



Strengthening International Cooperation Through Battling Against COVID-19

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What a way to start the new year! Since the outbreak of the Novel Coronavirus (COVID-19) in Wuhan, the ANSO Secretariat has received an increasing number of messages from the ANSO Member Organizations and collaborating partners worldwide, expressing appreciation, solidarity and support to the Chinese fight against the epidemic.

“We are sure that China, with strong and very effective governmental policy, will overcome this serious situation and conquer this dangerous infection in the near future.”, expressed in the letter from the Russian Academy of Sciences. “We wish the situation in China return to normalcy as soon as possible. NSTDA has sent funds and medical supplies solicited from our staff and corporate partners to the Chinese government to assist the combating effort”, a message from Dr. Narong Sirilertworakul, President of the National Science and Technology Development Agency (NSTDA) of Thailand. Hungarian Academy of Sciences expressed their deepest appreciation for the efforts of the Chinese authorities to fight the spread of the coronavirus. In the video made by University of Donja Gorica, staff and students encouraged the Chinese battling and wishing it a

big success. Others that have expressed their solidary and support include Pakistan Academy of Sciences, National Council for Tibb of Pakistan, African Academy of Sciences, Tribhuvan University, Nepal Academy of Science and Technology, The International Centre for Integrated Mountain Development, University of Chile, Nepal Academy of Science and Technology, etc. Institute of Geography-Gynecology of Mongolian Academy of Sciences donated their one-day salary to support Chinese battling against COVID-19.

In recent days, China’s effort has achieved significant success while the outbreak in other parts of the world is getting more serious. The ANSO Secretariat has explored various ways to assist some of the ANSO member countries in their fight at the advice of President Chunli Bai. ANSO is keen to make its contribution to the global fight against this epidemic. As President Mostpha Bousmina, Hassan II Academy of Sciences and Technology writes, “All together and united, we will for sure overcome the present difficulties and eradicate the virus. The world needs China and China needs the world.”

Research and Innovation for Sustainable Agriculture and Robust Grassroot Economy

Agriculture is considered a backbone of the Thai economy. It forms the foundation for several industries, including agroindustry, food industry and energy. Research and innovation have enormous potential to improve productivity and efficiency of agricultural sector, and thereby enabling sustainable agriculture. As almost half of Thai labor force works in farming sector, the improvement will also raise farmers' income and subsequently alleviate social inequality.

Over the years, NSTDA has developed numerous technologies and solutions for agricultural sector and local communities, through its research centers as well as via collaboration with other Thai government agencies and academic institutes. More than 30 technologies in NSTDA's portfolio are beneficial to agricultural sector and local communities – ranging from new crop cultivars, to farming equipment, technologies for soil, water and pest management, post-harvest and processing technologies. These technologies have been introduced to Thai farming sector and villagers by working in partnership with local authorities and communities. To date, NSTDA has worked with over 700 communities in 60 plus provinces throughout Thailand. Outstanding examples of technologies and innovations include:

- **New and recommended crop varieties.** Through breeding program employing biotechnology as a tool and germplasm evaluations, NSTDA has a number of new and area-specific recommended crop varieties available for cash crops such as rice, sugarcane, cassava, tomato, chili and mung bean. These varieties have been introduced and promoted to farmers in respective areas throughout the country, along with other technologies and training on topics such as farm management and seed production technology.

- **Smart farming technologies.** Sensor technology and IoT have been employed to develop smart farming technologies which enable resource-use efficiency and boost productivity and crop quality. Our technologies include Smart Plant Watering Control and Environmental Data Monitoring System, Weather Station equipped with sensors to obtain readings of soil moisture, humidity, temperature, light intensity, rainfall, wind direction and speed, and Smart Greenhouse.



- **Processing technologies.** A number of processing technologies have been developed to add more value to farm products and some of these technologies have been transferred to farmer cooperatives and community enterprises, creating more jobs and income in villages. NSTDA's rubber processing technology has enabled a latex foam pillow manufacturing cooperative - whose members are mostly rubber farmers - to move upstream in their production process, and thereby adding value to natural rubber latex and increasing profits to rubber farmers.

This article illustrates NSTDA's endeavor to apply its research and innovation to create sustainability in Thai farming sector. In addition to agriculture and food, NSTDA also engages in other research themes, including health and medicine, energy and environment, etc. NSTDA welcomes any collaboration with ANSO members, whether in the forms of R&D, technology transfer or capacity building. Please visit our website for more information and opportunities for collaboration.

About NSTDA

Established in 1991, the National Science and Technology Development Agency (NSTDA) is Thailand's national agency for S&T and one of the leading S&T centers in Southeast Asia. NSTDA's mission is to conduct and support Research and Development, Technology Transfer, Human Resource Development and Infrastructure Development, with the ultimate goal to make socio-economic impact to the nation. For more information, please visit: www.nstda.or.th.

ANSO Visiting Fellowship

The ANSO Visiting Fellowship program will be set up in 2020 in order to strengthen collaborative relations through sharing of mega-science facilities. This Fellowship provides scholars worldwide an opportunity to access high-impact & high-quality research facilities during short visits to China.

“FAST”, The World's Largest Radio Telescope

The Five-hundred-meter Aperture Spherical Radio Telescope (FAST) is a single-dish telescope with a diameter of half a kilometer and a receiving area equivalent to about 30 football fields. It is located in a naturally deep and round karst depression in Southwest China's Guizhou province. The telescope will gradually open to astronomers around the globe, providing them with a powerful tool to uncover the mysteries surrounding the genesis and evolution of the universe.

After its commissioning, FAST can now be used for observation at full capacity, and is expected to make a number of major scientific discoveries in the coming two or three years, said Jiang Peng, the chief engineer of the telescope. In the first two years, FAST has identified 102 new pulsars, more than the total number of pulsars discovered by research teams in Europe and the United States during the same period.

It has also improved the timing accuracy of pulsars to about 50 times the previous level, making it possible for humans to detect extremely low-frequency Nahertz gravitational waves for the first time.

Dubbed "China Sky Eye," FAST is about 2.5 times as sensitive as the second-largest telescope in the world and capable of receiving a maximum of 38 gigabytes of information per second.

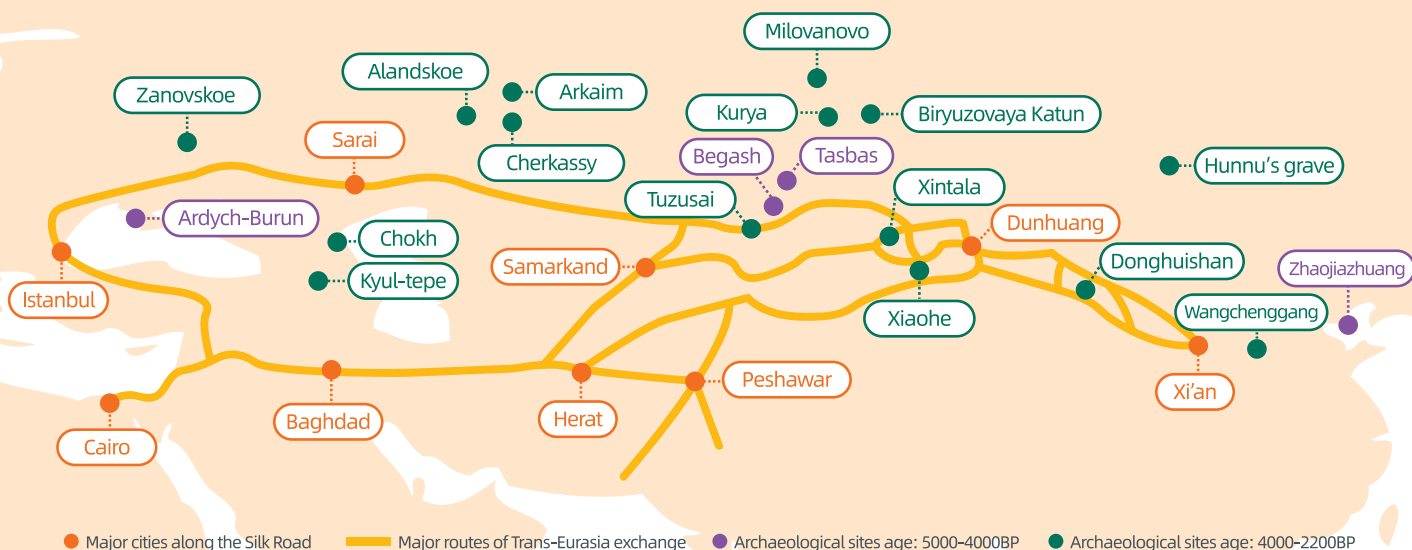
FAST has expanded the volume of the space range that radio telescopes can effectively explore by a multiple of four, which means that scientists can discover more unknown stars, cosmic phenomena and laws of the universe, or even detect extraterrestrial life, said Li Kejia, a scientist at the Kavli Institute for Astronomy and Astrophysics at Peking University.

Ten scientists from the United States, Britain and Pakistan have already worked at FAST. More global collaborations are expected in areas such as gravitational wave detection and very-long-baseline interferometry (VLBI) following initiation of formal operations. (Xinhua)



A range of scientific associations have been established as the operating arms of ANSO to help achieve its objectives and enhance the global influence and operations of ANSO in different professional areas. This section introduces the associations that ANSO supports.

ANSO Associations



ANSO ASSOCIATION FOR TRANS-EURASIA EXCHANGE AND SILK-ROAD CIVILIZATION DEVELOPMENT (ATES)

■ Who We Are:

The ancient Silk Road was one of the most important passages for Trans-Eurasian exchange and human migration, with origins traced back to 5000-4000 years before present. Prof. Fahu Chen and his team have been focusing on understanding the mechanisms of climate and environment change in arid Central Asia, and received wide recognition and awarding of the National Achievement Prize in 2007 and 2018. Based on the Belt and Road Initiatives proposed by the Chinese Government in 2013, and within the framework of ANSO, Prof. Chen proposed the establishment of ATES and work with more than 90 international scientists from 30 institutions.

■ Objective:

1. Clarify climate and environment changes at different time-scales since the Last Interglacial in the central part of the Ancient Silk Road. Focus on the timing, extent and amplitude of major hydroclimatic events and their influence on the water resources in the oases;

2. Understand the patterns and history of trans-Eurasian exchange and ancient civilizations along the Ancient Silk Road;
3. Understand the influences of climate and environmental changes on trans-Eurasian exchange and civilization development, and construct models for Climate-Hydrology-Oasis-Civilization.

■ Forthcoming Activities:

1. 2020 EGU Meeting, Vienna, Austria. Session ITS2.3/-CL1.1: Climate and Environment Changes and Impact on Civilization Development Along the Ancient Silk Road.
2. 2020 34th International Geographical Congress Meeting, Istanbul, Turkey. Session: Human-Environmental Interactions Along the Ancient Silk Road.
3. Seminar on Silk Road Civilization and Environment at ANSO 2020 conference.
4. Training school once a year in the Ancient Silk Road region for the next three years.

Postponement of ANSO Conferences | Moscow, Russia 2020

The 2nd General Assembly and the 3rd International Science Forum on Belt and Road Initiative that were scheduled to happen between 27 to 29 May 2020 have been postponed due to the global outbreak of the COVID-19 epidemic. The new schedule of the conferences will be further noticed.

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