimize environmental and social effects. 3. Establish performance indicators and penalties for non-compliance to ensure reliable and efficient service delivery.	Ministry of Urban & Infrastructure, private sectors and NGOs	Short term
	Invest into controlled waste disposal with proper leachate and gas management systems (sanitary	1. Conduct site assessments and environmental impact studies by carefully evaluating potential landfill sites to minimize environmental and social impacts.	Federal and regional EPA MoUI and regional Urban	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	landfills), as transition solution; ensure strict sanitary conditions protecting adjacent communities within the existing structure of landfilling.	2. Implement feasible leachate collection and treatment systems like Fukuoka method to prevent contamination. 3. Install landfill gas collection and utilization data systems to capture methane emissions to reduce greenhouse gas emissions.	Development Offices and Municipalities and NGOs	
	Invest in the establishment of national Material Recovery Facilities, which are equipped for sorting and processing, with focus on electrical and plastic waste.	1. Conduct feasibility studies and needs assessments to determine optimal locations, capacity requirements, and technology needs for Material Recovery Facility (MRF) based on waste generation rates and population density. 2. MRF development and operation that meet environmental and safety standards based on public-private partnerships (PPPs) model.	MoUI and regional Urban Development Offices and Municipalities	Medium term
	Phase out illegal and mismanaged landfilling in the long term (zero waste target)	1. Promote waste production reduction, reuse, and recycling to minimize landfill waste. 2. Enforce the integrated solid waste management master plan (Addis Ababa) and the national circular	MoUI and regional Urban Development Offices and Municipalities and NGOs	Long term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
		economy roadmap, setting milestones and monitoring progress towards zero waste.		
	Collaborate with neighboring countries and Regional Economic Communities (RECs) like Intergovernmental Authority on Development (IGAD) Common Market for Eastern and Southern Africa (COMESA), African Continental Free Trade Area (AfCFTA) etc. on establishing a regional waste treatment network to ensure most suitable disposal and treatment of waste streams.	1. Conduct joint needs assessments and feasibility studies to identify shared waste management challenges and opportunities. 2. Establish regional and local partnerships and agreements (e.g., MoUs) for waste management.	Federal and regional EPA, MoUI and regional Urban Development Offices and Municipalities and NGOs	Medium term
	Collaborate with neighboring countries and RECs on national and regional reverse logistic networks to ensure remanufacturing and	1. Map existing facilities and identify potential logistics hubs, using existing infrastructure and addressing gaps. 2. Integrate transportation routes for efficient and cost-effective inter-regional product movement.	Federal and regional EPA, MoUI and regional Urban Development Offices and Municipalities and NGOs	Long term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	refurbishing activities for unused and discarded obsolete products.	3. Develop shared facilities with appropriate technology and expertise for product processing, remanufacturing, and refurbishment.		
Integrated informal sector into the waste management and recycling system, and established support for the circular economy transition (in an inclusive way while not hindering important bottom-up activities).	Take into account and recognize the role of the informal sector in national waste policies as well as solid waste management by setting up a working group of representatives of informal workers. This can be consulted with regarding for them relevant policy and decision-making processes.	1. Formalize working groups (e.g., via MOU). 2. Map informal waste sector actors and identify representatives. 3. Build capacity of working group members (policy, advocacy, negotiation). 4. Investigate areas where the informal sector is underprivileged. 5. Formalize and regulate informal sector activities. 6. Oversee and control compliance with regulations (e.g. pricing).	Federal and regional EPA, MoUI and regional Urban Development Offices and Municipalities and NGOs	Medium term
	Ensure that the informal sector workers are not economically underprivileged in the recycling value chain, e.g. by overseeing and standardizing the quality and pricing of valorized waste.	1. Develop clear and fair pricing structures for valorized waste materials, ensuring that informal workers receive a reasonable and predictable income based on the quality and quantity of materials collected. 2. Facilitate connections between informal waste workers and buyers of recycled materials.	Federal and regional EPA, MoUI and regional Urban Development Offices and Municipalities and NGOs	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
		3. Provide training programmes to enhance the skills of informal workers in sorting, processing, and upgrading waste materials.		
	Develop national regulations on organizing and establishing cooperatives and associations for the informal waste sector, supporting their transition to formalization and integration. Empower and give flexibility to local Governments to contextualize the details of the transition.	1. Develop model regulations for cooperatives, covering legal recognition, registration, finances, and governance. 2. Consult with local governments and informal sector representatives to adapt the regulations to local contexts. 3. Investigate the impact of the informal sector and develop scenarios about informal sector integration to identify the best integration options in the local context. 4. Create training materials and workshops on the new regulations, cooperative management, and formalization for local governments and informal sector workers.	MoUI and Ministry of Labor and Skill (MoLS), Ethiopian Policy Studies Institute (PSI)	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	Promote and support the establishment of informal sector cooperatives, associations, coalitions or networks on different geographic levels to (1) reduce social marginalization, improve economic efficiency and thus the position in the economic value chain, (2) enable partnerships with municipalities and other stakeholders, and (3) enable informal waste workers to cooperate or fuse with SMEs.	1. Assess the specific needs and challenges of informal waste workers in different geographic areas to tailor support effectively. 2. Organize workshops, conferences, or online platforms to connect informal sector organizations with each other, municipalities, and other stakeholders.	MoUI, MoLS, Regional Bureau of Urban and Labour and Skill , Municipalities, NGOs	Short term
	Increase the involvement of the informal sector in the waste management sector by licensing their activities in certain zones and	1. Create a clear and accessible licensing process for informal waste workers, recognizing their existing roles and minimizing bureaucratic challenges. 2. Provide safety training and equipment on occupational health and safety and provide personal protective equipment (PPE) to ensure safe working conditions.	MoUI, Ministry of Trade and Regional Integration and their respective regional Bureaus	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	ensuring safe working conditions for informal workers. ¹⁶			
Established mechanisms to motivate stakeholders to contribute to efficiency and sustainability of the waste management and recycling sector.	Scale awareness raising initiatives and campaigns on solid waste management at all levels in society; start with the basics: proper waste separation of hazardous, organic (wet) and in-organic (dry) waste, and pair it with providing enabling infrastructure for it.	1. Develop targeted educational materials on waste management (separation, composting, etc.) for various audiences (households, businesses, schools) using diverse media (print, radio, social media). 2. Engage communities and promote behavior change through workshops, training, and public events. 3. Invest in supportive waste management infrastructure (bins, composting facilities, etc.).	Federal and regional EPA, MoUI and regional offices, Municipalities and NGOs, Ethiopian Food & Drug Administration	Short-term
	Establish incentivizing mechanisms for entrepreneurs and investors to engage in a diverse opportunity in Ethiopia's waste management and	1. Incentivize waste recycling and circular economy businesses with tax breaks, grants, and subsidies.	Ministry of Finance (MoF) MoUI, EPA, Policy Studies Institute (PSI)	Medium term

¹⁶ This may also include the regional involvement of the informal sector as it often works across borders.

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	recycling sector (including compost and fertilizer production, e-waste recycling, plastics and paper recycling, decentralized waste management solutions, and carbon credit schemes), e.g. incubators, tax incentives, etc.	2. Create business incubators to support waste management entrepreneurs (training, mentoring, and networking). 3. Simplify permitting and licensing for waste management businesses 4. Incentivize the off take of Circular Products and services		
	Establish a collaboration platform where all actors in waste disposal, management, treatment and processing can communicate and establish partnerships in their activities.	1. Develop a National Circular Economy Digital hub for exploring partnership opportunities, knowledge sharing, match making and crowd sourcing ideas from citizens, start-ups and academia. 2. Facilitate networking events and workshops to bring together different actors in the waste management sector. 3. Create a dedicated team or organization to manage the platform and facilitate collaboration among stakeholders.	Federal and regional EPA, MoUI and regional offices, Municipalities and NGOs	Short-term

4.1.2. Water and Wastewater

Water is a critical resource for industrial, agricultural, and domestic use, with increasing demand placing significant pressure on existing water bodies. In the industrial sector, particularly within government-owned industrial parks, freshwater consumption is notably high. An estimated amount of 108,000 m³ of fresh water is used per day, translating to approximately 39,420,000 m³ annually. This substantial amount underscores the need for robust water management strategies, particularly in the face of rapid industrial expansion and competing water needs from urban and agricultural sectors.

In Ethiopia, exist 17 industrial parks, which use groundwater as the primary source of water, extracted from wells located within park premises. While basin authorities issue water permits, there is currently no upper limit on consumption, which raises concerns about the long-term sustainability of groundwater reserves. The lack of stringent regulation increases the risk of over-extraction, potentially leading to aquifer depletion and reduced water availability for other sectors. Additionally, groundwater quality varies across different regions, with contaminants such as fluoride posing risks in areas situated in Rift Valley basins.

Beyond industrial use, domestic and agricultural sectors also consume significant amounts of water. Rapid urbanization has led to increased water abstraction for residential and commercial use, further straining available resources. The agricultural sector relies heavily on surface and groundwater sources for irrigation, often exacerbating water scarcity, particularly in regions prone to drought. Addressing these challenges requires a comprehensive national water management framework that integrates efficient water use, alternative sourcing strategies, and improved regulatory oversight.

Wastewater generation is another growing concern across multiple sectors. Industrial parks alone are estimated to produce annually nearly 243,000 m³ per park. The wastewater contains chemical pollutants and organic contaminants. Treatment processes generate significant sludge, with approximately 1.5 kg per m³ of treated wastewater, amounting to 364.5 tons

annually per park.¹⁷ While some parks, such as Hawassa, Adama, Dire Dawa Free Trade Zone, and Kilinto, have adopted Zero Liquid Discharge (ZLD) systems for full wastewater recycling, others rely on conventional treatment methods with varying efficiency.

Wastewater recycling enhances sustainability by reducing dependence on freshwater. Industrial parks with ZLD systems recover treated water for irrigation, industrial cooling, and sanitation, significantly conserving local water resources. For instance, Hawassa Industrial Park, which consumes approximately 8 million litres daily for production and 3 million litres for domestic use, has implemented ZLD systems to achieve full wastewater recovery. Similar practices are in place at Kilinto, Dire Dawa, and Adama, demonstrating a growing commitment to sustainable water management.

Municipal wastewater treatment is also inadequate in many urban areas, leading to untreated effluent discharge into rivers. In rural areas, the absence of proper treatment infrastructure poses severe health and environmental risks. Some municipalities are adopting decentralized treatment models to enable water reclamation for landscaping and urban irrigation. In agriculture, treated wastewater can provide a reliable irrigation source, though concerns about contamination require proper management. Expanding reuse initiatives will be crucial for enhancing water security.

Despite existing wastewater treatment regulations, enforcement remains inconsistent across sectors. Strengthening regulatory oversight, setting consumption limits, and incentivizing advanced treatment technologies are essential for sustainable water management. Circular economy principles, such as promoting wastewater recycling and investing in treatment infrastructure, can drive long-term improvements in resource efficiency.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

¹⁷ IPDC (2022) IPs solid and liquid waste generation data

Table 5: Action plan for Water Sector

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Established supportive regulatory framework to enable sustainable water management and resource utilization.	Revise existing water resource utilization regulations.	1. Review existing water resource utilization regulations on gaps in existing crosscutting regulation related to the water sector (e.g. by means of a multi-sectoral and inter-ministerial working group, managed under the EPA). 2. Prepare policy proposals for addressing identified gaps. 3. Approve policy amendments and communicate them to the affected stakeholders.	Ministry of Water and Energy	Short term
	Enhance awareness of policy and decision-makers on sustainable water utilization.	1. Select relevant people from different ministries and agencies to take part in awareness workshops related to water (re-)utilization. 2. Organize a series of awareness rising campaigns and workshops to improve the understanding of the previously selected people of sustainable water management. 3. Hand out a brochure summarizing relevant content and giving examples how they can improve their decision-making and work in favor of sustainable water management and reutilization.	Ministry of Water and Energy, UNICEF, Media	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	Regulate and formalize the matter of water access rights and management.	1. Develop a record and map of water users accessing ground water. 2. Communicate to them the importance of sustainable water sourcing, given the water scarcity in the country. 3. Establish a regulation for managing ground water extraction.	Ministry of Water and Energy	Medium term
Build capacity in wastewater management.	Provide capacity building training for water technicians.	1. Identify the thematic areas and knowledge needs of water technicians in order to improve their capabilities and skills to better support circularity. 2. Organize a series of trainings for water, sanitation and hygiene (WASH), wastewater technicians on resource efficiency and cleaner production techniques.	Ministry of water and Energy, UNESCO, IPDC	Short term
	Enhance water quality monitoring and evaluation capacity.	1. Review the existing water quality monitoring and evaluation capacities and identify needs for improvements. 2. Invest in improving identified needs, such as a quality assurance laboratory facility.	Ministry of water and Energy, UNIDO, Institute of Ethiopian Standards	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Establish a financing framework to enable sustainable water resource utilization.	Enhance the utility and tax payment and collection capacity.	1. Conduct a status quo analysis on the current utility and tax payment and collection system. 2. Initiate a dialogue between producers, government and users to improve the system. 3. Design a system together that incentivizes water resource conversations by producers and domestic users.	Ministry of water and Energy, Ministry of Finance	Long term
	Set up a fund for WASH infrastructures (incl. new pipelines, repair and maintenance).	1. Set-up a structure and a work plan for a WASH fund. 2. Publicly launch the fund and explain how it works and aims to improve existing water and wastewater management in the country.	Ministry of Water and Energy	Long term

4.2. Priority (vertical) Sectors, Goals and Actions

This section dives into the identified goals and actions that support the introduction of a circular economy in the previously identified priority sectors in Ethiopia.

4.2.1. Manufacturing and Industrial parks

Ethiopia's industrial parks play a critical role in the country's economic development, attracting foreign direct investment (FDI), creating employment opportunities, and enhancing industrial productivity. Currently, there are 17 industrial parks, out of which most focus on the garment and textile industries. These parks generate over 100,000 jobs and contribute to rural development through the establishment of rural transformation centres.¹⁸

The impact of these parks on sustainability and the circular economy remains a subject of both opportunity and challenge. Solid waste management remains a challenge, with approximately 813.43 tons of waste generated annually per park.¹⁹ While some scrap materials are sold to recyclers, waste segregation practices are limited, and most waste is disposed of in open dumps. Organic waste from agro-industrial parks presents an opportunity for composting, yet this remains underutilized due to inadequate processing facilities.

As also explained in the previous section, water consumption within industrial parks is another critical issue. Government-owned parks alone consume approximately 108,000 m³ of freshwater daily, sourced primarily from unregulated groundwater wells.²⁰ The absence of consumption restrictions raises concerns about over-extraction and long-term resource sustainability. Water quality issues, such as fluoride contamination in certain regions, further complicate industrial operations. Despite some industrial parks having implemented the ZLD systems to recycle wastewater, many still rely on conventional treatment processes that discharge effluent into nearby water bodies. This poses risks to local ecosystems and public

¹⁸ Ethiopian Broadcast Corporation (2024). *Industrial Parks, Free Trade Zone Create 100,000 Jobs*

¹⁹ IPDC (2024). <https://www.ipdc.gov.et/>

²⁰ IPDC (2019) *Industrial Parks Development Key Learnings*

health. Additionally, sludge generated from wastewater treatment remains an unresolved challenge, as there is no established system for its reuse or disposal.

Energy use in industrial parks is reliant on hydroelectric power, accounting for 1071MW.²¹ However, frequent power outages and underinvestment in energy-efficient technologies limit the sector's ability to fully utilize renewable energy sources. Addressing this issue will require targeted investments in energy-saving technologies and infrastructure to enhance sustainability and reduce reliance on non-renewable sources.

Material sourcing remains a key constraint, particularly in the textile sector, which continues to depend heavily on imported fabrics, accessories, and other inputs. This reliance limits Ethiopia's competitiveness compared to Asian producers with more established local supply chains. The lack of backward integration within the value chain further exacerbates this issue, particularly for agro-industrial products. Limited access to finance for modernizing agriculture and manufacturing processes also restricts efforts to enhance local production capabilities.

Logistical inefficiencies further challenge the adoption of circular economy practices in manufacturing and industrial parks. While Ethiopia has made significant investments in transportation infrastructure, including road and rail networks, inefficiencies in supply chain management continue to affect industrial park operations. The absence of well-developed reverse logistics systems hinders efforts to recover materials for reuse and recycling. Additionally, weak warehousing infrastructure restricts the effective storage and management of materials, affecting resource efficiency.

Beyond infrastructure and supply chain challenges, regulatory and financial barriers also impede the transition to a circular economy. The lack of incentives for sustainable practices, coupled with limited funding opportunities, discourages industries from adopting environmentally friendly technologies. Inconsistent enforcement of environmental

²¹ *ibid.*

regulations further complicates compliance efforts, particularly in areas such as wastewater management and emissions control.

Despite these challenges, Ethiopia's industrial parks hold significant potential for advancing circular economy principles. Improved infrastructure, stronger policy incentives, and increased investment in sustainable technologies can enhance waste management, energy efficiency, and resource conservation. Strengthening local supply chains, particularly within the textile and agro-industrial sectors, will be crucial for reducing dependence on imports and promoting a self-sustaining industrial ecosystem. Additionally, the integration of renewable energy solutions, such as solar power through public-private partnerships, could provide a more stable and diversified energy supply. By addressing these gaps, Ethiopia's industrial parks can become models of sustainable industrialization, driving economic growth while minimizing environmental impact.

The following tables present the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe regarding the industrial parks.

Table 6: Action plan for the Manufacturing and Industrial parks

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Established supportive regulatory and financial framework enabling sustainable manufacturing	Assess and revise existing regulations and policies to identify barriers to circular economy practices and propose necessary adjustments, in collaboration with the private sector.	1. Conduct workshops and interviews with relevant stakeholders and Tenant investors to identify barriers to implement circular economy policies, like empty chemical containers management policy, safe return/ disposal and recycling of hazardous waste including waste oils, electronic wastes. 2. Analyze regulatory frameworks, review and assess the impacts on Industry Parks operation in terms of circular economy. 3. Identify benchmarks and best practice. 4. Prepare and share communiques of the revised regulations and polices	Ministry of Industry, Industry Park Development Cooperation, Ethiopian Chamber of Commerce & Sectoral Associations, Policy Studies Institute (PSI)	Short term
	Develop tax and finance mechanisms for companies/businesses to adopt and implement circular practices.	1. Design green certification for the Industrial Park and its tenant-rating programme to identify best performers. 2. Prepare guidelines to implement tailored tax credits, grants, and low-interest loans aimed at encouraging	Ministry of Planning and Development, Ministry of Trade and Regional Integration, Ethiopian Chamber of Commerce & Sectoral Associations, PSI	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
		companies in the industry parks (their tenants) and Industry parks to comply 3. Introduce best performers award in collaboration with EPA.		
	Establish clear standards and guidelines for circular economy production practices in industrial parks to ensure compliance and quality, including product design, recycling practices as well as wastewater treatment and discharge; in parallel establishing industry data platform in centralized data registry in support of national statistics service (compliance and Monitoring and Evaluation.	1. Hold training sessions for companies, Industry Park operators and Certifying body on green certification constant obedience assessment and measurements. 2. Create a data registry to collect and analyses information on circular practices, integrating it with the national statistics service. 3. Reuse 85% of reclaimed wastewater.	Institute of Ethiopian Standards, Ethiopian Chamber of Commerce & Sectoral Associations, PSI	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Enhance capacity building and education initiatives to unlock circular economy potentials	Collaborate with academic institutions and TVETs to develop and implement comprehensive curricula and training programmes for manufacturers and business operators on circular economy principles and practices (incl. informal sector).	1. Make a list of educational institutions or research institutes that are knowledgeable on sustainability and how industries work around Industry parks. 2. Create and conduct surveys with tenants and industry parks to collect information about their current skills and knowledge on circular economy practices. 3. Organize workshops with schools and industry experts to work together and create tailored training content. 4. Select a mix of tenants and Industry Park management and employees to join trial-training sessions to ensure the different needs are represented. 5. Build an online platform with training resources, recorded workshops, and tips for tenants to easily access.	Addis Ababa University, TVETs, Ethiopian Chamber of Commerce & Sectoral Associations, PSI	Medium term
	Create multi-stakeholder forum/platform/center of	1. Use the Industrial Parks sustainability platform (IPSP) to involve people from businesses, government,	Ministry of Industry, Ethiopian Chamber of	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	excellence that brings together businesses, government, academia, and civil society to create awareness, supply important resources and discuss circular economy opportunities; potentially linked with incubators.	schools, and community groups to encourage practices that support a circular economy. 2. Hold regular meetings and special sessions on the platform to talk about problems and opportunities related to the circular economy. 3. Keep the platform's database updated with tools, resources, and success stories to help members share knowledge. 4. Arrange workshops on the platform to encourage teamwork and creative ideas for solving circular economy challenges. 5. Identify existing industry groups in the parks and support projects that help businesses work together and share resources.	Commerce & Sectoral Associations, PSI	
	Promote the formation of industry clusters within the parks to foster collaboration, innovation, and resource sharing among businesses.	1. Initiate frequent meetings between Industrial Park management, tenants and employees to promote the potential of closer collaboration.	Industry Park Development Cooperation, Ethiopian Chamber of Commerce & Sectoral Associations, PSI	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
		2. Identify opportunities for establishing Industrial symbiosis focusing on “waste to wealth” conversion practices between the tenants		
	Establish a handbook and guidelines with specific recommendations to enhance circularity in different industry sub-sectors and their business models (for product design that enables resource efficiency, recyclability and sustainability).	1. Collect data, information and good practice examples for circularity in industrial sectors. 2. Compose and publish a handbook for circularity for different sectors and sub-sectors.	Ministry of Industry, Industry Park Development Cooperation, EPA, Ethiopian Chamber of Commerce & Sectoral Associations, Universities	Short term
Implemented public-private partnerships (PPPs) to advance sustainable	Support Research and Innovation initiatives focused on Industrial symbiosis and mutually beneficial partnerships within the manufacturing sector as well as between the manufacturing sector and other sectors.	1. Find important research centres and industry leaders to work together on projects that help different manufacturing companies (tenant) and Industry parks share resources and reduce waste. 2. Plan workshops and seminars to promote the best ways to use industrial symbiosis and share examples of successful projects.	Ministry of Innovation and Technology, Addis Ababa University, TVETs, IPDC, EIC, Ethiopian Chamber of Commerce & Sectoral Associations	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
manufacturing practices.		3. Write proposals and apply for funding to support studies that encourage collaboration between the manufacturing industry and other industries. 4. Support the creation of joint venture agreements by providing legal and financial advisory services to both parties. 5. Set up a dedicated website or online space where people can share research results, tools, and resources about industrial symbiosis.		
	Facilitate partnerships that support the (ongoing) formation of joint ventures between local manufacturers and foreign investors to share expertise, technology, and resources.	1. Develop bankable Circular economy business models and projects that are economical feasible 2. Facilitate matchmaking among different companies and stakeholders. 3. Organize investment forums to attract potential investors, private sector and partners, for example, development partners such as UN Agencies, and financial institutions.	Ethiopian Investment Commission, Industry Park Development Cooperation, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term

4.2.2. Textiles and Apparel

Ethiopia has positioned itself as a key player in Africa's textile and apparel industry, achieving an average annual growth rate of 51% over the past six years, and the sector is a major driver of economic growth, employment, and export earnings.²² According to the Ethiopian Textile Industry Development Institute (ETIDI), as of 2016, Ethiopia had 24 textile and apparel mills, 23 textile mills, 72 apparel factories, and 8 handloom factories registered. Today, there are 122 textile and garment factories in operation and over 65 international textile investment projects were licensed for foreign investors. By 2020, garment exports were projected to reach approximately 1 billion USD, with an estimated 350,000 jobs expected to be created.

This rapid sectoral expansion has caused critical sustainability challenges, particularly in waste management, resource consumption, and environmental impact. As production scales up, ensuring that Ethiopia's growing textile sector aligns with circular economy principles while maintaining economic momentum is becoming increasingly urgent. Addressing these challenges is essential for securing long-term sustainability and competitiveness in the global market. The textile sector generates a significant amount of waste, with an estimated 813.43 tons of solid waste produced per industrial park annually. However, only 47% of this waste is recycled, while the rest is sent to landfills, highlighting an underutilized potential for waste valorization. Companies like Etur, a subsidiary of Türkiye's Yuksel Group, have made strides in recycling, processing around 6,000 tons of cutting waste and 1,000 tons of spinning waste per year.²³ However, large-scale recycling and other circular economy initiatives remain limited. Without a systematic approach to waste management, the growing production capacity could lead to even greater environmental strain.

Beyond solid waste, water consumption and wastewater pollution present pressing concerns. Although the textile sector accounts for only 0.4% of Ethiopia's total water usage, it generates

²² UNIDO (2020). *Sustainable textile investment and operation in Ethiopia*

²³ German-Ethiopian Textile Business Partnership (2020). *From RAGS to GARMENTS*

an estimated 73,000 m³ of wastewater per day.^{24,25} Financial and technical constraints prevent effective wastewater treatment, with most facilities discharging untreated effluent directly into water bodies. Industrial parks have attempted to implement wastewater treatment plants, but many remain non-functional or insufficient to handle the sector's growing wastewater output. Water pollution, if left unaddressed, could undermine the very resources that Ethiopia's textile sector depends on, threatening both industry growth and environmental sustainability. The energy-intensive nature of textile production compounds these environmental challenges. Many factories continue to rely on fossil fuels for boilers, while outdated machinery consumes excessive energy. With Ethiopia's overall industrial sector accounting for 3.4% of total energy use²⁶, improving energy efficiency is not only a sustainability concern but also a financial necessity. In addition, inefficient logistics and supply chain constraints add another layer of difficulty, making it harder for manufacturers to access alternative raw materials and sustainable technologies.

In summary, the major barriers to a circular economy in Ethiopia's textile sector include poor waste management, lack of wastewater treatment facilities, weak regulatory enforcement, and limited investment in sustainable practices. Additionally, competition from imported second-hand clothing affects local manufacturers. Regardless, opportunities exist to enhance sustainability through investment in solid waste management, wastewater recycling, energy-efficient technologies, and local raw material sourcing. Strengthening policies, fostering stakeholder collaboration, and raising consumer awareness can also help to drive the transition to a more circular and sustainable textile industry in Ethiopia.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

²⁴ SWI (2016). *Water Governance Mapping Report: Textile Industry Water Use in Ethiopia*

²⁵ IPDC (2019). *Industrial Parks Development Key Learnings*

²⁶ Girum ayalneh et al (2021) *Opportunities and Challenges of Renewable Energy Production in Ethiopia*

Table 7: Action plan for Textiles and Apparel sector

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Enhanced resource efficiency and sustainability within the textiles and apparel industry.	Support companies in their process of increasing resource efficiency and cleaner production.	1. Offer low-cost (or free for micro-sized companies), Material Flow Assessments (MFA) to analyses the use and flow of materials in production processes. 2. Offer low-cost (or free) Cleaner production and resource efficiency audits. 3. Provide key recommendations for improvements and certification	Institute of Ethiopian Standards, Ethiopian Textile Industry Development Institute (ETIDI), Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Promote sustainable sourcing of materials throughout the industry.	4. Encourage the use of recycled and sustainably sourced materials through partnerships with suppliers and certification programmes. 5. Prepare and implement sustainable supply chain management strategies in collaboration with service providers offering technical assistance.	Institute of Ethiopian Standard, Industry Park Development Cooperation, NGOs, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term
	Implement lean manufacturing techniques to minimize waste and optimize production processes.	1. Investigate potentials for lean manufacturing Ethiopia's textiles' sector. 2. Develop a handbook with lean manufacturing techniques (key interventions could include reducing waste, reusing fabric scraps, recycling fibers, and treating wastewater).	Mol, Manufacturers, Ethiopian Chamber of Commerce & Sectoral Associations	Short term
Sustainable product design	Develop and disseminate Eco-Design guidelines that emphasize durability, reparability, and recyclability	1. Investigate a study on potential eco-design criteria applicable to the textiles sector, looking at Europe as an example.	Mol, ETIDI, Ethiopian Chamber of Commerce & Sectoral Associations	Short term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	of textiles and apparel products.	2. Evaluate the feasibility of criteria for categorizing products and services as ecofriendly 3. Develop an Eco-design guideline.		
	Support R&D initiatives focused on developing sustainable alternative materials and innovative recycling technologies.	1. Identify research and development (R&D) initiatives that focus on sustainable alternative materials and innovative recycling technologies. 2. Communicate identified initiatives to the private sector and other organizations working on related topics. 3. Facilitate partnerships between academia and research and the private sector.	Ministry of Technology and innovation, Manufacturers, Academia, Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Encourage manufacturers to conduct lifecycle assessments (LCAs), for their products to understand environmental impacts and improve sustainability.	1. Compose a brochure listing the advantages and reasons for conducting LCAs for informing important product and process decisions. 2. Offer information sessions on the topic. 3. Distribute the brochure through commerce and sectoral associations.	IPDC, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term
Zero Waste in production across the manufacturing lines and within industry parks.	Encourage Industrial Symbiosis and industry collaboration to enhance circularity and minimize waste production.	1. Facilitate waste exchange platforms, e.g., through industry clusters or other platforms, where manufacturers can share waste materials and by-products with one another for reuse. 2. Implement Eco-industrial symbiosis by engaging different stakeholders.	IPDC, Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Encourage establishing take-back schemes for end-of-life	1. Compose information on why take-back schemes do not only benefit the planet but	Brands, manufacturers,	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	garments to promote recycling and repurposing.	also industry wide operations and process optimizations. 2. Draft a take-back model in collaboration with universities, private sector and development partners. 3. Hold a workshop with industry stakeholders to validate the model, work out details and agree on terms of implementation.	Ethiopian Chamber of Commerce & Sectoral Associations, universities, development partners	
	Launch awareness campaigns targeting consumers and businesses to promote the benefits of circular economy practices in textiles and apparel.	1. Investigate the content for the campaigns in collaboration with consumer organizations, brands and universities. 2. Develop a plan for raising awareness about benefits of circular economy in the textiles sector, targeting consumers and businesses. 3. Use different communication channels to deliver the campaigns.	Brands, manufacturers Ethiopian Chamber of Commerce & Sectoral Associations, Ethiopian Society for Consumer Protection	Short term
Promote local Sustainable cotton production.	Promote organic cotton production by introduction of sustainable farming practices, like integrated pest management to reduce chemical inputs.	1. Communicate the benefits and necessity for Ethiopia to move back to local cotton production. 2. Promote local production focusing on the pride and quality of Ethiopian fabrics. 3. Provide an overview of sustainable farming techniques, supporting local production.	Mol, ETIDI, PAN Ethiopia, Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Facilitate certification programmes like Better Cotton Initiative that can help farmers to adopt sustainable farming and processing practices, to	1. Investigate the conditions of Better Cotton Initiatives (and other certification programs) for implementation. 2. Identify implementation partners.	Manufacturers, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term

Goals	Actions	Sub-actions	Lead implementer	Timeframe
	improve the overall quality and marketability of cotton.	3. Invite textile producers to participate in pilot certification programmes. 4. Agree on obligatory or voluntary certification.		
	Establish vertical integration system by building partnerships between cotton farmers and textile manufacturers to streamline the supply chain and ensure consistent demand for cotton (Factories buying cotton).	1. Establish a database of cotton farmers and share through chamber of commerce or sectoral associations. 2. Develop a platform for dialogue where farmers can engage and build partnerships.	Manufacturers, Development partners, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term

4.2.3. Leather

Ethiopia has a significant livestock population, providing a strong foundation for its leather and footwear industry. With over 58 million cattle, 28 million sheep, and 28.6 million goats, the country produces millions of hides and skins annually, supplying raw materials for tanneries, footwear manufacturing, and leather goods production. To foster further growth in the sector, the government has implemented measures to enhance local processing, including the imposition of a 150% export taxes on raw hides and semi-finished leather products in 2012²⁷, thereby encouraging value addition within the country. However, despite these economic advancements, the sector continues to grapple with persistent challenges, particularly in waste management, even as the government enacts regulations aimed at improving waste disposal and environmental sustainability.

Tanneries rely on chemicals that, if not properly managed, contribute to significant environmental pollution. Although the government has introduced environmental regulations, compliance remains limited due to financial constraints and a lack of technical expertise among companies. Most tanneries operate outside of industrial parks, limiting their ability to implement efficient waste water treatment systems. The planned Modjo Leather City aims to address this gap by establishing modern facilities, including wastewater treatment plants, to improve sustainability.²⁸

Additional to chemicals, general waste production is a major issue, as tanneries generate around 86,567 tons of solid waste annually.²⁹ While an estimated 60 % of this waste could be recovered through proper management, the current disposal system is inadequate. Most waste is dumped in open areas or near rivers, creating risks for the environmental and public health. The industry also generally lacks effective waste segregation systems, making recycling

²⁷ Missing reference

²⁸ Modjo leather City technical Task force, Gizachew Mern

²⁹ Teklay et al (2018) Quantification of Solid Waste Leather Generation Rate from the Ethiopian Leather Sector - A Contributing Perspective to Waste Management Approach

difficult. Waste valorization systems also remain underdeveloped, although opportunities exist to convert leather scraps into useful by-products such as gelatin and animal feed.

Water consumption in the leather sector is another pressing concern. Tanneries use up to 50 m³ of fresh water per ton of hides processed, leading to substantial wastewater generation.³⁰ The 27 operational tanneries in Ethiopia produce approximately 16,000 m³ of wastewater daily, often with inadequate treatment.³¹ While some efforts have been made to install effluent treatment plants and recover chrome from wastewater, the adoption of sustainable water recycling systems remains limited.

In addition, the sector's energy use is significant. On average, processing a single hide requires 0.5 kilowatt-hours of electricity and 0.12 litres of diesel.³² Given the scale of production, Ethiopia's tanning industry consumes nearly 29.7 megawatt-hours of electricity and over 7,000 litres diesel daily.³³ Reducing energy consumption and transitioning to cleaner sources could help mitigate the sector's environmental footprint.

Logistics and infrastructure present additional challenges. Poor road conditions, particularly in rural areas, increase transportation costs and cause delays, affecting the movement of raw hides and finished products. While Addis Ababa and Modjo serve as key production hubs, the lack of efficient railway systems and inadequate waste management infrastructure hinder the sector's growth. Improving transportation networks and developing waste treatment facilities would enhance the industry's sustainability.

³⁰ Aurelia P. Calabro and Zerfie Degefu (2023) *Making a case for 'Accelerated Change' in Leather Industry's Water Consumption*

³¹ *ibid.*

³² ESIA (2018) *MLC CETP*

³³ *ibid*

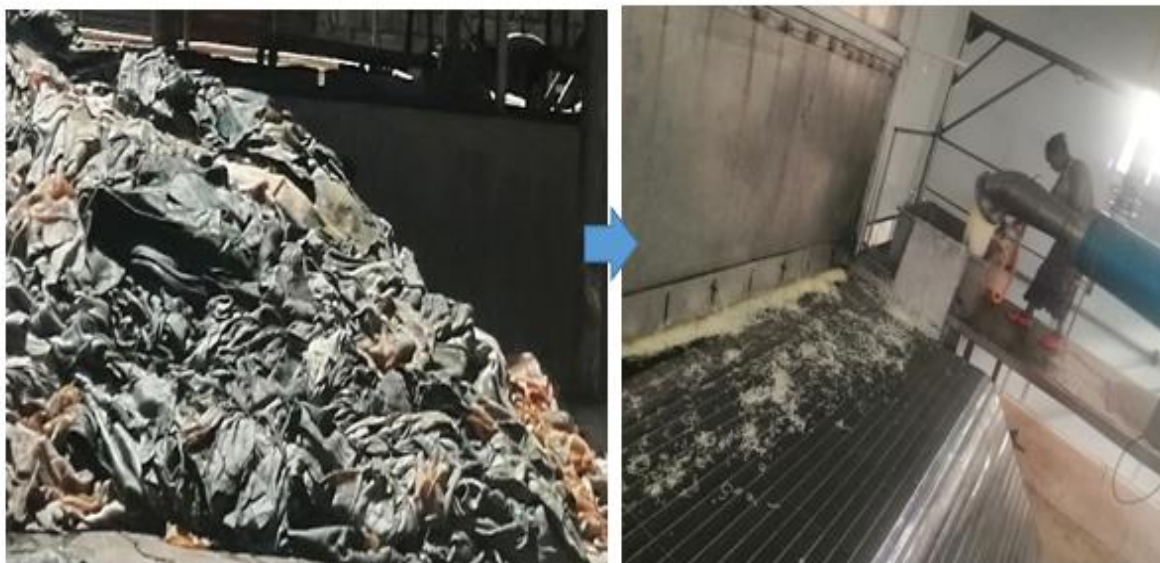


Figure 6: Trimmed hides waste into Gelatin at Jian Xin Zhang Tannery, Modjo

In summary, the Ethiopian leather sector holds great potential for circular economy practices but requires strategic interventions to address its challenges. Strengthening waste valorization initiatives could allow for the conversion of solid waste into high-value by-products, such as leather board, fertilizers, and bio-based adhesives. The adoption of closed-loop water recycling systems in tanneries would reduce freshwater consumption and mitigate wastewater pollution. Additionally, transitioning to bio-based tanning agents and cleaner production technologies could help minimize the industry's chemical footprint. Energy recovery from organic waste and investment in renewable energy sources, such as solar and biomass, could further enhance sustainability. Establishing efficient reverse logistics for used leather products, promoting repair and refurbishment, and encouraging sustainable footwear design would also contribute to a more circular value chain. With the right policies and investments, Ethiopia has the potential to transform its leather industry into a model for circularity in Africa.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 8: Action plan for Leather sector

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Enhanced Resource Efficiency and Cleaner Production (RECP)	Support companies in their process of increasing resource efficiency and cleaner production.	1. Conduct comprehensive (but low cost) resource audits in tanneries and production facilities to identify areas of high waste production and resource inefficiency. 2. Conduct (low cost) cleaner production and resource efficiency audits. 3. Provide tailored recommendations to companies.	Institute of Ethiopian standards, Leather Development Institute (LIDI), Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Encourage the adoption of technologies that reduce water and energy consumption, in leather production processes.	1. Establish an overview of affordable technologies, improving water and energy consumption, including projected economic savings. 2. Share information with leather producers.	LIDI, MOI, Development partners like UNIDO, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term
	Implement waste materials recovery systems in companies and dedicated zones for this matter.	1. Promote and establish material recovery systems to recover and recycle by-products (e.g., hair, fats)	Manufacturers, MOI EIB, UNIDO, Ethiopian Chamber	Medium term

		from leather processing for use in other industries and well as installing wastewater treatment plants. 2. Establish leather Industrial Zone where sustainability common facilities will be available for waste treatment and recovery materials.	of Commerce & Sectoral Associations	
Promote sustainable sourcing and production	Develop sustainable sourcing guidelines that encourage the use of sustainably raised livestock and eco-friendly materials in leather production.	1. Conduct research on sustainable sourcing in leather production, identify regional and international best practices, and contextualize this to Ethiopia. 2. Knowledge sharing can be conducted in collaboration with universities and sector association	LIDI, Mol, Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Support the industry in implementing sustainable sourcing strategies.	1. Invest into eco-friendly tanning practices that can support the transition to vegetable tanning and other low-impact methods to	Manufacturers, LIDI, Mol, LWG, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term

		minimize environmental harm, e.g. chrome-free tanning. 2. Prepare and implement sustainable supply chain management strategies.		
	Promote certification schemes for sustainable practices in leather production (e.g., Leather Working Group certification).	1. Investigate available certification programmes in the leather sector for implementation. 2. Identify implementation partners. 3. Invite leather producers to participate in pilot certification programmes. 4. Agree on obligatory or voluntary certification.	Manufacturers, EPA. Mol, Ethiopian Chamber of Commerce & Sectoral Associations	Long term
Foster Innovation and technology transfer	Establish centres for innovation where businesses can collaborate on sustainable practices and technologies (e.g. creative hub).	1. Investigate if any existing structure could be used as location; otherwise, identify new location. 2. Establish simple operational plan for a business hub, e.g. only two days a week. 3. Develop an event plan for business to engage.	Manufacturers, Development partners, Ethiopian Chamber of Commerce & Sectoral Associations	Short term

		4. Establish what kind of resources and content shall be provided.		
	Create a platform for University–Industry linkage to facilitate knowledge transfer.	1. Establish digital infrastructure for providing a platform for university and industry stakeholders to engage. 2. Organize physical meetings at a business hub (previous action).	Manufacturers, LIDI, Ethiopian Chamber of Commerce & Sectoral Associations	Short term
	Promote the formation of industry clusters focused on leather production to facilitate collaboration and resource sharing among businesses including innovative ideas, see Mojo leather city.	1. Initiate frequent meetings between leather producers in close proximity to promote the potential of closer collaboration. 2. Identify symbiotic relation between tenants of the industry parks on waste to wealth conversion practices.	UNIDO, IPDC, MoI, Ethiopian Chamber of Commerce & Sectoral Associations	Medium term

4.2.4. Packaging

The packaging sector in Ethiopia, encompassing plastics, paper, and chemicals, plays a vital role in the country's economic development, contributing significantly to GDP and employment. The demand for packaging continues to increase due to Ethiopia's growing population, which is projected to reach 200 million by 2050.³⁴ Ethiopia is one of the largest importers of plastics in East Africa, with plastic packaging making up 50-60% of total packaging imports, followed by paper and metal, which account for approximately 15-20% each.³⁵ However, this heavy reliance on imported materials, coupled with environmental concerns, poses significant challenges to sustainability. The country faces pressing issues such as landfill overflow, plastic pollution that affects agriculture through livestock ingestion, and an inefficient waste management system, all of which hinder progress towards a more circular and sustainable economy.³⁶

³⁴ *Ethiopia2050 (n.d.) Ethiopia2050*

³⁵ *EIC (2020). Packaging Landscape in Ethiopia*

³⁶ *Never Assan (2023). Socio-cultural, econ., and env. implications for innovation in sustainable food in Africa*



Figure 7 : The Promotion of Manufacturing Durable plastic bag (Source: EPA, 2025)

Waste management remains a significant concern, particularly in the recycling of packaging materials. In 2019, Ethiopia generated 77,000 tons of paper packaging waste, a figure expected to rise to 133,000 tons by 2030. Similarly, rigid plastic packaging waste, which stood at 112,000 tons in 2019, is projected to increase to 250,000 tons by 2030.³⁷ Despite this growing waste generation, Ethiopia has an extremely low recycling rate of just 4%,³⁸ largely due to the lack of formal recycling infrastructure and inefficient waste separation at both consumer and industrial levels. Although informal waste collectors play a role in recycling,

³⁷ EIC (2020). *Packaging Landscape in Ethiopia*

³⁸ GIZ (2023) *Sector Brief Ethiopia: Waste management and recycling*

their efforts are largely uncoordinated and unsupported. The ongoing discussion on Extended Producer Responsibility (EPR) Strategy for PET bottles presents an opportunity to enhance circular economy practices by holding producers accountable for post-consumer waste management. However, significant investment and policy enforcement will be required to ensure its effectiveness. Water and energy consumption in the packaging sector further complicate Ethiopia's transition to sustainability. The pulp and paper industry, in particular, consumes large amounts of water, yet freshwater use in production is not well regulated. In many cases, wastewater is discharged untreated into rivers, causing severe environmental and health risks. Improved recycling and reuse of packaging materials could help mitigate water demand while reducing pollution. The industry is also energy-intensive, relying primarily on electricity from the national grid and fossil fuels. Although Ethiopia has vast renewable energy potential, adoption within the packaging sector remains low.

Several key challenges continue to hinder Ethiopia's progress towards a circular economy in the packaging sector. The country's heavy dependence on imports limits local production capacity, making the industry vulnerable to global supply chain disruptions. Waste management inefficiencies, including poor segregation at the source and limited recycling facilities, further exacerbate the problem. Weak regulatory enforcement has resulted in low compliance with waste management policies. Limited public awareness regarding responsible waste disposal and recycling practices has also slowed the transition to a more sustainable system. Additionally, the high costs of logistics and poor infrastructure create delays in the supply of raw materials, making it difficult for businesses to adopt more circular packaging solutions. Despite these challenges, Ethiopia has significant opportunities to foster a circular economy in packaging. Strengthening waste valorization efforts, improving waste separation infrastructure, and investing in local recycling facilities could enhance sustainability while reducing environmental harm. Expanding public awareness campaigns and enforcing stronger regulatory frameworks would encourage responsible waste disposal and recycling practices, ultimately improving the country's overall waste management system. With coordinated efforts between the government, private sector, and civil society, Ethiopia is packaging



Figure 8: Plastic Waste segregation facility for recycling, Shagar City (Source: EPA, 2025)

Industry has the potential to shift towards a more sustainable and circular economy, ensuring long-term economic growth while prioritizing environmental responsibility.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 9: Action plan for packaging sector

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Develop incentive mechanisms to promote sustainable packaging and ultimately the reduction of plastic pollution.	Finalize and implement the Extended Producer Responsibility (EPR) policy that requires manufacturers to take responsibility for the entire lifecycle of their products, including post-consumer plastic waste management.	1. Approve EPR policy. 2. Prepare guidelines having stakeholders' roles and responsibilities. 3. Implement Monitoring, reporting and verification protocols. 4. Train and develop awareness among stakeholders.	EPA, PETCO, Plastic Waste working group of the Partnership for Circular Value Chains in Addis Ababa, Addis Ababa Cleansing Management Agency, Policy Studies Institute (PSI), Ethiopian Beverages, Manufacturing Industries Association, Manufacturing Industry Development Institute (MIDI)	Short term
	Develop financial incentives (e.g. tax breaks, subsidies) for manufacturers that adopt sustainable production	1. Identify applicable financial models for financial incentives. 2. Design incentive packages.	Mol, Ministry of Finance Development, EPA, UNIDO, WBG, GIZ, Policy Studies Institute(PSI)	Long term

	methods, opt-out for plastic materials, and invest in recycling infrastructure.	3. Validate incentive packages and its implementations. 4. Establish Call for application for the incentives. 5. Monitor the changes and impacts.		
	Establish clear nationwide targets for plastic recycling rates and waste reduction to drive progress within the sector.	1. Conduct baselines assessment to set targets. 2. Set recycling rates and standards.	Mol, Addis Ababa Cleansing Management Agency, Institute of Ethiopian Standards, Ethiopian Beverages, Manufacturing Industries Association,	Short term
	Establish rules for Public Procurement in prioritizing renewable materials over products made from virgin plastics, and/or limiting budget for plastic products.	1. Prepare guidelines and directives for procurement criteria and its application. 2. Restrict the production of plastics as per the newly approved proclamation.	Public Procurement & Property Administration Agency, Federal Customs and Revenues Authority	Medium term
Promote low-impact production	Support Research and Development of biodegradable and compostable plastic	1. Search funds for research on the biodegradable products.	Mol, AAU	Short term

and considerate use of plastics.	alternatives, incentivizing their use in packaging and other applications.	2. Prepare guidance to evaluate biodegradability of materials like life cycle analysis and degradation time to create similar standards on biodegradability. 3. Create networking and events for plastics use substitutions.		
	Implement Eco-design principles that enhance recyclability, reduce material use, and minimize environmental impact throughout the product lifecycle.	1. Prepare comprehensive guideline for eco-friendly packaging system across all sectors. 2. Distribute the guideline through Chamber of Commerce and Sectoral Association.	Manufacturers, Product Designers Chamber of Commerce Sectoral Associations,	Long term
	Encourage industries to explore and adopt sustainable materials that can replace conventional plastics.	1. Investigate the benefits for businesses to adopt sustainable materials to replace plastic and summaries in a brochure. 2. Conduct feasibility studies on incentive programs, green certification and rating mechanisms for those who replace conventional plastics. 3. Implement incentive programs, green certification and rating mechanisms.	Mol	Short term

		4. Clearly communicate to industry how the programs aim to support maximizing the benefits of using alternative materials.		
Strengthen collaboration and partnerships amongst stakeholders to enable plastic packaging recycling.	Create a Public-Private-Partnership scheme to mobilize resources and attract investment in recycling infrastructure.	1. Identify areas of investment and check their feasibility. 2. Call investors to participate in it.	Mol, Manufacturers, Finance institutions, investment commission, Policy Studies Institute(PSI)	Medium term
	Promote multi stakeholder partnerships among plastic producers, recyclers, and retailers to create closed-loop systems that enhance resource recovery and reduce waste.	1. Organize workshops and networking events and explore opportunities. 2. Introduce shared facility uses for closed loop system.	Mol, Partnership for circular value chains in Addis Ababa, PETCO	Short term
	Create a platform to form natural resource partnerships between local and international organizations and initiatives focused on the circular economy to share experiences, mobilize resources, access funding, and adopt best practices, e.g. GIZ partnership for plastic circular value chain.	1. Create user-friendly online platforms for investors, start-ups and governments to register and contribute on CE. 2. Conduct regular workshops on the initiatives and the impacts due the initiatives.	Partnership for circular value chains in Addis Ababa PETCO	Short term

4.2.5. Agriculture, Food and Forestry

Ethiopia's agriculture, food, and forestry sector remains the backbone of the country's economy, contributing nearly 40% of the national GDP, 80% of the country's exports³⁹ and employing around 80% of the population. Many Ethiopians depend on agriculture for their livelihoods, making it a critical sector for food security, economic development, and poverty alleviation. Agricultural production is dominated by smallholder farmers who cultivate staple crops such as teff, maize, wheat, barley, and sorghum, alongside major export commodities like coffee, oilseeds, and pulses. However, the country remains dependent on imports staples, including wheat, rice, and sugar, highlighting both the growing demand for food and the existing gaps in domestic production.

Despite its significance, the sector is fraught with challenges that limit productivity and sustainability. Agriculture in Ethiopia is largely rain fed, with only about five percent of cultivated land under irrigation. This heavy reliance on rainfall makes the sector highly vulnerable to climate variability, including erratic weather patterns, prolonged droughts, and flooding. Soil degradation further exacerbates the problem, as continuous cropping, nutrient depletion, erosion, and overgrazing have severely reduced soil fertility. In response to the rising population, farmland expansion has led to deforestation, biodiversity loss, and increased greenhouse gas emissions, creating an urgent need for sustainable agricultural practices. Women, who play a central role in the sector, continue to face structural barriers that restrict their access to land, credit, and modern farming inputs, further limiting productivity and economic empowerment.

Agro-waste management remains one of the most pressing challenges in Ethiopian agriculture. The sector generates an estimated 30 million tons of crop residues annually, with a 30-40% lost due to inefficient storage, handling, and processing.^{40,41} Similarly, livestock

³⁹ USAID Ethiopia Fact Sheet - Agriculture - October 2020

⁴⁰ Debebe, S. (2022). Post-harvest losses of crops and its determinants in Ethiopia: Tobit model analysis. *Agric & Food Security* 11, 13

⁴¹ Ministry of Agriculture and Natural Resources (2018). *Postharvest management strategy in grains in Ethiopia*, Addis Ababa, Ethiopia.

farming produces about 10 million tons of manure per year, yet much of it remains underutilized due to the lack of proper processing facilities, limited market access, and financial constraints. While some agro-waste is repurposed for composting, livestock feed, and bioenergy, a substantial amount is discarded, leading to environmental pollution and missed opportunities for resource efficiency. The improper disposal of agricultural chemicals and waste further compounds these environmental risks, contributing to soil and water contamination.

Water consumption is another critical issue, as agriculture accounts for approximately 93% of Ethiopia's total water withdrawals. The sector primarily depends on surface and groundwater sources, yet seasonal variability, climate change, and inadequate water storage infrastructure contribute to frequent shortages. Although solar-powered irrigation pumps are gaining traction, their adoption is hindered by high costs and limited access to financial resources. The energy consumption in agriculture also relies heavily on traditional biomass sources, though there is a growing shift toward solar and electrification solutions to enhance efficiency and reduce environmental impact.

Material use in Ethiopian agriculture is evolving, with government institutions such as the Ethiopian Seed Enterprise and Agricultural Input Supply Enterprise playing key roles in providing improved seeds and fertilizers. However, accessibility remains a challenge, and high costs push many farmers to explore alternative solutions such as integrated pest management and organic farming techniques. Mechanization is increasing, with cooperative ownership and rental services for farming equipment becoming more common, but infrastructural constraints persist. The country's road network has seen improvements through investment, but rural roads remain in poor condition, restricting farmers' access to markets and exacerbating post-harvest losses. Traditional storage methods, such as mud granaries and

elevated wooden structures, remain widespread, but they are often inadequate in preserving crops and preventing spoilage.⁴²

Circular economy presents a transformative opportunity for Ethiopian agriculture by promoting sustainable resource use, waste valorization, and climate-resilient farming. The large volumes of agricultural and livestock waste currently discarded could be converted into valuable resources such as biogas and organic fertilizers, reducing reliance on traditional biomass energy while enhancing soil health. Improved post-harvest management through better storage, processing, and logistics could significantly cut food losses, ensuring greater food security and economic returns for farmers.

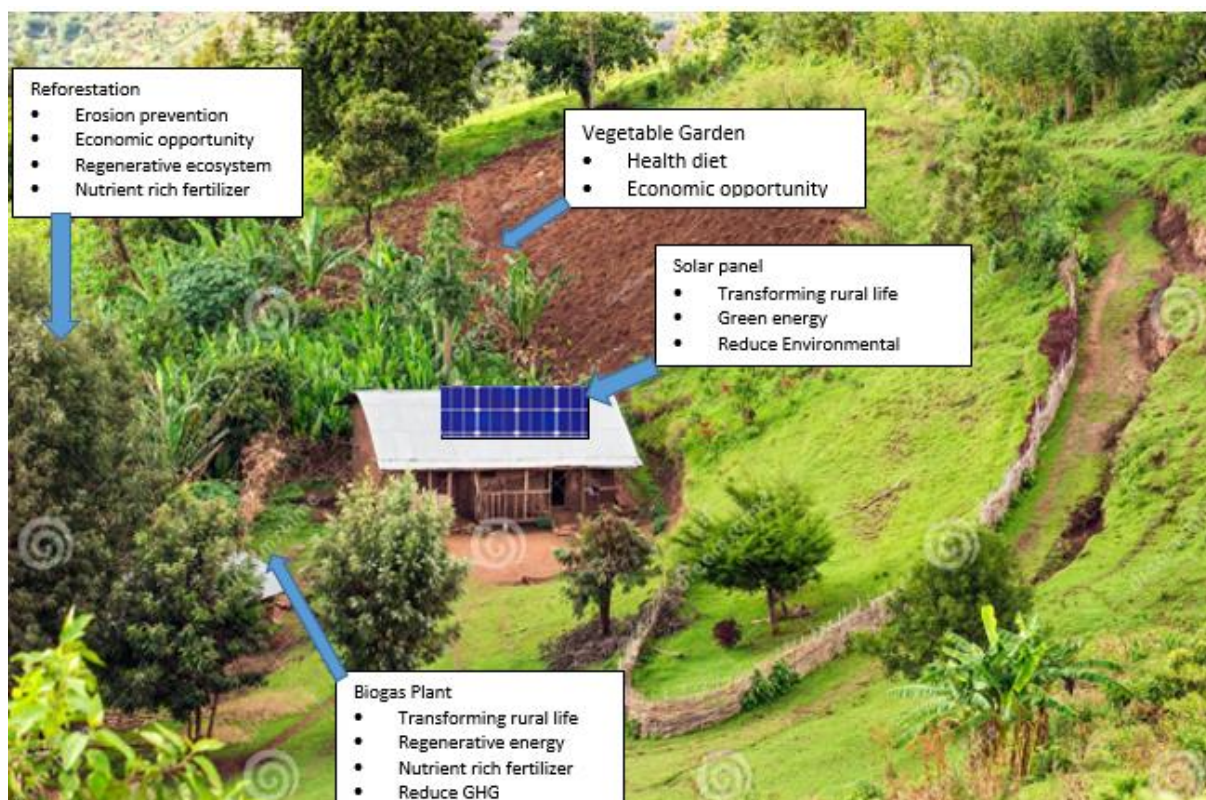


Figure 9: A transformative agricultural practice in Ethiopia (Source: Author, 2025)

42 Haile Tesfaye Duguma. *Indigenous Knowledge of Farmer on Grain Storage and Management Practice in Ethiopia*. *Food Sci & Nutri Tech* 2020, 5(4): 000224.

Crop residues and agricultural by-products could be repurposed as livestock feed, reducing dependence on expensive imported feedstock while addressing waste challenges. Strengthening policy frameworks, fostering investment in circular infrastructure, and enhancing farmer capacity building will be crucial in driving this transformation, ensuring that agriculture remains a cornerstone of economic growth while aligning with environmental sustainability goals.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 10: Action plan for Agriculture and Food systems sector

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Enhance the policy and regulatory framework in favour of circular economy in agriculture, good and forestry.	Ensure that circular economy principles are considered in existing policies, strategies and regulation related to agriculture, food and forestry.	1. Conduct a baseline assessment to evaluate the current agricultural, food, and forestry policies and strategies, to identify gaps in circular economy principles. 2. Based on the findings propose changes to existing policies, strategies and regulation. 3. Adopt changes after approval.	Ministry of Agriculture, Ethiopian Forestry Development, Agricultural Transformation Institute (ATI), Ethiopian Institute of Agricultural Research (EIAR), Ethiopia Food & Drug Administration (EFDA)	Short term
	Create new policies where needed.	1. Based on the outcomes of the assessment conducted under the previous action, revise, the existing policies and strategies, to explicitly include circular economy objectives and develop cross-sectoral strategies. 2. Conduct a multi-stakeholder forum to gather insights, validate the revised version and leverage entry points to implement the policy actions.	Ministry of Agriculture, Ethiopian Forestry Development, Agricultural Transformation Institute (ATI), Ethiopian Institute of Agricultural Research (EIAR), Ethiopia Food & Drug Administration (EFDA)	Medium term

		3. Develop Knowledge transfer materials and capacity-building training, e.g. prepare policy insight factsheets and organize training for policy practitioners and decision-makers.		
Strengthen the valorization of agro-waste.	Invest in R&D for innovative technologies that promote circular agriculture, such as precision farming and bio-based fertilizers.	1. Conduct a review of existing technologies in precision farming and bio based fertilizers to identify strengths, weaknesses, and gaps. 2. Establish specific goals for R&D initiatives, such as increasing yield efficiency, reducing resource input, or enhancing soil healthy. 3. Develop an investment readiness document that highlights areas of focus and resource mobilization and allocation plan	Ministry of Agriculture, Ethiopian Forestry Development, Agricultural Transformation Institute (ATI), Ethiopian Institute of Agricultural Research (EIAR), Addis Ababa Cleansing Management Agency, GIZ Ethiopia	Medium term
	Invest into R&D for more high-value valorization options other than composting.	1. Conduct a cost-benefit analysis of the existing and potential valorization options, considering production costs, pricing strategies, and potential revenue streams; Environmental and social impacts, technological advancement and enabling regulations and policies that could affect the adoption and	Ministry of Agriculture (MoA) Agricultural Transformation Institute (ATI), Ethiopian Institute of Agricultural Research (EIAR) Addis Ababa Addis Ababa Cleansing management agency	Short term

		commercialization of the identified high-value valorization options		
	Create financial incentives, such as subsidies or grants, for farmers who adopt circular economy practices.	1. Review the current agricultural subsidies and access to finance programs to understand their effectiveness and identify gaps related to circular economy practices. 2. Design and test /validate financial Incentive Mechanisms 3. Organize capacity building trainings for financial institutions	Ministry of Trade and Regional Integration, Federal Small and Medium Manufacturing Industry Development Agency (FeSMMIDA) Ministry of Finance, Ministry of Agriculture, Microfinance institutions (MFIs), Business advisory service providers, (Startup business accelerators)	Short term
	Create a waste valorization system to utilize agricultural waste and by-products into valuable products, such as	1. Based on the analysis, provide actionable recommendations for businesses looking to enter the high-value valorization market. 2. Create a detail portfolio of selected value chains, products and services.	Ministry of Agriculture Industry Park Development Cooperation (with focus on the Agro-parks), Business advisory service Providers	Medium term

	bioenergy, bioplastics, and organic fertilizers.	3. Developing a Market System for High-Value Valorization Options. 4. Identify potential partnerships like Public Private Partnerships that could enhance market entry and product development.		
	Invest in infrastructure and networks for enhancing solutions that valorize post-harvest waste.	1. A list of specific goals for infrastructure and logistics investment, such as reducing waste and improving resource recovery. 2. Develop an Infrastructure and logistic Development Plan (with focus on Designing facilities, facilitating end-to-end-logistic plan value chains. 3. Design, prototype and manufacture equipment in mass with local institutions and capacity.	Ministry of Agriculture, Ministry of Industry, Investment Commission, Manufacturing Development Institute(MIDI), TVET Schools, Development partners like UNIDO, UNDP	Long term
Support sustainable agricultural products and circular food	Create a multi-stakeholder, digital platform to create closed-loop supply chains that minimize waste and enhance resource recovery, e.g. among restaurants,	1. Investigate key partners for establishing the platform as well as the potential user organizations. 2. Setup the platform with clear goals, for example, the platform could be used for promoting circular economy practices, sharing knowledge, and fostering collaboration.	GIZ's Partnership for Circular Value Chains, EPA, Chamber of Commerce Sectoral Association	Medium term

systems and supply chains.	hotels, markets and composters.	3. Launch the platform in collaboration with Chamber of Commerce and Sectoral Association.		
	Create frameworks and guidelines for developing circular supply chains that minimize waste and promote the use of by-products in food production and processing.	1. Develop standards and certification schemes for the circular products and service with focus on materials, manufacturing processes, products, and business models related to the circular economy. 2. Align with ISO 59010 Circular Economy standards.	EPA, Ministry of Agriculture , Institute of Ethiopian Standards	Medium term
Promote the Bio economy to foster (economic) sustainability and resilience.	Set up demonstration sites (e.g. gardens, composters, etc.) in public institutions, such as schools or offices.	1. Identify model Schools to demonstrate regenerative agricultural practices. 2. Develop practical manual and guideline for regenerative agriculture 3. Design and setup a demonstration site dedicated to agricultural practices that align with Circular economy concepts and principles at the future Circular Economy Center of Excellence.	Addis Ababa Cleansing Management Agency, Ministry of Agriculture, Ministry of Education, Private sector like food secure circular schools in Africa C40, Soil and More Plc. Ethiopian Organic Compost Producers Association,	Short-term

			Plastic Waste working group of the Partnership for Circular Value Chains in Addis Ababa	
	Develop programs that enhance the economic viability of rural communities by creating new markets and job opportunities in bio-based sectors.	1. Conduct a market assessment to analyze existing market conditions, demand for circular products, and barriers to entry for businesses in the circular economy. 2. Develop a framework for the market system development program for 2-3 three value chains/ products /services, outlining key components such as product prototyping, regulatory frameworks, capacity building, funding, and resource allocation.	Ministry of Agriculture, Manufacturing Development Institute, Bio and Emerging Technology Institute (BETin) of Ethiopia, Development partners, Private sector	Medium term
	Promote regenerative practices that enhance soil fertility and biodiversity, for example by using organic amendments and cover cropping.	1. Compile a list of regenerative practices. 2. Conduct economics, environmental, social feasibility tests on selected practices. 3. Document the impact and develop knowledge management products for dissemination.	Ministry of Agriculture, Environmental Protection Authority, Media	Short term
	Gradually reduce the application of agro-	1. Conduct comparison and research between agricultural systems that use conventional	Ministry of Agriculture,	Long term

	chemicals and chemical fertilizers and replace with bio-fertilizers; supported by awareness campaigns, tax incentives and subsidies (shifting subsidies from chemical fertilizer to organic fertilizer).	agrochemicals vs. regenerative agriculture, generating both qualitative and qualitative analysis. 2. Summaries findings in a brochure and distribute it through Chamber of Commerce and Sector Association.	Environmental Protection Authority	
	Implement practices that lower GHG emissions, focusing on carbon sequestration in soils and sustainable land-use practices.	1. Investigate good practice examples that lower GHG emissions in the agricultural sector, look at international and regional examples. 2. Design and implement project that can generate carbon credits.	Ministry of Agriculture, Environmental protection Authority, Development partners like UNDP, GGGI	Long term

4.2.6. Construction and Urbanization

Ethiopia is one of the fastest urbanizing countries in the world, with an urban growth rate of 4.4%, a figure that surpasses the Sub-Saharan average.⁴³ This rapid urban expansion has led to an increasing demand for housing and infrastructure, with projections indicating that approximately 471,000 new urban housing units will be required annually by 2025.⁴⁴ The construction sector has, therefore, become a key driver of economic growth, contributing around 21% to the nation's GDP and maintaining an annual growth rate expected to exceed 8% until 2026.⁴⁵ Much of this growth is fueled by significant government investments in infrastructure, energy, and mining, as well as public-private partnerships that seek to modernize Ethiopia's built environment.

The construction industry in Ethiopia operates through a dual structure, with both formal and informal channels playing a significant role. The formal sector is largely dominated by foreign firms, particularly Chinese companies, which handle large-scale infrastructure projects. Meanwhile, the informal sector, consisting primarily of small and medium-sized local enterprises, is responsible for much of the housing construction, particularly in rural areas where self-building remains the predominant method of housing production. Given that the sector is the second-largest employer in Ethiopia after agriculture,⁴⁶ and the largest employer in urban areas, its potential impact on sustainable economic growth and resource efficiency is considerable.

Despite its rapid expansion, Ethiopia's construction sector faces critical challenges, particularly regarding material dependency and sustainability. The industry relies heavily on imported materials such as steel, aluminum, glass, plastics, and cement, leaving it vulnerable

⁴³ <https://www.cia.gov/the-world-factbook/countries/ethiopia/>

⁴⁴ World Bank (2019). *Unlocking Ethiopia's Urban Land and Housing Markets, Urban Land Supply and Affordable Housing Study Synthesis Report*.

⁴⁵ *ibid.*

⁴⁶ Global Data. (n.d.). *Ethiopia construction market size, trend analysis by sector, competitive landscape and forecast to 2028 – H2 update*. Retrieved from *Ethiopia Construction Market Size, Trend Analysis by Sector, Competitive Landscape and Forecast to 2028 - H2 Update*

to global supply chain disruptions. This reliance on external materials not only increases costs but also limits opportunities for local industrial development. Furthermore, the sector predominantly follows a linear economic model, characterized by a "take, make, dispose" approach, which results in high levels of material waste and inefficiencies. Unlike traditional Ethiopian building methods that historically incorporated sustainable practices such as material reuse and resource efficiency, modern construction has largely abandoned these principles in favor of more resource-intensive global models.

Waste generation within the construction sector is particularly significant. In the formal sector, material waste primarily occurs during the construction phase rather than at the demolition stage. In Addis Ababa, for example, the average demolition waste rate has been estimated at 1,400 kg per square metre.⁴⁷ While formal construction contributes to high levels of waste accumulation, the informal sector demonstrates more resource-conscious practices. Informal builders, often constrained by financial limitations, naturally optimize the use of available resources, repurposing and salvaging materials to reduce costs. Ethiopia's largest recycling hub, located in Addis Ababa's Merkato district and commonly referred to as 'Menyaleshtera,' plays a crucial role in facilitating material recovery and reuse.

In addition to material waste, the construction industry's consumption of water and energy poses further sustainability challenges. Construction projects rely on municipal water supplies, but shortages often lead to the transportation of water from wells and rivers to construction sites. Energy use within the sector is primarily derived from hydroelectric power and diesel-powered machinery, though manual labour remains an integral part of construction processes, particularly in the informal sector. The inefficiencies in water and energy use highlight the need for more sustainable and resource-efficient construction practices.

⁴⁷ Addis Ababa University (2023). Study

Despite these challenges, Ethiopia’s construction sector holds significant potential for circular economy interventions that can enhance sustainability and reduce waste. One of the most viable approaches is the promotion of material reuse and recycling, particularly through deconstruction rather than demolition. By integrating material recovery processes into formal construction activities, Ethiopia can reduce its dependence on costly imported materials while simultaneously decreasing waste generation. Strengthening local supply chains for key construction materials, such as steel and cement, would further reduce reliance on foreign imports and create economic opportunities for local industries. The reintegration of sustainable building techniques, particularly those that leverage bio-based materials such as bamboo, wood, and stone, could also contribute to a more circular construction sector. Historically, Ethiopian architecture made extensive use of these materials, which are both renewable and locally available. Revitalizing these traditional practices in contemporary construction would not only promote sustainability but also support local artisans and industries. Moreover, improved waste management policies and regulations could incentivize sorting, upcycling, and repurposing of construction waste, ensuring that valuable materials are not discarded prematurely. The Corridor development program in Addis Ababa enhances circularity practices in construction sector.



Figure 10 : Urban Corridor Development in Addis Ababa

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 11: Action plan for Construction and Urbanization sector

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Establish a solid policy and legal framework that favours circularity as key principled in the construction sector	Develop a circular construction strategy, featuring a national vision for the construction sector, sourcing from regional best practices, global trends and local needs.	1. Establish a national task force to prepare a draft for the national strategy. 2. Allocate budget for the task force and its activities. 3. Set a time schedule for the development of a strategy and its implementation. 4. Revisit existing strategies, policies and legislation applying to the construction sector; identify and eliminate legal barriers (such as barriers on locally sourced and produced materials), ensuring that circular principles are well integrated (e.g. Building Standards and Codes need to link choice of materials to performance and passive design criteria 5. Promoting the recycling of clay, ceramic and glass, or using useful materials from quarry sites (such as sand, marble, gravel); e.g. the Cement Production Strategy.	Ministry of Urban and Infrastructure (MOUI), EPA, Construction Project Management Institute (CPMI), Institute of Ethiopian Standards (IES), Regional Governments and City governments, Policy Studies Institute(PSI)	Short term

	Revising existing strategies, policies and legislation and applying to the construction sector; eliminating legal barriers (such as for locally sourced and produced materials), ensuring that circular principles are well integrated (e.g. Building Standards and Codes need to link choice of materials to performance and passive design criteria; promoting the recycling of clay, ceramic and glass, or using useful materials from quarry sites (such as sand, marble, gravel); e.g. the Cement Production Strategy.		MOUI, Institute of Ethiopian Standards (IES), Regional Governments and prime city governments, Policy Studies Institute (PSI)	Medium term
	Develop Public Green and Circular Procurement policies to drive the demand for circular and sustainable building materials and components; this should include (1) prioritizing green and circular products and services, (2) good procurement planning for quality, durability and long product life as well as (3) ensuring that end-of-life products are reutilized where possible.		MOUI, EPA	Medium term
	Advance in Green Building certification.	1. Establish a national/regional board of certification.	MOUI, EPA,CPMI, IES	Medium term

		2. Develop categories, terms of application, and qualification criteria. 3. Establish incentives for certifications		
	Provide guidelines and materials for industry to enable higher integration of circularity in their operations and compliance with the policy goals and revisions.	1. Commission the preparation of guidelines for selected experts selected through the national task force. 2. Establish timeline for implementation.	Regional governments, City governments, and MOUI	Short term
Promote Circularity as an important academic, cultural, economic theme through revitalizing and encouraging Education, Research, and Innovation.	Encourage the incorporation of circularity (circular construction, circularity and the city) as a theme in higher learning institutions in disciplines related to the design, construction, and management of the human habitat.	1. Establish chairs/professorships and courses in universities related to circularity in areas such as design, Construction, and planning of buildings, infrastructure, and cities.	MOE, EPA, MOIT	Short Term
	Encourage research and innovation by establishing research funds on circularity accessible for institutes of higher learning and research.	1. Establish accessible research funds for circular construction and circularity in/with cities in relevant federal ministries, sectoral offices of regional states, and municipalities. 2. Encourage the private sector in establishing research funding through tax incentives.	Ministry of Innovation and Technology, Ministry of Education EPA, Ministry of Urban and Infrastructure, Ministry of Trade and Regional Integration	Short Term
	Establish a national recognition scheme through awards for best building, infrastructure, or city	1. Establish national/regional awards for best practice in Circular Construction (design and	EPA,	Medium Term

	design/construction/systems awards (example ABC=Award for Building for Circularity) categories such as student design, professional design, implemented projects, etc.	construction) and the Greenest City of Ethiopia. 2. By engaging professional associations, universities (higher learning institutions), and developers, establish yearly or biennial national exhibition on Circular Construction, Green Construction, Green City schemes, etc..	Professional Associations (AEA, ECEA, etc.), Policy Studies Institute (PSI)	
	Encourage public art (including but not limited to TV shows, dramas, movies, fine arts) that promotes the existing reuse, less-use, and recycling culture (practice).	1. Establish sponsorship schemes for CE related art works. 2. Organize exhibitions and discourses to intentionally promote less-use and re-use. 3. Develop schemes to work with schools and student bodies for cultural promotion among the youth.	EPA, MOT (Ministry of Tourism),	Long term
Promote and stimulate the use of secondary, sustainable and renewable materials as well as circular construction techniques.	National campaign and financial incentives for the development of local construction industries to reduce import dependence of materials.	1. Organize geographic matrix of available natural building materials.	MOUI, EPA	Medium term
	Increase the steel recycling capacities in terms of both quality and quantity to compete with imported primary steel.	1. Investigate current recycling capacities. 2. Identify bottlenecks in the collection of scrap metals and its processing. 3. Identify ways of easing out the supply chain and manufacturing processes.	Ministry of Urban and Infrastructure, Ministry of Trade and Regional Integration	Medium term

	Impose mandatory selective demolition at demolition sites, valorizing C&D waste by recycling and reusing materials like concrete, bricks, and metals, (addressing import vitality and improve ROI).	1. Prepare manuals and guidelines for demolition and sorting/recovering of materials. 2. Establish standards and guidelines for testing of recovered and recycled materials.	MOUID, Manucipalities	Short term
	Identify innovations that promote the use of waste materials in construction or the reuse of construction materials or the recovery of other waste materials, such as plastic waste or copper tailings that can be used as input for construction products. ⁴⁸	1. Organize national and regional shows and competitions for innovations in CE. 2. Avail financial benefits and sponsorships for creative start-ups.	EPA, MOUI	Short term
	Explore traditional (vernacular) construction techniques to enable locally embedded construction economy.	1. Work with higher learning institutions to investigate the potentials of vernacular construction practices for urban development.	EiABC-AAU(and other higher learning/research institutions), MOUI	Short term

⁴⁸ These should be featured across the industry, e.g. through Private Sector Federations or Green Building Councils, and scaled-up.

		2. Identify bottlenecks, particularly in cities, that hinders the application of vernacular practices.		
	Investigate higher taxation of unsustainable construction materials for large-scale construction projects from local and foreign investors.	1. Develop criteria for sustainability index for construction materials. 2. Identify and grade construction materials based on developed matrix. 3. Develop taxation scheme accordingly.	MOUI MoF	Long term
	Promote modular buildings that facilitate repairs and the recovery of materials and complete functional blocks during decommissioning.	1. Promote research on building technology through earmarked research findings. 2. Popularize modularity in building design and construction through popular media (instead of scientific outlets) and model buildings.	MOUI, Universities and other Higher learning/research institutions (EiABC& AAit - AAU), Construction Project Management CPMI	Medium term
	Using current momentum of reforestation campaign to reintroduce wood (as well as agricultural waste) as a key building component on industry scale.	1. Investigate the current use of wood in the construction industry. 2. Investigate the potential of the forestry industry in Ethiopia to produce wood as a main construction material. 3. Develop standards to re-introduce wood as a vital material into the high-density urban development schemes.	EPA MoUI MoA	Long term

Plan urbanization and urban development in a way that considers circularity and sustainability criteria as well as tackled the urgent needs for affordable housing	Revisiting urban planning protocols, concepts, and techniques, establishing a framework that enables a system of habitat production with a more stable supply chain and controlled price volatility.	1. Critically review planning protocols and manuals. 2. Identify bottlenecks in the current planning practices that hinders sustainable practices. 3. Develop frameworks and manuals for local and regional spatial and infrastructural planning practices targeting sustainability.	MOUI, Policy Studies Institute(PSI)	Medium term
	Promote concepts of city planning and design that conceives cities as organism operating within a larger natural ecosystem recognizing than disrupting natural material cycles, hydrologic cycles, energy cycles, etc.	1. Organize experience sharing visits and exhibitions for city mayors and professionals. 2. Establish awards for best city plan or best comprehensive urban development implementation for sustainability. 3. Organize/support national and regional conferences on city visions	MOUI, Policy Studies Institute(PSI)	Medium term
	Develop guidelines for the planning and design of new cities/towns/neighborhoods that is established on the principles of circularity for better use/reuse/recycle of resources (material, water, energy, and waste).		MOUI, EPA, Policy Studies Institute(PSI)	Short term
	Co-creation workshops on neighborhood level, reimagining the neighborhood and its expansion.		Local governments, academia, NGOs	Short term

4.3. Enabling Elements

4.3.1. Inclusivity and Job Creation

Ethiopia's transition to a circular economy must consider existing inequality gaps that cut across social, economic, and environmental dimensions. Poverty and economic disparities remain significant hurdles, with income inequality limiting access to resources and opportunities for marginalized groups. Smallholder farmers and informal waste workers often struggle to access markets, making their participation in economic activities more challenging. Furthermore, geographic disparities deepen the divide between rural and urban areas, where inadequate infrastructure restricts economic engagement and access to essential services.

Gender inequality further compounds these challenges. Cultural norms and traditional gender roles hinder women's participation in education, resource access, and decision-making. Their underrepresentation in leadership positions and economic activities makes it even harder to achieve an inclusive transition. Similarly, gaps in education and skills development limit workforce readiness, particularly in rural areas where access to quality education remains low. Without targeted vocational training that aligns with labor market demands, many individuals remain unprepared for employment in a modern, circular economy.

Policy and governance issues present another critical barrier. Although policies exist to promote inclusivity, weak implementation and enforcement often render them ineffective. Marginalized groups frequently lack representation in decision-making processes, which leads to solutions that do not adequately address their needs. Job creation and skills development are integral to a successful circular economy transition. According to Circle Economy, circular jobs fall into three categories: core circular jobs that directly contribute to resource efficiency (such as waste management and renewable energy), enabling circular jobs that support these activities (such as education, design, and digital technology), and indirect circular jobs that contribute to the broader economic ecosystem (such as logistics and information services). Given Ethiopia's high unemployment rate—especially among women and educated youth—there is a pressing need for initiatives that equip workers with relevant skills and expand employment opportunities in the circular economy.

To address this, the Ethiopian government, through the Ministry of Labour and Skills (MoLS), has collaborated with institutions such as the Federal TVET Institute and private sector actors

to provide demand-driven skills training. Programmes like the MasterCard Foundation's *Young Africa Works* initiative are working to create 10 million jobs over the next decade by strengthening vocational education and aligning training with industry needs. However, with 83% of Ethiopia's workforce engaged in the informal sector, more must be done to integrate informal workers into the circular economy. These workers, particularly in waste collection and recycling, play a crucial role in circularity but remain largely unrecognized in policy discussions.

Women, too, stand to benefit from a well-structured circular economy transition. Despite their underrepresentation in the labour market, targeted training could equip them with the skills needed to move beyond low-income jobs and take on more technical or leadership roles. Initiatives such as *Empowering Women through Waste Collection* in Addis Ababa are already making strides by providing women with training in waste management and business skills, helping them establish recycling cooperatives and gain financial independence.

Ultimately, inclusivity in the circular economy transition requires giving marginalized groups a stronger voice in national policymaking. Informal workers' organizations, though active at local levels, lack the influence needed to shape policies on a broader scale. Ensuring that vulnerable communities have meaningful representation in decision-making will be key to fostering an equitable and sustainable circular economy in Ethiopia.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 12: Action plans for Enabling Elements

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Facilitate the integration of informal waste collectors into the formal waste management system	Reconsider the eligibility criteria to fulfil the due diligence for registering business owned by Informal waste collectors.	1. Conduct a series of consultations with informal waste collectors and SMEs to identify the challenges they are facing to operate as formal business entities. 2. Review the existing business registration processes and access to finance eligibility criteria to identify bottlenecks for formalizing informal businesses.	MoLS, Ministry of Trade and Regional Integration, Federal Small and Medium Manufacturing Industry Development Agency (FeSMMIDA)	Short term
	Facilitate partnerships between formal and informal businesses to co-own business.	1. Organize Business-to-Business (B2B) sessions between the formal and informal business to design business models. 2. Communicate about the benefits of collaboration between both sectors.	Federal Small and Medium Manufacturing Industry Development Agency (FeSMMIDA), Business advisory service providers	Medium term
	Create awareness and advocate for the rights of informal waste collectors to transform to formal entities.	1. Consider mainstreaming the voice of the informal sector in national decision-making. 2. Organize awareness raising and recognition campaigns.	EPA, FeSMMIDA, media, CSOs	Medium term

Facilitate the integration of integrating women and youth into the economy, in particular in circular activities.	Develop a financial incentive system for youth and women-owned circular economy products and services.	1. Investigate potential financial incentives programs that are successful in the region or internationally. 2. Contextualize most suitable incentive programs to Ethiopia. 3. Develop pilot programs with a few youth and women-owned CE businesses.	EPA, FeSMMIDA, Ministry of Trade and Regional Integration	Short term
	Develop (up-scale) empowerment programmes for women and youth active in circular activities.	Develop capacity-training programs tailored for women and youth-owned informal waste collectors focusing how they can design Circular Business models, products and services. Strengthen decision-making capacities and allocate funds for women/youth led circular enterprises Invite relevant businesses and execute the trainings in collaboration with partners and VETs.	Development partners, Techno serve, TVETs (Technical and Vocational Education and Training)	Short term
	Combine seed funds with capacity training, ensuring that they are well equipped and safely working.	1. Establish seed funding programs in collaboration with development partners. 2. Make a clear link to capacity building programs. 3. Provide access to subsidized infrastructure, equipment and working space.	Development partners	Short term

Align green/circular jobs with National Development Strategy and NDC.	Define green (circular) jobs and integrate it into the National Development Strategy and NDC.	1. Develop a list of criteria to define what constitutes green (circular) jobs within the national context. 2. Establish a national Green Jobs classification, in line with international standards, e.g. Circular Economy. 3. Integrate the standard into the NDC and National Development Strategy.	MoLS, EPA, international Labour Organization(ILO,), TVET, schools , MoPD, Policy Studies Institute(PSI)	Short term
	Revise the existing National Development Strategy to mainstream and reflect on indicators and targets for circular jobs.	1. Identify the gaps in policies and regulations focusing on labour, skills, innovation and startups 2. Based on the findings, revise them by integrating the requirements for creating Circular jobs.	MoLS, EPA, ILO, Ministry of Innovation and Technology, Policy Studies Institute (PSI)	Medium term

4.3.2. Trade and Collaboration

Collaboration and the strengthening of local industrial capacities play a crucial role in reducing Ethiopia's reliance on imported materials, while regional trade remains an avenue for economic growth through the mutual exchange of expertise and resources. Regional cooperation can foster improvements in material recycling and waste management, supporting circular economy practices across borders. However, Ethiopia's manufacturing sector is largely characterized by a linear supply chain, where material reuse and waste recovery remain underdeveloped. Shifting towards a circular model requires the integration of reverse logistics, industrial symbiosis—whereby one industry's waste becomes another's resource—and efficient material recovery systems. This transition would not only enhance resource efficiency but also lower production costs.

Government regulations on second-hand clothing imports aim to control quality and safety; yet high customs duties often make legal imports expensive, leading to widespread contraband activities, particularly in border regions. Meanwhile, waste from the construction sector presents an emerging opportunity for circular economy practices. Materials such as wood offcuts, steel, aluminum scraps, and plastic waste are increasingly repurposed or sold for recycling, contributing to resource efficiency and sustainability. However, much of this activity remains informal, driven by waste collectors known as "Korales." Integrating these informal actors into a structured waste management system could strengthen secondary raw material markets and foster more circular supply chains.

Ethiopia's participation in regional economic blocs such as COMESA, EAC, and IGAD, as well as trade agreements like the African Continental Free Trade Area (AfCFTA), offers a platform for enhanced collaboration in circular economy initiatives. Establishing regional product standards and certification schemes would further improve market access for sustainable goods. For instance, the existing East African standard for organic compost sets a precedent for similar frameworks applicable to other circular products and services. Additionally, policies that address transboundary resources and extend producer responsibility (EPR) can drive consumer demand for recycled-content products, reducing dependence on raw material imports and promoting a shift towards a more circular economy.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 13: Action plan for Trade and Collaboration

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Facilitate Industrial Symbioses	Develop a communication system to implement industrial symbiosis amongst the tenants of the industry parks and SMEs located within close proximity.	1. Establish Tenant Associations in selected Industry parks (IPs). 2. Organize a series of awareness raising and information sessions in the Ips.	IPDC, Private sector	Short term
	Facilitate access to infrastructure to process waste and by-products.	1. Setup a demonstration site(s) to process waste into by-products. 2. Collaborate with different industrial businesses to use them for a certain test period. 3. Scale successful practices.	IPDC, the upcoming Circular Economy Centre of Excellence at Bole Arabasa, Private sector, Municipalities Development partners	Medium term
Establish and protect regional markets on secondary raw materials and	Develop a market system for circular products and services in the region.	1. Identify value chain(s) with high potential to be further advanced on a regional level. 2. Develop a market system and implementation plan.	Development partners, Ministry of Trade and Regional Integration, Regional Economic Communities(RECs) like Intergovernmental Authority	Short term

sustainable materials		3. Start with pilot projects and scale what successful.	on Development (IGAD), Common Market for Eastern and Southern Africa (COMESA)	
	Develop a mechanism to access regional markets, i.e. COMESA, IGAD, EAC, and African Continental Free Trade Area (AfCFTA).	1. Conduct detailed market analysis to identify and estimate demand, competition, and opportunities 2. Draft a comprehensive report on market entry strategies. 3. Simplify customs procedures and reduce trade barriers to facilitate smoother cross-border transactions.	Ministry of Trade, PAN African Chamber of Commerce	Medium term
	Provide trainings on trade negotiation skills.	1. Develop training curriculum with WTO. 2. Organize training for policy officers negotiating cross-boundary trade and enhance regional integration.	Ministry of Trade, WTO AfCFTA secretariat	Medium term
Ensure access to global markets.	Facilitate transboundary movements of by-products and compliance to Multi-lateral Environmental agreements.	1. Invest in transportation and logistics infrastructure to improve connectivity between member states.	EPA, IPDC, Private sector	Short term

		2. Establish regional agreements on transboundary movements related to circular economy activities and local value creation.		
	Provide guideline on compliance with global markets (in terms of rising sustainability criteria).	1. Compile information material for global certification and standards and how to comply to them; distribute through Chamber of Commerce or Sector Associations. 2. Develop certification and eco-labelling schemes for circular products and services aligning with international standards, e.g. ISO standards.	ESA, Ministry of Trade and Regional Integration, Institute of Ethiopian Standards, Chamber of Commerce Sector Associations. Policy Studies Institute (PSI)	Medium term
Protecting the national and regional secondary / sustainable material market	Join discussions on regional market developments.	1. Attend information session organized by AfCFTA secretariat to identify market entry strategies. 2. Follow up with national REC representatives and align engagements in conversations, events	RECs and RECs representative	Short term

		and negotiations on regional market developments.		
	Ensure that imports of unsustainable/harmful products and materials are regulated.	1. Revise the existing transboundary Multilateral and regional Environmental Agreements to consider circular economy related waste streams, e.g. e-waste, lead batteries. 2. Launch updated regulation through public campaign. 3. Increase enforcement mechanisms to ensure implementation.	Customs office, EPA, Secretariat of the Basel, Rotterdam and Stockholm conventions (BRS Secretariat)	Short term
	Train customs and procurement officers.	1. Compile training materials as well as a check list for them. 2. Organize trainings for customs service provides and procurement officers.	ESA, Ministry of Planning and Development, EPA, Policy Studies Institute (PSI), Universities	Short term

4.3.3. Education and Capacity Building

Education and capacity building are fundamental to fostering a circular economy in Ethiopia and ensuring that economic activities shift towards higher value-added processes. For this transition to be effective, all stakeholders, including government entities, businesses, academia, and the public, must share a common understanding of circular economy principles and their relevance to the country's development. However, awareness remains low across multiple sectors. While some stakeholders possess a basic grasp of the concept, the lack of technical expertise and skills presents a significant barrier to the design and implementation of circular economy strategies. On the other hand, within the public system, it is common to equip staff members, with elements of circular economy concepts and principle with the expectation to improving efficiency in production and provision of service. However, due to high staff turnover, it is difficult to retain knowledge and expertise over a long period. Hence, it is ideal to design a cross-sectoral capacity building intervention with longer life span, with measurable impact and key performance indicator.

Integrating circular economy education at various levels, from schools and vocational training to higher education institutions, can help bridge this gap. Universities and TVET institutions should embed circular economy concepts into their curricula by offering dedicated courses and training programmes. In parallel, awareness-raising initiatives through media campaigns, workshops, and public outreach can help cultivate a broader societal shift towards sustainable consumption and production. Mainstreaming circular economy education can stimulate demand for sustainable products and services, drive industries towards circular models, and foster a new generation of innovators and entrepreneurs.

Despite the growing focus on green skills within Ethiopia's TVET system, the circular economy is not yet fully integrated into professional training or tertiary education. Current green initiatives in TVET institutions are largely limited to reforestation, afforestation, tree planting and participation in national sustainability programmes, with little emphasis on embedding circular economy principles into training delivery, curriculum design, research, and institutional culture. Although entrepreneurship courses are mandatory for TVET graduates, they do not priorities circular business models or green innovation.

To accelerate the adoption of circular economy practices, Ethiopia must strengthen awareness and technical capacity across all levels of education and industry. This requires better alignment between national development policies and TVET mandates to ensure that research, technology, and industrial practices are interconnected. By fostering stronger links between academia, industry, and government, Ethiopia can create an enabling environment where circular economy principles translate into real-world applications and drive sustainable economic growth.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 14: Action plan for Building Educational Capacity

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Enhance capacity for circular economy skills through CE-dedicated university and TVET curricula.	Develop a national general CE-dedicated curriculum (basic CE understanding) and sector-specific curricula that universities, high schools and TVETs can integrate into their modules, programmers and degrees.	1. Investigate crucial topics and contents to include in the curriculum, looking at international and regional best practices, and launching a survey for knowledge institutions and private sector. 2. Design practical guidance books and training manuals for TVETs to train students on circular skills. For example, product design and prototyping and 3Rs 3. Develop tailored curriculums for all educational levels, primary secondary and tertiary level.	Ministry of Educations, TVETs, Academic institutions ILO, Policy Studies Institute (PSI)	Short term
	Build on the existing University- Industry linkage to promote knowledge and technology transfer.	1. Develop tailored Internship programs for young graduates and professional. 2. Establish incubation hubs and business accelerator centres focused on Circular economy	Manufacturers, Academic Institutions, Ethiopian Entrepreneurship Development Institute	Medium term

Increase public awareness for CE	Integrate information from general CE curriculum into media outlets and advertisements.	1. Extract contents from the curriculum to communicate to the wider public. 2. Collaborate with different media outlets and influences to communicate relevant contents. 3. Establish an association of circular economy professionals to network and exchange information.	Media, Ministry of Education	Short term
	Develop national CE initiatives engaging different kinds of society, e.g. neighborhood clean-ups or repair days.	1. Organize an annual National Circular Economy Day to successfully commemorate initiatives. 2. Try to create a positive culture about engaging in these initiatives.	Local governments, EPA	Short term
Support tailored research and innovation for CE	Allocate budget for R&D on innovative circular products and services on alternative materials, product design, Prototyping minimum viable products etc.	1. Develop research proposals that focus on innovative circular products and services in collaboration with universities. 2. Fundraise for these proposals or integrate them into existing R&D programs (where budgets are still available).	Ministry of Innovation and Technology, Development partners, Universities	Short term

		3. Set up an innovation fund for circular economy.		
	Invest in strengthening the institutional capacity of the planned Circular Economy Centre of Excellence.	1. Conduct a needs assessment on the capacity, infrastructure and equipment for establishing the Circular Economy Centre of Excellence. 2. Develop a resource mobilization strategy to address the needs. 3. Consider cooperating with development partners on this.	EPA, AACMA, Soil and More, GIZ- NatuReS	Medium term
	Strengthen business advisory service provider to promote startup accelerator and incubation program.	1. Developed a tailored business accelerator and incubation program for startups, SMES and informal sectors working on circular economy. 2. Link the programs to TA or more established companies sharing their expertise.	Ethiopian Entrepreneurship Development Institute, Policy Studies Institute (PSI)	Short term

4.3.4. Business and Finance Support

The successful adoption of the circular economy in Ethiopia hinges on creating the right market incentives and ensuring robust business and financial support mechanisms. Access to grants, seed funding, and affordable loans is critical in fostering circular business models, yet financial products tailored specifically for circular economy projects remain scarce. The limited presence of venture capital dedicated to sustainable businesses makes it difficult for startups to secure funding, as many investors and financial institutions lack a clear understanding of the benefits and viability of circular initiatives.

Moreover, circular economy ventures particularly startups are often viewed as high-risk due to their untested business models and innovative approaches. Ethiopia's financial landscape comprises banks, microfinance institutions, and international donors, yet a lack of coordination among these entities presents challenges for SMEs and startups trying to navigate multiple funding sources. Compounding this issue, many businesses still operate within linear economic structures, making it difficult to transition without sufficient financial incentives. Short-term profit expectations among investors further discourage engagement with circular economy projects, which often require long-term commitments.

Addressing these challenges requires targeted funding schemes, tax incentives, and innovative financing tools such as green bonds to channel investment into circular economy initiatives. Government intervention and support from international development agencies could play a crucial role in bridging financial gaps, ensuring that sustainable business models have the necessary backing to thrive and scale in Ethiopia.

The following table presents the identified goals, actions, sub-actions, as well as lead implementers and suggested timeframe.

Table 15: Action plan for Business and Finance

Goals	Actions	Sub-actions	Lead implementer	Timeframe
Facilitate dialogues and visibility to promote and develop circular business models.	Establish multi-stakeholder platform based on stewardship principles for government bodies, private enterprises, and international organizations to develop indicators of feasible Circular Business models.	Setup a multi stakeholder platform clearly articulating the goals such as promoting sustainable business models, enhancing innovation, and fostering partnerships.	EPA, Policy Studies Institute (PSI), Working Groups (WGs) of the partnership for Circular Value Chains in Addis Ababa	Short term
	Develop a national rewarding system for circular business models	Design tax incentive and/or disincentive for business models	EPA, Ministry of Finance	Medium term
Explore new national financing mechanisms to support the funding of this roadmap.	Develop and implement Extended Producers Responsibility schemes.	Develop funding and financing mechanisms to support the implementation of the existing EPR scheme, such as fees paid by producers based on the quantity of products placed in the market.	EPA, Promoting Economic Transition to Circular Options (PETCO Ethiopia) , WGs of the partnership for Circular Value Chains in Addis Ababa	Short term
	Develop a national circular/green fund (linked to sanitation tax).	Negotiate the allocation of 5% of National GDP for financing green and circular programs	Ministry of Finance and Policy Studies Institute (PSI), EPA	Long term

Build capacity to develop bankable projects.	Provide trainings to MSMEs for developing financial proposal for environmental funds (GEF, WB, AfDB).or national loans.	Organize trainings for building skills like proposal writing and resource mobilization, Project management for policy officers and development practitioners	EPA, WGs of the partnership for Circular Value Chains in Addis Ababa	Medium term
	Provide access to proposed multi-stakeholder and Knowledge management platforms where knowledge and approaches can be shared.	1. Established or strengthen existing volunteer-based Working Groups and associations	EPA, WGs of the partnership for Circular Value Chains in Addis Ababa	Short term
Help linear businesses to transition to more circularity.	Revise the definition and scope of transition phases of SMEs to Medium Enterprises for CE products and services.	1. Develop a guidance document on green and circular taxonomy	EPA, FeSMMIDA, Ministry of Trade and Regional Integration	Short term
	Provide access to training materials and best practices.	1. Compile best practices on an online website which can serve as a dynamic living document to be continuously updated	EPA, Business Incubators	Short term

Increase the capacity and product offer of financial service providers.	Organize capacity building trainings on green/circular finance for financial institutions.	Design and deliver a series of tailored for financial institutions working on access to finance for CE business and projects	EPA, Financial institutions including Micro Finance institutions, Ministry of Trade and Regional Integration, Ethiopian Entrepreneurship Development Institute, Policy Studies Institute, Ministry of Finance	Short term
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5. FINANCIAL RESOURCE MOBILIZATION

The implementation of this Roadmap requires a strategic and thorough approach to mobilize the necessary resources from internal and external resources. An essential element of this activity is the costing of the actions in order to make informed and concrete requests to selected financial sources and providers.

The following categories of funding resources have been identified with high potential to tap into. Given the fact that the competition around financial resources is very high and thus their availability is rather limited, the importance of co-financing is becoming more relevant.

It is important to categorize the financing needs into three- Infrastructure investment, business and entrepreneurship development and capacity building. This will facilitate resource mobilization and to strategically allocate resources maximizing the impact of a Circular Economy Roadmap.

The resource mobilization team (Its role is elaborated under Section 7), can conduct a thorough landscape analysis to identify the different financial stakeholders, sources and instruments and develop innovative finance strategy for the circular economy transition.

Capacity building: This line of finance can be utilized to develop and enhance human capacity. For example, developing curriculum for schools, universities, vocational training centres focusing on Circular economy. It can also be used to produce practical toolkits and guidance documents for business and stakeholders implementing circular practices.

To ensure the successful implementation of the action plans on the road map and, eventually, the transition of the circular economy, it is important to allocate operational costs for the day-to-day activities of the designated entity to coordinate critical economy activities, such as the EPA's Circular Economy Desk. Therefore, the capacity building budget should be able to create plans for generating a sustainable flow of resources.

Infrastructure investment: The funding line will be used to develop and build Physical infrastructure needed to support circular economy initiatives. Mainly investments for modern recycling and material recovery facilities to improve waste processing and resource recovery. It could be also used to design efficiency waste management systems like collection, sorting

processing systems that promote the 7Rs of circular economy principles (Refuse, Reduce, Reuse, Recycle, Recover, Rethink, and Regenerate).

Public Private Partnerships are ideal for such infrastructure investments to ensure:

1. Increased access to capital and risk sharing schemes (between public and private partners), especially to absorb large scale initial investment costs by leveraging on the private sector funding capacity, specialized skills, innovative solutions, and efficient management practices that can enhance project delivery and reduce costs.
2. It also facilitates long-term commitments from both partners, an important element for sustaining circular economy interventions that require a longer timeframe to mature, regenerative agricultural practices.

The recently established Centre of Excellence for Circular Economy, in Addis Ababa, Ethiopia, is an ideal entity to demonstrate and implement such PPPs schemes to promote Circular economy transition in Ethiopia.

Business and entrepreneurship development: The financial support for this category could include resources aimed at establishing research and innovation hubs dedicated to research and development, mainly for designing and validating business model and adopting circular economy technologies, solutions and practices.

This category fosters innovation encourages the development of new technologies and business models E.g. Startups, SMMEs, driving innovation while supporting economic growth and job creation.

In the following section, different financial stakeholders, sources and instruments are being listed that require further investigation on the kind of financial schemes that could be considered under Section 5.2 an approach for the resource mobilization is provided.

5.1. Financial sources

5.1.1. International Donors and Development partners

The following stakeholders have been found as being very open to support circular economy projects (both private sector and governments) in the region. Some of them are even already active.

1. EU Delegations
2. African Development Bank (AfDB)
3. World Bank Group (e.g. IMF, IFC)
4. UN agencies (e.g. UNIDO, UNDP, UNEP, FAO, IFAD, ILO, UN Habitat, etc.)
5. EU Member States' programmes (e.g. SIDA, CIDA, DANIDA, NORAD, AFD, RVO, etc.)
6. Development Assistant Group (DAG)
7. GIZ

5.1.2. National, Regional or International Organizations

The listed organizations are already engaging in several circular economy related projects in Ethiopia.

1. Partnerships for Green Growth (P4G)
2. Cities Climate Leadership Groups (C40)
3. Solidaridad
4. IDH Ethiopia
5. Techno serve

5.1.3. National, regional or international funding programmes

The following funding programmes, formed by different international, regional and national organizations have supported several circular economy projects in Ethiopia.

1. Ethiopian Entrepreneurship Development Institute
2. Micro-finance institutions (e.g. NISIR)
3. Ethiopian Renewable Energy Program by AfDB, Power Africa program by World Bank Group
4. Accelerator programmes, such as Reach for Change, Xhub Addis, Blue Space, BIC Ethiopia
5. Norwegian International Climate and Forest Initiative (NICFI)

5.1.4. National or Regional funds

The following funds have been established to financially support climate, environmental, sustainable and development-related projects, in Ethiopia specifically but also in the region.

1. Green Climate Fund (GCF)

2. Global Environment Facility (GEF)
3. Ethiopian Climate Resilient Green Economy Facility (CRGE)
4. Africa Renewable Energy Initiative (AREI)
5. Sustainable Development Goals Fund
6. African Fund for Climate Change (AFCC)

5.1.5. National financial instruments

As an important aspect of co-financing, the following instruments could be means to contribute own funding for re-investing their generated surplus from related fees and taxes.

1. EPR (work in progress)
2. Sanitation tax? Land tax (ensuring re-investment into infrastructure improvements)

5.1.6. National Budget

Currently, it is under consideration to use 2% of the national budget for environmental programmes. Once this is agreed to, parts of it can be used for the implementation of this roadmap as it promises to address economic development of Ethiopia, improvement of life conditions as well as environmental protection.

5.2. Financial Resource Mobilization Strategy

Ethiopia requires USD 316 billion (Mitigation 87% and Adaptation 13%) by 2030 to implement its NDC. The Climate Resilient Green Economy Facility, hosted by the Ministry of Finance, serves as a government entity to coordinate and mobilize the required climate finance with technical support from the Ministry of Planning and Development, the Environmental Protection Authority, and other relevant line ministries and development partners, like UNDP, World Bank Group, FSD Ethiopia and Global Green Growth Institute. Integrating and aligning the action plans proposed in this Circular Economy Roadmap, into existing climate financing schemes as if financing and planning of the NDCs can significantly enhance sustainability and resilience of the strategy for Circular Economy. It can also be used as a tool attract innovative financing instruments and investments like Green Bonds, Carbon Credits, Debt for Nature swaps (for e.g. Payment for Ecosystem services, Extended Producer Responsibility schemes, green tax), accessing bilateral and multilateral and funds global climate finance (GCF) and

Global environmental funds (GEF) as well as creating platform for attracting and engaging private sectors in climate finance.

Ideally, the EPA would coordinate and oversee the strategic financial resource mobilization. Aligning with the CRGE facility under the Ministry of Planning and Development, is strategically important to maximize resource allocation from the national budget. In parallel, setting up a separate facility for mobilizing resources for circular economy, could also be considered.

This can be facilitated by structuring the stakeholders/financial sources in sectorial groups or by type of intervention, e.g. infrastructure, process optimizations, policy, capacity building, etc. and then engage them in a dialogue about opportunities to finance and/or co-finance the implementation of actions. This, of course, should be aligned with the indicated timeframes, with an initial focus on the short-term actions. In the long run, putting in place financial systems and instruments, that could incentivize or incentivize business models , like, Tax holiday and exemption, tax royalty, Polluter pays, Extended Producers Responsibility (ERP)schemes, facilitating loans with grace period for SMEs venturing out in Circular economy business and duty free privileges especially for imported equipment to be using for manufacturing green and circular products. This can be translated into the following steps:

1. Structure financial stakeholders, sources and instruments into sectorial groups or by type.
2. Prepare a note of intention engaging the stakeholders for developing functioning financing and co-financing approaches to implement the roadmap and its actions.
3. Systematically engage them. This could be in form of in-person or online meetings where an approach is agreed upon. This would go beyond fundraising per se.
4. Formally agree on contractual conditions, e.g. is the money lent or if not, what are the conditions of the financial provider.
5. In line with the implementation plan, start financing priority short-term actions for each sector or type of action.

Box 1: Importance of sufficient and qualified human resources in the implementation process

Almost equally important and not to forget in this process is the mobilization of human resources and their ability to fundraise and properly manage finances. This is because this capacity determines the quality and efficiency of the implementation delivery. Hence, to ensure adequate mobilization and management of financial resources, relevant skills and knowledge have to be enhanced to support the process. This requires an analysis of internal capacity (on the national, regional and continental level) to decide if and how technical capacity shall be increased. The capacity building is recommended to be done through (1) training of staff or (2) additional support from external professionals/consultants. The first element should include the training of responsible government staff on circular economy (as proposed under the crosscutting goal on education and capacity development, no. 2) as well as on effective fundraising and management of funds.

6. GOVERNANCE AND ROLES

The Environmental Protection Authority (EPA) is the dedicated governmental organization that responsible for overseeing the circular economy transition and offering the necessary support structures and capacities. So far, the EPA established a Circular Economy desk, which plays a key role to:

1. Promote Circular Economy by raising awareness and advocacy work
2. Coordinate efforts across various sectors and levels of government
3. Engage local communities in circular economy projects to ensure that initiatives are grounded in local needs and contexts
4. Develop and implement national strategies, policies, and regulations related to the circular economy
5. Monitor progress and ensure compliance with established goals
6. Form inter-ministerial committees or task forces to ensure collaboration between different government departments, such as environment, industry, finance, education, etc.
7. Develop integrated policies that align circular economy goals with other national priorities, such as climate change mitigation, economic development, and social inclusion.

Ongoing pipeline initiatives include expanding EPA's role to facilitate more stakeholder engagements by fostering partnerships between government, industry, academia, and civil society to drive innovation and implementation of circular economy initiatives. Because creating a circular economy involves multiple sectors, it requires an integrated strategy from the key line ministries to make sure that efforts and policies are coordinated and reinforce one another. Thus far, every ministry has tackled distinct aspects and constituents of circularity in a disjointed manner.

In summary, essential support structures in terms of coordination mandates are in place in Ethiopia through the responsible agency (EPA) and their ongoing and future initiatives. However, key implementation mechanisms, such as enforcement, legal framework and financial instruments, require significant attention to support the circular economy transition.

Hence, the following governance structure below is recommended. It elaborates on a comprehensive governance model, to ensure a systemic Circular Economy transition that promotes collaboration, policy integration and harmonization, multi stakeholder engagement, and robust monitoring across different sectors and stakeholders. It is designed to create a medium of institutional arrangements and frameworks that will facilitate the transition in a structured and effective manner, in the long run fostering a culture of circularity that leads to a resilient economy. This Roadmap, serve as a blueprint for mainstreaming Circular economy both federal level, regional and woreda levels. It envisage to capture and upscale opportunities as well as address bottlenecks for circular economy transition, at all levels of the existing public governance structure. Testing pilot action plans in secondary cities for example, Adama, Bahirdar, Mekele, Hawassa, Arba Minich, Dire Dawa especially where there are Industry parks and special economies zones is ideal to Circular economy interventions like Industrial symbiosis.

The governance model proposed in this roadmap consist of three pillars of frameworks to be implemented parallely under an umbrella inter-ministerial council. This section specifies the roles and responsibilities of government/ state actors and non-state actors like NGOs, private companies, cooperatives as co-implementers.



Figure 11: Governance Model (Source: Author, 2025)

6.1. High level Inter-Ministerial Council

This inter-ministerial level governance framework, is composed of representatives of line Ministers and Director General with the Environmental Protection Authority, as the chair. The EPA as lead agency will be responsible and have the mandate to coordinate circular economy initiatives nationally. The roles and responsibilities of this council include governing the circular economy transition at the highest government system. Specifically:

1. Mobilize political commitments from line ministries to harmonize their respective vision and mission with that of the National Circular Economy roadmap and ensure tangible actions;
2. Convening a Ministerial level consultation of the relevant line ministries and government departments to align the vision and mission of the roadmap with the National development plans, national commitments that address Circular economy principles. E.g. National Determined Commitments (NDCs), National Bio economy Strategy, fiscal policy reforms, and other Multilateral Environmental Agreements;
3. Monitor and Evaluate the Circular Economy transition and measure the progress in terms of macroeconomic indicators. E.g GDP;
4. Facilitate allocation of National Budget to implement the action plans of the roadmap.

6.2. Technical Advisory Council (TAC)

The current National Steering Committee is composed of sixteen experts from the respective line ministries and stakeholders. It is chaired by EPA and plays a key role in providing specialized knowledge and technical expertise in the respective fields relevant to circular economy practices, such as waste management, sustainable design, and resource recovery etc. This committee could further expand its role to:

1. Develop in depth sectoral action plan (for the prioritized sectors) that could be used as a bilateral engagement document between EPA and the line ministry, for achieving the roadmap's objectives, including timelines, corresponding goals, actions and sub actions, and resource allocation
2. Continue identifying and prioritizing initiatives by conducting feasibility assessments reports, which could be further developed into bankable projects, Investment case studies and costed action plans
3. Undertake research and development for innovative circular economy technologies and practices to prototype products and services
4. This TAC is also responsible for designing and implementing pilot projects .it can serve as an ideal structure for testing and validating circular economy concepts, approaches and business models;

5. Identifying and designing relevant capacity building trainings and academic curriculums for all levels of stakeholders also falls under the responsibility of this council
6. Develop guidelines and standards for sustainable practices and circular economy across various sectors
7. Develop key performance indicators (KPIs) and set targets to assess progress towards the roadmap's objectives
8. Establish Monitoring evaluation and lessons learned (MEAL) mechanisms for regular review and evaluation of the roadmap's implementation, providing recommendations for adjustments as needed.

6.3. Multi Stakeholder Advisory Council

Multi stakeholder advisory council could include representatives from government, Non-governmental organizations, development partners, financial institutions, business and private sector, academia and think tanks, and civil society to provide guidance and strategy oversight to harmonize interventions. Its specific role include:

1. Creating the platform for facilitating collaboration, sharing best practices and knowledge transfer across stakeholders
2. Organize public consultation initiative to engage stakeholders through workshops, forums, and surveys to foster collaboration, to gather input from communities and stakeholders, ensuring that diverse perspectives are considered.
3. Develop partnership schemes and modalities amongst stakeholders to leverage on existing or new resources and expertise.

6.4. Resource Mobilization Team

1. This team of experts from financial institutions will be responsible for mobilizing financial, institutional and Human resources in a sustainable framework. It will work closely with the Multi Stakeholder advisory council to develop resource mobilization strategy.
2. The team is also responsible for identifying financial landscape and ecosystem for Circular Economy to co-design and implement initiatives financing schemes that can support Circular Economy programs including grants loan and incentives

3. Work closely with policy designers and designer makers to ensure enabling legal frameworks are in place for Circular Business models E.g Tax Incentives
4. Creating a platform for fostering collaboration and establishing partnerships among different stakeholders.

7. IMPLEMENTATION PLAN

This section outlines the steps required to develop a structured approach that different stakeholders can pursue to, effectively collaborate, allocate resources and implement the goals and actions outlined in the roadmap.

Establish an effective governance model as proposed in Section 7, to ensure coordinated efforts, stakeholder engagement, and accountability. Further development of detailed the roles and responsibilities of each governance entity is required to strengthen leadership, ownership and accountability of the implementing partners.

A timeline of ~3 months is ideal to implement this plan.

Establish a multi-stakeholder platform to engage stakeholders, to create the required traction for circular economy transitions, enhance awareness and advocate circular economy by organizing workshops, strategic planning sessions, forge partnerships and corporations to maximize impacts.

A timeline of ~3 months is ideal to implement this plan

Developing and implementing Capacity building interventions, conduct detailed capacity needs assessment to identify capacity gaps and design curriculums for diverse groups including but not limited to schools, Universities, TVETs, ecosystem system service provider for MSMEs, Startups, development practitioners, policy designers and decision makers, to enhance skills and knowledge required for not only implementing the action plans on the roadmap but required in general for Circular Economy transition.

A timeline of 6 - 12 months is ideal to implement this plan

Developing resource mobilization strategy document to facilitate fundraising schemes, identify funding sources and allocate resources for implementing the action plans, including government budgets, grants, and private investments.

A timeline of 6 – 12+ months is ideal to implement this plan

Prioritize action plans that can be developed into pilot projects and initiatives with detailed cost benefit analysis and investment documents, the pilot projects can be used to test circular economy concepts and practices allowing for evaluation and refinement.

A timeline of 12-24 months is ideal to implement this plan

Establish a framework for monitoring and evaluating progress capturing lessons learned, measuring impacts, and evaluating the effectiveness of implemented initiatives. Develop measurable Key Performance Indicators (KPIs) for the action plans with target to track progress made.

8. MONITORING AND EVALUATION

The following tables provide insight on specific target values to be achieved for each action as well as accompanying indicators to help measure the progress making on a bi-annual basis. The respective implementers of the actions being implemented have the responsibility to report to the EPA CE Desk for central evaluation.

8.1. Waste Management

Table 16: Monitoring and Evaluation for Waste sector

Goals	Actions	Targets	Indicators
Establish a solid policy and legal framework for waste management on the national level	Revise and update the existing waste management policy landscape on the national level supporting waste management and identify where policy updates and new policies are required to support circular economy.	Incorporate circular economy principles into national waste management policies.	Number of national policies revised to include circular economy principles. Assessment of the alignment of national policies with circular economy best practices.
		Identify and address policy gaps hindering circular economy development.	Number of identified policy gaps documented and analyzed. Number of new policies drafted or proposed to address identified gaps. Stakeholder feedback on the effectiveness of new policies in supporting the circular economy.

		Ensure policy coherence across different sectors relevant to waste management and the circular economy.	Number of inter-ministerial collaborations established on waste management and circular economy. Number of joint policy initiatives implemented across relevant sectors. Assessment of policy coherence using a standardized framework.
		Apply, inaugurate and enforce waste management regulations and policies and build capacity for enforcement agencies, including an increased understanding of the CE concept.	Implement and enforce existing waste management regulations in cities/regions Number of enforcement actions taken against violations of waste management regulations. Rate of compliance with waste management regulations (e.g., through inspections). Volume of illegally dumped waste.
		Train enforcement personnel on waste management regulations and circular economy principles	Number of training sessions conducted. Pre- and post-training assessment scores of enforcement personnel. Number of enforcement personnel certified in waste management and circular economy.
		Establish a publicly accessible platform for reporting waste management violations	Number of reports received through the platform. Response rate to reported violations.

			Citizen satisfaction with the reporting and enforcement process.
Improve waste management and treatment infrastructure enabling a circular	Invest in the establishment of Material Recovery Facilities (MRFs) which are equipped for sorting and processing, with focus on electrical and plastic waste.	Establishment of operational Material Recovery Facilities specializing in e-waste and plastic processing.	Number of MRFs established and operational. Tonnage of e-waste and plastic processed through MRFs annually. Percentage of target e-waste and plastic diverted from landfills due to MRF operations.
		Achieve 50 % recycling rate for e-waste and 50 % for plastics by	Tonnage of e-waste recycled. Tonnage of plastic recycled. Overall recycling rate for e-waste and plastic.
		Train and employ a number of personnel in MRF operations and management	Number of personnel trained in MRF operations. Number of personnel employed in MRFs. Employee retention rate within MRFs.
	Prioritize composting, black soldier fly (BSF) technology and biogas production (anaerobic digestion) and necessary infrastructure to cope with the amounts of organic waste, including separate collection;	Divert 50% of organic waste to composting, black soldier fly farms and biogas facilities by 2030	Tonnage of organic waste processed through composting/BSF/biogas facilities. Percentage of organic waste diverted from landfills. Volume of biogas produced.
		Establish a national composting standard and certify composting facilities	Number of certified composting facilities. Quality of compost produced (based on the standard). Market adoption rate of certified compost.

	establishing a composting standard.	Train (number) of individuals/communities in composting and BSF techniques	Number of individuals/communities trained. Number of small-scale composting/BSF initiatives established. Volume of compost/frass produced through community-based initiatives.
		Reach 75% separate collection target for all organic waste stream of MSW by 2030	Tonnage of organic waste compared to overall MSW generation. Cap of maximum 25% organic waste fraction in the mixed waste stream
	Investing in efficient collection systems, including segregated collection for different waste streams and encouraging public-private partnerships.	Implement segregated waste collection systems in 50 % of urban areas and 50 % of rural areas	Percentage of urban areas with segregated collection. Percentage of rural areas with segregated collection. Public satisfaction with the collection system.
		Establish 14 of successful public-private partnerships in waste management	Percentage of urban areas with segregated collection. Percentage of rural areas with segregated collection. Public satisfaction with the collection system.
	Invest into controlled waste disposal with proper leachate and gas management systems (sanitary landfills), as a transition	Upgrade/establish (number) of sanitary landfills compliant with national environmental standards	Number of compliant landfills. Leachate and gas capture rates at landfills. Reduction in environmental pollution incidents related to landfills.

	solution; ensure strict sanitary conditions protecting adjacent communities within the existing structure of landfilling.	Reduce landfill reliance by 50-% by [Year] compared to baseline year [Baseline Year].	Percentage reduction in landfill waste compared to baseline. Increase in waste diverted to alternative treatment methods.
	Phase out landfilling in the long term (zero waste target)	Reduce landfill waste by 50% by towards achieving zero waste to landfill	Total waste sent to landfills annually. Percentage reduction in landfilled waste compared to baseline year. Percentage of municipalities working towards achieving zero waste to landfill.
		Increase the national recycling rate to 50%	Overall national recycling rate. Recycling rates for specific material streams (e.g., paper, plastic, glass). Amount of waste diverted from landfills through recycling.
		Implement waste prevention programs in (number) of communities	Per capita waste generation rates. Community participation rates in waste prevention initiatives.
	Collaborate with neighboring countries and RECs on establishing a regional waste treatment network to ensure	Establish formal agreements with neighboring countries/RECs on regional waste treatment collaboration	Number of signed agreements. Types of waste streams included in the agreements. Volume of waste exchanged for treatment across borders.

	most suitable disposal and treatment of waste streams.	Develop and implement joint waste treatment projects with neighboring countries/RECs	Number of joint projects implemented. Investment leveraged for joint projects.
		Conduct joint training programs/capacity building workshops on waste management with neighboring countries/RECs.	Number of training programs/workshops conducted. Number of participants from each country/REC.
	Collaborate with neighboring countries and RECs on national and regional reverse logistic networks to ensure remanufacturing and refurbishing activities for unused and discarded obsolete products.	Establish agreements with neighboring countries/RECs on reverse logistics collaboration.	Number of signed agreements. Product categories included in the agreements (e.g., electronics, appliances). Volume of products collected through reverse logistics networks.
		Establish a number of regional remanufacturing/refurbishing centres	Number of centres established. Number of jobs created in remanufacturing/refurbishing. Value of remanufactured/refurbished products.
		Train personnel in remanufacturing/refurbishing techniques	Number of personnel trained. Quality of remanufactured/refurbished products. Job placement rate for trained personnel.
	Implement robust waste data management systems that waste	Implement a national waste data management system accessible by	Percentage of waste producers using the system. Percentage of waste pickers using the system.

	producers, pickers and processors have to input.	50% of waste producers, pickers, and processors	Indicator 3: Percentage of waste processors using the system.
		Achieve 50 % data completeness for key waste streams (e.g., municipal solid waste, industrial waste) within the system	Percentage completeness of data for each waste stream. Frequency of data updates. Data accuracy validated through independent audits.
Integrate the informal sector into the waste management and recycling system, and offer support for the transition (in an inclusive way while not hindering important bottom-up activities)	Take into account and recognize the role of the informal sector in national waste policies as well as solid waste management planning, by setting up a working group of informal workers and representatives to be consulted in for them relevant policy and decision-making processes.	Establish a national working group with representation from informal waste sector workers	Frequency of working group meetings. Number of policy discussions/decisions involving the working group.
		Conduct training sessions for informal workers on relevant policy and planning processes.	Number of training sessions conducted. Number of informal workers trained.
	Ensure that the informal sector workers are not economically underprivileged in the recycling value chain, e.g. by overseeing	Establish standardized quality and pricing mechanisms for valorized waste	Number of waste types with standardized quality and pricing Reduction in price exploitation of informal workers.
		Increase the average income of informal waste workers by 50 %	Average income of informal waste workers. Percentage increase in income compared to baseline year.

	and standardizing the quality and pricing of valorized waste.	Provide informal waste workers with access to microfinance and business development services	Number of informal workers accessing microfinance. Number of informal workers receiving business development services. Number of informal waste worker businesses established or expanded.
	Develop national regulation on organizing and establishing cooperatives and associations for the informal waste sector supporting their transition to formalization and integration; empower and give flexibility to local Governments to contextualize the details of the transition.	Enact national legislation enabling the formation and operation of informal waste sector cooperatives and associations	Successful passage and enactment of the legislation. Number of local governments that have developed contextualized implementation guidelines.
		Target 2: Train local government officials on implementing and contextualizing the national regulations	Number of officials trained. Local government capacity to support cooperative development.
		Develop model cooperative/association bylaws and operational guidelines tailored to different waste management activities	Number of model bylaws/guidelines developed. Relevance and applicability of the models to different local contexts. Uptake of model bylaws/guidelines by newly formed cooperatives/associations.

	Promote and support the establishment of informal sector cooperatives, associations, coalitions or networks on different geographic levels to (1) reduce social marginalization, improve economic efficiency and thus the position in the economic value chain, (2) enable partnerships with municipalities and other stakeholders, and (3) capacitate informal waste workers to coalesce in SMEs.	Facilitate number of partnerships between informal sector organizations and municipalities/private sector stakeholders.	Number of partnerships established. Types of partnerships (e.g., service contracts, joint ventures).
		Support informal waste sector organizations to transition into formal SMEs	Number of organizations transitioning to SMEs. Number of SMEs transitioned.
	Increase the involvement of the informal sector in the waste management sector by licensing their activities in certain zones and ensuring safe working	Implement a licensing system for informal waste workers in 50% of designated zones by 2030.	Percentage of designated zones with operational licensing systems. Number of informal workers licensed. Compliance rate with licensing requirements.
		Provide informal waste workers with access to occupational safety and	Number of workers receiving training and equipment. Reduction in work-related injuries and illnesses among informal workers.

	conditions for informal workers. ⁴⁹	health training and equipment by 2030.	
Establish mechanisms to motivate stakeholders in contributing to efficiency and sustainability of the waste management and recycling sector.	Scale awareness raising meetings and campaigns on solid waste management at all levels in society; start with the basics: proper waste separation of hazardous, organic (wet) and inorganic (dry) waste, and pair it with providing enabling infrastructure for it.	Conduct awareness-raising meetings and campaigns on solid waste management targeting different societal levels (households, businesses, schools, etc.)	Number of meetings/campaigns conducted. Number of people exposed to the campaign messages.
		Increase public participation in waste separation programs to 50 %	Percentage of households correctly separating waste. Volume of separated waste collected.
		Install of public waste separation bins (for hazardous, organic, and inorganic waste) at different locations	Number of bins installed. Accessibility and distribution of bins.

⁴⁹ This may also include the regional involvement of the informal sector as it often works across borders.

	Establish incentive mechanisms for entrepreneurs and investors to engage in a diverse opportunity in Ethiopia's waste management and recycling sector (including compost and fertilizer production, e-waste recycling, plastics and paper recycling, decentralized waste management solutions, and carbon credit schemes), e.g. incubators, tax incentives, etc.	Implement of specific incentive mechanisms for waste management and recycling businesses	Number of incentive mechanisms implemented. Uptake of incentive mechanisms by businesses. Private sector investment in waste management and recycling.
		Establish of business accelerators specifically focused on the waste management and recycling sector	Number of incubators/accelerators established. Number of businesses supported by the accelerators. Success rate of businesses graduating from the acceleration programs.
		Attract private investment in waste management and recycling projects	Number of private investments attracted. Number of new waste management and recycling businesses created. Number of jobs created in the waste management and recycling sector.
	Establish a collaboration platform where all actors in waste disposal, management, treatment and processing can communicate and establish partnerships in their activities.	Launch a national collaboration platform for waste management stakeholders	Successful launch and operation of the platform. Number of registered users on the platform. Active engagement on the platform (e.g., forum discussions, resource sharing).
		Facilitate (number) of partnerships/collaborations between platform users by 2030	Number of partnerships/collaborations initiated through the platform. Types of partnerships/collaborations formed.

8.2. Waste and Wastewater

Table 17: Monitoring and Evaluation for water and wastewater sector

Goals	Actions	Targets	Indicators
Establish a supportive regulatory and framework to enable sustainable water management and resource utilization.	Revise existing water resource utilization regulations.	Conduct a comprehensive review of existing water resource utilization regulations and identify gaps in cross-sectoral policies by 2030.	Number of gaps identified and documented in the regulatory framework. Number of new policy proposals developed to address identified gaps.
		Implement regulatory amendments to improve water resource governance by 2030.	Number of policies and regulations revised and approved. Number of government agencies and private stakeholders adopting new regulatory measures. Compliance rate of industries with updated water regulations.
		Establish a multi-sectoral, inter-ministerial working group to oversee water regulation reforms by 2030.	Establishment of a formal inter-ministerial working group under the EPA. Number of ministries and agencies participating in the working group. Frequency of working group meetings and

			documented policy discussions. Number of policy recommendations developed and submitted for approval.
	Enhance awareness of policy and decision-makers on sustainable water utilization.	Organize at least [number] high-level awareness workshops for policy and decision-makers on sustainable water utilization by 2030	Number of awareness workshops and campaigns conducted. Number of policymakers and government officials trained. Number of brochures and policy briefs distributed. Number of case studies developed and distributed on best practices in sustainable water management.
	Regulate and formalize the matter of water access rights and management.	Establish a national database for all industrial and commercial groundwater users and register at least [percentage] of them by 2030.	Percentage of groundwater users registered in the database. Completeness of data collected (location, extraction volume, permit status). Frequency of database updates to reflect new registrations and changes.
		Implement community and industry engagement strategies to promote	Number of awareness campaigns and stakeholder engagement sessions conducted.

		sustainable groundwater use by 2030.	Percentage of industry groundwater users adopting sustainable abstraction practices. Number of voluntary compliance commitments signed by industries and businesses.
		Develop and implement legally binding regulations on sustainable groundwater abstraction by 2030.	Existence and enforcement status of a national groundwater extraction policy. Number of permits issued under new regulatory guidelines. Percentage reduction in excessive or unregulated groundwater withdrawals.
		Strengthen monitoring and enforcement of groundwater access regulations by 2030.	Number of illegal or unregulated groundwater abstractions identified and addressed. Number of enforcement actions taken against non-compliant users. Change in groundwater extraction levels in monitored areas compared to baseline data.

Build capacity in wastewater management.	Provide capacity building trainings for water technicians.	Develop standardized training initiatives for water technicians on wastewater management best practices by 2030.	Completion of a nationwide skills assessment survey for water technicians. Number of training modules developed based on identified knowledge gaps. Number of technicians trained.
	Enhance water quality monitoring and evaluation capacity	Conduct a nationwide assessment of existing water quality monitoring systems and identify gaps by 2030.	Number of assessments conducted to evaluate monitoring system effectiveness. Number of identified gaps addressed through policy or infrastructure investments.
		Upgrade at least [number] national water quality laboratories with modern testing equipment by 2030.	Number of national water quality monitoring labs upgraded or newly established.
Establish a financing framework to enable sustainable water resource utilization.	Enhance the utility and tax payment and collection capacity	Conduct a status quo analysis of current water utility and tax collection mechanisms by 2030.	Completion of a national assessment report on water utility payments. Number of inefficiencies identified and addressed through policy reforms.
		Launch a revised water tariff	Number of tax incentives or rebates introduced for

		structure that incentivizes conservation and efficiency by 2030.	sustainable water users. Percentage reduction in non-payment and water wastage by domestic and industrial users.
	Set up a fund for WASH infrastructures (incl. new lines, repair and maintenance).	Develop a structured WASH infrastructure investment plan and launch a national water fund by 2030.	Amount of funding secured for water and wastewater management projects. Number of infrastructure projects funded and implemented.
		Secure at least [amount] in initial funding commitments from government and private sector partners by 2030.	Number of public consultations and stakeholder forums held. Level of public and private sector contributions to the WASH fund. Amount contributed by public and private sector to the WASH fund.

8.3. Packaging

Table 18: Monitoring and Evaluation for packaging sector

Develop incentive mechanisms to promote sustainable packaging and ultimately the reduction of plastic pollution.	Finalize and implement the Extended Producer Responsibility (EPR) policy that requires manufacturers to take responsibility for the entire lifecycle of their products, including post-consumer plastic waste management.	Enforce EPR regulations.	Number of companies that comply with EPR regulations.
	Develop financial incentives (e.g., tax breaks, subsidies) for manufacturers that adopt sustainable production methods, opt-out for plastic materials, and invest in recycling infrastructure.	Prepare and implement comprehensive financial incentives	Number of incentivized companies for their circular economy practices.
	Establish clear nationwide targets for plastic recycling rates and waste reduction to drive progress within the sector.	Reduce 20% plastic waste reduction and 50% recycling rates	Volume of plastics waste reduced and volume of recycled plastic waste.
	Establish rules for Public Procurement in prioritizing renewable materials over products made from virgin plastics, and/or limiting budget for plastic products.	Enforce procurement criteria	Number of procurement agreements complying with established procurement criteria.

Promote low-impact production and considerate use of plastics.	Support Research and Development of biodegradable and compostable plastic alternatives, incentivizing their use in packaging and other applications.	Establish a dedicated circularity research centre for packaging sector at nearby universities	Number of research and publications.
	Implement Eco-design principles that enhance recyclability, reduce material use, and minimize environmental impact throughout the product lifecycle.	Prepare and implement comprehensive Eco-Design guidelines in the packaging industry	Number of companies implementing the established Eco-Design guidelines.
	Encourage industries to explore and adopt sustainable materials that can replace conventional plastics.	Implement incentive programs and establish green certification and rating mechanisms for businesses that replace conventional plastics with sustainable alternatives	Number of incentivized companies who replace conventional plastics.
Strengthen collaboration and partnerships amongst stakeholders to enable plastic packaging recycling.	Create a Public-Private-Partnership scheme to mobilize resource and attract investment in recycling infrastructure.	Identify attractive areas of investment and facilitate increase investment amount in the feasible recycling infrastructure	Number of bankable projects and number of investors engaged on the subject matter.
	Promote partnerships among plastic producers, recyclers, and retailers to create closed-loop	Organize workshops and introduce shared facilities who can recover, reduce and create closed loop	Number of forums conducted, and investors involved in the circularity projects including jobs created

	systems that enhance resource recovery and reduce waste.		
	Create a platform to form partnerships between local and international organizations and initiatives focused on the circular economy to share experiences, access funding, and adopt best practices E.g. GIZ-Natures led Partnership for Circular Value Chains in Addis Ababa.	Launch user-friendly online platforms for investors, start-ups, and governments to register and contribute to circular economy (CE) initiatives	user satisfaction and engagement levels or online presence via the platform

8.4. Manufacturing (Industrial parks, Leather, Textiles)

Table 19: Monitoring and Evaluation for Manufacturing Sector

Sector	Goal	Action	Target	Indicators
Industrial Parks	Establish a supportive regulatory and financial framework to enable sustainable	Assess and revise existing regulations and policies to identify barriers to circular economy practices and propose necessary adjustments, in collaboration with the private sector.	Conduct legal frameworks assessment, Prepare and submit regulatory communiques for approval	Number of regulatory frameworks analyzed, revised and approved

	manufacturing (coherence)	Develop tax and finance incentive mechanisms for companies/businesses to adopt and implement circular practices.	Prepare and implement a comprehensive circularity green certification programs financial incentives	Number of certified and incentivized companies for their circular economy practices
		Establish clear standards and guidelines for circular economy production practices in industrial parks to ensure compliance and quality, including for product design, recycling practices as well as wastewater treatment and discharge; while in parallel establishing industry data platform in centralized data registry in support of national statistics service (compliance and M&E).	Reclaim 85% of wastewater for reuse	Volume of wastewater treated and reused
	Enhance capacity building and education initiatives to unlock circular economy potentials	Collaborate with academic institutions and TVETs to develop and implement comprehensive curriculums and training programs for manufacturers and business operators on circular economy	Conduct training programmes for 2000 business operators	Number of trained people on the subject matter

	Link to Enabling Element, Capacity	principles and practices (incl. informal sector)		
	Building & Education	Promote the formation of industry clusters within the parks to foster collaboration, innovation, and resource sharing among businesses.	Create symbiotic relation between tenants on waste to wealth conversion practices	80% of waste shall reused, recycled or converted to resources not be sent to landfills
		Establish a handbook and guidelines with specific recommendations to enhance circularity in different industry sub-sectors and their business models (for product design that enables resource efficiency, recyclability and sustainability).	Develop and publish a handbook for circularity for different sectors and sub sectors	A handbook having all sectors circularity practice
	Encourage the development of public-private partnerships (PPPs) to advance sustainable	Support Research and Innovation initiatives focused on Industrial symbiosis and mutually beneficial partnerships within the manufacturing sector as well as between the manufacturing sector and other sectors.	Establish a dedicated circularity research centre for each sector at nearby universities	Number of research and publications

	manufacturing practices.	Facilitate partnerships that support the (ongoing) formation of joint ventures between local manufacturers and foreign investors to share expertise, technology, and resources.	Campaigning investor attraction programmes having a bankable and feasible circularity projects	Number of forums conducted, and investors involved in the circularity projects including jobs created
Textiles	Enhance resource efficiency and sustainability within the textiles and apparel industry	Support companies in their process of increasing resource efficiency and cleaner production.	implement resource efficiency and cleaner production initiatives for operational companies	number of companies engaged in the initiatives and measurable improvements
		Promote sustainable sourcing of materials throughout the industry.	adopt and implement sustainable sourcing strategies	Number of companies sourcing from suppliers who has environmentally friendly and socially acceptable practices who obtain certificates.
		Implement lean manufacturing techniques to minimize waste and optimize production processes.	Create textile industries having 20% waste reduction and 15% water, energy and raw material optimizations.	number of companies who are able to achieve 20 waste reduction and 15% production process optimization for water, energy and raw materials usage
	Promote Sustainable Product Design	Develop and disseminate Eco-Design guidelines that emphasize durability, reparability, and recyclability of textiles and apparel products.	prepare and implement comprehensive Eco-Design guidelines in textiles industries	number of industries implementing Eco-Design guidelines

		Support R&D initiatives focused on developing sustainable alternative materials and innovative recycling technologies.	Do a survey to find out important research topics and work with universities and research centres	Number of research initiatives for alternative materials and innovative recycling technologies
		Encourage manufacturers to conduct lifecycle assessments, for their products to understand environmental impacts and improve sustainability.	Conduct yearly lifecycle assessment for companies	Number of companies engaged in lifecycle assessment
	Achieve Zero Waste in production across the manufacturing lines and within industry parks.	Encourage Industrial Symbiosis and industry collaboration to enhance circularity and minimize production waste.	Create symbiotic relation between tenants on waste to wealth conversion practices including wastewater treatment plants	80% of waste shall be reused, recycled or converted to resources not be sent to landfills
		Encourage establishing take-back schemes for end-of-life garments to promote recycling and repurposing.	Implement take back schemes and agreements with suppliers	Number of companies implementing take back agreements and practices.
		Launch awareness campaigns targeting consumers and businesses to promote the benefits of circular economy practices in textiles and apparel.	Launch a comprehensive awareness campaign	Number of individuals and companies participated or engaged in the awareness.

	Promote local Sustainable cotton production.	Promote organic cotton production by introduction of sustainable farming practices, like integrated pest management to reduce chemical inputs.	Implement IPM system in cotton producing farms	Number of farmers who implement IPM.
		Facilitate certification programs like Better Cotton Initiative that can help farmers to adopt sustainable farming and processing practices, to improve the overall quality and marketability of cotton.	Adopt and implement organic cotton certification standards	Number of farms who are able to get organic cotton certification.
		Establish vertical integration system by building partnerships between cotton farmers and textile manufacturers to streamline the supply chain and ensure consistent demand for cotton.	Ensure 30% organic cotton supply chain for textile manufacturing	Number of textile manufacturing sourcing 30% organic cotton from suppliers.
Leather	Enhance Resource Efficiency and Cleaner Production (RECP)	Support companies in their process of increasing resource efficiency and cleaner production.	Implement resource efficiency and cleaner production initiatives for operational companies	Number of companies engaged in the initiatives and measurable improvements.
		Encourage the adoption of technologies that reduce water and energy	Create leather industries having 20% waste reduction and 15%	Number of companies who could are achieve 20 waste reduction and 15%

		consumption, in leather production processes.	water, energy and raw material optimizations	production process optimization for water, energy and raw materials usage.
		Implement waste materials recovery systems in companies and dedicated zones for this matter.	Reclaim 85% of wastewater for reuse by clustering leather industries in Zones to improve waste and resources recovery	Volume of wastewater treated and reused, as well as volume of materials recovered from the sector.
	Promote sustainable sourcing and production	Develop sustainable sourcing guidelines that encourage the use of sustainably raised livestock and eco-friendly materials in leather production.	Implement sustainable livestock management system to reduce GHG of the supply chain	Number of farmer or group who implement Sustainable livestock management system. Volume of GHG reduced via these practices
		Support the industry in implementing sustainable sourcing strategies.	Adopt and implement sustainable sourcing strategies	Number of companies sourcing from suppliers who have environmentally friendly and socially acceptable practices.
	Foster Innovation and technology transfer	Establish centres for innovation where businesses can collaborate on sustainable practices and technologies (e.g. creative hub).	Establish leather circular economy incubators and a learning platform	Number of incubators and number of stakeholder engagement on the platforms.

		Create a platform for University– Industry linkage to facilitate knowledge transfer.	Establish a dedicated circularity research centre for each sector at universities	Number of research and publications.
		Promote the formation of industry clusters focused on leather production to facilitate collaboration and resource sharing among businesses including innovative ideas, see Mojo leather city.	Secure financial support from at least three development partners for the development of the Modjo Leather City (MLC) Special Economic Zone (SEZ) and ensure it meets all SEZ designation criteria	Amount of finance secured for MLC development and number of industries collected in MLC.

8.5. Agriculture and Food

Table 20: Monitoring and Evaluation for Agriculture and Food sector

Goal	Action	Target	Indicators
Enhance the policy and regulatory framework in favour of circular economy in agriculture, good and forestry.	Ensure that circular economy principles are integrated in existing policies, strategies and regulation related to agriculture, food and forestry, and develop new policies where necessary.	Circular economy is mainstreamed and aligned with the existing policy and legal framework	Number of policies and strategies revised. Number of policy actions endorsed and implemented. Number of stakeholder's forum conducted. Number of Knowledge transfer materials developed and disseminated.
Strengthen the valorization of agro-waste.	Invest in R&D for innovative technologies that promote circular agriculture, such as precision farming and bio based fertilizers.	Research and Development for Circular Economy topics increased by 50 % by 2030.	Number of research conducted and published.
	Invest into R&D for more high-value valorization options other than composting.	Investment for Research and Development for Circular Economy topics increased by 50 % by 2030	Amount of investments attracted both in monetary value and partnership level. Number of TVETs involved in the manufacturing process.
	Create financial incentives, such as subsidies or grants, for farmers who adopt circular economy practices.	Increase access to finance for circular economy by 50 % in 2030	Number of financial tools developed and tested. Number of capacity building trainings provided to Financial Institutions.

			Number of Financial schemes tested (E.g. Grants, loan repayment success stories.
	Create a waste valorization system to utilize agricultural waste and by-products into valuable products, such as bioenergy, bioplastics, and organic fertilizers.	Divert 50% of waste from landfills by 2030 towards circular economy	Number Circular Products and services prototyped, tested and business model validated.
	Invest in infrastructure and networks for enhancing solutions that valorize post-harvest waste.	Increase in access to infrastructure for circular economy by 50% in 2030	Number of partnerships created. Amount of investment attracted in terms of monetary values.
Support sustainable agricultural products and circular food systems and supply chains.	Create a multi-stakeholder, digital platform to create closed-loop supply chains that minimize waste and enhance resource recovery, e.g. among restaurants, hotels, markets and composters.	Increase public awareness of circular economy principles by 50% by 2030.	Number of stakeholders joining the platform. Type and amount of circular products and services exchanged along the value chain.
	Create frameworks and guidelines for developing circular supply chains that minimize waste and promote the use of by-products in food production and processing.	Increase the enabling legal framework of circular economy principles by 50% by 2030.	Number of guidelines developed.
Promote the Bio economy to foster (economic)	Set up demonstration sites (e.g. gardens, composters, etc.) in public institutions, such as	Increase the awareness creation initiatives by 50% by 2030.	Number of demonstration sites established.

sustainability and resilience.	schools (see food secure circular schools in Africa) or offices.		
	Develop programs that enhance the economic viability of rural communities by creating new markets and job opportunities in bio-based sectors.	Increase the participation of development partners to align with circular economy principles by 50% by 2030	Number of programs co-designed with rural communities. Number of Market systems developed, Number of jobs created. Percentage of income increment per market system
	Promote regenerative practices that enhance soil fertility and biodiversity, for example by using organic amendments and cover cropping.	Increase the percentage of regenerative agriculture by 50% by 2030	Number of farmlands/ households adopting regenerative agricultural practices
	Gradually reduce the application of agro-chemicals and chemical fertilizers and replace with bio-fertilizers; supported by awareness campaigns, tax incentives and subsidies (shifting subsidies from chemical fertilizer to organic fertilizer).	Decrease the use of agrochemicals by 50% by 2030	Acres of farmland /Percentage of agrochemicals substituted by Biofertilizers
	Implement practices that lower GHG emissions, focusing on carbon sequestration in soils and sustainable land-use practices.	Reduce emissions from agro-waste management by 50 % by 2030	Amount of GHG emissions reduced and carbon sequestered that could be accounted in the national MRV System

8.6. Construction and Urbanization

Table 21: Monitoring and Evaluation for Construction and Urbanization sector

Goal	Action	Target	Indicator
Establish a solid policy and legal framework that favors circularity as key principled in the construction sector	Develop a circular construction strategy, featuring a national vision for the construction sector, sourcing from regional best practices, global trends and local needs.	Revision of policies to incorporate the principles of circular economy in the construction and urban development sectors.	Number of national policies revised to include circular economy principles in the construction and urban development sectors.
	Develop a circular construction strategy, featuring a national vision for the construction sector, sourcing from regional best practices, global trends and local needs.	Development of strategies to overhaul the construction sector by identifying policy gaps hindering the development of circular economy.	Number of identified policy gaps documented and analyzed. Number of new policies developed to address existing gaps.
	Develop Public Green and Circular Procurement policies to drive the demand for circular and sustainable building materials and components; this should include:	Development and enactment of a green and circular public procurement policy for building/construction materials, building/infrastructure	Number of procurement frameworks and guidelines developed and introduced. Number of policy instruments developed.

	1. Prioritizing green and circular products and services. 2. Good procurement planning for quality, durability and long product life. 3. Ensuring that end-of-life products are reutilized where possible.	components, and housing development projects.	
	Advance in Green Building certification.	Development of an exhaustive Green Building Certification Guideline	Certification regimes are in place both in the federal and regional levels. Certification initiative is launched.
	Provide guidelines and materials for industry to enable higher integration of circularity in their operations and compliance with the policy goals and revisions.	Development of guidelines and standards for the integration of circularity in the manufacturing and processes of the construction industry.	Guidelines are introduced and disseminated among stakeholders of the construction industry. Number of manufacturing and process standards developed
Promote Circularity as an important academic, cultural, economic theme through revitalizing and	Encourage the incorporation of circularity (circular construction, circularity and the city) as a theme in higher learning institutions in disciplines related to the	Development of full-fledged courses on circular construction, sustainable construction, and sustainable urban development.	Number of curriculums revised and developed in aligning the industry with circular concepts. Number of circularity-aligned courses and teaching materials developed.

encouraging Education, Research, and Innovation.	design, construction, and management of the human habitat.	Establishment of professorships (academic units) in circular construction and sustainability in urban development within the higher learning institutions.	Number of units and professorships established on circularity and sustainability in the fields related to construction, infrastructure development and urban development.
	Encourage research and innovation by establishing research funds on circularity accessible for institutes of higher learning and research.	Establishment of research funds and its administration on national and regional levels available for researchers in circular construction and urban development.	How much research funding is secured in the area of circularity in construction and urban development? How much research papers were published in the area of circular economy in construction and urban development
	Establish a national recognition scheme through awards for best building, infrastructure, or city design/construction/systems awards (example ABC=Award for Building for Circularity) categories such as student	Establishment of national and regional awards for best design for circular construction. Establishment of recognition schemes for best projects in	Number of recognition schemes established at the national level among the various disciplines and practices. Number of recognition schemes established in regional states, city governments, and municipalities.

	design, professional design, implemented projects, etc.	Circular construction and urban development schemes.	Number of recognized projects.
	Encourage public art (including but not limited to TV shows, dramas, movies, fine arts) that promotes the existing reuse, less-use, and recycling culture (practice).	Establishment of a national public art promotion fund. Establishment of a regional and municipal public art promotion fund dedicated to the promotion of the culture of sustainability and circular economy.	Number of art works sponsored and produced. Observable/measurable behavioral change/development in reusing and recycling practices.
Promote and stimulate the use of secondary, sustainable and renewable materials as well as circular construction techniques.	National campaign and financial incentives for the development of local construction industries to reduce import dependence of materials.	Substantial reduction of the import of construction materials and equipment. Establishment of incentive packages (financial or otherwise) for industries that aims to produce construction materials and equipment to substitute imports.	Amount of the reduction of yearly import in construction material and equipment.

	Increase the steel recycling capacities in terms of both quality and quantity to compete with imported primary steel.	Reduce the amount of steel import	The percentage reduction in steel import. The percentage increase in amount of locally produced steel. Increase in quality of locally processed steel.
	Impose mandatory selective demolition at demolition sites, valorizing C&D waste by recycling and reusing materials like concrete, bricks, and metals, (addressing import vitality and improve ROI).	Development of standards, guidelines, protocols and procedures for demolition of physical structures.	Number of standards, guidelines, protocols and procedures developed. Amount of recyclable C&D waste recovered and reprocessed
	Identify innovations that promote the use of waste materials in construction or the reuse of construction materials or the recovery of other waste materials, such as plastic waste or copper tailings, that can be used as input for construction products.[1]	Establishment of special (semi-academic) journal that publishes reviewed and qualified innovative materials and techniques.	Number of identified innovations in recovery process, reusing methods, and recycling processes of construction materials. Level of dissemination of information about identified innovations.
	Explore traditional (vernacular) construction techniques to enable locally embedded construction economy.	Development of local industries that uses local knowledge and materials.	Number of established companies specialized in traditional construction techniques and local artisanship.

		Establishment of local technical institutes that specializes in the preservation and development of local skills and materials	Number of trained (skilled) artisan in vernacular (traditional) skills of construction.
	Investigate higher taxation of unsustainable construction materials for large-scale construction projects from local and foreign investors.	Reduction (substantial) of the use of unsustainable materials on large scale projects	Substantial price difference between sustainable and unsustainable construction materials.
	Promote modular buildings that facilitate repairs and the recovery of materials and complete functional blocks during decommissioning.	Development of Various Standards for modular construction. Development of procedures and guidelines in recovering components from modular construction during decommissioning.	The number of regulatory standards developed for modular construction. The number of guidelines and procedures for recovering and assessing and testing of components
	Using current momentum of reforestation campaign to reintroduce wood (as well as	Establishment of forestry and wood processing industries.	Number of companies or cooperatives established to work on forestry. Number of wood processing industries.

	agricultural waste) as a key building component on industry scale.	Development of standards for timber and wood constructions.	Number of standards developed to reintroduced wood as a main structural and non-structural element in urban production.
Plan urbanization and urban development in a way that considers circularity and sustainability criteria as well as tackled the urgent needs for affordable housing.	Revisiting urban planning protocols, concepts, and techniques, establishing a framework that enables a system of habitat production with a more stable supply chain and controlled price volatility.	Revised federal and regional Urban planning procedures and protocols in line with aligning cities for a more stable supply chain regime.	Number of urban planning protocols and procedures revised to incorporate concepts of circularity in urban development.
	Promote concepts of city planning and design that conceives cities as organisms operating within a larger natural ecosystem rather than disrupting natural material cycles, hydrologic cycles, energy cycles, etc.	Establishment of open idea (scheme) competition regime as a method of selecting better ideas for sustainable architectural, infrastructural, and urban development schemes.	Number of regional, national, and international competitions held to select best ideas for urban development schemes, urban design, infrastructure and landscape projects
	Develop guidelines for the planning and design of new cities/towns/neighborhoods that is established on the principles of circularity for better use/reuse/recycle of	Established frames of references and guidelines at national and regional levels for the design of	The number of guidelines developed to guide the planning and establishment of new towns.

	resources (material, water, energy, and waste).	particularly new towns based on circular economy city model	The number of new towns conceived and planned based on circular economic city model.
	Co-creation workshops on neighborhood level, reimagining the neighborhood and its expansion.	Establishment of processes and procedures for community (inhabitants) participatory planning processes, particularly in local development plans	Number of developed procedures and protocols to engage communities in planning and decision-making processes in urban development. Level of participation of communities in the development of local plans.

