

HRC's Annual Report on Foreign Affairs in 2021 and Work Plan for 2022

In 2021, HRC seriously studied and earnestly implemented Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era, and the spirit of the Sixth Plenary Session of the 19th CPC Central Committee. Based on an accurate understanding of the new stage of development, with a view to fully implementing the new development philosophy and accelerating our efforts to create a new development dynamic, and led by the Ministry of Water Resources (MWR) of the People's Republic of China and Nanjing Hydraulic Research Institute (NHRI), HRC spared no efforts in 2021 to overcome the impact of the pandemic, innovate the China-aid training models, conduct the international trainings and seminars, continuously promote the overseas technology transfer centers and extensively open up overseas markets, which have yielded fruitful results in all respects.

I. Successful Transformation of China-aid Trainings

In order to enhance China-aid human resources development, deepen South-South Cooperation and promote exchange and cooperation among developing countries, especially the BRI countries, in the fields of water

recourses management, small hydropower and other clean energy, rural



Ministerial Workshop on Water Resources Management and Socioeconomic Development for Developing Countries

electrification, etc. and strengthen mutual understanding and enhance traditional friendships, HRC has played an active role in

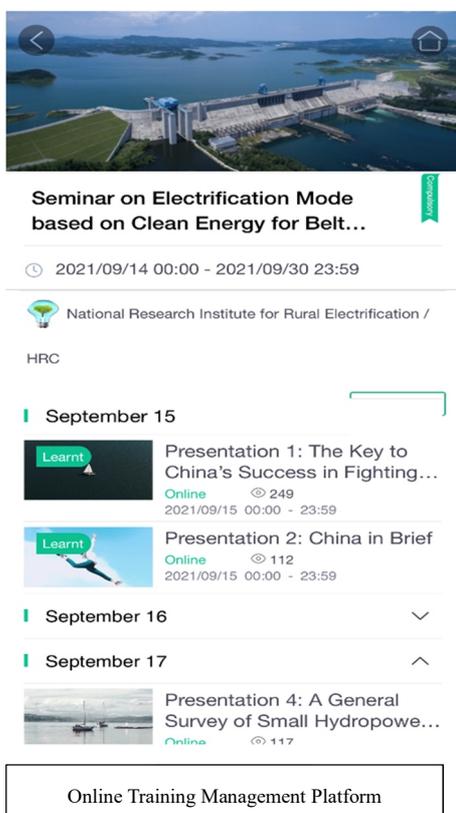
implementing China-aid trainings for developing countries. Not only did HRC overcome the difficulties such as the impact of the pandemic, the

large time zone difference among participating countries, the large number of online participating countries, etc., but also HRC explored new forms of online training and developed diverse online courses. In this context, a total of 9 online training programs were successfully organized, among which were one ministerial workshop for developing countries, one



seminar for Latin America and the Caribbean (LAC) with Spanish as the working language, and one seminar for Francophone African countries with French as the working language.

In addition, training programs on the themes of “Green Economy and Environmental Protection” and “Flood and Hydrological Forecasting and Warning” were conducted for the first time, and HRC continued to organize bilateral training courses on



small hydropower technologies and construction and management of water conservancy and hydropower projects respectively for Rwanda and Nigeria. A total of 995 participants of government officials and technicians from 56 countries attended the trainings, seminars and workshops. Both the numbers of participating countries and the quantity of participants hit a record high.

Training Programs Organized by HRC in 2021

| No. | Project Title | Date/Days | Number of Countries | Number of Participants |
|-----|---------------|-----------|---------------------|------------------------|
|-----|---------------|-----------|---------------------|------------------------|

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|---|--|--|----|-----|
| 1 | Seminar on the Exploitation & Utilization of Water Resources and the Treatment of Aquatic Environment for Latin America, Caribbean and South Pacific | 14 th -27 th July 14 Days | 6 | 168 |
| 2 | Seminar on Small Hydropower and Rural Electrification for Francophone African Countries | 25 th Aug.-7 th Sept. 14 Days | 11 | 94 |
| 3 | Seminar on Electrification Mode Based on Clean Energy for BRI Countries | 15 th -28 th , Sept. 14 Days | 18 | 86 |
| 4 | Training Course on Flood and Hydrological Forecasting and Warning for Developing Countries | 13 th Oct.-2 nd Nov. 21 Days | 20 | 95 |
| 5 | Ministerial Workshop on Water Resources Management and Socioeconomic Development for Developing Countries | 21 st -27 th , Oct. 7 Days | 16 | 100 |
| 6 | Seminar on Small Hydropower and Sustainable Development of Rural Communities for Developing Countries | 26 th Oct.-8 th Nov. 14 Days | 25 | 133 |
| 7 | Seminar on Green Economy and Environment Protection for Developing Countries | 3 rd -16 th Nov. 14 Days | 19 | 98 |
| 8 | Seminar on Construction and Management of Water Conservancy and Hydropower Project for Nigeria | 9 th -22 nd Nov. 14 Days | 1 | 84 |
| 9 | Seminar on Small Hydropower Technology for Rwanda | 22 nd Nov.-16 th Dec. 25 Days | 1 | 137 |

Through vigorously carrying out online China-aid trainings, HRC has kept close contact and exchanges with massive developing countries and continuously expanded exchange channels to further strengthen friendship and mutual trust, laying a good foundation for both bilateral and multilateral international cooperation in the future.

II. In-depth Exchanges and Discussions

In the past year, HRC organized the International Forum on Green Energy and Climate Change for BRI Countries, Online Seminar on Renewable Energy Cooperation with Training Alumni of HRC and China-Pakistan Forum on Standard for Small Hydropower Technology.

HRC also participated in organizing the Seminar on Joint Construction of Standards for Green Hydropower Technology for Lancang-Mekong



2nd Lancang-Mekong Water Resources Cooperation Forum

Countries, Webinar on Dam Safety Management under the project of “Construction and Demonstration on Dam Safety Supporting System for ASEAN Countries”, the Session 6 of the 2nd Lancang-Mekong Water Resources Cooperation Forum, with the topic of “Sustainable



China-ASEAN Dam Science Popularization Contest

Hydropower Development and Energy Security”, the 1st China-ASEAN Dam Science Popularization Contest, 2021 International Youth Forum on Hydrology and Water

Resources, Webinar on Water Safety of UNICEF: Sharing Experience and Practices of Water Supply and Safety in China and Mekong

Countries. Besides, HRC dispatched delegates to attend the second Belt and Road Ministerial Meeting on Energy, China-Uruguay Seminar on Water Resources Technology, China-Europe Webinar on Policy Dialogue, the Inaugurating Meeting of Overseas Branch of the China Society for Hydropower Engineering, etc. In order to promote and propagandize international cooperation, HRC published special columns in domestic and international newspapers including China Water Resources, Vientiane Times, Phnom Penh Post, etc. Through organizing or attending these activities, HRC carried out extensive and intensive technical exchanges on green energy, climate change, water management, dam safety, etc., in a bid to share ecological and sustainable development concepts and experiences, help to improve local livelihoods, and advance towards the goals of “emission peak, carbon neutrality” and the economic, social and environmentally sustainable development.

III. Further Construction of Overseas Centers

HRC maintains close contact with the counterparts in different countries where HRC’s four overseas centers are located and keeps pushing forward the construction of overseas centers. In this context, HRC has completed the key project of Strategic International Sci.-tech Innovation Cooperation and of Intergovernmental Sci.-tech Innovation Cooperation under China’s National Key R&D Programs (NKPs). China-Pakistan

Joint Laboratory for Small Hydropower under the Belt and Road Initiative has made considerable progress. The framework of small hydropower technical standards applicable to South Asia countries has been initially set up. Additionally, HRC also developed a talent exchange and training program on small hydropower and renewable energy technologies, and jointly cultivated 10 young hydropower professionals for South Asia countries. Besides, HRC carried out research on the off-grid hybrid power generation technology and the remote centralized control technology for small hydropower stations by organizing technical seminars, making remote technical investigations and selecting potential demonstrative sites. And HRC promoted the construction of demonstrative power plants in ASEAN countries and the China-ASEAN Technology Transfer and Training Center on Renewable Energy and Rural Electrification, further boosting the research and application of solar-powered water pumping system used for irrigation. Considering the crop planting and actual irrigation demand in different parts of the countries, for instance, the Philippines, HRC researched on some of the applicable technologies including solar inverter optimization, water-saving irrigation technology, smart water allocation technology, etc. Under the China-Europe Water Platform (CEWP), HRC further strengthened technical exchanges and cooperation via videoconferencing with the University of Belgrade, Serbia, and the University of Natural

Resources and Life Sciences, Vienna, Austria, and renewed the Memorandum of Understanding on cooperation between two Parties. On the basis of the cooperative project of Sustainable Hydropower Use and Integration in China and Europe (SHUI-ChE) under the framework of the China-Europe Water Platform (CEWP), HRC further planned for the



Design and Supply of Equipment for a Low-head Run-of-the-river Demonstrative Hydropower Station in Serbia

program of joint research on Watershed-scale Impact Assessment and Response Strategy of

Hydroelectric Power on River Ecosystems. Under the framework of the Technical Transfer, Research and Training Center on Clean Energy and Rural Electrification for Africa, HRC has been conducting multilateral exchanges and training courses, and promoting the localization of talent training in the field of small hydropower development, renewable energy technology and water management and hydropower project management in Ethiopia, Rwanda and Nigeria.

IV. Extensive Industrial Capacity Cooperation

Taking full advantage of China-aid trainings, international scientific and technological cooperation, the platform of HRC's overseas centers, as well as its function as a "window" to the outside world, HRC has been offering wide-ranging services including hydropower engineering consultation, equipment supplies, installation and testing, solar power and hybrid power generation system, etc. with a view to extending international cooperation in industrial capacity. Besides, HRC completed the equipment supply and on-site installation of the solar-powered water pumping systems in Rwanda, finalized the construction and assisted the plant owner for the commissioning of Batu Gajah hydropower plant in Indonesia, as well as offered on-site installation



Instructions on the Installation of Mayari Hydropower Plant in Cuba

instruction to Mayari Hydropower Station in Cuba. HRC is also engaged in the China-aid supply of solar systems to countries including Mali, Sudan, etc. and the spare parts supply to hydropower plants in Turkey, Peru and Kenya. Based on the demonstrative achievement of the previous solar-powered irrigation projects, HRC further expanded solar-powered water pumping system for irrigation, water purification system and rooftop solar power projects in the Philippines. Hangzhou Yatai Hydro Equipment Completing Co., Ltd., subordinate to HRC,

signed strategic cooperative agreements respectively with ENSOPHX (Tianjin) International Engineering Consulting Co., Ltd. and China Energy Engineering Group Jiangsu Power Design Institute Co., Ltd., with a view to jointly exploring the markets of small hydropower and hybrid power generation in Southeast Asia, South Asia and the Middle East, and meanwhile Hangzhou Yatai Hydro Equipment Completing Co., Ltd. offered design and consultation services to overseas hydropower projects undertaken by Sinoma Energy Conservation Limited, China's Hydropower Thirteenth Bureau Hydropower Engineering Co., Ltd., Jiangsu Power Design Institute Co., Ltd., Shanghai Investigation, Design & Research Co., Ltd., Jiangxi Water and Hydropower Construction Group Co., Ltd., etc.

V. Broadened Channels of Information Exchange

HRC completed the publication of important information in English and Chinese on the website and revised the English textbook *Small Hydropower Technology in China*. Besides, HRC signed a cooperation agreement with the School of Foreign Languages, Zhejiang University City College, and exchanges on cooperation of the trainings and studies of foreign students in China. The information exchange channels and the international cooperation and exchange continued to be broadened and promoted.

VI. Work Plan for 2022

1. To improve training contents and innovate training mechanisms

HRC will continue to improve the design of training courseware, make video tutorials, carry out “Internet Plus” online education programs, expand the application of VR technology, and set up the new training models incorporating both online and offline courses to successfully complete various training courses and workshops. Besides, HRC will also cooperate with other organizations to strengthen the faculty, enrich the contents of teaching materials and expand the training areas, and will make full use of computers science and mobile terminals to achieve scientific management of China-aid training.

2. To strengthen the construction of the four overseas centers based on the domestic and international cooperation platforms

HRC will strengthen the construction of the International Talent Training Base for Green Hydropower and the China-Pakistan Joint Laboratory for Small Hydropower under the Belt and Road Initiative, and will accelerate the implementation of key projects of Strategic International Sci.-tech Innovation Cooperation and of Intergovernmental Sci.-tech innovation cooperation under the National Key R&D Programs, the China-ASEAN Maritime Cooperation Fund Program and the

Pérez-Guerrero Trust Fund (PGTF) project of G77. Moreover, HRC will also actively apply for the key project of Strategic International Sci.-tech Innovation Cooperation and of Intergovernmental Sci.-tech Innovation Cooperation under the National Key R&D Programs from the Ministry of Science and Technology, the Asian Cooperation Fund project, etc. It will continue to promote the cooperation with the South Asian countries concerning small hydropower standards, hybrid power generation system and centralized control technologies and Sino-Austrian inter-governmental scientific and technological cooperation, China-Europe cooperation on water resources and the third-party market cooperation. HRC will also carry out renewable energy technology transfer and capacity cooperation with the ASEAN Energy Centre, and will build the regional sub-centers of the China-Africa Technology Transfer, Research and Training Center on Clean Energy and Rural Electrification. Focusing on the “Emission Peak, Carbon Neutrality” objective, HRC will strengthen green and low-carbon oriented exchanges with developing countries on green energy technologies such as hydropower, wind power, solar energy, etc. and will deepen bilateral and multilateral cooperation in capacity building, joint research, project demonstration and technology transfer in an effort to promote green energy interconnection and facilitate energy transformation and sustainable development in the BRI countries.

3. To focus on priority countries and areas to expand overseas markets

Based on the role of the Green Energy Working Group of the Belt and Road Energy Partnership Cooperation Network, HRC will keep close contact with the training fellow alumni of HRC and further explore market potential. It will cooperate with the large state-owned enterprises to provide technical services. Based on the international scientific and technological cooperation and the platforms of overseas centers, it will build the domestic and international teams and set up a new operation mode to promote the clean energy and rural electrification technology transfer and international cooperation in industrial capacity under the Belt and Road Initiative. It will focus on developing hydropower and solar energy projects in Indonesia, the Philippines, Vietnam, Mongolia, Uzbekistan, Kenya, Rwanda, Zimbabwe, etc.

4. To establish incentive mechanisms and strengthen talents cultivation

HRC will improve the system, establish an incentive mechanism, clarify position responsibilities and strengthen talents training. More trainings and exchanges will be organized to boost technical, commercial and managerial capabilities and improve market expansion skills. It will also strengthen project management to ensure the safety of projects and personnel and continue to assist in the article submission, translation

and publication of the two HRC journals, the newsletters and the website of HRC, as well as the Zhejiang Foreign Affairs Yearbook and the magazine of China South-South Cooperation Network, broadening the channels of contact and communication to strengthen the information sharing and technology promotion.