



UNEP-IEMP 10-Year Progress Review (2012-2022)



International Ecosystem Management Partnership
国际生态系统管理伙伴计划



Preface

It has been over 10 years since the inception of the UNEP-International Ecosystem Management Partnership (UNEP-IEMP) in Beijing back in 2011. The Center has become a global center since 2012 through the signing of the UNEP-Chinese Academy of Sciences (CAS) legal agreement. Over the past decade, UNEP-IEMP has emerged as a pivotal player in the global network for environmental cooperation. It has been instrumental in promoting ecosystem management, exploring sustainable solutions, and facilitating transformative efforts in the Global South, with a particular emphasis on advancing South-South cooperation.

This report is a summary of UNEP-IEMP's 10-year work achievements and provides a forward-looking. The report itself is a vehicle that, on the one hand, we use to report to and receive guidance from UNEP-IEMP's host institutions – UNEP and CAS. And on the other hand, it is a way of appreciation to the partners and friends who have given support and assistance to the Center since its inception, without whom the achievements of UNEP-IEMP would not have been possible. Meanwhile, the report also represents a self-assessment and reflection process which provides our staff a base to start working with for the years to come.

Over the past decade, the UNEP-IEMP has traversed a transformative journey, akin to the growth of an individual entering their teenage years. Looking ahead, we recognize the magnitude of the environmental pressures that confront us and the imperative for the Center to play a substantial role in shaping solutions. UNEP-IEMP remains committed to advancing ecosystem management, fostering South-South cooperation, and advocating for integrated approaches that propel our collective journey toward a sustainable future. As we move forward, we earnestly seek your unwavering support in the years to come. Thank you for your continued partnership.

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About UNEP-IEMP

Who we are?

The United Nations Environment Programme – International Ecosystem Management Partnership (UNEP-IEMP) is UNEP's first collaborating center in the South and for the South mobilizing science to support policy setting for sustainable ecosystem management in the developing countries. Supported by the Chinese government, it was jointly launched by UNEP and Chinese Academy of Sciences (CAS) in 2011 and housed by the Institute of Geographic Sciences and Natural Resources Research of CAS.

Vision

To enhance the role of ecosystem management as a vital approach to working with nature for a world with a green economy.

Mission

To provide science, policy, and capacity support to developing countries to integrate ecosystem-based approaches into national policies and development plans to enhance the delivery of ecosystem services for human well-being.

Niches

- To promote nexus approaches of Climate, Ecosystems and Livelihoods for the implementation of Sustainable Development Goals (SDGs) and Paris Agreement
- To support South-South cooperation that engages China with other developing/developed countries
- To enhance evidence-based science for policy

Strategy

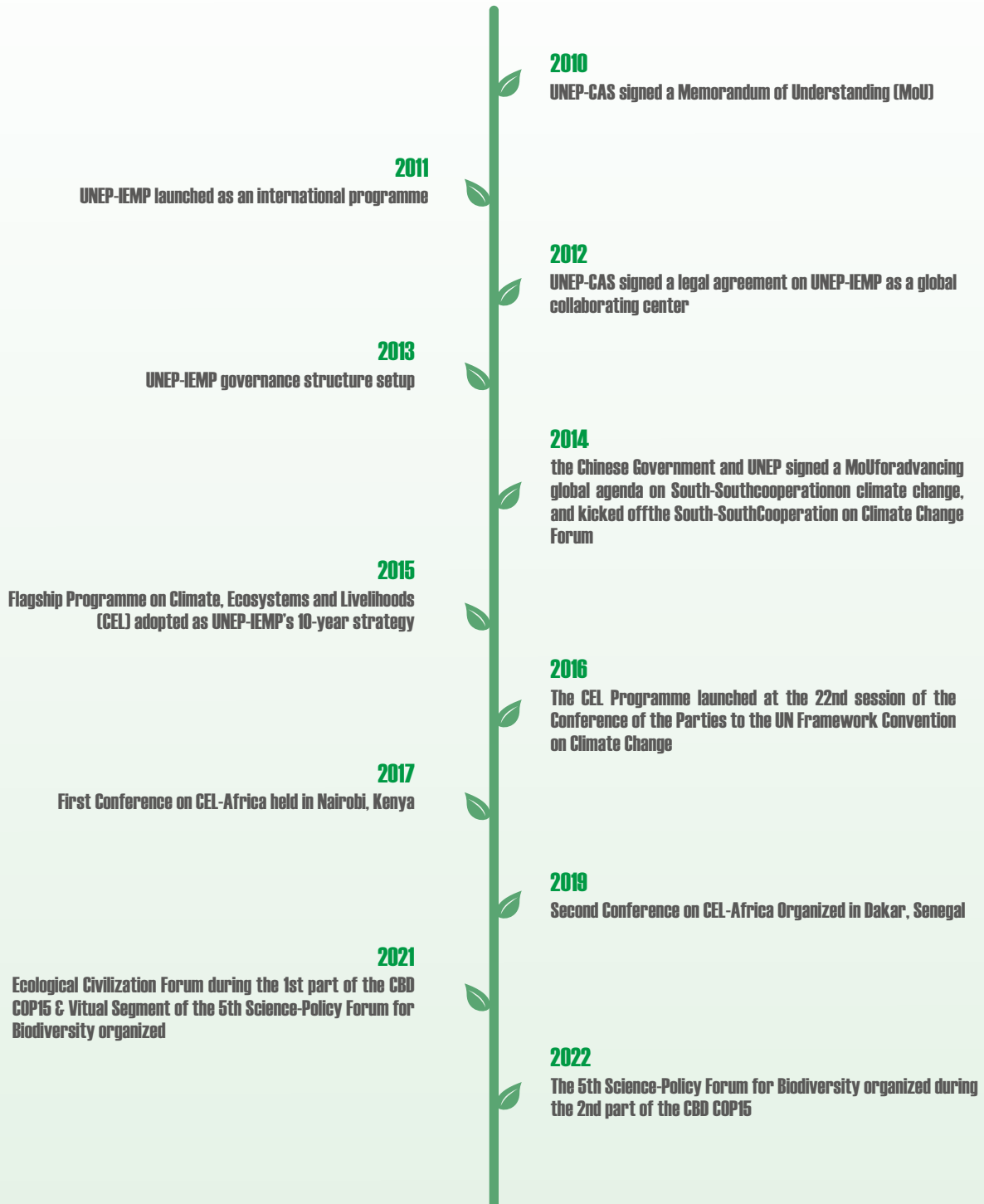
In the inception phase, a three-phase approach including inception (2010-2012), development (2013-2015), and operation (2016 onwards) was designed for UNEP-IEMP to become a fully operational global center.

Since 2016, UNEP-IEMP has been implementing a decade-long Flagship Programme on Climate, Ecosystems and Livelihoods (CEL), a major South-South cooperation initiative supported by UNEP and China designed to assist developing countries to improve livelihoods through ecosystem restoration and conservation in the context of climate change.

Throughout the implementation of CEL Programme, UNEP-IEMP is dedicated to provide countries with assistance in monitoring and assessment, capacity building, technology demonstration and science for policy. The programme focuses on the most fragile ecosystems, such as drylands, mountains, river basins and coastal zones in Asia, Africa, and other developing regions.



10-Year Milestones



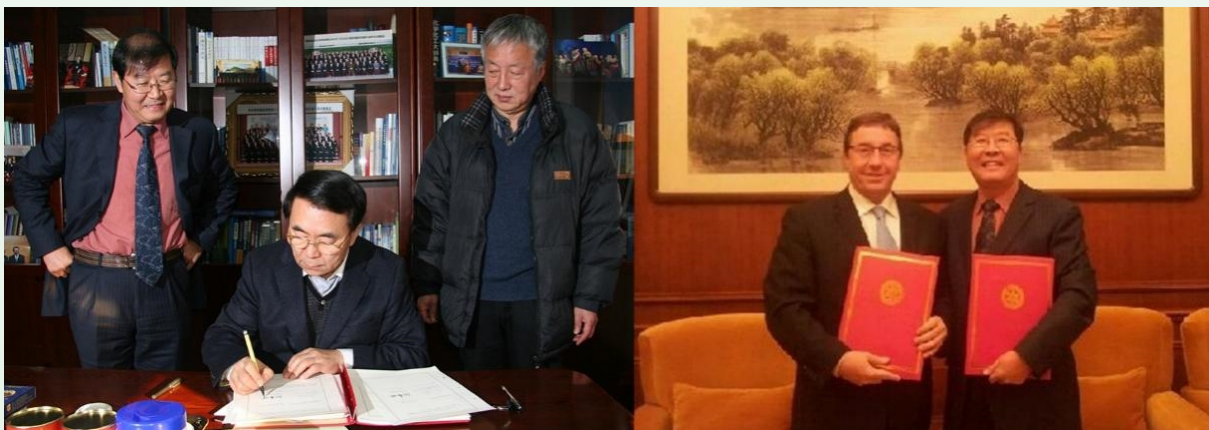
Part 1 Institutional Development

1.1 Moments in the spotlight

UNEP-IEMP firstly launched by UNEP and CAS in November 2011 in Beijing, China. Mr. Achim Steiner, UN Under-Secretary General and UNEP Executive Director, along with Mr. Zhongli Ding, Vice President of CAS, launched UNEP-IEMP, which was witnessed by Mr. Ganjie Li, Vice Minister of Environment Protection, other Chinese ministerial-level leaders, heads of the UN and other international organizations, and renowned scientists.



Prof. Chunli Bai, President of CAS, reiterated his continued support to UNEP-IEMP and its development during his visit to UNEP Headquarters in Nairobi in April 2012.

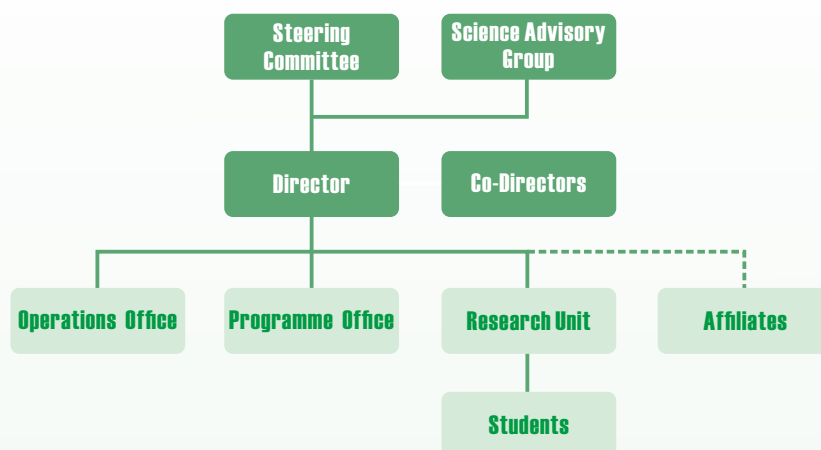


On 31 December 2012, an agreement was signed between UNEP and CAS to establish UNEP-IEMP as a global center mobilizing science to support policy setting for sustainable ecosystem management in developing countries.

1.2 Institutional governance

UNEP-IEMP Organizational Structure

Nov 18, 2020



Steering Committee

UNEP-IEMP is overseen and guided by a Steering Committee co-chaired by the principals or their designated representatives from UNEP and CAS. The Steering Committee provides strategic advice and oversight to UNEP-IEMP on partnership matters and programme implementation for all collaborative projects. Its members are from relevant ministries and agencies of environment, development, and science and technology in China and international agencies, among whom UNEP-IEMP serves as secretary/‘ex officio’ member.

Scientific Advisory Group

The Steering Committee established an international Scientific Advisory Group composed of well-known experts in ecosystem management to assist it in exercising its responsibility on issues of strategy and programme of UNEP-IEMP. The Scientific Advisory Group provides scientific advice on the directions of future UNEP-IEMP activities, reviews the scientific relevance, quality and impact of projects, makes recommendation for planned work, and facilitates partnerships.

Directors

To support the development and operations of UNEP-IEMP, UNEP establishes UNEP-IEMP as an out-posted office of UNEP’s Ecosystem Division. UNEP also appoints a Director of UNEP-IEMP, who advises and exercises intellectual leadership in strategic planning and programme development of UNEP-IEMP in support of UNEP’s Programme of Work. Additionally, this appointment aims to enhance collaboration within UNEP and worldwide.

The CAS, through its IGSNRR, appoints co-director(s) responsible for the expenditure of resources available for UNEP-IEMP programmes and activities as well as for the management of its human and financial resources. The co-director(s) also plays a role in proposing draft work programme and annual work plan of the Center.

Staff

UNEP-IEMP’s work is run by an operations office, a programme office, and a research unit. Staff members are from multi-cultural backgrounds, with Chinese nationals as the majority and international staff from both developing and developed countries. In total, UNEP-IEMP, in the past 10 years, has employed 26 international staff from 17 countries in positions such as project staff, postdoctoral fellows, doctoral students, consultants, and collaborative researchers. The Chinese staff are employed through the host institute to implement the work of UNEP-IEMP.

Financing

The core fund of UNEP-IEMP is provided by UNEP and the Chinese government through CAS, including the CAS regular budget and the CAS International Talent Programme. In addition to the two parties, its thematic work is also funded by agencies such as the National Natural Science Foundation of China (NSFC), the Global Environment Facility (GEF), the European Union (EU), UN Women, Swiss Agency for Development and Cooperation (SDC), World Wide Fund For Nature (WWF), and the Ford Foundation.



Part 2 Policy Advocacies and Actions

In the past 10 years, UNEP-IEMP has been playing a leading role in the organization of a series of high-level policy dialogues on various important environmental issues, including the green economy, climate change, biodiversity conservation and ecosystem restoration, food systems transformation. These efforts are in responding the global conventions and policy agenda, and South-South cooperation has been emphasized as an important approach and with a unique value to these processes.

2.1 Call for green economy policies in the post Rio+20 era

The High-Level Xiamen Forum on Ecosystem Management and Green Economy organized by UNEP-IEMP on 6 September 2012 called for actions on cross-cutting key issues committed by Rio+20 to implement green economy policies in a post Rio+20 era.



“Ecosystem management provides a foundation for green economy...How to strengthen this foundation will help determine what kind of future we want.” said H.E. Zukang Sha, Secretary General, United Nations Conference on Sustainable Development.

In this regards, UNEP-IEMP team produced 6 UNEP Policy Briefs to promote this call globally and regionally. These Policy brief covered “Restoring the natural foundation to sustain a Green Economy”, “60 years of paradigm shift in China, change of policies and practices on Ecosystem Management”, “Challenges and Opportunities for Management of Terrestrial Ecosystems in Asia”, “Putting Ecosystem Management in the Vision of Africa’s Development”, “China and UN-REDD Programme, what they can do together to move to REDD+ agenda forward?” and “Promoting upstream downstream linkages through integrated Ecosystem Management in the Greater Mekong sub-region”.

2.2 Promote South-South cooperation on climate change

During the visit of China's Premier H.E. Mr. Keqiang Li to Kenya, on 10 May 2014, a UNEP-China MoU for advancing South-South cooperation on climate change was signed. With UNEP-IEMP's facilitation and pioneering projects, this MoU has built up momentum for the enhancement of collaboration on South-South Cooperation in addressing climate change, through jointly organizing the South-South Cooperation on Climate Change Forum.

Later in 2014, National Development and Reform Commission of China (NDRC) and UNEP jointly launched the High-level South-South Cooperation on Climate Change Forum at the UNFCCC COP 20 (Lima, 2014) and continued it at the COP21 (Paris, 2015) and COP22 (Marrakech, 2016). SSCCC Forum, organized by UNEP-IEMP, provided platform for consolidating wide consensus on the need to integrate a South-South dimension into global action against climate change. . The Forum had been very well-received, as participated by many ministers and heads of international organizations, that by 2017 it was subsequently taken up as a standing policy mechanism carried forward by the Executive Office of the UN Secretary-General.



▲ The high-level SSCCC Forum on 8 December 2014 during the UNFCCC COP20 in Lima, Peru



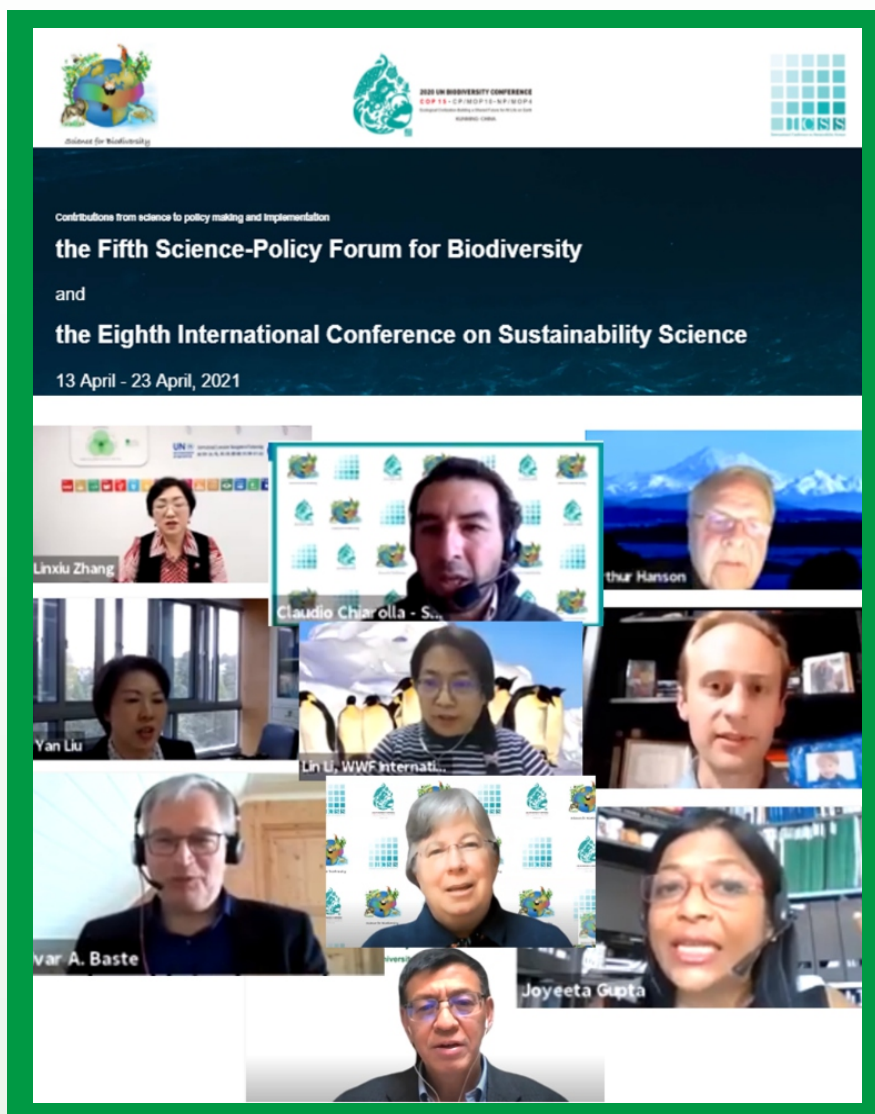
▲ 2nd SSCCC Forum on 6 December 2015 during the UNFCCC COP21 in Paris, France



▲ 3rd SSCCC Forum on 14 November 2016 in Marrakech, Morocco

2.3 Promote integrated approach of Climate, Ecosystems and Livelihoods

UNEP-IEMP promotes the nexus approach of Climate, Ecosystems and Livelihoods in developing countries for implementing the UN20230 SDGs, Paris Agreement and Kunming-Montreal Global Biodiversity Framework.



The virtual segment of the 5th Science-Policy Forum for Biodiversity

Session on “Biodiversity, Climate and Livelihoods: Implications for the Post-2020 Global Biodiversity Framework” at the Virtual Segment of the 5th Science-Policy Forum for Biodiversity was organized on 19 April 2021. Key messages of the session were submitted to the CBD SBSTTA-24, SBI-3 and WG2020-3 meetings through infodoc CBD/SABSTTA/24/INF/28. Later on, on 28 May 2021, the key message on promoting climate, ecosystem, and livelihoods nexus was adopted by China and proposed as a national statement at the SBI-3 Plenary meeting. “The long-term strategy on mainstreaming should consider the integration of the development of green livelihoods into biodiversity conservation, ecosystem restoration, and addressing the impacts of climate change.” said the China delegation to the CBD.

Three sessions of Conference on Climate, Ecosystems and Livelihoods in Africa were organized to promote coordinated efforts in Africa, which marked a shift from individual to institutional cooperation, and from a project to an integrated programme approach.



The first Conference on Climate Ecosystems and Livelihoods for Africa in 2017, Nairobi, Kenya



The second Conference on Climate Ecosystems and Livelihoods for Africa in 2019, Dakar, Senegal.

2.4 Mainstreaming the value of nature

14 December 2022, Montreal, Canada – CBD COP15 side event “Recognizing and managing the value of nature’s contribution to people through food systems transformation” was organized, highlighting the importance of sustainable agriculture and food systems transformations in halting biodiversity loss and restoring degraded ecosystems. Public and private sectors from countries and regions voice their support for strengthening the recognition and management of nature’s contributions to people for sustainable and resilient agri-food systems in the post-2020 biodiversity conservation agenda.



“Inadequate recognition and measurement of nature’s value is one of the major reasons leading to the continuous deterioration of biodiversity. The notion that natural ecosystems and the services they provide have a ‘value’ is becoming increasingly popular in China...it is expected that UNEP will provide more guidance and suggestions on how to apply The Economics of Ecosystems and Biodiversity (TEEB) approach in specific areas and scenarios to make socio-economic activities more friendly to biodiversity.” said H.E. Mr. Runqiu Huang, Minister of Ecology and Environment of China and President of the COP15.



15 October 2021, Kunming, China – Session “Lucid Waters and Lush Mountains are Invaluable Assets: from Concept to Practice” at the CBD COP15 parallel event Ecological Civilization Forum was organized. “Good environment and flourish ecosystems are the fairest public goods and the most universal welfare for the people.” said Vice Minister of Ecology and Environment of China, H.E. Mr. ZHAO Yingming.



2.5 Food systems transformation, women empowerment and community development 🌱



12 October 2021, Kunming, China – High Level Policy Forum and Dialogue - Collaboration and Cooperation: The Role of Communities, Science and NGOs in Biodiversity Conservation and Utilization.

Ms. Elizabeth Mrema, Executive Secretary of the CBD stressed in her opening remarks that the key to the implementation of the post-2020 Global Biodiversity Framework “will be the pivotal roles played by the civil society organizations, science and education community as well as the local communities...[as they] are the people who deliver practical actions and produce measurable results and impacts on the ground, through the implementation of various initiatives, programmes and projects.”



9 December 2022, Montreal, Canada – CBD COP15 side event “small farmers, farmer seeds systems and sustainability” was organized. The event partners launched the “Joint Montreal Declaration of Supporting Small Farmers and Indigenous Communities” to promote multi-stakeholder exchange and cooperation in enhancing farmer seed systems for sustainable biodiversity and conserving and utilising traditional knowledge for the Post-2020 Global Biodiversity targets and SDGs. The declaration was then submitted to the CBD secretariat for further consideration by the Parties to the Convention.



Part 3 A profile of work implementation

3.1 Projects and geographic coverage

As of May 2022, UNEP-IEMP had been implementing over 70 projects in the Global South addressing various issues, including ecosystem management and biodiversity conservation, climate change adaptation, social-economic development and gender empowerment, pollution management, and capacity building. The work of UNEP-IEMP had covered about 30 countries in Asia-Pacific and Africa. Key working regions include West Asia, Central Asia, the Greater Mekong Subregion, Zambezi River Basin of southern Africa, the Sahel region of western and north-central Africa, and Lake Victoria Basin of East Africa.

3.2 South-South cooperation platform

As the UNEP’s first global center in the South and for the South, South-South cooperation has been designed as a key feature of all initiatives and projects at UNEP-IEMP. It supports to the UNEP’s Strategy for South-South and Triangle Cooperation and takes advantage of technical and finance resources from the host country and international development agencies. The functions of South-South cooperation platform include providing policy dialogue mechanism, forging standing funding programme, pioneering global programme on South-South cooperation.

On forging South-South funding programme, with UNEP-IEMP's facilitation, the National Natural Science Foundation of China (NSFC) has initiated a joint programme with UNEP to fund research in the Global South on climate change, ecosystem management, resource efficiency, and environment government since 2011.. Over the past 10 years, this joint programme has invested a total of 120 million Chinese Yuan (CNY) (17.8 million USD) for 42 projects undertaken in developing countries. Furthermore, based on its MOU with UNEP, the Ministry of Science and Technology of China had invested 40 million CNY (5.93 million USD) in Africa and Asia to address issues like desertification, water resources management, environment health, and disaster prevention and control.

On pioneering global programme on South-South cooperation, UNEP-IEMP facilitated GEF's first project within the framework of South-South Cooperation, adding a new dimension of global climate change cooperation. The full-sized GEF project entitled Ecosystem-based Adaption through South-South Cooperation (EbA South), which was jointly implemented by UNEP and NDRC, and managed by UNEP-IEMP. The project received a GEF funding of 4.9 million USD and co-financing of approximately 10.7 million USD from the Chinese government. It has enabled a follow-up project, i.e. the Mekong EbA South being implemented by UNEP with a funding of 7 million USD from the Adaptation Fund.

3.3 Capacity development

UNEP-IEMP had organized a total of 89 workshops and events (including those co-organized with partners) to support capacity building and awareness raising for nearly 7,000 beneficiaries in the Global South. These workshops and events were organized on the following topics:

- Ecosystem-based Adaptation
- Ecological civilization and environmental governance
- Ecosystem monitoring and assessment
- Land degradation and ecosystem restoration
- Agrobiodiversity conservation and food systems
- Green economy and sustainable livelihoods
- Community development and women empowerment
- South-South cooperation on climate change
- China-Africa Cooperation

Internally, UNEP-IEMP has provided education to 20 students of the University of Chinese Academy of Sciences with PhD degrees and 7 students with master's degrees.

3.4 Thematic progress

3.4.1 Ecosystem-based adaptation

Ecosystem-based Adaptation (EbA) is an approach to work with nature to maximize ecosystem services for adaptation and to build resilience of vulnerable ecosystems, benefiting the well-being of communities vulnerable to climate change. Building upon UNEP's EbA Flagship programme, the EbA portfolio of UNEP-IEMP focuses on vulnerable ecosystems in the developing regions of Asia and Africa, where EbA is considered as one of the most cost-effective, durable and pro-poor solutions to address those common challenges on conservation and livelihoods.

In this context, UNEP-IEMP has developed a number of projects to implement EbA actions in the Global South. They are:

- The GEF-funded project "Enhancing capacity, knowledge and technology support to build climate resilience of vulnerable developing countries" implemented in Asia-Pacific and Africa
- Research project on climate-food-water nexus in the Zambezi Basin funded by the UNEP-NSFC collaborative programme
- Research project on Nature-based Solutions (NbS) in mountains of Nepal funded by the UNEP-NSFC collaborative programme
- Research project on rice production risk management under climate change in Southeast Asia funded by the UNEP-NSFC collaborative programme

Key Achievements:

- Developed a large number of knowledge products, such as the EbA planning tool 'ALivE', handbook, research guideline, education curriculum guide, good practice case studies, EbA implementation protocols, documentary films, and scientific papers on lessons learned from the EbA South project.
- Published the UNEP Technical report "Case studies on ecosystem-based approaches for resilient livelihoods in developing countries" (2022)
- Created a user-friendly interactive web-based platform (<http://www.ebasouth.org/>) to share the global knowledge, technology and good practices to facilitate learning and promote dialogue on EbA for effective EbA planning and implementation.
- Ecologically restored 450 ha of deserts in Mauritania, 20 ha of mangroves in Seychelles and planted over 840,000 seedlings in Nepal, with multiple alternative livelihood options piloted.
- Studied the climate-food-water nexus in the Zambezi River Basin by applying the CropWatch Cloud Platform (cloud.cropwatch.com.cn) which combines remote sensing and ground-based indicators in the monitoring of regional crop production and agricultural development.
- Organized 5 technical training workshops on crop monitoring using the CropWatch Cloud Platform for more than 50 staff members of national and provincial crop and early warning departments in Mozambique.
- Provided information on crop conditions for all districts and regions of Mozambique, including the real-time crop monitoring results from CropWatch cloud adopted by the national agro-metrological forecasting system of Mozambique.
- Assessed the impact of glacier melting and vegetation change on local evapotranspiration and water supply in Nepal and recommended some initial NbS for Nepal mountainous regions.
- Developed knowledge and tools for simulating the agricultural production potential in different contexts of climate change and management practices in Bangladesh, India and Myanmar, and provided strategies for adaptive management of agroecosystems to strengthen regional food security.

3.4.2 Ecosystem management and restoration

Ecosystem management, "an integrated process to conserve and improve ecosystem health that sustains ecosystem services for human well-being", can halt and reverse the increasing degradation of ecosystems while also providing economic and job opportunities, hence plays a pivotal role in the development of green economy. Similarly, ecosystem restoration means assisting in the recovery of ecosystems that have been degraded or destroyed, as well as conserving the ecosystems that are still intact. It is one of the most important ways to address food insecurity, climate change mitigation and adaptation, and biodiversity loss through the delivery of NbS.

Therefore, ecosystem management and restoration has been at the core of UNEP-IEMP's work. This project portfolio mainly includes:

- The assessment on capacities of ecosystem monitoring, research and management in Africa (2012-2014)
- South-South capacity building for ecosystem management in the Greater Mekong Sub-Region (2015-2016)
- Global Dryland Ecosystem Programme (Global-DEP) (2017-2021)
- Ecosystem management for sustainable livelihoods in Greater Mekong Subregion (2021-2022)
- Technology to combat desertification for the Great Green Wall (2019-2022)
- Lake-watershed management for sustainable use of water resources in East Africa (2019-2022)
- Four research projects under the UNEP-NSFC collaborative programme on the themes of protected area management in East Africa (2014-2018), ecosystem change in Central Asia (2014-2018), desertification control in Mauritania (2019-2023), and land use and land cover change in the Sahel (2017-2021)

Key achievements:

- Produced UNEP technical report "Good Practices on Vulnerable Ecosystem Restoration in China"(2022) and "Transboundary Landscape Management Tools and Key Strategies in the Lancang-Mekong Region"(2023)

- Produced ecosystem assessment reports for Central Asia and the Greater Mekong Subregions, respectively.
 - Complied case studies and best practices on ecosystem-based approaches to combat desertification and dust storms relevant to West Asia.
 - Produced the key biodiversity areas and impact assessment in the Belt and Road Initiative (BRI) region and the BRI case studies report on biodiversity conservation.
 - Produced and shared surface water body extent and area, 30m land use and cover maps, and long time series night time light remote sensing datasets for the Sahel Region of Africa.
 - Developed datasets on water resources supply and demand patterns and provided tools and policy suggestions for sustainable water resources utilization in the Lake Victoria Basin.
 - Set up a monitoring site with methodological tools and approaches for long-term ecosystem monitoring in Rwanda.
 - Established demonstration sites on desertification fixation and enhancing nursery with drip irrigation in Mauritania, as well as 200 ha demonstration area on degraded grassland restoration in Ethiopia.
 - Facilitated global research collaboration on dryland Social-Ecological-Systems that engages researchers, practitioners and policymakers in developing a science plan to support ecosystem management and sustainable livelihoods in different dryland regions.
 - Produced 6 UNEP policy briefs on the themes of ecosystem management and green economy.

3.4.3 Food systems resilience and agrobiodiversity conservation

Food systems are essential for human survival. They are closely connected to, and have a significant impact on human and animal health, land, water, climate, biodiversity, economy, and other systems. Over the past 50 years, the conversion of natural ecosystems for crop production or pasture has been the primary cause of habitat loss, which in turn leads to a reduction in biodiversity. Agrobiodiversity conservation can lead to not only more stable and efficient ecosystem service provision, but also increases resilience of production systems and livelihoods to shocks and stresses.

UNEP-IEMP has developed a set of actions and projects to enhance agrobiodiversity conservation and food system resilience, such as:

- The Sustainable Livelihoods and Green Development Strategy in Environmentally and Economically Fragile Areas project under the Pan-Third Pole Environment Study for a Green Silk Road (Pan-TPE) (2018-2022)
 - The Economics of Ecosystems and Biodiversity: Promoting a Sustainable Agriculture and Food Sector (China) project (2019-2023)
 - Seed diversity in smallholder farmers: Ensuring global food security in the context of climate change (2019-2020)
 - Farmers' Seed Networks: Developing a comprehensive knowledge system to promote biodiversity conservation, plant breeding and food improvement in China (2017-2019)

Key achievements:

- Contributed to raising awareness about sustainable food system by clarifying the development rules of labor market and land rental market faced by smallholders of East Asia, and identify their influencing factors.
 - Provided options for agrobiodiversity conservation among smallholders in mountainous areas by evaluating the effects of conservation measures on crop diversity and examining their implications for climate-resilient livelihoods in Nepal.
 - Established a framework for assessing farmers' vulnerability to climate change in environmentally and economically vulnerable regions, and assessed the energy stability, inequality and vulnerability to climate change in these regions.

- Analyzed diet structure change of over 2000 rural households in five provinces of China and revealed the health, economic, and environmental co-benefits derived from the change, contributing to the publicity of more balanced diet adjustment in rural areas.
- Highlighted the positive and negative impacts of agriculture along its value chain on the environment and human health, through the TEEBAgriFood assessment piloted in Tengchong City, Yunnan Province, China.
- Jointly established the “Naxi Cooperation and Learning Network in Mountainous Area of Jinshajiang River Basin” since 2016, aiming at exploring innovative pathways in rural revitalization to cope with the social changes and climate crisis.
- Organized multi-stakeholder policy dialogues, proposed policy recommendations based on action research results, and cooperated with government departments at all levels to shape decision-making process on agrobiodiversity conservation and food systems resilience in China.

3.4.3 Food systems resilience and agrobiodiversity conservation

Empowering women and promoting local community development is critical in achieving the SDGs. It lies at the core of efforts to eradicate poverty and hunger, improve education and health, combat climate change, address environmental problems, and contribute to many other goals. Worldwide, women and girls are at the frontline in agriculture and natural resource management. However, they often do not have equal rights to own, use and control land and resources and have limited support for their multiple roles and their formal or informal cooperation. This poses major challenges to food security and agrobiodiversity, especially in areas with dramatic climate change and fragile ecological and socio-economic environments, such as countries in South and Southeast Asia, where the majority of the world's smallholder farmers live.

UNEP works to promoting gender equality and empowerment of women and girls in environmental governance, including operationalizing gender and human rights dimensions and non-discrimination issues in programme and project design, promote environmentally and socially sustainable approaches to natural resource management. In this field, UNEP-IEMP has implemented the following projects:

- Strengthening Qinghai Women Farmers' Income Security and Resilience in a Changing Climate
- Improving social impacts of China's development finance in countries of the Global South from a gender perspective with case studies and pilot projects” funded by Ford Foundation
- The Pilot Project on Green Economy in Dongying City of China

Key achievements:

- Organized regional dialogue on empowering women to manage sustainable food systems and enhancing agrobiodiversity in the Asia Pacific Region, with support from UNEP, UN Women, International Center for Integrated Mountain Development (ICIMOD), and other major partners.
- Produced report on Gender Equality and Sustainable Development in the Mountain Areas of Asia, which selects five mountainous countries in Asia (Bhutan, Cambodia, China, Nepal, and Thailand) to review the role of gender equality in climate change adaption, biodiversity conservation, ecosystem restoration and food security.
- Provided skills training, gender awareness raising, and other supports to nearly 70,000 women farmers in Qinghai Province of China, with the aim of helping them become more economically resilient in a changing climate.
- Demonstrated the crucial role of women in farmers’ seed system enhancement and traditional knowledge revitalization for climate change adaptation in four Naxi Mountain communities in Yunnan Province of China.
- Promoted gender inclusive tools and approaches for practitioners to improve community development and environment protection in China’s oversea investments.
- Developed collaborations with the government of Dongying City on urban green development and community-based ecosystem management, so as to integrate the conservation of ecosystems and biodiversity into local policies and development plans.

4.1 Situation analysis

The slogan of World Environment Day 2022 is “Only One Earth”, with the focus on “Living Sustainably in Harmony with Nature”. Same slogan as that for the 1972 Stockholm Conference, the first world conference to make the environment a major issue. 50 years on, this truth still holds – this planet is our only home, but it is facing more tremendous pressure. The way out of this dilemma is to transform our economies and societies to make them inclusive, fair and more connected with nature. Several major policy processes and actions have been underway to enable transformative development of the world by 2030, which opens up tremendous opportunities for UNEP-IEMP to implement CEL in the years to come. Key ones are:

Ecosystem-based approaches, also known as Nature-based Solutions (NbS), is defined as “actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits”. Being taken up at the 2019 UN Climate Action Summit, NbS has brought great political attention and momentum to the power of unlocking potential of nature for climate action as well as achieving other development priorities. It has now been promoted as a key tool for solving diverse environmental and societal problems. For example, NbS can make a large contribution for CO₂ removal and play a vital role in creating multiple co-benefits for disaster risk reduction, gender equality and sustainable livelihoods, as well as for building climate resilience. Therefore, UNEP-IEMP can systematically integrate the NbS principles and practical applications into its mandate to enhance ecosystem management as a vital approach to working with nature for a world with a green economy.

The implementation of the Kunming-Montreal Global Biodiversity Framework. The biodiversity crisis is at unprecedented level in the history of mankind as alarmed by the IPBES report in May 2019 and several other reports that followed since. The Kunming-Montreal Global Biodiversity Framework sets out goals and action-oriented targets for this decade and beyond to halt and reverse biodiversity loss and put nature back on a path to recovery. In the next decade, implementation of this framework will be the key. UNEP-IEMP's work will contribute to the implementation of this framework, particularly in support to Target 7 (pollutions), Target 8 (climate), Target 10 (agriculture), Target 11 (ecosystem services), Target 14 (mainstreaming biodiversity and its values), Target 20 (capacity development & South-South cooperation), and Target 23 (gender).

The UN Decade on Ecosystem Restoration, a global rally to heal our planet aims to prevent, halt, and reverse the degradation of ecosystems in eight major ecosystems. Simultaneously it aims to assist in the effort to end poverty, combat climate change and prevent mass extinction. To address the existing barriers such as limited awareness, social and culture norms, insufficient public and private investment and collaboration, and limited technical knowledge and capacity, UN Decade will inspire and provide support to all parties to create a platform for better and continued human-nature relationships by 2030. UNEP-IEMP will make unique contributions to this process, both as a provider and a facilitator, based on its abundant knowledge accumulated on ecosystem-based approaches as well as good connections with key technical partners and practitioners such as the Chinese Ecosystem Research Network (CERN) of CAS.

Food systems transformation. In September 2021, UN convened the Food Systems Summit as part of the Decade of Action to achieve the SDGs by 2030. The Summit was guided by five Action Tracks and four Levers of Change to deliver progress on all 17 SDGs, each of which relies to some degree on healthier, more sustainable and equitable food systems. Given the integral nature of the food system and its compositions, the CEL integrated approach will be promising to support a sustainable food systems transformation. For example, UNEP-IEMP's work on agrobiodiversity conservation to improve livelihoods under climate change has provided solutions to “enhance farmers' access to crop diversity first in seed policy and practice” and “increase the production and consumption of vegetables for livelihoods and health”, contributing to the goals of reducing hunger in Action Track 1 and healthy diets in Action Track 2.

UNEA's resolution to end plastic pollution. In March 2022, the resumed fifth session of the United Nations Environment Assembly (UNEA 5.2) endorsed a historic resolution to End Plastic Pollution and forge an international legally binding instrument by 2024. The resolution addresses the full lifecycle of plastic, including its production, design and disposal. It is expected to present a legally binding instrument, which would reflect diverse alternatives to address the full lifecycle of plastics, the design of reusable and recyclable products and materials, and the need for enhanced international collaboration to facilitate access to technology, capacity building and scientific and technical cooperation. This is the area of opportunity for UNEP-IEMP to engage with partners and make contributions.

4.2 UNEP MTS linkages

As put forwarded in the UNEP Medium-Term Strategy (MTS) 2022-2025, the world is facing three major planetary crises: climate change, biodiversity loss and pollution. In the four-year period covered by this strategy, UNEP will tackle three planetary crises through three thematic subprogrammes: Climate Action, Nature Action, and Chemicals and Pollution Action. UNEP will also step up delivery of these core areas of work, catalyzing actions outlined through two foundational subprogrammes (Science-Policy and Environmental Governance) and facilitated by two enabling subprogrammes (Finance and Economic Transformations and Digital Transformations).

The CEL Programme implemented by UNEP-IEMP has been contributing to resolving these three aspects, which will continue to be the direction of the Center's efforts in the future. The focus on ecosystem-based approaches will be of great value. For example, climate-smart agriculture, which aims to increase climate resilience and reduce poverty in developing countries, can support the delivery of Climate Action, Nature Action, as well as the Science-Policy subprogramme of the UNEP MTS.

4.3 Key lessons learnt

The UNEP-IEMP partnership provides a unique and strategic platform that engages UNEP, China and other developing/developed countries in South-South cooperation. Several lessons have been learnt by UNEP-IEMP in developing the platform, particularly since CEL originated in 2016. Key ones are:

Support and long-term commitment from UNEP and Chinese government agencies are central to the success of UNEP-IEMP's work. The proposed CEL programme demonstrates how the two sides can work together to assist vulnerable developing countries in pursuing sustainability with an ecosystem-based approach.

Acting as a coordinating, facilitating and/or catalyzing body, apart from project implementation, is an appropriate way to bridge various understandings and interests in South-South and triangle cooperation. In fact, the CEL programme has been coordinated by the robust core team of UNEP-IEMP, drawing on the globally relevant knowledge, expertise and other resources of its network of partners.

Strengthening a substantial network of partners is essential to the success and sustainability of CEL. UNEP-IEMP strives to establish and enhance partnerships among scientists, practitioners, and policy makers in developing countries, as well as between individuals and agencies from the South and the North. The CEL programme works with a broad range of partners at international, regional, national and local levels.

Engaging with more private sectors can play a potential role in promoting the CEL. Entrepreneurs and companies are a dynamic force in delivering SDGs. UNEP-IEMP has built strategic partnerships with several foundations and NGOs through pilot projects and case studies. It is a priority to strengthen communication and collaboration with more private sector bodies in the programme.

4.4 Strive for better delivery

UNEP-IEMP has played an important role in promoting South-South cooperation, in facilitating the science-policy interface, and in advancing the integrated approach of Climate Ecosystems and Livelihoods. In the past decade, it has been acting as an implementing body of UNEP, leveraging support from its host country, China, to contribute to global actions to address the intertwined environmental challenges. We understand the need for rapid action during the coming decade of action, starting with the "mega-environmental year" of 2020. UNEP-IEMP can make very important contributions that will shape its own future over this entire decade ahead. Key recommendations include:

Continue to strengthen the emphasis on CEL and ensure that all three elements of CEL are covered in every UNEP-IEMP initiative. In general, more emphasis should be placed on livelihoods as an essential starting point for success in ecosystem management. Additionally, more attention is needed to create advanced tool kits, such as building skills with relevant modeling, indicator development, and socio-economic interpretation of ecological knowledge. It is particularly important to consider how CERN's 30 years of experience can be used to better advantage in future efforts.

Strengthening Communications Strategy. While UNEP-IEMP has expanded its range of practical guidebooks, produced various scientific papers, and held numerous meetings on its work, it still needs sufficient capacity to deliver the right information to key audiences in a timely way. Furthermore, while there is evidence of increasing demand for policy advice based on its work, the ability to deliver is constrained by finance limitations, staff time, and in some cases, the lack of background and training to provide such advice.

Capacity Development. Developing country partners need both short-term and long-term training to fully utilize the CEL approach and address new science and technologies, such as in addressing NbS. UNEP-IEMP will collaborate with existing UN training networks and Chinese initiatives, as well as other training efforts, to secure fundings for capacity development and training. UNEP-IEMP will also expand its staff and affiliates, with a particular focus on recruiting professionals in areas currently lacking expertise.

Increased Funding. Substantial budget increases are required for UNEP-IEMP. Diversification of funding is already underway, including sources within and outside China. However, UNEP-IEMP must have the flexibility to achieve its vision and objectives in ways that allow for exploring what it believes to be the most important elements. One way to move forward is to develop additional funding partnerships, potentially involving foundations, businesses, or other sources from within or outside of China.