

What Expert Says: Impact of Climate Change on Agrobiodiversity and Food Security

Dr Mohamad Zabawi Abdul Ghani
Research Specialist, MARDI

The Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) released in 2007 has reaffirmed that climate is changing and influencing many physical and biological systems including disruption of the ecosystem's services, which is important to support livelihood. When we address climate change issues, normally, two main approaches are highlighted i.e. adaptation to minimize adverse impacts, and mitigation to reduce the emissions of greenhouse gases. Changing crop management will be the key component in adapting agriculture to climate change particularly in the context of food production and security.

Apart from changing crop management, we also believe that agrobiodiversity can be an important adaptation strategy in reducing the impact of climate change on food security. However, agrobiodiversity has never been seriously and properly integrated with agricultural adaptation strategies to climate change in this country, and that creates a future challenge for all of us here. Enhancing the ecosystem services through use of agrobiodiversity will be crucial, given that it contributes to adaptation, mitigation and resilience. Sustainable use and good management of agrobiodiversity has a huge potential for production systems to adapt to changing environments while maintaining productivity, conserving biodiversity and improving human well-being.

With regards to biodiversity of food and agriculture, what comes to mind is the variability that exists among living organisms and how it is affected by climate change. However, in the past, the possible impacts of climate change on biodiversity, ecosystem services, food and agriculture were often discussed separately. There has been very little systematic attempt to explore the threats posed by climate change to plant genetic resources for food and agriculture. At the same time, there is not much effort taken to understand threats caused by climate change on resources for food and agriculture. Therefore, analyzing whether climate change may constitute a threat to biodiversity in the future requires understanding of the extent and distribution of biodiversity of food and agriculture, and its vulnerability and adaptation patterns. Matching this information with available data from climate change models will be the basis requirement for conservation and adaptation strategies. Lack of characterization and evaluation of genetic resources for food and agriculture will be an obstacle in developing adaptation mechanisms to climate change. Evaluation is currently an important bottleneck across all types of genetic resources. Improving information systems for genetic resources and the dissemination of relevant information to users will be an important priority for the future.

In conclusion, it is now crucial for the country to start preparing strategies and action plans to reduce the negative impacts as well as to take advantage of the potential benefits from climate change. Better understanding of the impact of climate change (existing and potential) on agrobiodiversity, in particular the impact on agricultural production and food security is urgently needed.

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