

**Consultative Workshop
on
Expanding Areas of Plantations of Areca Nut and Other Commercial Species in
Meghalaya: critical review of the changing landscapes with reference to their
ecological impacts**

Date: 13th April 2023, Thursday

Venue: MIIT Hall, Brookdene, Shillong

BACKGROUND

Meghalaya has nearly 76% of geographical area under forest cover which harbours rich biodiversity. Over ninety percent of forests in the State are owned by the clans, individuals and communities who largely derive their livelihood either indirectly through the ecosystem benefits flowing from these forests or directly in the form of forest produce. It is very important that the communities in the State continue to enjoy ecosystem benefits sustainably for the future generations as well. This concern assumes even more significance given the fact that climate change is causing severe stress on the ecosystems everywhere. Land-use is greatly influenced by the hilly terrain, imposing agro-ecological constraints on the region. Hilly regions are generally ecologically more sensitive to the land use practices. According to the latest India State of Forest Report (ISFR, 2021), forest cover of Meghalaya has declined by 73 sq km with respect to the previous assessment two years ago by FSI. Land Use and Land Cover (LULC) has rapidly changed in the State in the last two decades. One noticeable change in the LULC is the emergence of extensive plantations of horticulture and commercial species.

Plantations of horticulture and commercially important species such as arecanut, rubber, cashew, orange, etc are important as they provide significant income to the rural communities and make substantial contribution towards poverty alleviation. Several Government Departments/ Agencies have promoted plantations of these species and have provided technical know-how to the people under the extension services by them. As a result of these efforts and increased awareness among the people, plantations of these species have spread in many parts of the State in the last two-three decades. The area under fruits and plantation crops in Meghalaya state during 2010-11 was 27.69 and 14.61 thousand ha respectively (Directorate of Economics and Statistics, Govt. of Meghalaya, 2011). The highest area under cultivation of fruit crops was in West Garo Hills (6.75 thousand ha) followed by East Khasi Hills (5.86 thousand ha) and Ri-Bhoi (5.05 thousand ha) districts (In: Horticulture for Economic Prosperity and Nutritional Security in 21st Century, 2013; Deshmukh, et al., pp.225-242).

In case of plantation crops, arecanut is commercially grown all over the State. Over time, the Government had encouraged the expansion of area under arecanut cultivation on a large scale and provided liberal financial assistance for its cultivation. In the year 2012-2013, areca nut was produced in 14600 hectares of area with a production of 19800 Metric tons (Arecanut subsector in Meghalaya: a review-MBDA publication, 2014). However, there has not been any scientific evaluation on the level of influence of these plantations on the ecology at large. Arecanut plantations are mostly grown as

monoculture. In many areas, arecanut plantations have been created by clearing forests. In Garo Hills, arecanut plantations can be seen even at higher altitudes.

When monoculture plantations of economic species have spread across the landscapes and they are interspersed with forests, it becomes essential to critically evaluate their impacts on soil, biodiversity, water regime and overall ecology. Such a scientific evaluation will also provide inputs for developing appropriate systems and practices for raising plantations of commercial species in a sustainable manner while causing least adverse impacts on the ecosystems. It is not intended to discourage such plantations as income generating activity for the people, rather a scientific understanding would help in their sustenance as well.

One of the impacts of commercial plantations is soil erosion. Plantations that are established on steep slopes may lead to soil erosion in the phase of establishment. This can have serious consequences for the long-term productivity of the land, as well as for downstream water quality. It has been reported that commercial plantations on steep slopes had a significant impact on soil erosion, with erosion rates increasing by up to 50% in some areas (Journal of Environmental Biology 2010: 31, 1-9).

Water pollution may also be a major ecological impact of commercial plantations in Meghalaya. The use of chemical fertilizers and pesticides in these plantations may lead to the contamination of nearby water sources, which can have serious consequences for both human and animal health. A study conducted by the North Eastern Hill University found that water samples collected from the Myntdu River, which runs through several commercial plantation areas, had high levels of nitrate and phosphate, which are common pollutants associated with agricultural runoff.

In addition to these ecological impacts, commercial plantations in Meghalaya may also have social and economic consequences. Large scale establishment of these plantations may lead to displacement of indigenous communities, who rely on forests for their livelihoods. This may result in loss of traditional knowledge and cultural practices, as well as a reduction in the availability of forest resources like medicinal plants and non-timber forest products.

While these plantations have contributed to economic growth and development in the State, it is important to carefully consider the environmental and social costs associated with these activities. Efforts should be made to ensure that commercial plantations are established in a sustainable manner, considering the needs of local communities and the conservation of important ecosystems and biodiversity. It is therefore, important to scientifically assess their impacts on biodiversity, water regime and ecology as a whole.

OBJECTIVES

The main aim of this workshop is to critically examine the impacts of monoculture plantations of commercial species on the ecosystems in Meghalaya. It is intended to have a focussed discussion on the following in the presence of experts:

- To examine the influence of monoculture of commercial plantations on various constituents of ecosystems such as water, soil, biodiversity etc.
- To discuss sustainable scientific ways of farming systems for such commercial crops that protect the environment and conserve natural resources

- To discuss the socio-economic dynamics as a result of practice of monoculture plantations of commercial species

EXPECTED OUTCOME

- An improved understanding on the impacts of commercial species plantation farming practices on the environment
- Identification of gaps that may exist in the current cash-crop farming practices and the interventions that may be required for more sustainable farming.
- Practices that farmers prefer in shaping land use dynamics and the incorporation of agroforestry practices on private lands
- A feedback to know the actual type of land tenure and land use practices in the State that may enable framing policies on land tenure, agriculture, forestry and tree growing