Status of Coconut Plantation in Andamans and Nicobar group of Islands

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The Andaman and Nicobar group of Islands is situated in Bay of Bengal (Indian Ocean) between 6° 45' and 13° 4'N latitude and 92° 15' and 94° E. As per old reference a total of 572 islands forms Andaman and Nicobar group, out of which 300 Islands are suitable for human living; however only 38 Islands are inhabited. Port Blair, the capital of this Union Territory is 1130 km away from Chennai and 1255km away from Calcutta, whereas some of the foreign lands are much nearer to Port Blair. (Rangoon, Myanmar, Bangkok, Penang and Kuala Lumpur are 422, 544, 655 and 817 km away from Port Blair respectively) These group of Islands have many things unique , the primitive tribes, cosmopolitan culture of Port Blair with people from different parts of India, beautiful coral reefs, national monument of cellular Jail and rich bio-diversity of coconut and other flora and fauna which adds natural beauty to these Islands. The Island enjoys a tropical forest cover to the tune of 80%; total geographic area being 8,293 km^2. Acid sulphate and sandy loam are the common types of soils noticed. Most of the land areas of Andaman district are undulated terrain while that of Nicobar district are plains. This region is characterized by humid weather with well distributed annual rain fall of 3000 mm. Temperature always remains mild without much diurnal variation(28-31°C to 23-25°C). Thus, the edaphic-climatic condition in the Island offer potential scope for growing plantation crops where coconut occupies major area under cultivation.

Coconut in the Islands

Coconut is grown in an area of 24,410 ha. which provides 85.44 million nuts annually. The coconut originally belongs to Nicobar Island and was later introduced to Andaman and other parts during the period of British rule. Thus in Andaman area, we do not find very old coconut trees. Coconut thrives as rain dependant and the palm undergoes stress during peak summer (March-April). There is zero maintenance of the coconut plantation. The unnoticed shed nuts germinates and grows as big tree in the same place where it has fallen (Plate 1) and so there is no chance of proper spacing of the trees. Thus the coconut plantations looks like coconut forest (Plate 2). Generally, 450 to 800 palms/ha (as against recommended 175 palms/ha.) is seen existing where there is no chance of sunlight falling on the ground which avoids total evaporation and provides a weed free situation. So the palms do not die even under the years of severe and prolonged drought. Due to over population and neglect conditions the average yield of the palm in the Island is low (20 nuts/palm/year). Since the plantations are poor yielders there will be no nuts for regular harvest and thus only the shed fruits are usually collected for consumption. As the collected fruits are de-husked right in the field and only the nuts are taken away, left out husk pile up in the garden as real waste material from coconut plantation. The word "tree of heaven" for coconut palm does not suit much for the Islands as most of the parts of the palm are not utilized effectively especially the leaves and the husk.

Plate 1 : The unnoticed shed nuts germinate and grow as big trees in the same place where they have fallen

Plate 2 : The coconut plantation looks like coconut forest

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Agro-bio diversity of coconut is unique in the Island (Balakrishnan and Nair 1979). Coconut accession having horned fruits, palms producing beaked fruits/nuts, and palms with persistent petiole and inflorescence are found in Car Nicobar Islands (Plate -3). Andman Ordinary is an accession from south Andaman which has recorded only 33% incidence of the serious problem of root (wilt) in Kerala (Jacob *et al*, 1998) when all other accessions excepting a few palms of West Coast Tall and Chowghat Green Dwarf had 100% disease incidence. Secondary selection of Andaman Ordinary may give a fairly tolerant planting material. Andaman Ordinary had also shown resistance to *Pestalotia* leaf spot in West Bengal (Ray *et al.*, 1990). Andaman Giant a large fruited accession from South Andaman has shown tolerance to burrowing nematode (Sosamma *et al.*, 1988). Based on physiological parameters and yield performance studies at CPCRI Kasaragod and Veppankulam (Tamil Nadu), Andaman Ordinary was found to possess relative drought tolerance. All these research information support the importance of coconut biodiversity in this region. Recently an exploration was made to collect and preserve these fragile forms from extinction.

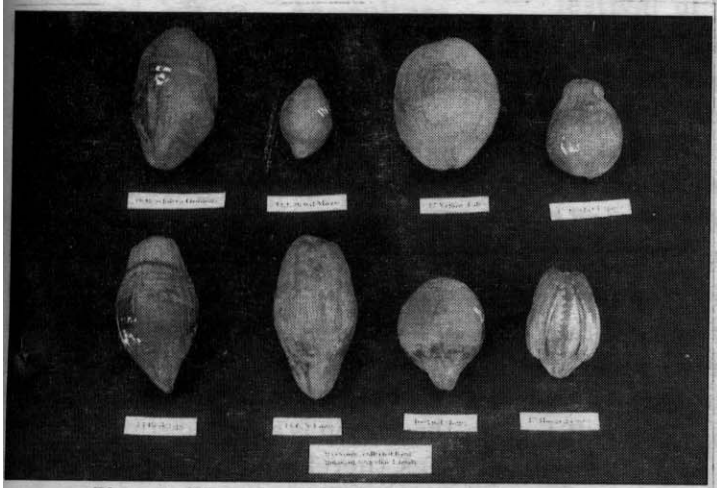

Plate 3 : The coconut bio-diversity at Andamans and Nicobar group of Island

Natives and Coconut

Socio-economic situations of the Islands is another interesting feature. Six group of natives of these Islands live here. They are Nicobarese, Shompen, Jarawa, Sentinels, Great Andamanies and Ongi. In this group a few are Mongolian type (Nicobarese and Shompen), others are all Nigorides type. Of these six groups Nicobarese have accepted changes in life style, and are more in population. In their life style many good habits are seen. Every village has a captain and they will not entertain any outsider without the consent of the captain. Captain's word is final and binding even for the purpose of election. Generally Nicobarese are very healthy and lead a self contended and peaceful life. The Nicobarese huts is a two tire system (Plate 4) On the first floor the Nicobarese live and on the ground floor the animals especially the pigs are reared. Along with pigs, goats and poultry are also reared. The first floor of hut is built with mat woven with split bamboos. Since the mat is having gap there is good aeration inside the hut. Their main occupations are piggery, collection of shed coconuts, fishing (domestic purpose only) and collection of wild fruits like screwpine for consumption. Their main food is coconut, pandanus fruits, meat (pork) and fish but in the recent years they have begun to eat rice and wheat, which they exchange with copra on barter system. There are more than 30 primary marketing co-operatives (Raveendra 1989) where the tribes get all the required materials, (clothes, food etc.). There is a copra grading and forwarding centre at Car Nicobar which regularly ships huge loads of copra to oil mills for Calcutta. Entire land in a village belongs to the captain of the particular village and he earmarks or distributes the lands to the villagers and thus every head of the family in the village will have some land. One interesting feature seen is that no one takes a shed coconut from other's property on any account which shows a respect for the captain and the co-villagers.

Plate 4 : The Nicobaree hut in a two tire system

There are many myths and stories about coconut in Nicobar Islands. Long before coconut were considered as poison/devil by the tribes. So the coconut palms were considered as jungle trees and were not in use. A mark is made in the coconut groves by hanging leaves of the palm sprayed and smeared with pig blood as an indication that no one should use the coconut trees as the tree remains sole charge of

Plate 5 : On hearing the sound of fallen nuts the pigs rush to the spot for eating coconuts

the spirit of the dead. Later on, one of the tribes was sick and was about to die. He was provided with coconut water. Then there was some improvement in the health of the sick person, thus the tribes believed that the coconut is non-poisonous and thus it came into use.

The tribes live as joint family and the coconut requirement per family is large. Coconut not only forms the main food of the tribes but they also feed the pigs ranging from 10-20 nuts/pig/day. Thus their dependence on coconut is too high.

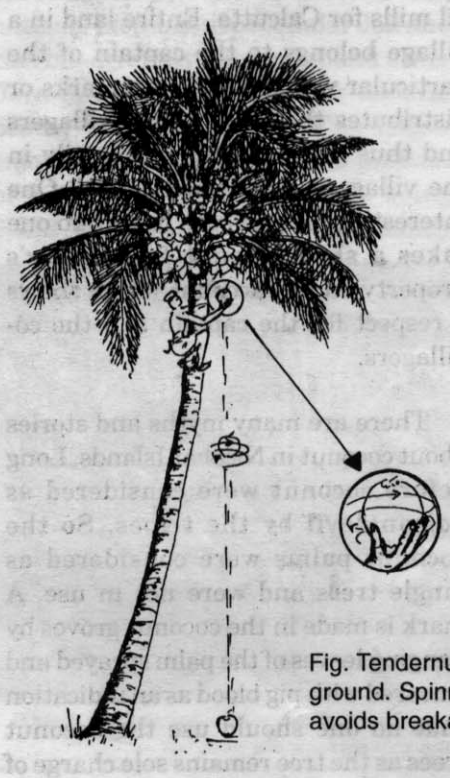

Fig. Tendernut falls on the ground. Spinning which avoids breakage of nut

Tender nut harvest

The coconut trees in Nicobar Islands are very tall (approximately 25-30 m). Though the soil is of sandy nature, it is compact due to the husk and leaf dumping in the garden. Thus when the tender nut is plucked and dropped to the ground it invariably cracks. To avoid cracking the natives after plucking the tender nut, spins the tender nut in upright position and leave to the ground. By this the tender nut comes to the ground spinning and the distal end touches the ground first, where the chances of tender nut breakage is remote. On hearing the sound of fall of nut the pigs rush to the spot for eating the coconuts (Plate 5).

Traditional belief and the possible scientific reason that can be related

1. Kin to Lang festival will bring good to the community

Every year the Nicobarese celebrate Kin To Lang festival in the months of May-June which they consider will bring fortune to the community as a whole. The head of the each village fixes his own convenient day for the festival. Kin to Lang is community festival arranged in a central open place in the village where they put big fire with the dried branches, leaves, shells and rejects of the coconut collected from the surrounding plantation, (Rao 1992). Being the flight season the rhinoceros beetle, lurking in the surrounding area get attracted by the huge fire/light. The attracted beetles either fall in the fire or become a prey to the dogs and pigs moving about, which enjoy them as a great delicacy. Hence most of the coconut groves in the Nicobar district are free from the menace of the beetle attack.

2. Often seeing and climbing coconut tree yields more

Though Nicobarese do not harvest regularly, the palms on the road side or on the borders are often climbed either to quench the thirst or for harvest for urgent needs. Thus the border trees yield more, the possible reasons being: that when a Nicobaree climbs, first he cleans the crown with more attention so much so the pests and disease incidence is comparatively low and the trees in the border rows, adjacent to the road get more sun light resulting in more yield.

3. Shifting the village reduces the coconut yield

Some group of Nicobarese has the habit of shifting the village after continuously staying for a few years. They take away the animals along with them when they shift. The pigs till the soil continuously in search of some rhizome, etc. Thus all the advantages of tilling the soil is benefited by the coconut groves. The piled up husk in the garden is always disturbed by the pigs thereby eliminating breeding centre for the *rhinocerous* beetle. The pigs excreta forms a good manure for

coconut. After shifting the pigs the coconut plantation do not get these benefits, which may be the reason for low coconut yield.

4. Rhinocerous beetle and their automatic control

Pigs are widely grown by Niobarese and each family will have at least 5-10 pigs. Though the pigs are timely fed with coconut, they invariably till the soil, disturb the breeding centre of rhinocerous beetle. Nicobarese also attempt to collect the grub for eating. All these keep the beetle always under check.

Suggestions for improving the coconut plantation and industry

1. The over populated garden should be thinned down, *i.e.*, the senile palms and the seedlings which are growing very near to the grown up palms should be removed. The traditional belief of "more number of palms - more yield" must be removed from the minds of tribes by giving effective demonstrations, by imparting training to captains, conducting tours to well maintained coconut plantations.
2. New planting should be taken up with quality seedlings which can be obtained from Agriculture Department, Andaman and Nicobar Administration and should be planted at a spacing of 7.5x7.5 m.
3. Tuber crops can be planted in the inter space of coconut garden, with proper fencing to protect the tuber crops from pigs. Banana and pine-apple can also be grown in the inter space.
4. Many tribes were complaining about the general trend of yield reduction in the coconut. Care should be taken to fertilize the coconut garden with inorganic cum organic source.
5. Since a lot of green leaves are available adjoining forest areas, green leaf application should be demonstrated after taking basins.
6. Most of the coconut leaves are unutilized. Efforts should be made for vermicomposting the coconut leaves. Local earthworms are available. The same may be used for vermicomposting in the coconut basin.
7. The piled up husk in the coconut garden should be removed and the same can be used for coir making. There is ample scope for establishing coir and coir based industries.
8. Modern copra dryers may be installed to replace primitive ways of copra making.
9. Mulching the basins of palms should be encouraged for the conservation of moisture.

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