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MATERIAL ASPECTS OF FOLKLORIC TRADITIONS AND KNOWLEDGE AT THE FACE OF MODERNIZATION: SOME OBSERVATIONS FROM ARUNACHAL PRADESH

JAYANTA SARKAR

Abstract : It is a common notion that the population living in the relatively remote geographical areas having practically no interaction or maintaining insignificant contacts with the neighbouring populations, generally lag behind in respect of innovative knowledge and thinking. It is an established fact that populations living in close association with their immediate ecology develop skill of close observation in understanding the behaviour of the nature. Such understanding results in cultivating knowledge that helps them towards their survival. In order to negotiate with the specific ecological niches, these populations usually fall back to the natural resources available in their immediate surroundings to procure items of their subsistence. The present exercise examines a few such material culture produced and resources used by the tribes of Arunachal Pradesh. The ways they use these resources intelligently are the testimony of extra-ordinary innovative traditional knowledge of their ancestors. Consequences of infrastructure development in the region on the traditional knowledge have also been discussed.

Key Words : Resources, Tribes, Traditional, Ecological

Introduction

The word "folklore" has enormous and deeply significant dimension of culture. Folk traditions encompass traditional believe, practices, knowledge, arts, crafts, songs, tales and other aspects of culture that pass from generation to generations through oral communication and behavioural example.

Since early stage of evolution human being remained a close observer of the nature. In course of struggle to survive human being learnt many aspects of usefulness of natural objects and their functions. Through systematic observations, he could understand the principles working behind many happenings of nature. Knowledge acquired on the principles and functions of natural objects through close observation used to be applied in creating many artifacts of use in the life.

With his constant endeavours he invented the techniques and acquired knowledge and skill to produce such implements artificially for his purpose. The knowledge thus acquired used to be transmitted from one generation to another generation through their traditional way of learning. Even today, there are a number of tribes who have been living in different stages of social development where such scientific knowledge is being inherited from their forefathers through practical experience and practices through traditional learning.

In order to negotiate with the specific ecological settings in which these populations live and also to produce items of their subsistence, they fall back to the natural resources available in their immediate surroundings. Irrespective of their different ecological settings and various mode of subsistence, we find them to apply traditional knowledge in order to continue with the unique aspects of material culture, which their ancestors once had invented.

In the present endeavour I shall take up such innovations from three economic categories of tribes namely the shifting cultivators, the terrace cultivators, and the settled wet-cultivators from high mountainous region, plateau, and the foot hills of Arunachal Pradesh.

The tribes selected

The tribes like the Adi/Nishi/Tagin encompass a number of groups who originally lived in the high hills of Siang and Subansiri districts of Arunachal Pradesh. Traditionally they are the shifting cultivators. Of recent, many of them have left their original settlements at the high hills and settled down in the foot hills of Arunachal Pradesh and have adopted wet-rice cultivation (Sarkar 1987).

The Apatanis are well known tribe of Arunachal Pradesh who inhabit in a bowl-shaped plateau in Lower Subansiri district. They are known for their wet-rice cultivation in large terraces through well controlled indigenous irrigation system.

The Khamtis live in the foot hills of Lohit district in Arunachal Pradesh. They originally migrated to the present place of their habitation from Irrawati valley of present Myanmar in the 18th century. This tribe is well known for their wet-rice cultivation, supported by controlled irrigation.

Let me now describe a few specific material cultures, those which illustrate the technological know-how of these tribes transmitted through generations.

Shifting cultivators

In the mountainous region of Arunachal Pradesh we find a specific type of hanging bridge used for communication between two sides of a river. This is a glaring example of technological know-how of the tribes like the Adis, Tagins and the Mishmis living in the high hills (Sarkar 1987).

For construction of any bridge on a river we know that an engineer would first examine the site in order to ascertain load bearing capacity of the soil. The engineer would also prefer to have a site with minimum breadth so as to minimize length of the bridge for its durability. The tribes of Arunachal Pradesh while constructing a hanging bridge also follow the same procedures. They select a narrow place where the soil is firm with a number of boulders. The place should have tree with strong trunk so that when both sides of the hanging bridge are tied with the selected trees, the bridge can sustain the load and also remain

usable for a longer period. A particular species of cane is selected. The canes are joined with great skill and perfection.

Around these long canes, tied with the trunk of the trees of the two banks of the river, a number of cane rings are fixed in order to increase the strength of the bridge. The rings are fixed in such a way so that the bridge can sustain the load of a number of persons on it at a time. The joints of the cane rings are also of special nature that requires special knowledge to make. This technical know-how is being handed down in their society generation after generations (Roy 1960). The skilled persons in the village do not take much time to construct such a hanging bridge, sometimes even within a day or two they can install such a unique bridge.

Terrace cultivators

The Apatanis, living in a bowl-shaped place in Lower Subansiri district at an altitude of 2438 meter have skillfully utilized the available land for cultivation. The bowl-shaped land is not suitable either for shifting cultivation or for settled plough cultivation as practiced by the tribes in the high hills and foot hills respectively. They have taken to terrace cultivations in large sized terraces.

Situation of the bowl-shaped plateau surrounded by high hills is not suitable for controlling flow of water from the hills to the plateau. The ancestors of this tribe must have observed the strength of water flow that occasionally submerged the valley for a considerable period. They must have also observed how the big boulders, trees, and forest in the periphery of their habitats restrict force of water flow from the hills. In order to negotiate the problem of uncontrolled water flow they opted for preventing and protecting the dense forest around. In this effort burial grounds of different clans distributed at different locations play significant roles. Cutting trees near a burial ground is prohibited in their custom. Also to prevent decay of forest through collection of fire woods or construction of house they adopted a custom of raising at least one bamboo groove situated on the high ground adjoining the villages or on a neighbouring island. Forest and well maintained bamboo groves automatically prevent flooding the valley and soil erosion. The water thus coming out through these obstructions is tapped and diverted through different sizes of small channels to the terraces.

Slopes in a bowl-shaped land are not uniform. Terraces in the upper region experience rapid flow of water and thus cannot hold the water required for growing all varieties of crops. With a view to have control on water flow in each terrace, the tribe places different sizes of bamboo ducts that control water flow as per the requirement to grow a specific crop.

The indigenously invented irrigation system suitable in a particular ecological setting is a glaring example of the intelligence as well as understanding of nature together with technical

skills of the forefathers of the present day Apatanis. This indigenous knowledge is inherited through generations and is still applied in cultivation in this plateau.

Settled cultivator

Husking machine: Water current of river is being used now-a-days for generating hydraulic power with the help of developed technology. In order to install a turbine, the engineer at the first instance mechanically ascertains the power of the water current that is naturally produced due to sudden fall of water from a height suitable to operate the turbine at a desired speed required for generating electric power. The Khamtis of Arunachal Pradesh act on the same principle while setting their husking machine. They are well known in the northeastern region for their paddy collection in the foothills; a tradition that they had brought from the Irravati valley of Maynmar. As in case of other tribal populations, the paddy is husked daily by the women folk in their house. To have a large scale husking the tribe had invented a unique device in which they clearly utilize power of water current available near the villages. Incidentally, the Khamti villages are located on the bank of rivers where fertile lands are available. The machine they invented, known as *kookjhak,* is an example of their wonderful innovative mind, power of intimate observation of the nature of the river and its water current. The rivers coming down from the mountains flow here in great velocity. The current is not uniform here due to undulating nature of the terrain.

The wooden make *kookjhak* has two parts. One part consists of wooden planks of a required shape and size, fixed in a specific direction which makes a wheel shaped structure. This part of the machine is placed inside the water current so that the current of the water can rotate the wheel uninterrupted. A long wooden axis is fixed at the center of the wheel. The other end of the axis has more than one levers fixed in it for husking. The wooden machine is installed in a place on the riverbank where the water current remains almost uniform throughout the day. At the same time the current should not be very strong. The nature and velocity of the current in such case is ascertained not mechanically, instead the human factor is involved here. The experience and traditional knowledge are the two factors that work behind it. The uniform flow of water current facilitates rotation of the wheel immersed in the water, which in turn operates the levers in a controlled manner. The tribe can thus husk a large quantity of paddy utilizing water current without inputting much physical labour. The *kookjhak* and its mode of installation prove beyond doubt the intelligence of the ancestors of the Khamtis and continuation of such scientific knowledge in their society through ages (Sarkar 1987).

Discussion

What I am trying to emphasize upon is that the necessity of the tribes, irrespective of their distribution pattern in some geographical areas force them to observe intimately the

natural resources available around their habitation, their characteristics, and utility. With their day- to- day experience and observation over the time they have developed an intimate understanding and knowledge of such resources and make best use of their requirement. When one looks at such age-old non-formally learnt scientific knowledge of these tribes against the backdrop of modern advance science and technology of the 21st century, one may consider these as insignificant. But if we try to understand the stages of social development in which they had invented all these devices out of their quest to know many natural phenomena, these emerge as most significant achievements in the history of development of knowledge.

Rapid changes in the habitat areas of these tribes together with several measures taken up by the neighbouring communities are making a number of alternatives of such inventions easily available to these tribes.

As a result of the regular exposures to the outside populations and also due to infrastructure development, use of these indigenously developed material cultures is gradually declining.

As a part of the programme of increasing communication through infrastructure development at many places such suspension cane bridges are getting replaced by concrete bridges. At some places, cane and bamboo of the traditional suspension bridges are replaced with steel wires provided by the government. The experts in construction of a traditional cane suspension bridge are not acquainted with the new techniques and therefore, they are unable to take part in the construction of modern suspension bridges. This is likely to result in losing their expertise and skill and also the indigenous knowledge of the local tribes about the properties of many natural resources those were used in preparing suspension bridge of traditional type. Such a bridge always functions as a symbol of the community pride and self respect that displays togetherness of a community. Replacement of traditional suspension bridge may thus, loosen the community pride.

The examples of innovations discussed here, clearly indicate that the basic principle that works in the invention of a particular type of object remains the same in case of the tribes or the people having developed technology. However, in case of the tribes who even today live in relatively secluded geographical areas, continuation of the basic principle related to traditional knowledge and wisdom through ages still directly depends on the human factor. Such process of handing over *'parampara'* through human factor fades as and when the geographical isolation breaks and advanced mechanical knowledge enters in the society.

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Bio-Profile of the Author
Former Director-in-Charge, Anthropological Survey of India
Presently Honorary Research Director,
Indian Anthropological Society, Kolkata
E-mail: jsjayanta0@gmail.com