4. Key findings

Among the key findings outlined in the assessment, the following are descriptions of the unique features of the ecosystems and their values that help in promoting their conservation and sustainable use:

- All of the ecosystems (Mountain, Forest and Woodland, Aquatic and Wetland, Rangeland and Agricultural ecosystems) have biodiversity components that harbor unique assemblages of plant, animal and micro bial species,
- The Ethiopian agroecosystem is unique as it is part of the Vavilovian center of origin and diversity of crop species such as coffee (Coffea arabaica), teff (Eragrostis tef), enset (Ensete ventricosum) and niger seed (Guizotia abyssinica), and livestock breeds,
- The Ethiopian ecosystems provide provisioning, regulating and non-ma terials services such as food, construction materials, flood and erosion control, pollination and ritual sites;
- Communities living in various ecosystems have rich indigenous and local knowledge developed over millennia to manage biodiversity and the ecosystem services, and
- Ethiopia has formulated and implemented several ecosystem and biodiversity related policies, laws, regulations and guidelines such as Biodiversity Policy, The Wildlife Policy and Strategy, Forest Proclama tion, Access to Genetic Resources and Community Knowledge, and Community Rights Proclamation and Regulation, and National Biodiver sity Strategy and Action Plans.

As a result of their threat status and vulnerability in the assessment, the following key findings require interventions. These interventions could be policy, science, practice or combinations thereof as summarized in Table below.

Key finding	Intervention types			Responsible institution
	Policy	Science	Practice	
Most of the endemic flora and fauna inhabiting isolated mountains have been categorized as critically endangered			✓	Institutions working on conservation and development
The national policy on biodiversity conservation and research, and other environmental policies and strategies do not pay adequate attention to the mountain ecosystem as a unique environment with vital ecosystem services	✓			Policy makers and implementers
The long history of human settlement with continued land degradation and deforestation has critically threatened the forest and woodland ecosystem and the services it provides	✓		✓	Institutions working on conservation and development
Policies and institutional arrangements relevant to biodiversity and ecosystem services of the forest and woodland ecosystem show a huge gap between policy design and implementation	✓		✓	Policy makers and implementers
Ethiopia is rapidly losing its natural water bodies and wetlands due, mainly, to over abstraction, pollution and changes in land use and habitats	✓		✓	Conservation, research & development institutions
Low level of public awareness prevails in the face of growing threats to aquatic and wetland areas			✓	Conservation institutions, and media & local communities
The shift towards sedentarization, crop cultivation and emergence of private holding of communal rangelands are triggering conflicts over grazing and water resources with boundary claims	✓		✓	Policy makers and development institutions
There are lack of clarities in rangeland policy and development direction, and limited knowledge and attention to the pastoral indigenous and local knowledge and informal institutions	✓	✓	✓	Research, academic and development institutions
Crop and livestock species with farmers' varieties/landraces and breeds are declining; and the many wild useful plant species and orphan crops remain underutilized and vulnerable	✓	✓	✓	Conservation, research & development institutions, and local communities
The loss of agrobiodiversity and its essential ecosystem services in agroecosystem is continuing due to natural and anthropogenic drivers			✓	Institutions working on conservation and development
The spread of invasive alien species is affecting all ecosystems		✓	✓	Conservation, development and research institutions

5. The way forward

Ethiopian ecosystems, despite their determining roles in economic and social wellbeing, have been degrading due to anthropogenic and natural pressures that need to be addressed. Since the task ahead is enormous, it is fundamental to operate in a collaborative manner and synergized efforts at various levels. These in turn can be materialized by putting in place the appropriate policy framework and institutional setup; and promote the generation and integration of knowledge systems and the tradition of collaborative undertakings. Through the process, the science-policy interface is aspired to be enhanced leading to maintenance of the country's biodiversity resource base that would eventually contribute towards improved wellbeing of the Ethiopian public.

How to access the Ethiopian National Ecosystem Assessment Products

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- Comoros Street
- P.O.Box: 30726
- Tel.:+251011-6-612244/011-6-512023/ 011-6-615607/ 011-6-616643
- E-mail: info@ebi.gov.et
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NATIONAL ECOSYSTEM ASSESSMENT OF ETHIOPIA

Brochure prepared by the Ethiopian Biodiversity Institute

Addis Ababa
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Comoros Street, Woreda 5, Yeka Sub-City
Addis Ababa, Ethiopia
P.O. Box 30726
Tel. +251-0116615607/0499
Fax. +2516613722/2542
E-mail. Info@ebi.gov.et
Website: www.ebi.gov.et

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1. Introduction

Ethiopia is endowed with high biodiversity that emanates from a wide range of topographic, climatic, edaphic and cultural variations, giving rise to diverse ecosystems and wide range of ecosys tem services for the benefit of people and the environment. Despite this, biodiversity and ecosystem services are under critical threats, mainly due to rapid human population growth. The livelihood of the population mainly depends on services generated from the natural resources, the demand of which is consistently growing. This substantially drives the unbalance between demand and supply of services, which triggers unsustainable utilization of natural resources leading to a rapid decline in biodiversity.

Addressing these challenges requires information on the current status of biodiversity and ecosystem services. Thus, a biodiversity and ecosystem services assessment is a crucial tool and needs to be conducted based on proven assessment methodologies and principles such as those outlined in Intergovernmental Panel for Biodiversity and Ecosystem Services (IPBES) Framework.

An ecosystem assessment is a process that aims at evaluating current knowledge about the interrelationships between human activities and biodiversity; and can be conducted at global, regional and national spatial scales. A National Ecosystem Assessment (NEA) is a nationally driven process involving contextualized proven principles, frameworks and methodologies to suit country needs and address specific policy questions. With such rationale, the UN Environment World Conservation Monitoring Center (UNEP-WCMC), which provides support to countries in undertaking National Ecosystem Assessments (NEA) in accordance with the conceptual and assessment frameworks of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has initiated assessments in five countries in 2017. In the case of Ethiopia, the NEA is being undertaken with the support of the German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) through the Biodiversity and Ecosystem Services Network (BES-Net) project. The Ethiopian Biodiversity Institute (EBI) has coordinated the assessment and a range of stakeholders have been involved in the process, principally through consultation sessions.

Ethiopian ecosystems used to be classified into 10 broad categories, and recently 12 vegetation-based ecosystems are recognized. For the purpose of this national assessment, however, these ecosystems are clustered into the following five major groups based on stakeholder consultation sessions during the scoping phase. These are Mountain Ecosystem, Forest and Woodland Ecosystem, Aquatic and Wetland Ecosystem, Rangeland Ecosystem and Agroecosystem.

The assessment undertaken on the above major ecosystems has centered around the following policy relevant questions: nature"s benefit to people, status and trends of ecosystem and their services, direct and indirect pressures on biodiversity and ecosystem services, the level of awareness on biodiversity and ecosystem services, and policy and governance. It is an up-to-date, comprehensive, and critical synthesis of available knowledge from across natural and social science realms. Moreover, indigenous and local knowledge (ILK) and the linkages to environmental resource and biodiversity management dimensions have also been explored.

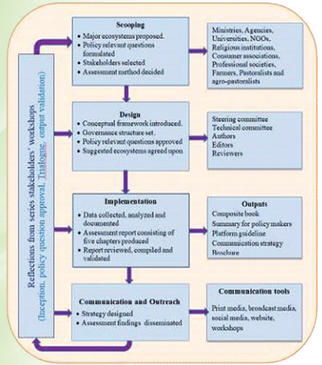
The outputs of the NEA will provide a knowledge base for informing pathways for actions and policy options and help respond to future scenarios regarding the status and trend of changes in the country"s biodiversity and ecosystem services. The ample evidence that has been synthesized through the processes of the NEA needs to be communicated to all relevant stakeholders, including policy makers, the scientific community and practitioners. Therefore, this brochure is prepared to provide an overview of the essence, process, key findings and home-take messages of the country"s NEA.

2. Ethiopia's National Ecosystem Assessment process

The National Ecosystem Assessment (NEA) was framed based on the IPBES Conceptual and Assessment Frameworks. The NEA began in 2017 by sharing various experiences from prior assessments. The following table presents major milestones in practice of ecosystem assessment at various levels.

Milestones	Year
Millennium Ecosystem Assessment: evaluated the impact of ecosystem change on human well-being and proposed actions	2005
IPBES: was established with an aim to conduct global, regional and thematic assessments and encourage countries to undertake their own national level assessments	2012
UNEP World Conservation Monitoring Centre: was established the National Ecosystem Assessment Initiative to deliver guidance to support countries	2017
CBD: Conference of Parties highlighted the value of national ecosystem assessments, and urging "parties" to do the same	2018

To make the assessment credible, legitimate and relevant, and which would be acceptable by all stakeholders; the NEA passed through scoping (exploratory), implementation, validation, and communication and outreach stages (see the Framework below). The different steps have followed an iterative process, supported by active engagement of the three groups of stakeholders (scientists, policy makers and practitioners) to own the assessment product. Authors, editors and peer reviewers pooled from various disciplines and sectors played the principal role in executing the assessment



3. Lessons Learned from the National Ecosystem Assessment

As experience shows, communication of the process and outcomes of a NEA process is conducted both at national and international levels using various tools and approaches. Ethiopia has shared lessons it has learned to other countries (Africa, Asia, Latin America, the Caribbean and Europe) conducting similar assessments; and has also learned from the experiences of others. Ethiopia"s experience shared during the lessons learned event which was organized by UNEP-WCMC include:

- The importance of establishing a multidisci plinary steering and tech nical committee that comprise of policy makers, conservation and research institutions, academia and non-gov ernmental organizations as components of the project governance structure;
- The need for feedback from stakeholders re garding identification of eco systems to be as sessed and refine draft policy questions; and
- The relevance of recruiting appropriate au thors, editors and review ers from across differ ent disciplines; and
- The need for engaging planning and imple menting ministries to main stream the assess ment outputs into their respective sectoral plans.