

---

## WP23\_25: In-Situ Observations and Applications for Ecosystem Status of China and Central Asia

---

1451,210

### Basic Information

#### Full title of the Initiative

Comprehensive monitoring of typical terrestrial ecosystems and assessment of ecosystem services in the "Belt and Road" region of China and Central Asia

#### Short Title or Acronym

Ecosystem monitoring and assessment of ecosystem services in the "Belt and Road" region of China and Central Asia

#### Current category in the 2020-2022 GWP

Community Activity

#### Proposed category in the 2023-2025 GWP

Pilot Initiative

### Points of Contact

First Name	Last/Family Name	Email
Honglin	He	hehl@igsnr.ac.cn
Xinyu	Zhang	zhangxy@igsnr.ac.cn
Xiaoli	Ren	renxl@igsnr.ac.cn

### Purpose

#### Objective

To improve the ecological networks monitoring capabilities, promote the ecological monitoring data sharing in the "Belt and Road" regions of China and Central Asia, provide support for the monitoring and evaluation of "sustainable development goals" SDGs15, also provide support for management: a) regional decisions, e.g. support carbon peaking and carbon neutrality goals through carbon sink advisory reports and also support grassland management policies in these Central Asian countries, etc.; b) global decisions (provide materials for GCP)

#### Please provide a short description of the Initiative

The conservation, restoration and sustainable utilization of ecosystems and their services is a shared mission of Group on Earth Observations (GEO) and Sustainable Development Goals (SDGs) 15. It is of great significance to improve the ecological networks monitoring capabilities in the "Belt and Road" region of China and Central

Asia, make up for the lack of in-situ observation data of GEO, and scientifically assess ecosystem services. Due to the inconsistency between China and Central Asia's ecosystem research network monitoring indicator system and SDGs15 report requirements, and the lack of methods for developing data products, it is urgent to improve the ecological monitoring technical specifications aiming at supporting ecosystem service assessment, enhance ecological network monitoring capabilities, and promote the ecological monitoring data sharing in the "Belt and Road" region of China and Central Asia to provide support for the monitoring and evaluation of SDGs15. This initiative covers four Central Asian countries, which include Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan.

### **Why is this Initiative needed?**

The monitoring indicator system of Ecosystem Research Networks in China and Central Asia is inconsistent with that in the requirement of report writing for SDGs15. Besides, the indices provided by us are different from GEOBON. These Essential Biodiversity Variables provided by GEOBON are defined as the derived measurements required to study, report, and manage biodiversity change, focusing on status and trend in elements of biodiversity should play the role of brokers between monitoring initiatives and decision makers. They provide the first level of abstraction between low-level primary observations and high-level indicators of biodiversity. The main EBVs include Genetic composition, e.g. Genetic diversity, Species populations, e.g. Species distributions, Ecosystem functioning, Ecosystem phenology and Ecosystem structure e.g. Ecosystem distribution etc. While we focus on the ecosystem function indices, e.g. Net primary productivity, Water conservation and Soil conservation etc. We assess these indices based on the ecosystem process model, combining the model data fusion method and multi-source observation data to optimize the model sensitive parameters and improve the model simulation accuracy. In the process model, net primary productivity was expressed directly as net primary productivity, i.e., the difference between gross primary productivity (GPP) and vegetation autotrophic respiration, water conservation is calculated using the water balance method, and soil retention is calculated by integrating the universal soil loss equation.

### **What evidence is there to support this need?**

The lack of methods for developing data products; the lack of in-situ observation data for GEO; make it difficult to meet the requirement of report writing for SDGs15.

### **Is this Initiative open to participation by representatives of any GEO Member, Participating Organization, and GEO Associate?**

Yes

### **Are you aware of other projects or initiatives at a global or regional scale (both in GEO and externally) that provide similar products or services?**

No

**Please identify the most important actual and/or intended outputs (products, services, etc.) produced by the Initiative, along with their intended and/or actual users. This list does not need to be comprehensive but should identify the outputs which are most used and are expected to have the greatest potential impact.**

Output	Status	Users	Additional info
Crucial data products related to in-situ observation of typical terrestrial ecosystems in the 'Belt and Road' region of China and Central Asia	In development	GEO, researchers, government personnel, general public	
Satellite remote sensing standardized dataset of crucial ecological parameters for grassland in Tajikistan	In development	GEO, researchers, government personnel, general public	
Technical Specification for developing terrestrial ecosystem monitoring data products	In development	Ecological networks and stations in	
GEO's Knowledge Hub in Central Asia	In development	GEO, Ecological networks and stations in	
Support for management: a) regional decisions, e.g. support carbon peaking and carbon neutrality goals through carbon sink advisory reports and also support grassland management policies in these Central Asian countries, etc.; b) global decisions (provide materials for GCP)	In development	government personnel	

**If needed, please provide additional comments or explanation to accompany the outputs table**

- no answer given -

**What kinds of decisions are the outputs of this Initiative primarily intended to support?**

To promote the joint application of China's ecological monitoring technology in four Central Asian countries, that is, Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan, form a closer international cooperative research mechanism and link in ecological monitoring, and effectively improve the comprehensive monitoring technology level of terrestrial ecosystems in Central Asia. Besides, this initiative will support decision-makings. a) regional decisions, e.g. support carbon peaking and carbon neutrality goals through carbon sink advisory reports and also support grassland management policies in these Central Asian countries, etc.; b) global decisions (provide materials for GCP)

**How will these decisions benefit from the outputs of this Initiative?**

The formulation of technical specifications, the production of data products and the construction of knowledge hubs

**What kinds of impacts (for example, reduced loss of life, monetary savings, conservation of biodiversity, etc.) are anticipated as a result of the use of the outputs**

## **of this Initiative?**

To fully support the level of comprehensive monitoring technology of terrestrial ecosystems in Central Asian and monitoring and assessment for SDGs15, enhance the capability of China and the Central Asian to jointly respond to natural disasters, environmental changes and other major issues affecting the economic and social development of the Asia-Pacific region, and promote the sustainable development in China and Central Asia.

## **Has this Initiative been asked to provide specific information (for example, reports, data, services) on an ongoing basis to an international convention, organization, or other multilateral body?**

No

## **Technical Synopsis**

### **Please provide a brief description of the methods used by the Initiative to produce its (actual or planned) outputs.**

Based on "Classification and Grading System for Long-term Monitoring and Network Observation Data Products" of Chinese Ecosystem Research Network (CERN), the technical specifications for data product development were made by referring to the classification and grading rules of data products in advanced international ecosystem networks and combining expert knowledge from different fields, conducting screening of crucial indicators for in-situ monitoring of ecosystem service assessment and comparing data reconstruction methods. The technical specification were further improved through application tests at terrestrial ecosystem field stations in "Belt and Road" region of China and Central Asia.

Relying on the Research Center for Ecology and Environment of Central Asia, an international exchange meeting on ecological monitoring in "Belt and Road" region of China and Central Asia is organized in conjunction with the GEO work plan, also in collaboration with relevant research institutions in Central Asia. Through multilateral consultation, the "China and Central Asia 'Belt and Road' Regional Ecological Monitoring Alliance" is jointly established. A technical coordination working group is also established and, unified monitoring standards, unified technical methods and unified data products are issued within the Alliance through the consultation mechanism of the Alliance. Jointly with GEO, international trainings on monitoring technologies and applications for relevant research institutions in Central Asia are organized, and technical supports for ecological monitoring to members of the alliance are provided. The knowledge website portal for ecological observation in the region using WEB technology is developed and the GEO knowledge hub in Central Asia based on the Tajikistan branch of Research Center for Ecology and Environment of Central Asia is built, and cooperation between GEO and the "China and Central Asia 'Belt and Road' Regional Ecological Monitoring Alliance "Cooperation in the field of ecological monitoring is strengthened.

### **If you would like to provide further details on the technical methods, you may upload one or more documents here.**

- no supporting documents provided -

### **Are there any significant scientific or technical challenges that need to be resolved by the Initiative during the 2023-2025 period?**

Yes

#### **Please describe these challenges and the steps being taken to solve them.**

To address the shortcomings of the monitoring indicator system, monitoring technology and data quality control for ecosystem service assessment in the "Belt and Road" region of China and Central Asia, the technical Specification for developing terrestrial ecosystem monitoring data products will be made. It will realize "unified specification, and unified data products" for typical terrestrial ecosystem monitoring in this region, improve data comparability and usability, and provide technical support for SDGs15 reports writing.

### **Does the Initiative expect to complete any key new outputs, improvements to existing**

**outputs, or improvements to the methods of producing outputs, in the 2023-2025 period?**

Yes

**Please describe these new outputs or improvements.**

Improvements: (1) Crucial data products related to in-situ observation of typical terrestrial ecosystems in the "Belt and Road" region of China and Central Asia; (2) Satellite remote sensing standardized dataset of crucial ecological parameters for grassland in Tajikistan; (3) Technical Specification for developing terrestrial ecosystem monitoring data products; (4) GEO's Knowledge Hub in Central Asia, the website will share knowledge and technologies in the field of regional ecological monitoring in China and Central Asia, aiming to better promote the applications of research results and build a regional knowledge hub for GEO

**Please identify the key tasks that must be implemented to ensure delivery of these changes, with target dates for completion.**

Task	Task description	Expected completion (month/year)
Production of crucial in-situ monitoring data products for ecosystem service assessment of typical terrestrial ecosystems in 'Belt and Road' region of China and Central Asia.	Based on the technical specifications for the development in-situ monitoring data products, the data sets for ecosystem service assessment at 10-15 sites in arid and semi-arid climate zones during 2015-2019, including those supporting water conservation, soil conservation and sand control, productivity and carbon sequestration, are collected from published literature and in-situ monitoring data from ecosystem networks in China and Central Asia, Expert knowledge is used for data quality control. Statistical methods and GIS spatial analysis are used to produce crucial data products for monthly/annual scale monitoring of typical terrestrial ecosystems in 'Belt and Road' region of China and the Central Asian.	12/2025
Develop technical specifications for the developing ecological monitoring data products for typical terrestrial ecosystems in 'Belt and Road' region of China and the Central Asia	Based on 'Classification and Grading System for Long-term Monitoring and Network Observation Data Products' of Chinese Ecosystem Research Network (CERN), the grading system for in-situ monitoring data products of typical terrestrial ecosystems in 'Belt and Road' region of China and the Central Asia is determined by refereeing to the classification and grading rules for data products of international ecosystem networks. Combining expert knowledge from different fields, screening of	12/2025

	<p>crucial indicators for ecosystem in-situ monitoring is conducted and data reconstruction methods are compared. The technical specifications for developing the typical terrestrial ecosystem monitoring data products in this region are made mainly focusing on indicators for ecosystem service assessment (e.g., climate: temperature, precipitation, relative humidity, radiation, etc.; biology: biomass, phenology, etc.; soil: temperature, salinity, etc.; water: water quality, flow, etc.) and ecological function products (water, matter, energy balance, etc.).</p>	
<p>Development of the portal for 'China and Central Asia 'Belt and Road' Regional Ecosystem Monitoring Alliance' and construction of a knowledge hub in Central Asia for GEO.</p>	<p>Relying on Tajikistan branch of Research Center for Ecology and Environment of Central Asia, the portal of 'China and Central Asia 'Belt and Road' Regional Ecosystem Monitoring Alliance' will be developed in conjunction with GEO and the 'China and Central Asia 'Belt and Road' Regional Ecosystem Monitoring Alliance'. The 'China and Central Asia 'Belt and Road' Regional Ecosystem Monitoring Alliance' portal will dynamically publish knowledge and information related to the Alliance and GEO, and also the research results of this project, including technical specifications, data products, etc., to support the construction of a GEO knowledge hub in Central Asia.</p>	<p>12/2025</p>

## Resources

**Have all resources required to implement the Initiative's planned work in the 2023-2025 period been secured?**

**Please list all financial and non-financial contributions to the Initiative (other than in-kind, voluntary participation by individual contributors) having a value of more than USD 50,000.**

Contributing Organization	GEO Status	Type of Resource	Value	Currency
CERN	China	Financial	600,000	Chinese Yuan
NESDC	China	Financial	8000,000	Chinese Yuan
Research Center for Ecology and Environment of Central Asia	China	Financial	500,000	Chinese Yuan
Ministry of Science and Technology of the People's Republic of China	China	Financial	18370,000	Chinese Yuan
Kazakhstan, Uzbekistan, Kyrgyzstan and Tajikistan	Multiple countries	Other	200,000	Chinese Yuan

## Lessons from the 2020-2022 Period

**Were all planned activities for the 2020-2022 period implemented as expected?**

Yes

**Were there any key challenges faced by the Initiative in the 2020-2022 period?**

No

**Were there any impacts or changes to operations due to COVID-19?**

Yes

### Please describe.

The outputs was not made clear before, which include a draft presenting the procedure for generating the in-situ observation data products, crucial data products related to EBVs and EESVs, a thematic report about the ecosystem services, and a data portal to share data products and link to GEO BON through metadata standards. The details are as follows.

(1) A draft presenting the procedure for generating the in-situ observation data products

We have already finished the draft of data product specification for long-term observation of ecosystem, which specifies the conceptual model specifications for the normative overview information, basic description information, data entity structure and content description information, site information, collection method information, data processing and data quality control method information, quality information, and distribution information for long-term ecosystem observation data products.

We also have the draft of classification and gradation of ecosystem long term observation data product, which specifies the classification and grading rules for long-term ecosystem observation data products and establishes the classification and grading system for long-term ecosystem observation data products.

Besides, we have published the paper of "classification of ecosystem long term observation data product" in Big Data Research, which proposed a long-term observation data product system of ecosystem based on the data product classification, data product gradation, combining the existing long-term observation protocols and data resources of ecosystem in China.

(2) Crucial data products related to EBVs and EESVs

We produced a reference dataset of the decadal C cycle dynamics for 10 typical Chinese forests. Based on the CERN long-term dynamic monitoring database and after strict quality control and statistical analysis, this dataset provides the baseline observation data products of carbon cycle of typical forest ecosystems in China

in the past 10 years. It consists of three major components: (1) a basic observation dataset (biological, soil, atmospheric and moisture elements) based on observations and strict quality control and statistical processing, (2) a set of key carbon cycle process parameters obtained based on assimilation, and (3) a dataset of time-continuous carbon sequestration functional products, including the dynamic changes of vegetation, soil carbon pool, productivity, respiration and carbon sink over the past ten years. This dataset has published in Scientific data and openly shared, and the abstract of the paper is as follows.

(3) A thematic report about the ecosystem services.

We have finished the thematic report about the ecosystem services, which describes the temporal and spatial variation of ecosystem services and their trade-offs and synergies in China during 2000-2018. The report shows that the productivity provision, carbon sequestration, hydrology regulation, water retention, and soil retention all showed increasing trends in China from 2000 to 2018. This results have been published in Acta Ecologica Sinica, and the abstract of the paper is as follows.

(4) A data portal to share data products and link to GEO BON through metadata standards.

We have built National Ecosystem Data Bank (EcoDB, <https://scidb.cn/en/c/ecodb>) to share and manage data products. EcoDB is a trustworthy discipline-specific data repository in ecology which is built on Science Data Bank (ScienceDB) and maintained by the National Ecosystem Science Data Center (NESDC).

Researchers in ecology and related fields can use it to deposit the underlying datasets related to their papers, share the datasets with journal editors and peer reviews via DOIs or private links provided by it, and publish the datasets according to data policies of corresponding journals.

About the impact due to COVID-19, it is not feasible to organize on-site conferences and meetings is not feasible, so we have to change these meetings online. Besides, field investigations in Central Asia are limited.

**Please describe the key changes proposed for the 2023-2025 period, for example, new projects, new areas of focus, or adjustments to the activity governance.**

The limited field investigations in Central Asia

**Does the Initiative have outputs (products, services, etc.) available to users now, even if only on a pilot or testing basis?**

No

**Do you have evidence of any impacts that have occurred in part as a result of using the outputs of the Initiative (for example, policy decisions taken, behaviour changes by users, risks mitigated)?**

No

**Have there been any internal or external reviews or evaluations of the Initiative since 2019?**

No

**Please indicate any GEO Work Programme activities with which you have ongoing collaboration.**

**Please indicate any additional GEO Work Programme activities with which you would like to establish new collaborations.**

- GEO BON - GEO Biodiversity Observation Network

## **Stakeholder Engagement and Capacity Building**

**Are there specific countries or organizations that your Initiative would like to engage?**

Yes

**Please list these countries, regions or organizations.**

National Ecosystem Science Data Center, Chinese Academy of Sciences  
Institute of Ecology and Geography, Chinese Academy of Sciences  
Research Center for Ecology and Environment of Central Asia  
Institute of Water Resources, Hydropower and Ecology, Tajikistan Academy of Sciences  
Kazakhstan Institute of Soil and Agricultural Chemistry  
Institute of Geology, Kyrgyzstan Academy of Sciences  
Institute of Botany, Uzbekistan Academy of Sciences

**What are your plans to engage them?**

NESDC, Chinese Academy of Sciences is Responsible for ecosystem monitoring data research, leading the organization of field stations, conducting research on field stations, carry out key technology comparisons, and produce crucial data products.

Institute of Ecology and Geography, Chinese Academy of Sciences is responsible for organizing ecological monitoring data and metadata from 15 ecological stations in Central Asia, cooperating with investigation of field stations, collecting other field monitoring data, translating Russian literature data, and participating in the preparation and evaluation of technical specifications for developing data products; establishing the "China and Central Asia 'Belt and Road' Regional Ecosystem Monitoring Alliance", organizing technical training, and developing, publishing and operating and maintaining the portal of the Alliance.

Institute of Water Resources, Hydropower and Ecology?Tajikistan Academy of Sciences, Kazakhstan Institute of Soil and Agricultural Chemistry, Institute of Geology, Kyrgyzstan Academy of Sciences and Institute of Botany, Uzbekistan Academy of Sciences are responsible for cooperating with the investigation of field stations, collecting other field ecosystem monitoring data and Russian literature data, and participating in the evaluation of technical specifications for developing data products; operation and maintenance of equipment in field stations; providing the working environment of the "China and Central Asia Belt and Road Regional Ecosystem Monitoring Alliance", working together for the construction of the "China and Central Asia 'Belt and Road' Regional Ecosystem Monitoring Alliance", and working together with Chinese Academy of Sciences for making technical specifications of data products and implementing overseas ecological data collection in accordance with the technical requirements. Overall, these central Asian organizations are working together with Chinese Academy of Sciences for the whole process of data collections, making specifications and data products.

**Does your Initiative engage users in the work of the Initiative (for example, consultation, testing, co-design)?**

Yes

**Please briefly describe the Initiative's approach to engaging users.**

Engagement of Research Center for Ecology and Environment of Central Asia and field stations through project cooperation

**Does the Initiative have a user engagement strategy or similar kind of document?**

No

**Are there categories of users that are not represented at this time, but you would like to engage?**

No

**Does the Initiative have a documented capacity development strategy?**

No

**Please describe the approach to capacity development that is being implemented by**

## **the Initiative?**

National Ecosystem Science Data Center, Chinese Academy of Sciences ,Institute of Ecology and Geography, Chinese Academy of Sciences, Research Center for Ecology and Environment of Central Asia and Institute of Water Resources, Hydropower and Ecology?Tajikistan Academy of Sciences, Kazakhstan Institute of Soil and Agricultural Chemistry, Institute of Geology, Kyrgyzstan Academy of Sciences and Institute of Botany, Uzbekistan Academy of Sciences have a solid foundation of cooperation and consist of the superior research teams in the field of comprehensive monitoring and service assessment of terrestrial ecosystems in China and Central Asia. The Institute of Geographical Sciences and Resources of the Chinese Academy of Sciences has repeatedly hosted CERN and ecosystem service assessment projects, leading the development of long-term ecological monitoring technology in China.

Research Center for Ecology and Environment of Central Asia has built an ecological network in the Central Asian region with 15 field stations. The ecological network adopts unified monitoring specifications with CERN, and has a good cooperation basis with the Institute of Water Resources, Hydropower and Ecology?Tajikistan Academy of Sciences, Kazakhstan Institute of Soil and Agricultural Chemistry, Institute of Geology, Kyrgyzstan Academy of Sciences and Institute of Botany, Uzbekistan Academy of Sciences. This organization also foster several PhD candidates from central Asian countries for ecological monitoring systems every year, who carry on ecological monitoring in their own countries after graduation in China.

Kazakhstan Institute of Soil and Agricultural Chemistry has built cooperation with Chinese Academy of Sciences in the areas of climate and environmental evolution, modern agriculture and biological resources, ecological restoration and environmental management. Institute of Water Resources, Hydropower and Ecology?Tajikistan Academy of Sciences has built cooperation with Chinese Academy of Sciences in the fields of climate and environmental evolution, mineral resources and soil and water resources, and export high-end technical talents for international cooperation. Institute of Geology, Kyrgyzstan Academy of Sciences has built cooperation with Chinese Academy of Sciences to provide a technical platform for China-Kyrgyzstan scientific research project cooperation and professional and technical personnel training. Research Center for Ecology and Environment of Central Asia has built an ecological network in the Central Asian region, with 15 field stations, including three in Tajikistan. The ecological network adopts unified monitoring specifications with CERN, and has a good cooperation basis with the Institute of Water Resources, Hydropower and Ecology?Tajikistan Academy of Sciences

### **Are there any commercial sector organizations participating in this Initiative?**

No

### **Are there opportunities for commercial sector uptake of the outputs of the Initiative?**

No

### **Are there opportunities for further commercial sector participation in the Initiative?**

No

### **Does the Initiative have a plan for commercial sector engagement?**

No

## **Governance**

### **Please describe the roles of each of the key leadership positions, as well as any team structures involved in day-to-day management.**

Roles of the key leadership positions: Prof. He Honglin is in charge of issues related to knowledge hub; Prof. Zhang Xinyu is in charge of issues related to technical specifications; Dr Ren Xiaoli is in charge of issues related to data products.

Team structures involved in day-to-day management: NESDC is responsible for making specifications; NESDC and Research Center for Ecology and Environment of Central Asia and related field stations are responsible for producing the data products; NDSDC and Research Center for Ecology and Environment of Central Asia are

responsible for developing the knowledge hub. we have established substantial cooperation with four Central Asian countries, including the development of observation indices, data product specifications, and implementations.

**Is there a steering committee or other governance bodies that advise the Initiative but are not involved in day-to-day management?**

No

**What methods does the Initiative use to communicate with its participants?**

- Email / e-newsletters
- Regular conference calls
- Website
- Regular events

**Please describe the key risks that could delay or obstruct the completion of the planned activities and outputs of the Initiative, along with any actions taken to mitigate these risks.**

- no answer given -

**What methods are used by the Initiative to monitor its effectiveness?**

- Informal discussions with users / beneficiaries
- Consultations or events

**Would the Initiative be interested in assistance from the GEO Secretariat for developing an impact plan?**

No

**How are the results of the monitoring and evaluation activities shared with participants and the wider GEO community?**

The results of the monitoring and evaluation activities will be shared with participants and the wider GEO community through the established knowledge hub in order to fill the gap of ecological monitoring data in the "Belt and Road" regions of China and Central Asia for GEO. We will complete the "China and Central Asia 'Belt and Road' Regional Ecological Monitoring Alliance" portal in 2023. The website will share knowledge and technologies in the field of regional ecological monitoring in China and Central Asia, aiming to better promote the applications of research results and build a regional knowledge hub for GEO.

**Are any monitoring or evaluation activities required by funders/contributors?**

No

## Participants

**Please list the active individual participants in the Initiative**

First name	Last name	Email address	Member	Org
Xiaoli	Ren	renxl@igsnr.ac.cn	China	CAS - Chinese Academy of Science
Xuebing	Guo	guoxb@igsnr.ac.cn	China	CAS - Chinese Academy of Science

Wen	Su	suw@igsnr.ac.cn	China	CAS - Chinese Academy of Science
Li	Zhang	li.zhang@igsnr.ac.cn	China	CAS - Chinese Academy of Science
Xinzhai	Tang	tangxz@igsnr.ac.cn	China	CAS - Chinese Academy of Science
Xinyu	Zhang	zhangxy@igsnr.ac.cn	China	CAS - Chinese Academy of Science
Isanova	Gulnura	agamprit@gmail.com	Kazakhstan	RCEECA Almaty - Research Center for Ecology and Environment of Central Asia, Almaty Branch
Majid	Gulayozov	majid1983@mail.ru	Tajikistan	RCEECA Dushanbe - Research Center for Ecology and Environment of Central Asia, Dushanbe Branch
Guoqin	Wang	wangqg@igsnr.ac.cn	UN Environment - United Nations Environment Programme	UN Environment - United Nations Environment Programme
Salamat	Abdyzhapar	guldurok@mail.ru		RCEECA Bishkek - Research Center for Ecology and Environment of Central Asia, Bishkek Branch
Honglin	He	hehl@igsnr.ac.cn	China	CAS - Chinese Academy of Science
Weisheng	Wang	wangws@ms.xjb.ac.cn	China	RCEECA - Research Center for Ecology and Environment of Central Asia
Peng	Hou	houpcy@163.com	China	MEE - Ministry of Ecology and Environment
Peng	Yang	yangpeng@caas.cn	China	MARA - Ministry of Agriculture and Rural Affairs

## **Other information**

**Please provide any other comments or information that was not included in the previous sections, but you would like to appear in the Implementation Plan.**

- no answer given -

- no supporting documents provided -

## **Co-Editor Management**

**List of co-editors for this initiative**

- no answer given -