

# Rethinking Development in the Aftermath of Tsunami in Nicobar Islands

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**Abstract:** Nicobarese is a horticultural tribe and depends on both terrestrial and aquatic resources for their survival in the geographically isolated Nicobar Islands. Copra-making, pig rearing, fishing and hunting are some of the traditional livelihoods of the Nicobarese. Traditional knowledge of the Nicobarese made them self-reliant by maintaining close harmony with Island ecology. But the advent of tsunami and earthquake on 26<sup>th</sup> December 2004 affected this symbiosis and livelihoods. Soon after the tragedy, many islands such as Chowra, Trinket, Little Nicobar, Kondul, Pilomilow, and Bampuka were evacuated and rehabilitated in temporary shelters. Later on, Nicobarese planned to go back to their native villages but the administration insisted them to stay in temporary tin shelters promising permanent shelters in place of traditional ones. Unfortunately, the *pucca* house construction took more than seven years and accordingly they were shifted. Instead of creating sustainable livelihoods, cash compensation was given to Nicobarese in lieu of loss of life and resources. With the rise of sea levels, they face land scarcity for the arrangement of houses, piggery, and plantations. Prolonged stay in temporary shelters and dependence on government doles made serious dents on Nicobarese culture and livelihoods. While recovering from the tsunami travails, another blow hit the indigenous people in the form of *Niti Aayog's* mega developmental plans in 2019 for the generation of revenue for the government. This move has had mixed repercussions on the fragile Island's ecology and the livelihoods of the Nicobarese and Shompen. With this backdrop, the present paper focuses on how natural and man-made disasters promote unsustainable development in the islands which eventually affects ecological conservation.

**Keywords:** Nicobarese, Earthquake and Tsunami, Rehabilitation, Ecology, and Development.

## Introduction:

Development is a highly debatable subject in the present context where national governments are trying to ameliorate the condition of the large-scale populations at the cost of the environment and indigenous communities. In post-Independence, development was focused on removing cultural barriers through the application of science

and technology to eradicate poverty. This technology-driven development is uprooting not only the scarce resource base but endangers the indigenous cultures and livelihoods at large. The ongoing liberalization, globalization, and free markets made open access to the natural resources responsible for changes in the life style of the indige-

nous people. Further, massive infrastructural development projects oriented toward the majority population have serious repercussions on the endangering bio-diversity that ultimately pose a question about the survival of indigenous communities.

The Nicobarese of Nicobar Islands is not exceptional in this fact. The natural disasters in the form of tsunamis and earthquakes and man-made disasters in the form of acculturation, rehabilitation, and developmental intervention made a great impact on the Nicobarese society. With the contact of Christianity and other faiths, Nicobarese animistic practices slowly disappeared and habituated to a modern lifestyle. Elaborate burial ceremonies, ancestor worship, and rituals associated with natural resources are fading day by day. Coconut has a greater role not only in the preparation of traditional foods but the creation of diverse livelihoods in the form of copra-making, feed to pigs, oil manufacture, coir, and craft items. Pandanus, jackfruit, banana, yam, roots and tubers which were once considered staple foods are now replaced with subsidized rice, wheat, lentils, spices, and junk foods (Prasad, 2016).

The situation is further deteriorated by a great tragedy in the form of the 26<sup>th</sup> December 2004 earthquake with its epicenter at Sumatra which triggered the tsunami. It wrought drastic changes not only in the demography of Nicobar, but also in socio-economic, cultural and political aspects of the Nicobarese along with their ecosystem. Soon after the tragedy, they were evacuated from their natural habitat and forced to stay in temporary tin-made shelters for more than six years. Later on, they were shifted to *pucca* houses that are entirely different from the stilt-based wooden houses. The dumping of monetary assistance caused

sedentary living and neglected the rejuvenation of plantations and other traditional livelihoods. For claiming cash compensation and *pucca* houses in a new location, their traditional joint family and *tuhel* (maximal lineage) were replaced by nuclear units (Saini, 2014). Death of elderly knowledgeable persons i.e., craftsman, magico-religious practitioners, native medicine-men, etc. created a leadership vacuum. The inexperienced younger generation who are appointed as *captains* (headman) supporting the administration plans blindly without thinking about their repercussions on their society in long run. Not only the rehabilitation measures for the tsunami, but also other plans and programmes meant for the development of the Islands have been showing a negative impact on the indigenous population of Nicobar.

Interior villages of Central and Car Nicobar Islands whose plantation was intact were still negotiating with the age-old knowledge and practices whereas in the southern group islands new practices emerged as a result of new way of life in European model colonies. Participation in the mundane life of the Nicobarese after the tsunami, it is found that the changes that have taken place in customary practices, knowledge, livelihoods, and so on are profoundly greater than the loss of life that they have experienced during the disaster. The personal experiences narrated by the survivors testify these changes and affirm earlier accounts through their memory. The rehabilitation interventions facilitated the outsiders to make inroads into their privacy and free culture ultimately changing the peaceful attitude of the Nicobarese on commercial lines. Though Nicobarese was exempted from the wildlife protection act, af-

ter tsunami, restrictions imposed by the forest department, made hunting a ritual act. The cultural heritage behind all these activities came to standstill with too much dependence on external aid. While experiencing the tsunami, another blow hit the indigenous people of Nicobar in the form of *Niti Aayog's* mega developmental plans i.e., “*Transforming the Islands through Creation and Innovation*” in 2019 promising generation of additional income as well as livelihoods. It had mixed repercussions on the fragile Island's ecology and the livelihoods of the Nicobarese and Shompen. As such, the present study tries to elucidate the implications of tsunami on the traditional aspects of the Nicobarese society along with changes that are taking place with the intervention in the form of acculturation, rehabilitation and long-term development. Disaster-induced rehabilitation and development measures affected the age-old customs and traditions which made traditional livelihoods vulnerable is a matter of concern to prevent further endangerment.

### **Objective:**

The main intention behind this study is to highlight the socio-cultural life of the Nicobarese with the changing patterns as a result of natural and man-made disasters. An attempt is also made to understand how the tsunami disaster impacted the Nicobarese society. Further, how the development initiatives are affecting the fragile eco-system and social organisation is also attempted through document analysis. Based on empirical data, the study suggested some ameliorative steps to deal with the indigenous populations when disasters confront them and rethink the developmental strategy that may trigger cultural genocide in the future.

### **Methodology and Study Area:**

The study relied on both primary and secondary data to understand the ethnographic account of the Nicobarese along with changing patterns due to tsunamis and earthquakes followed by rehabilitation and development measures. To understand the impact of tsunami and consequent external intervention, document analysis was resorted. Primary data collected in connection with national projects of Anthropological Survey of India in post-tsunami era was used for analysing the changes in Nicobarese society. For the collection of data, qualitative anthropological techniques like observation, key informant discussions, group interactions, and formal and informal interviews were used along with checklist. Data from secondary sources like books, articles, and reports on the impact of tsunami and earthquake are collected through online sources. Demographic information was gathered using published and unpublished reports, census reports, and other government documents.

For the present study, the Nicobarese of Nicobar Island was selected. It is located in Bay of Bengal at a distance of 1200 km away from the Indian sea coast. Whereas it is just 150 kilometers distance on the sea from the Achin head of Sumatra from where the earthquake and tsunami took place. Nicobar is divided into the north, central and southern groups for administrative purposes. Northern Nicobar is flat and central and southern islands are having elevations from the mean sea level covered with small mountains, forests, mangroves, and horticulture plantations on its coast. In erstwhile Nicobar, all the houses of Nicobarese are located on the sea coast. But the 2004 tsunami disaster has uprooted the natural habitat of the Nicobarese which had a tremendous impact on material and non-

material culture. Hence, the present study focus on Nicobarese of the whole Nicobar Islands since the intervention is more or less similar to all islanders.

### **Impact of Tsunami - Demographic and Geo-morphological:**

Demographically speaking, out of 42,055 Nicobarese populations (including non-tribal), 3,449 people were reported dead or found missing. Of which, 2,955 were indigenous population who lost 6,115 hectares of plantation and 1,26,056 livestock (Saini, 2015). In Nicobar, the pre-tsunami total population is 42,068 (Census, 2001) whereas in post-tsunami it has come to 36,842 (Census, 2011) and the decadal population growth is recorded as minus 12.42%. Likewise, the density of the population is 20 people per square kilometer in 2011 whereas it is 23 people per square kilometer in 2001. The difference in sex ratio was 777 per 1000 males in 2011 whereas it is 857 in 2001.

With the pressure of tsunami, the sea level rises up to 30 meters with the penetration of high-speed waves on the sea coast. In Car Nicobar, the seawater run-up area was 7 meters which caused inundation of inland up to 1000 meters (Ramanamurthy, 2005). With the proximity of the epi-centre, the impact of the earthquake was so great that the entire archipelago tilted about 1.15 meters in the southeast direction and sunk about 1.25 meters in general. As a result, the islands have sunk by an average of six feet rendering the inundation of Nicobarese settlements (Singh, 2006). The giant waves came inside the landmass from the sea coast to the interior of the Island about a length of 1.5 to 2.5 kilometers, except in the elevated areas. As a result of flooding of seawater,

the plantation along the seacoast i.e., coconut and areca nut is thrown away around two kilometers distance inside the forest. Those who withstand the tidal waves are also slowly dried up due to the stagnant saline water. It is equally affected by their livestock population too (Sahani and Prasad, 2007). A study conducted by the Indian Council of Medical Research also revealed that with the stagnation of water and piling of ravaged material the malaria incidence increased from 23 to 53 percent between 2006 to 2007 in the central Nicobar Islands (Satya Prakash, 2011).

The ravaged structures on the coast including settlements, ruined canoes, and household materials caused damage to the coastal ecosystem. The waves also impacted the mangroves to the extent of 335.70% hectares (69%) in Katchal, 152.53 hectares (100%) in Nancowry and 240.06 hectares (68%) in Trinket. The damage of shore-level mangroves results in the flow of saline water inside the plantation and forests causing loss of coastal livelihoods. Coral reefs are breeding points for fish that were greatly affected in Kamorta (41%), Katchal (49%) Nancowry (53%) and Trinket (59%) islands. Besides forests area inundated in tsunami was 540.31 hectares (6.5%) in Kamorta, 1787 hectares (18%) in Katchal, 142.49 hectares (25%) in Trinket and 148.13 hectares (3%) in Nancowry. Whereas plantation inundation area 362.42 hectares (8%) in Kamorta, 68.06 hectares (27%) in Nancowry and 4.53 hectares (0.69%) in Trinket (Ramachandran et al, 2005). As a result, Nicobarese have been experiencing the harshness of the sea and consequent changes in weather. Pre-tsunami Nicobarese life was characterised by traditional methods of cultivation coupled

with pig rearing, hunting, fishing and collection of sea food. But after tsunami, they were forced to depend on government rations and making new plantation has come down due to the scarcity of fertile land.

### **Social Organization and its Transformation:**

Social structure of the Nicobarese is characterized by joint family, lineage groups, and cooperative socio-economic activities that are integrative in nature. Based on native dialectical variation, the Nicobarese were grouped whole Car Nicobar as one category followed by Teressa and Bampuka; Chowra; central Nicobar representing Camorta, Katchal, Nancowrie, and Trinket; Pulo Milo, Little Nicobar and Kondul; and Great Nicobar.

Lineage corporate group forms a core to Nicobarese social structure popularly known as *tuhēt*. It is a consanguine group related by birth wherein no individual possesses exclusive inheritance rights over the land and resources but it is the *tuhēt* as a whole that possesses rights over the resources within their territory (Justin, 1990). As a rule, a *tuhēt* has a primary house at the sea shore known as *gholghar*, which is employed for hosting annual village festivals, traditional sports like *kana ha-un* (pig fight) *asol-rui* (canoe-race), *hachuva* (stick-fight), annual ceremonies, magico-religious practices, intra- *tuhēt* councils etc.

When certain lineage members of a *tuhēt* separate themselves from the parental lineage on account of serious disputes and establish a separate identity as a new *tuhēt* it is referred as *kinem*. As per established customary norms, separated lineage members of the parent *tuhēt* shall have no access to the coconut and areca nut plantations, horticultural gardens, etc., and the same is true

for all members of the newly established *tuhēt*. They are being allotted land in their ancestral property. For all practical purposes Nicobarese (members of these social units) collectively organize community feast, calendrical festivals, and life-cycle rituals, etc., under the banner of their original *tuhēt*. As per established traditions, the *tuhēt's* properties cannot be transferred individually (Mathur, 1967). Because of their genealogical ties, all the members automatically possess usufruct rights over their *tuhēt's* properties as long as they are associated with *tuhēt*. When an individual belonging to particular *tuhēt* commit offense, it is the *tuhēt* that is responsible for paying the fine or penalty to village council in the form of holding community feast.

But after tsunami, Nicobarese were forced to split from *tuhēt* or joint families into nuclear ones for encashing the monetary compensation and permanent shelters in new locations. The labor-intensive copra economy was hit worse with the disintegration of the joint family system and now the community facing problems in the accumulation of community cooperation to work in *tuhēt* plantation (Saini, 2014). In pre-tsunami, resources were shared among closely knit kin groups within the village and with other villagers. While attempting the breakdown of community sharing structures. Chandi et al (2015) found that petty thefts, breaching taboos, customary laws, and alteration of tenure rights were frequent with the formation of sub-groups in Nicobar. The collection of joint families in *tuhēt* was replaced with collection of nuclear-oriented corporate groups known as *uvaev* in Chowra, *komun-sio-se* in central Nicobar, *konya* in southern Nicobar. With the decline of shamanistic practices, the control of land and aquatic resources through restrictions also weakened.

At present the regulatory functions, and cultural traditions are undertaken by these newly appointed heads. In south Nicobar, some nuclear families broke away from common *tuhet* property and establish their own plantation in unclaimed forests and practicing fishing in mangrove patches. In contrast to this, in Chowra resources are still governed under traditional rules where they impose strict fines or punishments for non-compliance of *tuhet* rules (Chandi, 2015).

Earlier, social gatherings known as *baradin* are very common among the Nicobarese during life cycle, annual, horticulture rituals. During such ceremonial occasions, Nicobarese enjoyed undifferentiated space in *el-panam* (community houses), but the new shelters are congested in nature and not having space for holding communal activities. In the newly build *pucca* houses, Nicobarese stopped observing fetish worship. Soon after tsunami, *menlouna* (witch doctor) of Katchal Island opined that new shelters are very hot and hence they shifted the recovered fetishes to their indigenous houses that are located inside their plantation area. Further, the relocation of dwelling houses has little space for indigenous poultry and piggery. Livestock is considered intimate members and hence Nicobarese share their living space with them. Stilt-based houses facilitate the dropping of left-over food to their poultry and livestock providing a perfect niche to their livestock. But in the new structures, livestock were segregated from their habitat and shifted to earmarked places.

*Koun-kuo* (*tuhet* unity), and *henogno* (village unity) is a marked feature of Nicobarese found during festivities as well as in crisis. Individual families contribute money

and resources for the proposed group ceremonies. It is obvious in the clearing of debris in the old settlement area, plantation of new gardens, construction of temporary accommodation, and repairs of old gardens in the aftermath of tsunami (Prasad, 2012). But the split of *tuhets* and damage to the plantation causing anxiety whether such type of unity persists in the long run or not.

### **Breakdown of Institutional Frameworks**

Management of natural resources through a complex set of rules and regulations is the characteristic feature of Nicobarese. It is evident from the Katchal where the village council along with lineage heads unveils resource utilization through festivals like *it-fat* (night fishing with coconut torch), *asook kanang* (first crab collection), *katom* (coastal fishing), *payuh* (wild fruit collection) festival, and so on. Resource sharing and access are strict as per council norms followed for generations. For *asook kanang*, Nicobarese from Banderkadi venture to Upper Bay Katchal and halt for two to three days to take part in the ritual along with crab collection. Prior to the event, it is taboo to collect and consume crabs by the natives of Upper Bay Katchal. Similarly, *payuh* fruits are available only in West Bay Katchal, but the festival is observed by inviting the Nicobarese from the rest of the villages in Katchal. Thus, excess resources are shared with others to maintain homeostasis balance. In post-tsunami, compliance with community prescriptions and rules are weakened considerably. A study conducted by Vardhan Patankar et al (2015) also demonstrated the fact that younger individuals (19-35 years) and those who received tsunami aid in the form of motor boats, gears, and fishing nets were the most likely non-compliers. Nearly 84% of the inter-

viewers attributed the trend of non-compliance directly attributed to rehabilitation measures in post-tsunami and the consequent decline of traditional authority. Though this process of non-compliance has already started prior to tsunami due to changes wrought by acculturation but it got accelerated drastically after tsunami with the collapse of traditional authority and control over the younger Nicobarese who are under the tremendous influence of consumerism (Vardhan, 2015).

Politically every island has its own Island Council headed by Chieftain, Vice Chieftain, Secretary, Joint Secretary, and executive members representing all villages of the island. The positions in tribal council are generally selected by the lineage heads. In exceptional cases, elections are conducted. Further, every village in the island had its own *manula* (village council in Katchal) headed by five captains of which first captain is the headman. The intra village disputes are dealt by *manula*. The selection process is the same as stated by Island Council. The Council meets at the headman's residence or sometimes at the victim's residence in presence of all *tuhets* and settles disputes. Generally, fines are imposed in the form of community feasting. The traditional punishments in Katchal such as *foho* (beating with stick), *yahiyoona* (fine in the form of pig, coconuts, cloth), *saacha* (physical service at captain's residence in lieu of fine) are not found nowadays (Prasad, 2017).

However, the power of the traditional council is slowly coming down in Nicobar as the present generation are demanding election due to perceived monetary benefits in the form of misappropriation of relief or development grants. Death of elderly knowledgeable persons has created a leadership

vacuum in the post-tsunami scenario (Saini, 2014). As a result, the inexperienced younger generation was appointed as captains who supports the administration and their plans blindly without having any idea of future repercussions on their society. Youth apathy towards traditional council has weakened social control which is slowly passing into the hand of the administration.

### **Wading Customary Practices:**

The Nicobarese initiate their economic activities as per their seasonal calendar that are accompanied by rites and rituals. Besides, fishing and first crop festivals, the exhaustive annual death rites known as *ossuary* in Car Nicobar, and the reburials of dead bone rites known as *kinrooka* in central Nicobar and *kindrak* in Chowra, are observed with great pomp and show. To organise such kind of marathon funeral rites, the concerned *tuhets* strengthen the economy by pooling resources such as coconuts, roots and tuber, new cloth, piggery, fowls, fruits, vegetables and so on (Sahay, 2009). Such types of events are observed for a longer period at least one month and every *tuhet* and family invites their friends or relatives to take part in the ensuing ceremonial event and exchange valuable gifts and resources. But the scarcity of resources, and the observance of such ritual events disappeared in the present context. In the new location, it is very difficult to pool resources required for such type of mega events that possess a rich cultural heritage as well as traditional knowledge.

Fetish worship is central to the Nicobarese of central Nicobar where the wooden effigies known as *kareava* and *hentukui* are kept inside the house to prevent the entry of malevolent spirits. The periodical offerings

to *kareava* such as *kakatok* (October), *toich* (January), *kafong* (March), *ramong* (May), *laneh* (September) are observed regularly. A psycho-therapeutic treatment known as *kinlooming* where medicinal herbs are mixed with sacrificial blood and smeared on affected individuals during such events. But they are not found in new colonies.

Besides the above-mentioned animistic wooden statues, Nicobarese houses are characterised by *lanaylauri* (memorial posts), *uvi-ngo-hinhoinvo* (cloth wrapped effigy) *ung-ing-samaanot* (display of wild boar mandible bunches as trophies), *kari-yong* (Chowrite earthen pots), *yong-pop* or *umhuai* (country cigars), etc., are not found in new structures. Traditional practice of *roi-kunhil* is a symbolic display of cane twig to the posts of the house or the trees to prevent the entry of dead souls into the village or house was also endangering.

### Changes in Material Culture:

The Nicobarese villages are generally located on the beach side and the houses are built contiguous to their lineage clusters. An elongated wooden or iron pillar containing a flag is the symbolic representation of political authority in front of the headman's house. Dome-shaped community houses attached by outrigger canoes, wooden oil extraction places, copra processing huts, and so on are replaced by *pucca* houses, motor vehicles, electric gadgets, etc. The house building material such as cement, iron, asbestos, and so on imported from the mainland replaced the traditional construction material such as *pandanus* leaves, wood, bamboo, and cane.

Erstwhile Nicobarese separate settlements/villages are clubbed together and allotted jointly in a new location. The pre-tsunami Katchal consists of six settlements

such as West Bay, Jhoola, Jhansin, Ponda, Kapanga, East Bay, and two non-tribal settlements i.e., Mildera, Solo Tekry but after tsunami all were shifted to Japan Tekry, Meenachi Ramnagar, E-wall and Mildera (Prasad, 2017). Likewise, there were 24 settlements of Great Nicobar were reduced to three resettlements such as New Chingenh, Afra Bay, and Rajiv Nagar. Seventeen villages of Little Nicobar are now reduced to five resettlements named as Makachua, Pulo Panja, Pulo Pattia, Puloulo, and Pulobaha (Nikita, 2020).

Nicobarese are expert in making different cane and bamboo artifacts including baskets, mats, stilt platform, etc. The art of making *aap* or *revy* (outrigger canoes) is a distinguished feature of the central group of Islands. Further, each group has sub-types of canoes ranging from small, medium to big ones based on convenience to fishing in creeks, shallow waters, and deep sea along with transportation. They are replaced with motor boats in the post-tsunami have ruined the entire gamut of traditional canoe-making industry, associated ceremonies, and community adventure fishing. Such type of adventurous acts provides a platform to train novice adolescents have become elusive now. The death of expert craftsmen has created a vacuum in making the sea-faring canoes. Even for the available craftsmen raw material supply is hampered by the restriction imposed by the forest department.

Now they depended on imports from the mainland since traditional art and craft-making activities came to standstill due to the non-availability of raw materials. Other material artifacts like *linreny* (cross bow) and *chok* (detached arrows), *sanak* (spears), *kuvoko* (cane knitted baskets), *chatai* (*pandanus* mats), earthen pots, are replaced with consumer items. Relief compensation for

the loss of life and plantation in the form of cash is responsible for consumer culture among the Nicobar as it is evident from the purchase of DVD players, music systems, television sets, junk food, alcohol, mobile phones, etc. (Singh, 2009). *Hayaken* (lineage cooperation) during construction of stilt houses, canoe making, spirit pacification, etc., are not practiced due to the non-availability of the above-mentioned material artifacts.

### **Loss of Traditional Knowledge:**

Previous strands of traditional knowledge got affected due to the demise of traditional craftsmen who possess the knowledge of making traditional dwellings, outrigger canoes, hunting and fishing tools, fetishes, and so on. The traditional economic activities like copra making, oil extraction, ethno-medicinal and veterinary practices, processing of yams and tubers and so on are got affected by the damage of the plantation. Traditional horticultural activities are subjected to *hinruolo-kahe* (seasonal calendar) which is purely dependent on the winds over the sea. In *sikehago* (summer) Nicobarese restrict consuming scarce foods such as crab, pandanus, and certain varieties of sea food. In *yuuch* (rainy season) fishing with spears is undertaken to mark the consumption of restricted resources.

The changes in tidal position dictate the fishing activities of the Nicobarese in open sea. The geo-morphological changes also affected the fishing demarcations in open sea i.e., *kuyayi* (beach area), *kuinhai* (shallow waters), *mailomrong* (moderate sea area), *nongti* (deep sea area), and *tokirung mai* (very deep-sea area). Depended on the variation of moon and clouds, Nicobarese able to recognise the behaviour of sea and its under currents to fish catch. Detachment

from coastal living affected this knowledge and venturing for fishing occasionally. Now they are purchasing fish from market which never thought before tsunami. Death of magico-religious practitioners known as *kamasun* is a Chowra, *tomiluono* or *tota-rong* in Car Nicobarese and *menlouna* in Central Nicobar lost the real flavor of ceremonies as well as the ethno medical practices.

In pre-tsunami, Nicobarese women always busy in processing pandanus, banana, jackfruit, and roots and tubers and prepare native cuisines like *nya-rang-chaun* (jackfruit), *humlem* (processed *hiloie* fruit cakes), *laeom* (*pandanus* cakes), *hilo* (banana), *hileuh* (*kutcha* coconut), infant foods like *kiyoy*, *kujo-o*, *kani kanliny*, *tayukngo*, *ame*, and so on. Loss of plantation-based subsistence has made an impact on this traditional cuisine and Nicobarese are habituated to the rice supplied by the administration.

Thus, tsunami have had a tremendous impact on Nicobarese society and culture. Apart from this, new developmental initiatives from the administration cause irreparable loss to livelihoods, the environment, and rich cultural heritage.

### **Developmental Interventions:**

For Nicobarese, the land is not considered private property rather it is a common property where all the members of the joint family possess equal rights. For example, land in Kapanga village in Katchal is equally shared by the joint families of seven *tuhets*. The administration is unaware of the basis of such communal ownership in Nicobar, the ancestral horticultural plots of the Nicobarese are annexed by the administration

for expansion of defense activities, construction of roads and other infrastructural facilities, etc. Further, the existence of rubber plantations, settlement of Sri Lankan Tamil settlers in Katchal, and retired army officials in Great Nicobar exacerbated land scarcity after the inundation of their coastal plantation. It is so that non-tribals who were rehabilitated in their ancestral lands in pre-tsunami period were not bothered by Nicobarese since they have enough plantation and piggery on the coast side. But after the inundation of coastal plantations, land scarcity for plantations has been surmounted since Nicobarese wanted replantation inside the forest ancestral lands where non-tribals settled now.

The central government's popular livelihood programme known as Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) was unsuccessful in Nicobar since they do not have the concept of undertaking manual labour under the supervision of outsiders. In the traditional horticultural plantation, all the members of *tuhet* enjoy usufruct rights over yield and enjoy the privileges of ownership as long as they associate with their lineage. Due to irregular fishing and hunting, Nicobarese are now purchasing fish and vegetables from the market. With the consumption of junk food and alcohol, lifestyle diseases are frequent now. The scarcity of piggery, toddy, pandanus, and coconut has curtailed the spirit of festive celebrations. They were replaced by items such as biscuits, candies, cakes, and alcohol. Age-based social stratification is replaced with a hierarchy determined by economic considerations. Administration and non-Nicobarese emerged as the enforcers of social control. The devastation of traditional horticultural resources such as yam, pandanus, banana, jackfruit,

coconut, cane, and bamboo are major hindrances for the perpetuation of traditional technology and knowledge (Saini, 2013).

During the Covid-19 pandemic period, the government-initiated efforts for industrial and tourism development for the creation of a shipping terminal, an international airport, a power plant and a township complex in the Great Nicobar Islands (Jitendra and Muralidharan 2019). The steps such as denotification of Galatiya Bay by National Board for Wild Life on 5<sup>th</sup> January 2020 subsequent exemption of wildlife sanctuary from the eco-sensitive zone of environment ministry on 18<sup>th</sup> January 2020 are testimony to the government's intention of exposure of Islands in the name of development for revenue generation. Large-scale diversion of forest land to accommodate 6.5 lakh people by 2050 in 166 square kilometers is obviously damage the island's ecology as well as cultural heritage of indigenous people. Galatiya National Park is recognized by United Nation's Educational Social Cultural Organization (UNESCO) as the nesting place of giant leatherback turtles in Great Nicobar. The large-scale dredging and concretization of sea shore for transshipment terminal will definitely impact the survival of endangered species of Great Nicobar. Further, denotification of tribal area is against the provisions of Andaman and Nicobar Islands Protection of Aboriginal Tribes Regulation (ANPATR), 1956 that have severe impact on the foraging activity of Nicobarese.

Thus, with the unabated external interventions, the traditional Nicobarese society had already undergone changes that may endanger if the developmental or rehabilitation plans are not revamped. Apart from indigenous people, the risks are also prone to the inhabiting of endangering species such as

Nicobarese pig, tree shrew, serpent eagle, megapode, and leatherback turtle if Niti Aayog plans are implemented. The islands are frequent with earthquakes and tsunamis very often and environmentalists also opined that such kind of mega projects are not viable for Nicobar. Hence, it is the need of the hour to rethink the proposed development strategy considering the socio-cultural interest of the native communities of Nicobar Island. To maintain environmental sustainability and traditional livelihoods, the following anthropological insights are suggested for maintaining a symbiotic relationship between indigenous communities with the fragile ecosystem.

- After tsunami, the administration strictly followed the coastal regulatory provisions 2019 and not allowing Nicobarese to go near the coast. The present *pucca* colonies of Nicobarese are far from the sea coast which drastically affects their sea foraging activity. Further, it is observed that there is no real participation of community elders in the selection of new settlements and plantation areas, type of house, material, design, etc. For generations, Nicobarese habituated to the coastal ecosystem and procured livelihoods. Hence, it is the need of the hour to make necessary arrangements to facilitate Nicobarese to procure traditional livelihoods through the development of coastal plantations and resources.
- The stereotype meetings organized by the administration have proven a farce in the case of Nicobarese present state of affairs. It is a well-known fact that all the meetings organized by bureaucrats reflect the *durbars* (courtship) where

motivated people or some educated individuals air their views. They are all well administered or trained for the name's sake by vested interest officials, contractors, and other businessmen. But later on, people are facing problems in such villages and are slowly vacating the newly built *pucca* houses. In such cases, the traditional method of collecting public opinion will not serve its purpose. To overcome this, trained anthropologists should be engaged in official teams or standard committees, who conduct focus group discussions (FGDs) with all the stakeholders separately along with scientific techniques of documentation like video and audio recording. The results of such inquiry should be highlighted in the report prior to execution of development or rehabilitation plans.

- In case of repairs to the existing *pucca* houses, raw materials and spare parts are not available locally. Hence, Nicobarese was forced to rely on outside technicians for repairs and renovation of the *pucca* houses. This situation led to opening gates to the non-tribal population in tribal reserve islands. The tsunami disaster ravaged the coastal *pandanus* and coconut which had immense contributions in building traditional houses. Hence, measures should be taken to replantation of such resources for those who wish for traditional houses in the long run. Hence, the availability of natural building materials for the construction of huts was made available to the Nicobarese to restore their traditional technology and knowledge.

- As it is already observed that the significance of *tuhēt* (maximal lineage system) pattern is slowly coming down among the Nicobarese. In such cases, anthropologists should undertake an opinion survey with all sections of people by revealing its future repercussions on the community cooperation, joint family, and customary law and the outcome is kept in the community for open discussion for elucidating majority opinion. Otherwise, the vested interests of a few individuals frame the official reports which are responsible for the present state of affairs in the Nicobarese colonies. Distinct culturally determined perspectives assure that elderly have the voice to redress the grievances in the future.
- Administrators opine that generally anthropologists support isolationism and are biased toward the survival of primitive cultures. To overcome this misconception, anthropologists should act objectively in the collection of public opinion from an inter-disciplinary perspective. To avoid prejudice, anthropologists should collect as much as evidences by using the latest technology to prove the empiricism of the research.
- Language is a vehicle of a culture of any society be a tribal or caste. It is already stated that the introduced Roman script for Car Nicobarese is dominating the rest of the islands due to their numerical preponderance, literacy, employment, political representation, etc. As a result, the local dialects of other islands are endangering slowly. To protect the dialects of other islands, the administration should develop primers, visual dictionaries, and documentaries by engaging professional linguists. The influx of outsiders in connection with rehabilitation also affects the native dialects. Hence, steps should be taken to check undesired immigration.
- Regarding the art and craft of the Nicobarese, many changes are taken place in the post-tsunami scenario i.e., traditional outrigger canoes are replaced with motor boats. The noise generated by these boats is not amenable for fishing. Further, they could not able to bear its maintenance costs. Even the carpentry tools are replaced with modern ones that are not amenable to making traditional crafts. In such cases, it is pertinent to document the left-out cultural survivals to reconstruct their cultural objects such as *hentukui*, *kareava*, *eneeva*, through the surviving elderly crafts specialists. It is so that many of such specialists have died in tsunami and earthquake and the present younger generation is not interested in hard labour craft works. Under these circumstances, craft workshops should be conducted by the concerned department with the available traditional craftsman to transmit their craftsmanship knowledge and skills to future generations.
- Unaware of Nicobarese institutional framework such as *haruk* (child adoption) and *Ungreung* (bi-local residence), local administration and NGOs disturbing the Nicobarese everyday by collecting various censuses like orphan survey, widow survey, children survey, aged people survey, and so on. Though it is meant for a noble cause, in a true sense it served for a cross purpose. Nu-

clear families are busy with the collection of resources to meet their livelihood than orient toward the welfare of the orphans. To avoid this, relief measures should be in tune with their institutions i.e., *tuhets* who are ultimately the caretakers of such orphans and it is proved soon after tsunami. Hence, administrators should work in tune with lineage heads, anthropologists, and tribal or village council members prior to augmenting such programmes to avoid adverse consequences in the future.

While discussing the future logic of development, Arjun Appadurai (2004) stated that development should be framed in such a way that it should strengthen the capacity of the poor to aspire through the provision of resources to change the conditions of poverty. But the ongoing development or rehabilitation is not creating any alternative resources for the Nicobarese rather they are depleting the existing resources by denotifying the reserved forests or lands to accommodate the majority of people's interest in the name of tourism, hospitality, and industry. Earlier policies like Andaman and Nicobar Protection of Aborigines Tribal Reserve (ANPATR) 1956 meant for the protection of resources from the exploitation of settlers making them self-reliant. Even this act was modified several times to facilitate administrative and development purposes. But the proposed development plans are oblivion of protecting the interests of the minority indigenous population for the futuristic welfare of majoritarian non-tribal population. The futuristic development plans are going to create havoc not only on the fragile Island's ecology but also on the sustainable livelihoods of the dependent communities. It is not clear how

can one create sustainable livelihoods by depleting precious natural resources through massive construction by clearing huge tracts of forest land is a million-dollar question that perturbs conservationists, anthropologists, and environmentalists. Ignorance of local cultures, land use patterns, and material artifacts in the proposed development is colossal to the community concerned which James Scott (1998) articulated as *metis* which is lacking present-day development. Disasters are becoming instrumental in introducing changes not only in material aspects of a community but the whole culture itself. It is exactly reflected in the case of Nicobarese where traditional institutions such as *tuhets*, lineage elders, and shamans act like *metis* whereas administration-induced tribal councils, leaders, corporate groups, and so on are imposed interventions responsible for the present state of affairs in Nicobarese society. Hence, it is the need of the hour to rethink the top-down approach to aspire people's development in the Nicobar Islands to protect the endangering culture and livelihoods.

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