



## Development of methods for organic carbon stock assessment and improvement of climate change reporting on agricultural ecosystems in Kyrgyzstan (CARB-ASIA)

Kyrgyzstan ratified the United Nations Convention to Combat Desertification as well as the United Nations Framework Convention on Climate Change and is obliged to report regularly on carbon stocks and related greenhouse gas emissions. However, since the collapse of the Soviet Union and the decline of scientific expertise and organizational capacities in the field of environmental sciences, the country struggles to establish a functioning reporting system for carbon stocks and climate gas emissions. There is a lack of evidence-based instruments for inventorying and evaluating carbon-rich soils and the land use systems. Due to the absence of the baseline values, assessments of changes in carbon stock differences and the climate gas emissions require considerable improvements. Most importantly, the transferability of results and publications into the international context is very difficult, since the method of soil classification used in Kyrgyzstan is different from international soil classification methods. The current knowledge on methods of C-evaluation has not been updated. The carbon evaluation methods mainly correspond to the state of the art from the Soviet times. Information on the distribution of land use categories is only available in the analogue formats and experience with the GIS-based data management is limited.

Furthermore, the institutional framework for monitoring and reporting on the inventory of carbon stocks and greenhouse gas emissions is still in the process of development and the capacity of state organisations in the field of climate protection is insufficient to carry out a structured, comprehensible inventory of C-stocks in land use. The responsible organisations are underdeveloped in terms of their expertise and personnel.

The responsibilities are unclear, and the rights and duties of the individual hierarchical institutions are not well defined. A

Main Facts	
<b>Title</b>	<b>Development of methods for organic carbon stock assessment and improvement of climate change reporting on agricultural ecosystems in Kyrgyzstan (CARB-ASIA)</b>
<b>Focus/ Topic</b>	Protection of carbon sink capacities of prevalent vegetative forms
<b>Duration</b>	25.11.2018 – 31.12.2020
<b>Implementer</b>	Humboldt-Universität zu Berlin
<b>Country/ Region of Implementation</b>	Kyrgyzstan
<b>Overall Budget</b>	157.786,00 €

lack of vertical and horizontal integration hampers a transparent flow of information. For example, due to a lack of feedback to the organisations that collect data, the involved actors are not sufficiently motivated. There is also a lack of facilities for advice and monitoring in order to make effective use of the potential sink functions in land use and to avoid emissions.

## Project Objective

CARB-ASIA project supports the development of a scientifically sound and adapted to international standards method for assessing the carbon storage of soils in various categories of land use in Kyrgyzstan.

## Thematic priorities and activities

The project makes a methodological contribution to improve national reporting towards international obligations and to achieve Sustainable Development Goals (SDGs) and land degradation neutrality (LDN) in Kyrgyzstan by developing an innovative method for monitoring carbon in the soil under representative land use categories in Kyrgyzstan.

This is an important milestone for the inventory of climate related data and forms the basis for determining the absolute differences in C stocks. The method and the produced results will meet the international standards, such as representativeness, good documentation, quality assessment, indication of uncertainties and long-term availability. Most importantly, the project results will support reporting within the national framework for achieving SDGs and LDN.

We expect that on the basis of generated data and knowledge, Kyrgyz experts will be able to develop recommendations for protection and increase of carbon stocks and enable evidence-based development of adapted and sustainable land use strategies.

Further on, organizational and institutional framework conditions for transparent and comprehensible carbon stocks inventory and reporting will be identified and recommendations for the formalization of the developed method will be formulated by the project team.

The following are main project activities:

1. Development of the method for assessing national carbon stocks in soils that meet international standards and incorporate previous and existing knowledge and experiences in Kyrgyzstan.
2. Training and capacity building of Kyrgyz experts responsible for emissions monitoring and reporting to improve their knowledge of the C-balancing methodology for different categories of land use and the associated greenhouse gas emissions. The Tajik experts will also be invited as observers.
3. Development of a set of rules for the implementation of the developed methods and their institutionalisation.
4. Publication of materials and manuals (the evaluation methods and recommendations for their institutionalisation) in English and Russian.

## Results

- The method for organic carbon stock assessment is applied and the data collected is evaluated. The method is discussed with the stakeholders and multipliers. Their feedback is incorporated in the methodology.
- Stakeholder workshops and discussions are organized and their expertise is taken into account in developing recommendations for the method formalization and implementation. Kyrgyz experts and students are trained to apply the method.
- The institutional framework is analysed, and recommendations for the institutionalisation of the method are developed. The policy makers are informed and motivated to implement the recommendations.
- The project results are published in a manual in English and Russian languages that can be directly used by national stakeholders and as a guiding material for scientific publications and further multiplications of the project's insights.

## Partner organizations involved/Implementing Partners

The project is implemented by Humboldt-Universität zu Berlin in close cooperation and coordination with the following Kyrgyz and German partner organisations:

- Ministry of Agriculture, Food Industry and Melioration of the Kyrgyz Republic
- State Agency for Environmental Protection and Forestry
- Kyrgyz Soil Science Society
- Kyrgyz State Institute for Land Use (KyrgyzGiprozem), Republican Soil Agrochemical Station
- National Statistical Committee
- NGO Camp Alatoo

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Project period:  
June 2017 to March 2021