

## **Innovating On-farm for Sufficiency Agriculture by Participation**

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Alleviating poverty and developing rural regions have been given priority in developing countries. Population increase, climate change and variability, need of investment, competition for agricultural land between food and fuel needs are the main reasons, among others, in food insecurity. The sufficiency economy philosophy, developed by Late King of Thailand, Bhumibol Adulyadej, highlights a balanced way of living, aims at improving human well-being as a development goal, and seeks to harmonize the social, economic and environmental aspects of development. The sufficiency agriculture, derived from His Majesty's philosophy, is a guideline for appropriate conduct covering many different aspects of agricultural science and insights on sustainable food production for future generations, known also as sustainable agriculture. It addresses food security and food safety as well as providing a sustainable socio-economic system based on environment friendly and sustainable farming practices. Securing food for everybody requires breeding crops which are more efficient in input use and tolerating better environmental stresses. Plant mutation project at Akdeniz University aims at developing plant types and cultivars based on self-sufficiency generated by the participation of the counterparts, i.e. researchers, leading farmers, university students, and local administrations to that end. Through the participation of the farmers, large mutated populations could be grown on-farm to the benefit of the farmers. In the frame of the main project we have also developed a strategy to enhance the student learning experience in the agricultural engineering program using the activities of funded research by International Atomic Energy Agency (UN), TÜBİTAK-Turkey, and the British Council (UK). All activities have been done at West Mediterranean Region of Turkey during a two-decade period based on voluntariness and mutual confidence among the parties built in time. The students have gained invaluable experience of engaging the local community through the practical training as part of the curriculum. Accordingly the farmers have benefited with the cultivars developed. Beside this, the farmer participation through on-farm testing has led to more appropriate site-specific technology, broader and faster adoption, and increased producer ability to adapt environmentally sound and profitable conservation farming practices. The on-farm tests have also allowed farmers to measure the performance of new varieties or techniques in their own fields in order to make the most profitable choices for the farm. Furthermore, the participatory research has contributed to the empowerment of rural communities through the recognition of their skills, traditional knowledge and generating awareness that they could contribute to their own development. Other details of the agricultural innovations through the farmer participation to meet some of the Millennium Development Goals will be given in the workshop.