

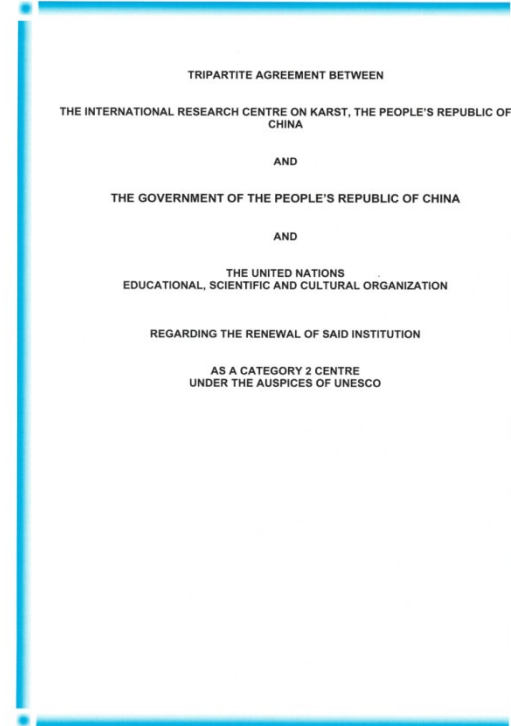
Introduction of International Research Centre on Karst under the Auspices of UNESCO

Zhang Cheng

**May 15-17, 2024
Kuala Lumpur**

I The History of IRCK

- Establishment in 2008 as the first category II center in the field of geosciences;
- Second phase in 2016-2023 (join **IUGS** as an affiliated organization in 2020; join **GEO** as a participating organization in 2021);
- Set up **ISO TC 319** on Karst in 2018.
- Set up China-Slovenia the Belt and Road joint laboratory on Karst Geology on 2021
- Third Phase in 2023-2031

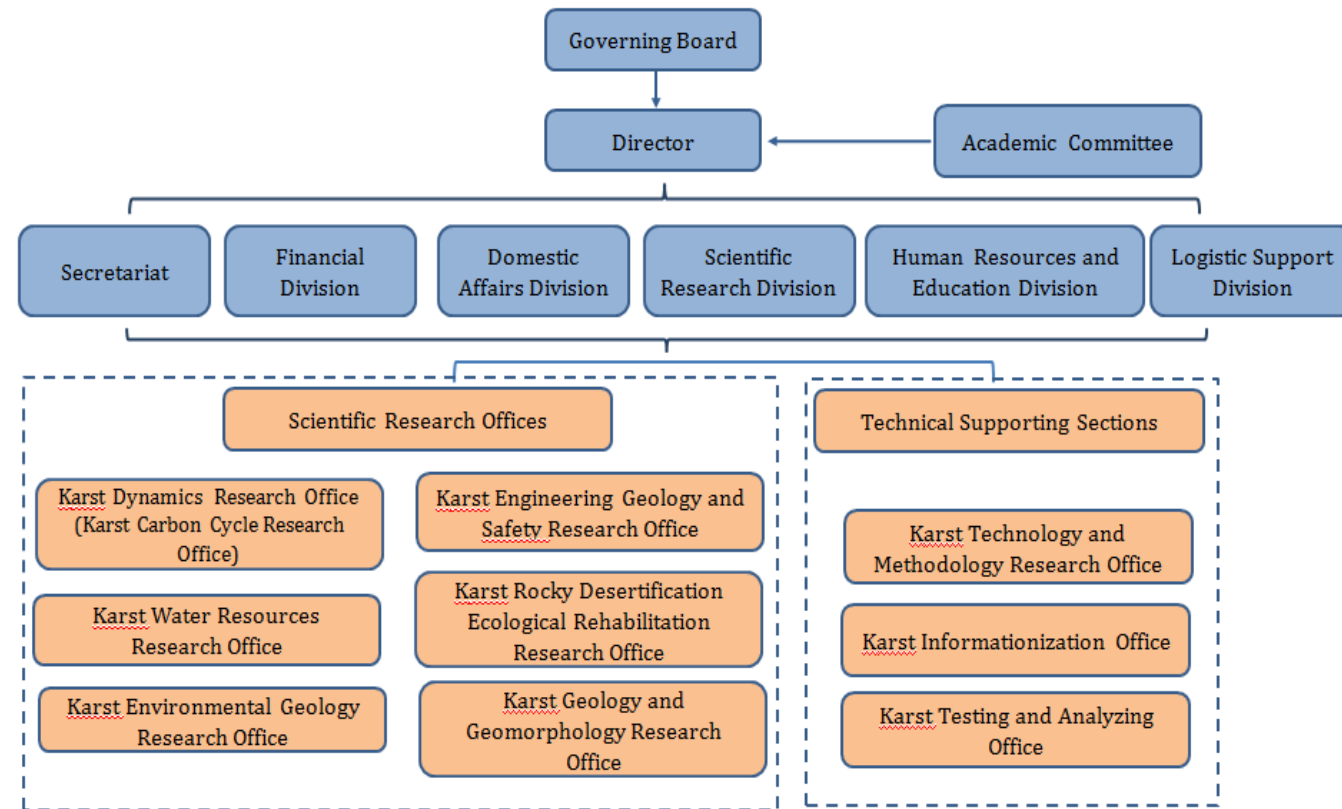
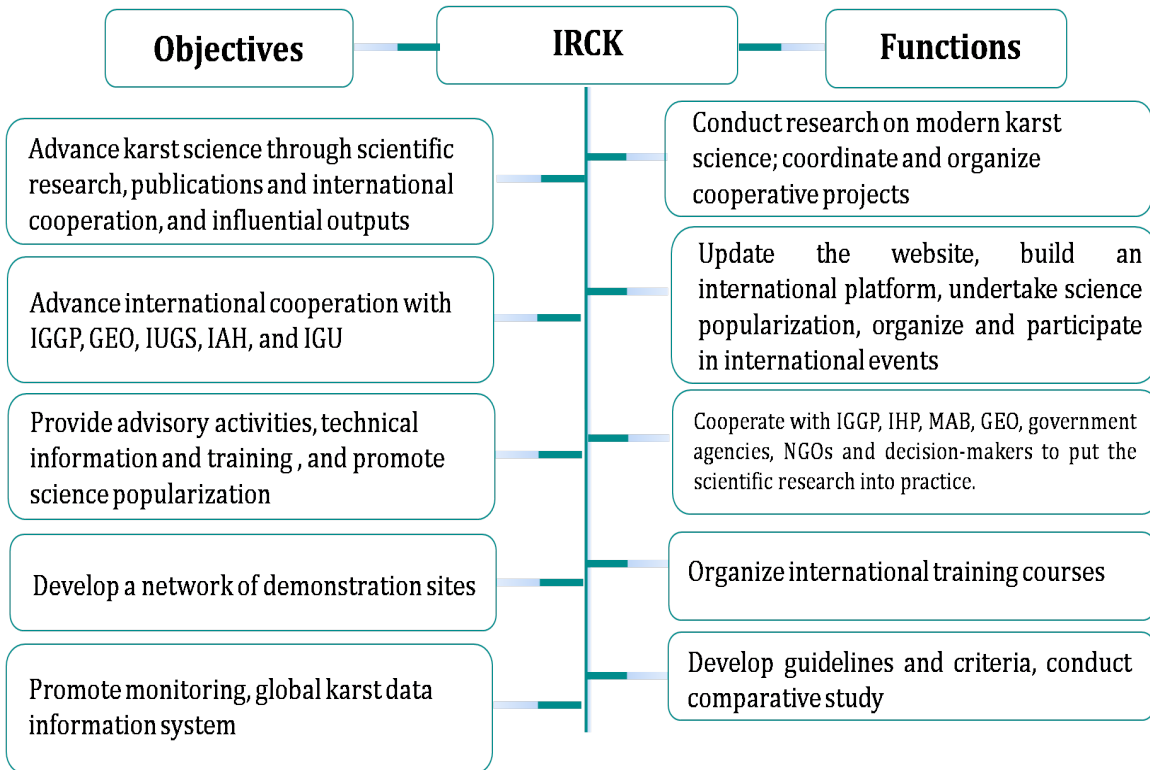


Tripartite Agreement between IRCK and PRC and UNESCO



Published *The Second Six Years of IRCK*

II Objectives and Functions



The Organization structure of IRCK

III Major Activities

International Big Scientific Plan on Resources and Environmental Effects of Global Karst Dynamics Systems(Global Karst)

International Cooperation Project to support the “Global Karst”

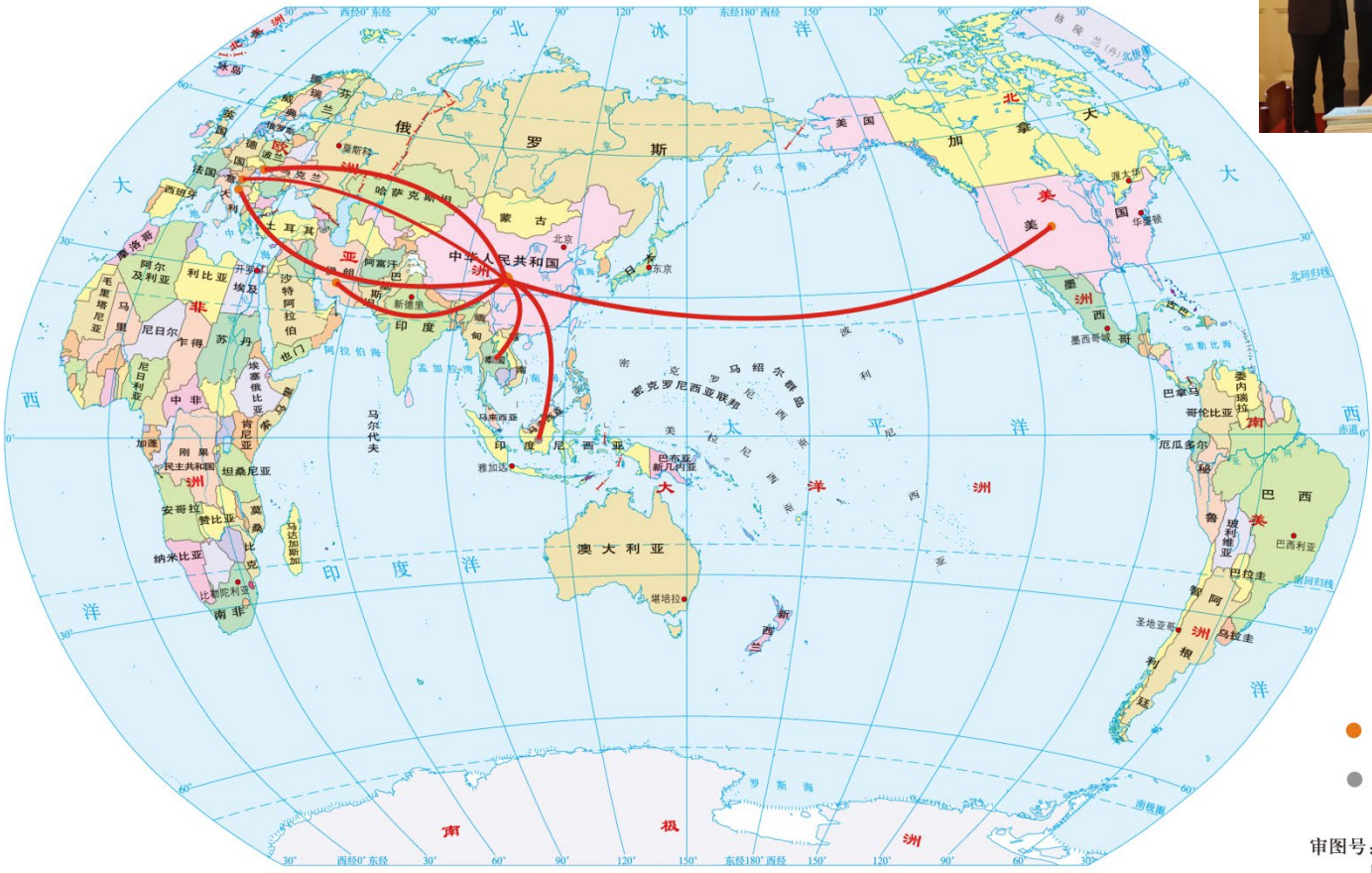
No.	Project title	Duration	Granted by
1	IGCP 661 : Processes, Cycle, and Sustainability of the Critical Zone in Karst Systems	2017-2021	UNESCO & IUGS
2	Comparative study on karst eco-environmental restoration, karst carbon cycle and carbon sink effect between subtropical zones in China and temperate zones in Slovakia	2016-2017	Ministry of Science and Technology (MOST)
3	Infiltration processes through the unsaturated zone of karst aquifers in temperate and subtropic climates	2017-2018	MOST
4	Joint laboratory on global karst resources and ecology -Comparison of typical karst regions between China and Slovenia	2019-2021	MOST Aiding Project
5	Comparative study on the coupling relationship of hydrology and ecology of karst critical zones in different climatic zones	2021-2024	MOST
6	China-Slovenia joint laboratory on karst geology and comparison study of karst critical zones	2020-2023	MOST
7	Joint compilation of hydrogeological and environmental geological maps of 5 countries on Indo-China Peninsula	2017-2019	China Geological Survey(CGS)
8	Comparison and Mapping of Karst Geological Environment in Key Areas along the Belt and Road	2019-2021	CGS
9	“The Belt and Road”karst geological environment innovative team	2019-2022	Department of Science & Technology,Guangxi
10	EO4KARST: Earth Observations for Global Typical Karst	2023-2025	GEO



In Nov. 2016, IRCK announced the International Big Scientific Plan on “Global Karst” to support the sustainable development of karst areas through the research on karst and climate change (SDG 13), karst water resources and water security (SDG 6), karst rocky desertification and eco-industry (SDG 15), karst geoheritage diversity protection and sustainable utilization (SDG 11), as well as karst geohazards prevention and early warning (SDG 9).

GEO Pilot Initiative to support “Global Karst”

Earth Observations for Global Typical Karst



IRCK delegation visited Croatia and Slovakia and absorbed 6 monitoring karst stations from the two countries.



Install karst monitoring station in Slovenia



Install karst monitoring station in Iran

International Training Course

No.	Nationality	Number of trainees	No.	Nationality	Number of trainees	No.	Nationality	Number of trainees
1	America	6	20	Libya	4	39	Republic of Korea	6
2	Australia	2	21	Macedonia	3	40	Slovakia	5
3	Brazil	21	22	Malawi	2	41	Slovenia	12
4	Brunei	2	23	Malaysia	14	42	South Africa	5
5	Cambodia	33	24	Mexico	4	43	Serbia	4
6	Congo-Brazzaville	7	25	Mongolia	5	44	Spain	1
7	Egypt	2	26	Montenegro	1	45	Sri Lanka	1
8	Ethiopia	11	27	Morocco	13	46	St. Kitts and Nevis	1
9	France	1	28	Mozambique	1	47	Tanzania	1
10	Hungary	5	29	Myanmar	23	48	Thailand	71
11	India	7	30	Namibia	1	49	The Niger	1
12	Indonesia	26	31	Nigeria	5	50	The Philippines	29
13	Iran	15	32	Pakistan	6	51	Congo-kinshasa	1
14	Iraq	1	33	Papua New Guinea	4	52	Togo	1
15	Italy	1	34	Peru	5	53	Tunis	2
16	Jamaica	9	35	Poland	3	54	Uganda	3
17	Jordan	2	36	Portugal	1	55	Vietnam	32
18	Kenya	4	37	Romania	9	56	Yemen	3
19	Laos	23	38	Russia	3	57	Zimbabwe	7

IRCK has organized 18 international training courses, with 471 students from 57 countries participated

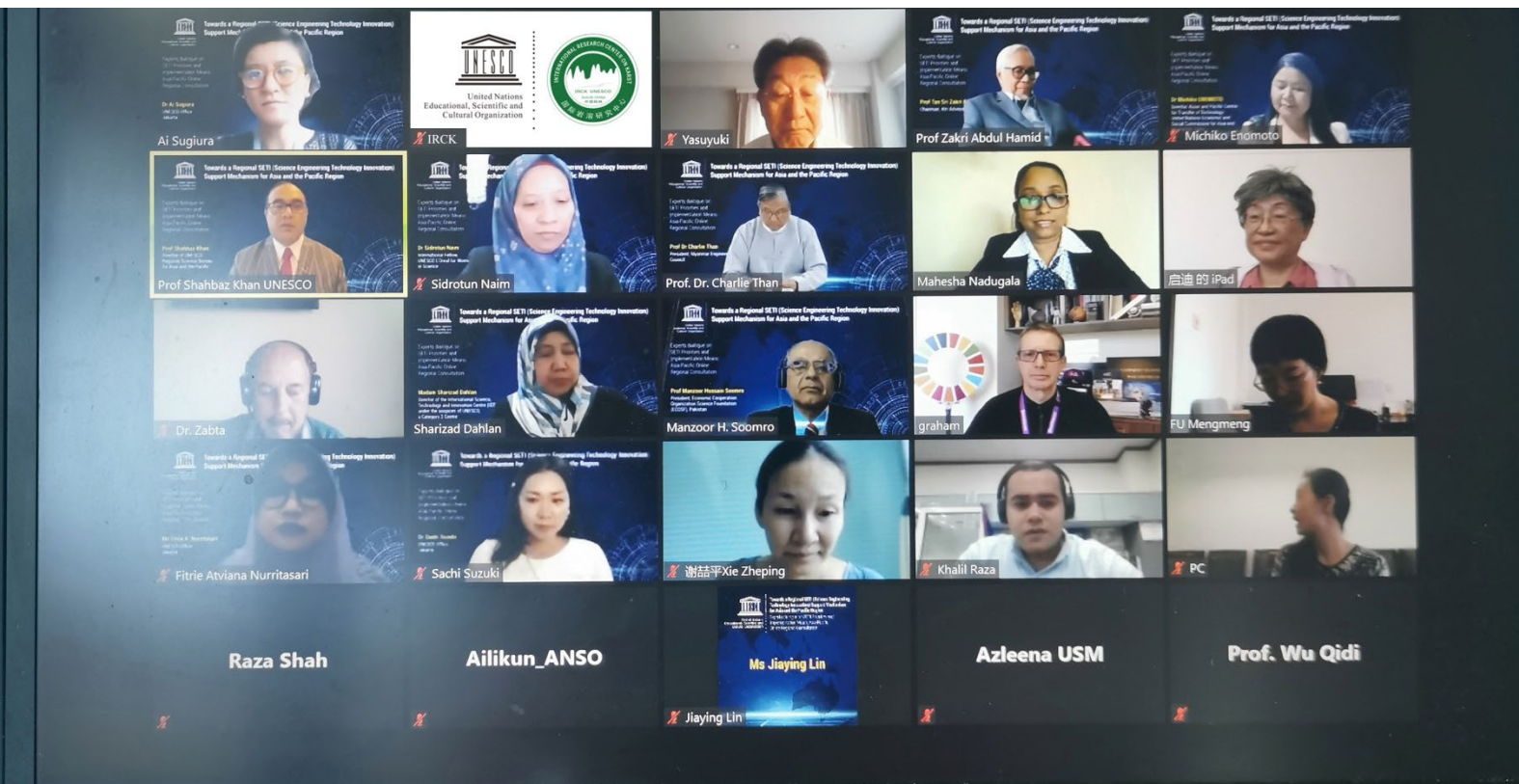


2023 IRCK Training Course(Nanning, Chongqing, Guilin)



2024 IRCK Training Course(Beijing, Wuhan, Guilin)
Mr. Shahbaz Khan, UNESCO Representative to China attend the Opening Ceremony

Attending UNESCO Meetings



IRCK attended “Experts dialogue on SETI Priorities and Implementation Means Asia-Pacific Online Regional Consultation” hosted by UNESCO Jakarta Office



Attendance of the Meeting on Science to Enable and Empower Asia Pacific for Sustainable Development Goals

Academic Exchange and Cooperation



IRCK co-organized the China-African water resource Dialogue (2015,2016,2017,2018,) to promote the water utilization in Africa.



Attendance of the IAH congress

Academic Exchange and Cooperation



On April 16th, IRCK launched an initiative concerning Global Karst Science and Technology Innovative Cooperation with the scientists from Croatia, Indonesia, Serbia, Slovenia, Slovakia, Turkey, and China. The initiative aims to realize karst science and technology innovative development and protect the fragile karst environment.

IV Scientific Popularization

IRCK has promoted science popularization through various activities, like theme day activities, painting or video competition, visit China Museum of Karst Geology, and go to the campus to give lectures or exhibit posters.



Paintings competition "Earth Protection"

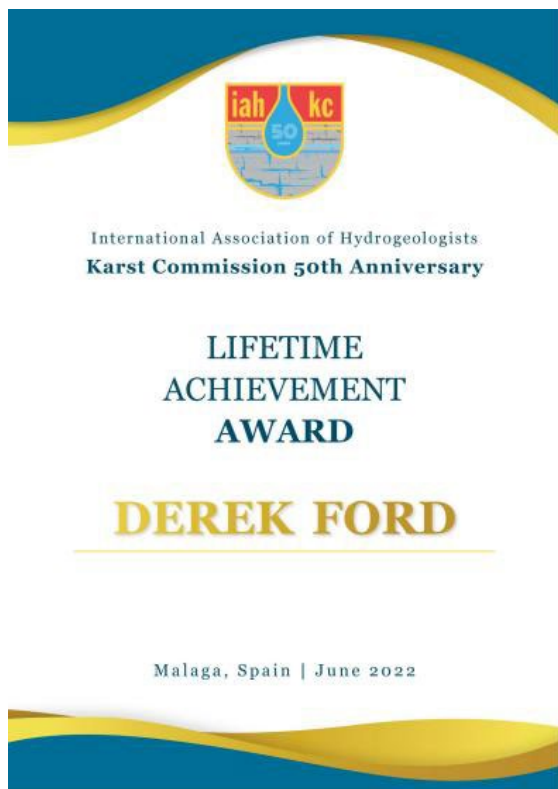
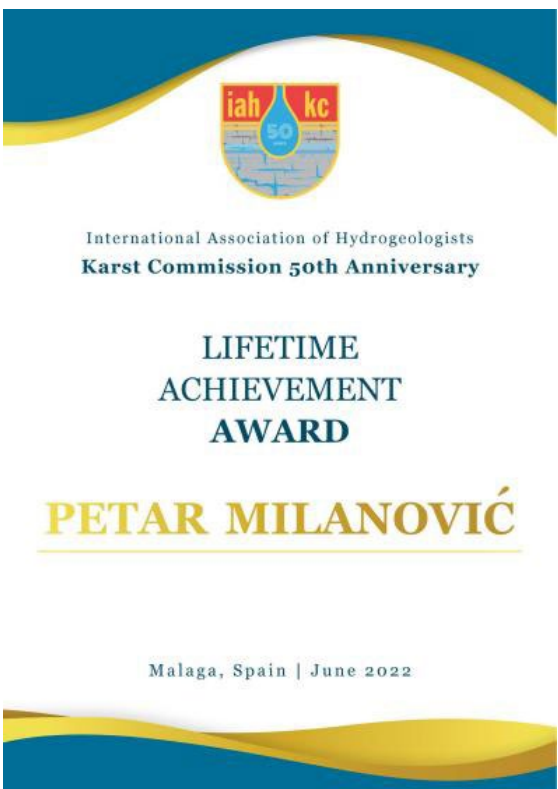
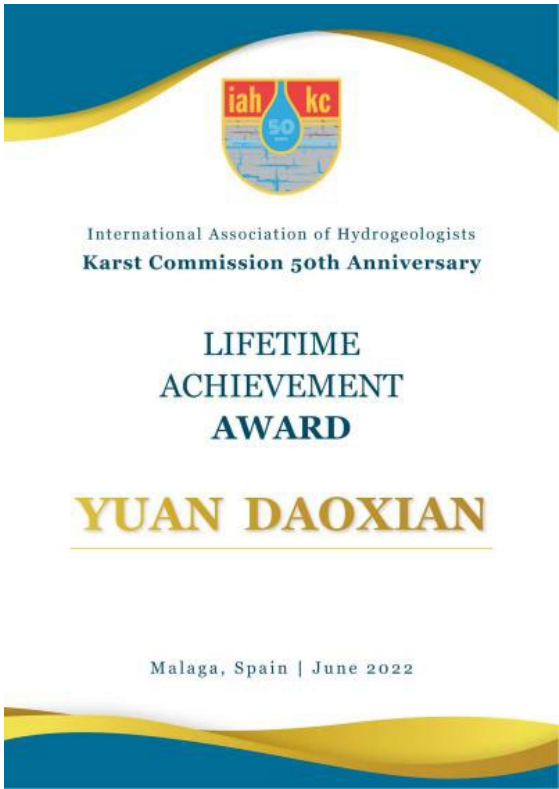


"Cleaning the intestines of the earth":
Cleaning up the caves



Visiting China Karst Geological
Museum

IV Other Achievements



IRCK long term partner Mr. Chris Groves (U.S.) won the International Scientific and Technology Cooperation Award of China in 2016. In 2022, at the 50th Anniversary of the IAH-Karst Commission, GB members of IRCK, Mr. Yuan Daoxian (China), Mr. Petar Milanovic (Serbia), and Mr. Derek Ford (Canada) were rewarded the Lifetime Achievement Award.

V Contributions to UNESCO

➤ Contribution to sectoral programme priorities

Strengthening STI policies, governance and the science-policy-society interface by:

- Karst carbon sink with carbon peaking and carbon neutrality goals
- Karst rocky desertification control and ecological civilization construction
- Targeted poverty alleviation, rural revitalization and karst scientific research

Fostering international science collaboration for earth system, biodiversity, and disaster risk reduction by:

- Implementation of IGCP 661
- Assisting Thailand in applying for its first UNESCO Global Geopark

Strengthening the role of ecological sciences and biospheres reserves by:

- Implement National Key Research and Development Project of China “Evolution of rocky desertification in karst graben basins and its comprehensive control and demonstration
- Cooperated with the Chinese National Committee for M&B Programme to edit Karst Geology and Ecosystem- Karst Science Popularization in China

Strengthening freshwater security by:

- Carried out research on karst water security in China

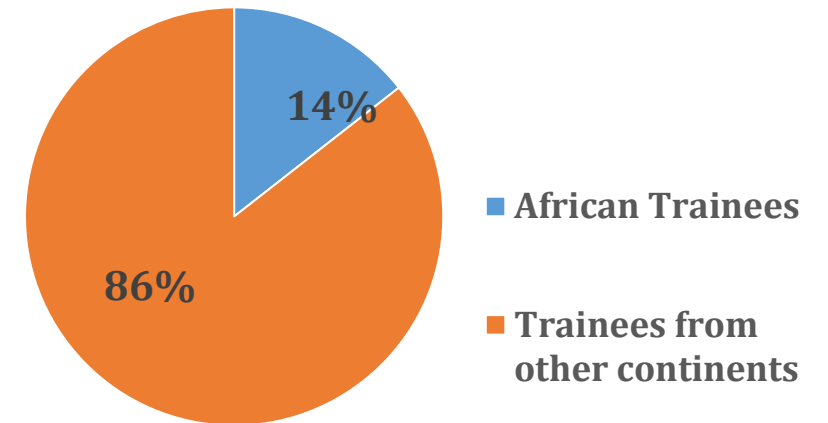
V Contributions to UNESCO

➤ Contribution to global priorities

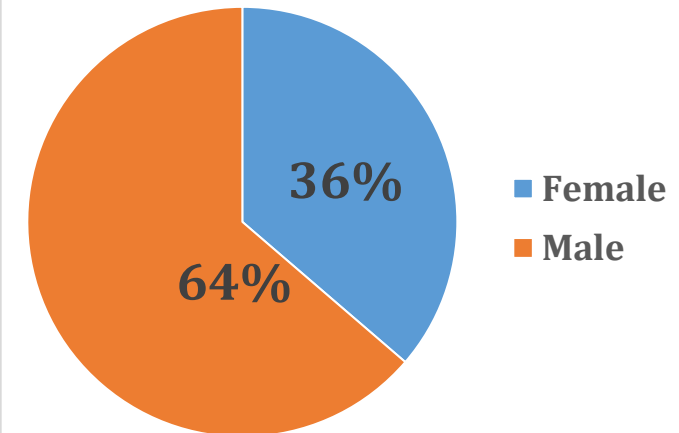
Africa: IRCK invited African scientists and technicians to join the International Big Scientific Plan on Global Karst actively, signed a cooperation agreement with the National University of Science and Technology of Zimbabwe, and also carried out bilateral cooperation on karst water resources management with South Africa. Through international training courses, IRCK has trained 68 African students in total.

Gender Equality: IRCK has enrolled 171 female scientists and technicians attending the training course, accounting for about 36.3% of the total trainees. The IGCP661 has attracted 14 female (30% of the total) to participate in relevant work, including one from Slovakia as a co-leader. Through training and project cooperation, IRCK has made some contributions to improving the research capacity of females from the developing countries.

African trainees proportion



The female trainees proportion





Thanks for your attention