
PAPER 1:
SOCIAL, ECONOMIC AND TECHNOLOGICAL POTENTIAL OF AGRICULTURAL BIOTECHNOLOGIES FOR CROP DIVERSIFICATION – A NEW APPROACH IN RESEARCH

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ABSTRACT

Increasing populations, climate change, disparate economic growth and urbanisation constitute major challenges for the ASEAN region. 'Business-as-usual' will not be enough. We need fresh ideas and innovative solutions, especially in agriculture which can be a major engine of socio-economic growth. Recent biotechnological advances in major crop species show significant potential for sustainable gains in agricultural productivity, reducing poverty and enhancing food security. However, major staples alone cannot ensure the nutritional security of a growing population or novel sources of livelihoods from marginal landscapes. This presentation shows how knowledge of the genetic resources of currently underutilised crops can be linked with modelling and geospatial tools to predict their potential in new locations. Data driven biotechnology linked with value chains can enhance our understanding of agricultural biodiversity and accelerate selection for suitable crop traits for specific locations and end uses. Using the example of bambara groundnut, this paper presents a case study of crop suitability for soil and climatic conditions of Peninsular Malaysia. Through such an approach, the paper demonstrates how locations and end uses can be identified for particular crops. Comparisons will show potential distributions and uses of underutilised crops in the ASEAN region as an evidence base for agricultural diversification.

Keywords: underutilised crops, crop diversification, South East Asia