



The IGU Commission on *Geography for Future Earth*:

Coupled Human-Earth Systems for Sustainability

Annual Report 2018-2019

The report includes meeting, special issues hosting and journal establishment for the IGU Commission on Geography for Future Earth (IGU-GFE).

1. Structures

1.1 Steering committee

IGU Commission on *Geography of Future Earth: Coupled Human Earth Systems for Sustainability* (IGU-GFE) has been formally established in October 2017. IGU-GFE will initially focus on human-land systems and its interfaces with the coast, the ocean, and the atmosphere. It aims to promote wider analysis and innovative thinking about global land sustainability through the bridging and synthesis of physical geography, human geography, ecology, hydrology, atmospheric, climate and social sciences. It will provide a platform for communication among geographers globally with the aim of promoting research and innovation in relation to sustainability. The steering committee structure of IGU-GFE is as follows:

Initiator and Distinguished Chair

Dr. Prof. Bojie Fu

Dean and Distinguished Professor of Faculty of Geographical Science, Beijing Normal University.
Distinguished Professor of Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences

Address: No. 19, XinJieKouWai St., Hai Dian District, Beijing 100875, P. R. China

Email: bfu@rcees.ac.cn; Phone: +86 10 62923557

Chair

Dr. Prof. Wenwu Zhao

Director and Professor of Institute of Land Surface System and Sustainable Development .Faculty of Geographical Science, Beijing Normal University.

Address: No. 19, XinJieKouWai St., Hai Dian District, Beijing 100875, P. R. China

Email: zhaoww@bnu.edu.cn; Phone: +86 10 58802125

Vice-Chairs

Dr. Prof. Mark Stafford Smith

Chief Coordinating Scientist in Institute of Land and Water, CSIRO, Australia; Chair of Science Committee, Future Earth

Address: GPO BOX 1700 Canberra Act 2601 Australia

Email: Mark.Staffordsmith@csiro.au; Phone: +61 408 852 082

1.2 Members

Dr. Prof. Hanqin Tian

Director of International Center for Climate and Global Change Research; Solon and Martha Dixon Professor at Auburn University.

Address: SFWS Building, 602 Duncan Drive Auburn, AL 36849-5418, USA

E-mail: tianhan@auburn.edu; Phone: +1 334 8441059

Dr. Prof. Peter Verburg

Institute for Environmental Studies, Faculty of Science

VU University Amsterdam, Netherlands

E-mail: peter.verburg@vu.nl

Dr. Prof. Soroosh Sorooshian

Director of Center for Hydrometeorology and Remote Sensing;

University of California, Irvine

Address: Irvine E/4130 Engineering Gateway, Irvine, CA USA, 92697-2175

Email: soroosh@uci.edu

Dr. Prof. Sandra S. Luque

Director of Research at IRSTEA, National Research Institute of Science and Technology for Environment and Agriculture

Address: 500 rue JF BRETON, Montpellier 34000, France

Email: sandra.luque@irstea.fr; Phone: +44 1334 463381

Dr. Prof. Toshiya Okuro

Laboratory of Landscape Ecology and Planning Department of Ecosystem Studies

The University of Tokyo

Address: Yayoi 1-1-1, Bunkyo-ku, Tokyo 113-8657, Japan

Tel: 3-5841-5051 Fax: 3-5841-5072

E-mail: aokuro@mail.ecc.u-tokyo.ac.jp

Dr. Prof. Francesco Cherubini

Professor, Industrial Ecology Programme

Department of Energy and Process Engineering

Norwegian University of Science and Technology

Address: IT-bygget, 238, Gløshaugen, Sem Sælands vei 7

Tel: + 47 73598942

E-mail: francesco.cherubini@ntnu.no

Dr. Prof. Dra. Nicole Bernex

Professor Principal at Department of Humanities - Geography Section, Pontifical Catholic University of Peru

Email: nbernex@pucp.edu.pe

Dr. Walter Musakwa

Department of Town & Regional Planning
University of Johannesburg, South Africa
Tel: +27 011 559 6318
Email: wmusakwa@uj.ac.za

Secretary:

Dr. AP. Yan Li

Associate Professor at Institute of Land Surface System and Sustainable Development, Faculty of Geographical Science, Beijing Normal University.

Address: No. 19, XinJieKouWai St., HaiDian District, Beijing 100875, P. R. China

Email: yanli@bnu.edu.cn; Phone: +86 10 58800569

2. Meetings

1.1 Meetings held in 2019

The 10th IALE world congress

The 10th IALE (International Association for Landscape Ecology) world congress was held in Milan, Italy on July 1-5, 2019. The conference theme is “Nature and society facing the Anthropocene: challenges and perspectives for landscape ecology”, which aims to emphasize the coupling between nature and society in landscape ecology research. The conference had 6 keynote speech and organized 74 special seminars, consisting of a total of 750 oral reports and more than 200 posters. The conference attracted more than 1,000 attendants from more than 60 countries.

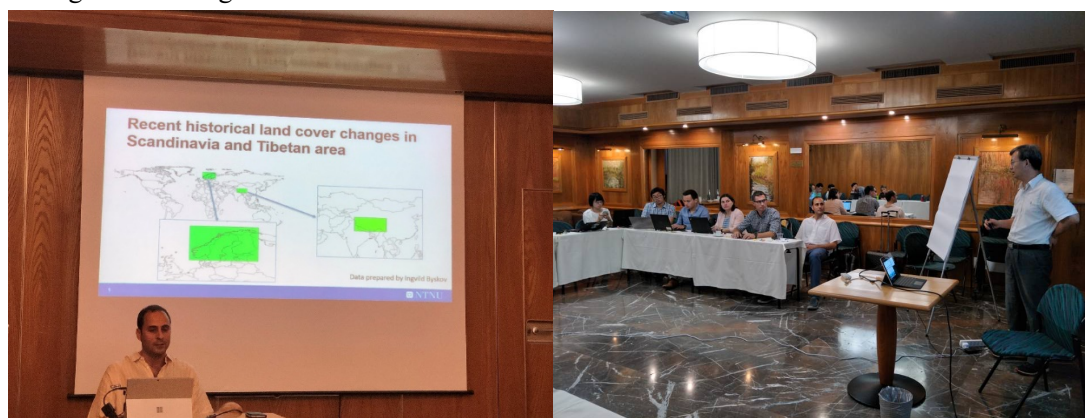
Professor Wenwu Zhao, the chair of IGU-GFE Commission, organized a special session “*Promoting Ecosystem Services for Sustainable Development Goals*”. This session aims to bring international scholars together to have in-depth discussions on frontier topics such as the connection between the United Nations sustainable development goals and ecosystem services. This session was the largest session of the conference with a total of 50 received abstracts, including more than oral presentations from 30 scholars.



Members of the IGU-GFE Commission in the IALE conference

The 1st Ecosystem and Sustainability Seminar

On June 27-29, 2019, the first Ecosystem and Sustainability seminar was successfully held in Florence, Italy. Twenty international scholars from Beijing Normal University, Institute of Geographical Sciences and Resources, Chinese Academy of Sciences, Norwegian University of Science and Technology, and Italian Institute of Life Sciences attended the meeting. The seminar was co-chaired by Prof. Wenwu Zhao from Beijing Normal University and Prof. Francesco Cherubini from Norwegian University of Science and Technology on behalf of IGU-GFE commission. The presentations of the seminar covered topics on life-cycle analysis to explore natural and socio-economic composite systems, the ecological vegetation and climate monitoring in arid areas, and agricultural farming and sustainability. The attendants discussed and shared their knowledge on mapping ecosystem pressures, assessing ecosystem status, the integrated impacts of multiple stresses on ecosystem quality and ecosystem services, and future sustainable ecosystem management strategies.



Prof. Francesco Cherubini and Wenwu Zhao in the seminar.

The African Regional Workshop of Global Dryland Ecosystem Programme & The Second Conference on Climate, Ecosystems and Livelihoods in Africa

The African workshop took place in Dakar, Senegal from 23 – 25 September, 2019. The workshop was to create a permanent partnership mechanism to support China-Africa cooperation in pursuit of the Sustainable Development Goals. The aim of the workshop included reviewing the progress in research and practices on climate change through good ecosystem management for sustainable livelihoods in Africa, identifying priority areas and developing an implementation plan for good research collaboration, focusing on the ecosystems of arid and semi-arid zones in Africa, and developing strategic recommendations to enhance scientific and technological cooperation between China and Africa on sustainable development. There were two sessions in the workshop (Session 2: Climate, Ecosystems and Livelihoods for SDGs in Africa and Session 4: China-Africa cooperation in science, technology and innovation (STI) for SDGs) co-organized by IGU-GFE members Prof. Bojie Fu, Wenwu Zhao, and Walter Musakwa. Session 2 included 12 presentations focusing on climate, risks, ecosystem resilience and the services, as well as the vulnerability of populations in arid and semi-arid zones in the face of global changes. Session 4 was a round discussion session and Prof. Bojie Fu attended. The workshop had more than 70 participants from Africa, USA, and China.



Participants of the African workshop

China Conference on Geography 2019

On November 2, the China Conference on Geography 2019 was held in Beijing. The official journal of IGU-GFE commission *Geography and Sustainability* organized an international session together with the Asian Geographical Society on the theme “Geography and Sustainability” in the conference. The session attracted more than 40 experts and scholars from 13 countries including China, Japan, Belgium, Turkey, India, and South Korea. In this session, invited speakers gave speeches on the application of GIS & RS to Urban Sustainability Studies, evolution of cartography in Western Europe in the last 500 years, coastal land use change under sea level rise, anthropogenic geomorphology, geographies of subjective Wellbeing, and Promoting Geography for Sustainability. Prof. Wenwu Zhao introduced the motivation and scope of the new journal to the attendants and make calls for submission.



2.2 Upcoming Meetings in 2020

International workshop on Geography and Sustainability. The 1st international workshop on “Geography and Sustainability” will be organized at Beijing Normal University in late May, 2020. The workshop will invite members of IGU-GFE commission, leading Chinese and international experts to discuss the latest research progress, new ideas, and potential collaborations under the theme of “Geography and Sustainability”. The workshop will also be a place to have the annual meeting of our commission to discuss future activities and the new journal.

International Geographical Science for Resilient Communities, Ecosystems and Livelihoods under Global Environmental Change (GORILLA). The GORILLA conference will be held on May 28-30, 2020 in Kampala, Uganda. The conference was jointly organized by the three special committees of the International Geographical Union (IGU Commission on African Studies, IGU Commission on Biogeography and Biodiversity, IGU Commission on Geography for Future Earth) and the Uganda Geographical Society. New technologies and innovative methods related to ecosystem, ecosystem and livelihood resilience will be discussed in the conference. Outstanding manuscripts collected from the conference could be published by Springer as a special issue in 2020.

The 34th International Geographical Congress (IGC 2020). The IGC 2020 conference will be held on August 17-21, 2020 in Istanbul, Turkey. Prof. The IGU-GFE commission will organize a session named *Coupling Human and Environment system for Sustainability: theory and practice*. This session invites research that focuses on the coupled human-environment system at different scales and on how the coupled system can promote sustainability.

3. Publication

3.1 Special issue on Pattern–Process–Service–Sustainability

During the 2018 IGU Regional Conference, the new conceptual cascade of “pattern – process – service – sustainability” was discussed in the session, which is a new way to understand the dynamics of coupled human-earth systems, the management policies, and practices for improving sustainability. As for the research processes of coupled human-earth systems, researchers should diagnose the response of land use or landscape PATTERN change (human activities) on ecological PROCESSES at multi-scales, and identify the ecosystem SERVICE among various ecosystem functions, and reveal the contribution of ecosystem service on human wellbeing. Human activities such as planning and governance are typical adaptations to regulate the natural components towards SUSTAINABILITY.

Based on the session discussion, a special issue on Pattern–Process–Service–Sustainability is being organized in Chinese Geographical Science. The topics of this special issue are as follows (not limited to):

- Impacts of land use or landscape pattern change on ecological processes
- Coupling of natural and human processes
- Ecosystem service evaluation and integrations
- Effects of global environmental change on ecosystem service
- Ecosystem service evaluation and tradeoff analysis
- Simulation of human and nature system
- Sustainability evaluation and sustainable development
- Scale and scaling issues

Guest Editors of this special issue:

Prof. Wenwu Zhao, zhaoww@bnu.edu.cn, Beijing Normal University

Prof. Francesco Cherubini, francesco.cherubini@ntnu.no, Norwegian University of Science and Technology

Prof. Walter Musakwa, wmusakwa@uj.ac.za, University of Johannesburg, South Africa

3.2 Geography and Sustainability—the official journal of IGU-GFE

In order to promote international communication and cooperation on Geography, Future Earth, and Sustainability, a new official journal of IGU-GFE, named Geography and Sustainability, will be launched with collaboration with Elsevier in 2020. The new journal is supported by Faculty of Geographical Science, Beijing Normal University. The journal is open to submission. Scope of the journal includes:

- Geographical processes
- Human-Environmental Systems
- Ecosystem services and human wellbeing
- Sustainable development
- Geo-data and model for Sustainability.

For inquiry and paper submission issues, please contact editorial office: geosus@bnu.edu.cn.

4. Other information

4.1 Prof. Bojie Fu was elected as an Honorary Member of American Academy of Arts and Sciences

Prof. Bojie Fu, the distinguished chair of the IGU-GFE, was elected as an International Honorary Member of American Academy of Arts and Sciences. The announcement was made by Academy President David W. Oxtoby and Chair of the Board of Directors Nancy C. Andrews on 17th April, 2019.

4.2 Prof. Bojie Fu received the 2020 Humboldt Medal of the European Geosciences Union

The European Geosciences Union (EGU) announced the recipients of the 2020 Union Medals and Awards on October 22, 2019. Prof. Fu Bojie, Chair of the IGU-GFE, was named the 2020 EGU Humboldt Medal for his achievements in the land use structure and ecological processes, ecosystem services and ecological restoration of the Loess Plateau and his outstanding achievements in leading the global arid ecosystem research.

4.3 Prof. Hanqin Tian won the 2019 Andrew Carnegie Fellows

On April 23, 2019, Prof. Hanqin Tian won the 2019 Andrew Carnegie Fellows award for his research achievement in bridging natural science, economics and social science to consider the causes and effects of changes in the biosphere, climate, and human interactions on Earth. The overall objective of this fellowship is to offer fresh perspectives on the humanities and solutions to the urgent issues of today.

4.4 Profs. Peter Verburg and Francesco Cherubini awarded the Highly Cited Researchers in 2019

Profs. Peter Verburg and Francesco Cherubini awarded the Highly Cited Researchers 2019 by Web of Science. This recognize their production of multiply highly-cited papers that rank in the top 1% by citations for field and year in Web of Science.