

附件2

Joint Research Agreement

Basic parts (but not limited to these parts):

1. Title of the Joint Research Project

Anthropic and climatic factors controlling soil carbon storage (case studies: Sangong River Basin, China and Central Alborz, Iran)

2. Principal Investigators and Main Participants from Both Sides

List principal investigators and participants of each side

Party A:

Nanjing University of Information Science & Technology

Principle Investigator: Prof. Dr. Zhao, Xiaoning

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Main Participant: Prof. Dr. Shen, Weishen

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Main Participant: Associate Prof. Dr. Li, Chaofan

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Main Participants: Dr. Kazem Zamanian

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Xinjiang Agricultural University

Main Participants: Prof. Dr. Jia, Hongtao

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Party B:**University of Tehran**

Principle Investigator: Prof. Dr. Ahmad Heidari

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Main Participants: Dr. Alireza Raheb

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3. Research Plan, Division of Labor and Timetable

Briefly describe the scientific objectives, methodologies and approaches of the research. State clearly which part is “Partner A”’s work and which part is “Partner B”’s. Include time frames in this part if necessary.

Party A and Party B assume the role, research content and task division in the application (task): Party A is the lead applicant of the project in the People’s Republic of China (China) and Party B is the lead applicant of the project in Iran. All applicants shall jointly promote the overall implementation of the specific projects and successfully complete the individual objectives.

With climate change, human activities and the fast development of economy, people must face a series of environmental problems in arid land, water supply decreasing, soil salinization, soil desertification and grassland degradation and so on. Soil can be used as a large carbon pool to reduce carbon dioxide emissions facing global warming. The SOC and SIC storage with time and space scale under climate change and human activities is still unclear in recent 30 years in Sangong River Basin,

China and Central Alborz, Iran. Moreover, the main mechanism of SOC and SIC translocation and transformation in soil profiles into the arid land soils remains vague. Dissolved inorganic carbon could be leached into the huge aquifer under the desert, forming a huge carbon pool, which may be a direct and rapid link between the biological carbon cycle and geochemical carbon cycle in arid areas. The objective of the project was identifying land use and field managements to improve carbon storage facing limited resources and serious environmental problems. This project focus on tracing and quantifying organic and inorganic carbon migration and transformation in arid land soil from arid and semi humid climate, clarifying the biogeochemical cycle mechanism of carbon, evaluating the potential carbon pool, and land use adaptation by changing the overall carbon budget. The project will provide new information on the regional carbon budget in the arid region of Central and West Asia, especially for a water-stressed ecosystem.

The project will consist of 3 WPs. In WP 1 (Professor Ahmad Heidari and Professor Zhao), we monitor the carbon balance for different land use, calculate carbon balance including the carbon sink and carbon source. The goal of WP 2 (Professor Ahmad Heidari and Professor Zhao, Professor Jia) is the carbon storage under different land use change and field managements for sustainable strategies. As the key goal of the project is the establishment and successful application of a holistic approach, we will place special emphasis on the integration of all measures and on the involvement of local stakeholders, which will be the task of WP3 (all together).

Time table:

Year	2021				2022				2023			
Quarter	1	2	3	4	1	2	3	4	1	2	3	4
Experiment preparation												
Sample												
Lab experiment												
Field experiment												
Results Discussion												
Paper writing and publication												
Meeting and block seminar												
Researcher's exchange												

The instruments, the laboratories, experimental stations in organizations in China and Iran in this project proposal are ready for sampling, measurement, and experiment for both parties.

4. Sources of Funding and Its Use

Describe sources of funding for the collaborative research and the mechanism to use it. Provide certificates or written commitment of the foreign collaborator if necessary.

The applicants shall submit the proposals to their respective governments.

Chinese applicant will apply for a grant from NSFC and Iranian applicant will apply from INSF. Each party will be responsible for their own costs of carrying out its part of the Research Project. According to the guidelines, there is no matching self-financing for this project. If the project is approved, the actual amount of funding shall be subject to the project (contract) issued by the NSFC and INSF.

5. Ownership, Use and Transfer of the Intellectual Property

Clearly state who shall own the intellectual property and how to use or share it.

The information provided by the parties in the proposal shall be only applied for the application process. The technical materials provided by both parties in the proposal shall not be used for any purposes other than for the application process. Once the project is funded, the intellectual property shall be negotiated separately. The intellectual properties that the research is independently completed by either Party belongs to the completed Party. The intellectual property of the jointly completed results or of which are shared by both parties shall be agreed upon by both sides. If there is no other party's consent, neither party shall apply or use the jointly completed result. Both Party A and Party B shall take the necessary measures to protect the intellectual property held by either party or shared by both parties during the application process.

6. Duration, Amendment and Withdrawal

Clearly state the specific dates that the collaborative research starts and ends and the process to deal with changes concerning principal investigators and main participants before the research terminates.

- (1) This agreement shall take effect from the date of signature of the partner and shall be valid until the date of completion of the application process; Upon approval of the project, the partners will sign the project design assignment and a joint implementation agreement on responsibility and rights in the execution of the project.
- (2) A research partner who decides to withdraw from the project before the above-mentioned date should notice other members of the collaborative research at least three months before the change happens. Any amendment to this agreement should be agreed by both parties.
- (3) The disputes arising from the interpretation of the joint agreement shall be settled through friendly consultation or conciliation between the partners. In case such consultation or conciliation fails, the disputes may be submitted to Arbitration Commission for settlement.

7. Legal Validity

Effective date, period and termination.

This agreement comes into effect on the date of signature of the partner and terminates on completion of the application process

This agreement shall be made in four copies, of which one copy shall be held by each party and two copies shall be used for the application process. Matters not covered in the agreement shall be discussed separately by both parties.

8. Signature by Principal Investigators of Both Parties, Date and Place

Party A:

Party B:

Nanjing University of Information Science
& Technology

University of Tehran

Legal representative:

Legal representative or Chair of Department:

Principle Investigator:

Principle Investigator:

Date:

Date:

Place:

Place:

The Agreement shall be printed on paper that contains the name of the either collaborator's institution and contact information (address, telephone, fax and email).

8. Signature by Principal Investigators of Both Parties, Date and Place

Party A:

Party B:

Nanjing University of Information Science
& Technology

University of Tehran

Legal representative:

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Date:

Date:

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The Agreement shall be printed on paper that contains the name of the either collaborator's institution and contact information (address, telephone, fax and email).