

Beyond traditional learning: an international initiative to improve capacities of Sri Lankan universities on resilient agro-ecosystems

Due to different socio-economic and environmental conditions, agro-ecosystems play a critical role in development processes all over the world, particularly in the tropics. Tropical agricultural systems are characterized by planned and unplanned diversity. Both these types of diversity have a significant impact on agro-ecosystem's productivity, stability, pest control, soil processes, and organism movement between agriculture and natural habitats in the agricultural landscape. Industrialization, urbanization, population growth, the market economy, and climate change are major factors that threaten tropical agro-ecosystems. As a tropical country, Sri Lanka relies on agriculture as one of the most important sectors of its economy, and disasters can obstruct agricultural production, resulting in significant capital losses. The rice-based agro-ecosystem of Sri Lanka is vulnerable to natural disasters such as floods and droughts. Natural disasters of this nature strike Sri Lanka almost every year. In this context, Sri Lanka's tropical agro-ecosystem should be linked to higher education to address the new social and economic challenges associated with such agro-eco systems.

In this light, the project 'Building Resilience in Tropical Agro-Eco Systems' (BRITAE) aims to ensure that selected Higher Education Institutions (HEIs) have research and innovation capacities to address the challenges of building resilience in agro-ecosystems in Sri Lanka. There is a significant knowledge gap on the status of agro-ecological resilience in tropical areas particularly, Sri Lanka is lacking in terms of knowledge, research, and innovation. BRITAE involves collaborations between five partner institutions in Sri Lanka: the University of Ruhuna, the University of Colombo, the University of Moratuwa, the University of Sri Jayawardenepura, and the Sabaragamuwa University. European partners of the project are University of Huddersfield and the University of Central Lancashire in the United Kingdom, Tallinn University of Technology in Estonia, and the Vilnius Gediminas Technical University in Lithuania. Five Sri Lankan universities and four European Union (EU) universities developed the project proposal and the team was able to secure the highly competitive and prestigious grant “Erasmus+: Higher Education - International Capacity Building” of the Education, Audio-visual and Culture Executive Agency of the European Union. The project has a three-year duration from 2020 to 2023.

The BRITAE project will develop joint curricula modules for a master's degree programme at Sri Lankan universities in order to increase their capacities to improve the quality and relevance of education programmes to match the needs of the global market. BRITAE curriculum will focus on food security, agro-eco tourism, agricultural laws and policies, climate change etc. The curriculum will improve the

ability of HEIs to address the challenges associated with agro-ecological resilience to disasters. Further, it facilitates international cooperation between academic networks of the north and the south through knowledge exchange. These HEIs in Sri Lanka have identified beneficiaries such as students, academics and non-academic staff members, national and regional authorities, farmers, government officials, non-governmental organizations, and etc.

BRITAE advocates techniques that extend beyond traditional methods of learning by blending European practices in education from participating European Union universities with the educational practices of Sri Lankan universities. A major component of the Masters programme is the inter-disciplinary and cross-sectorial capacity development opportunities it provides. BRITAE promotes the development of research and innovation to increase agro-ecological resilience to disasters through productive interactions between research groups from different disciplinary and national and regional (EU and Asian) backgrounds and by encouraging meaningful sharing of cross-sectorial experience of policy and practice.

In addition, through the creation of a “Smart Agro-ecosystem Resilience” (SAR) center for Teaching, Learning, Research, and Development (TLRD), BRITAE aims to facilitate learner-centered online teaching. The SAR center will offer adaptive video tutoring, big data mining, an adaptive biometric examination system, and open source materials for Sri Lankan students. The primary goal of establishing the SAR center is to create a platform for the delivery of Massive Open Online Courses (MOOCs). MOOCs are 21st-century learning models that deliver learning content via online platforms.

In addition, a university-based industry platform will also be created under the project. It will focus on training students and instigating incubation programmes while developing socio-emotional skills, career guidance and career opportunities, commercialization of research and innovation etc. Plans are underway to organize the "International Conference on Building Resilience in Tropical Agro-ecosystems" in the year 2023. Researchers exploring the topic of agro-eco systems and disaster resilience will be able to present their findings at the event.

Finally, the BRITAE project contributes to national and institutional strategies and policies on a variety of topics, including access to higher education and preparedness for future climate-related disasters. The project will also result in the increased capacity of local and international students, practitioners, policymakers, and academics to accumulate knowledge and engage with research-based studies and findings from around the world.

BRITAE Project - <https://www.britae.lk>