

Imperatives of indigenous knowledge along with the hill farmers of Manipur

C. VICTORIA DEVI AND M. M. ADHIKARY

*Department of Agricultural Extension,
Bidhan Chandra Krishi Viswavidyalaya, Mohanpur-741252, Nadia, West Bengal*

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ABSTRACT

The unique ethnicity, biodiversity and traditional practices of North East have provoked the inquisitive minds to set off an investigation of its rich indigenous traditional knowledge, practices and culture. The region is a conservatory of indigenous knowledge of cultivating crops, animal husbandry and also the preparation of food and medicines from the highly diversified flora and fauna that are inherent to this region. Indigenous knowledge used in various parts of North East in general and Manipur in particular is still less explored. Unless preserved, indigenous knowledge may pass into oblivion forever and cannot be revived at any cost. Keeping this as the foremost point, a study was conducted in three hill districts of Manipur, North East India in order to facilitate sharing of practices and beliefs of villagers which can improve the level of interaction and to discover various ITK for future sustainable rationalizations and also to validate and develop natural package and practices. There may or may not exist books to read on local culture and practices but they can be better appreciated through other media of expression such as local art, culture, dance, drama, etc. So, indigenous and modern approach may be combined as the so called "technology blending" for the evolution of new technology.

Keywords: Fauna, flora, indigenous technical knowledge, traditional ecological knowledge

As a matter of fact, the traditional societies in North East India have a rich Traditional Ecological Knowledge (TEK) and Indigenous Technical Knowledge (ITK). Indigenous knowledge is developed and adapted continuously to gradually changing environments and passed down from generation to generation and closely interwoven with people's cultural values. Indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives. It is considered a part of the local knowledge in the sense that it is rooted in a particular community and situated within cultural traditions. This knowledge is embedded in the experiences of indigenous or local people and involves intangible factors, including their beliefs, perspectives and value systems. It is unique to every culture and society and it is embedded in community practices and rituals. So it is obviously localized and restricted and its generation is normally governed by local environmental factors and cultural conditions. It varies between countries, regions and even between farms to farm. Today, many indigenous knowledge systems are at risk of becoming extinct because of rapidly changing natural environments. Many traditional agricultural systems need to be redeveloped through incremental, rather than quantum change, based on traditional ecological knowledge; anything drastic may not find acceptance by the local communities. As a matter of fact, the traditional societies in North East India have a rich TEK and ITK. Indigenous knowledge is developed and adapted continuously to gradually

changing environments and passed down from generation to generation and closely interwoven with people's cultural values. Indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives. It is considered a part of the local knowledge in the sense that it is rooted in a particular community and situated within cultural traditions. This knowledge is embedded in the experiences of indigenous or local people and involves intangible factors, including their beliefs, perspectives and value systems. It is unique to every culture and society and it is embedded in community practices and rituals. So it is obviously localized and restricted and its generation is normally governed by local environmental factors and cultural conditions. It varies between countries, regions and even between farms to farm. Today, many indigenous knowledge systems are at risk of becoming extinct because of rapidly changing natural environments. Many traditional agricultural systems need to be redeveloped through incremental, rather than quantum change, based on traditional ecological knowledge; anything drastic may not find acceptance by the local communities. As such scientists like Wang (1998) and Rajshekaran, (1993) have stressed upon developing a framework for incorporating indigenous knowledge system into agricultural research, extension and NGOs for sustainable agricultural development.

The unique ethnicity, biodiversity and traditional practices of North East have provoked the inquisitive minds to set off an investigation of its rich indigenous traditional knowledge, practices and culture. While there have been changes of biodiversities with the change in topography, there should have been a change of traditional practices. It would critically analyse the unique flow of information, the texture of praxis, the curve of ethnobotanical configuration and the rich traditional knowledge. The region is a conservatory of indigenous knowledge of cultivating crops, animal husbandry and also the preparation of food and medicines from the highly diversified flora and fauna that are inherent to this region. As a matter of fact, the traditional societies in North East India have a rich TEK and ITK.

In recent years, considerable importance has been ascribed by a growing number of scientists and organizations in indigenous knowledge of the third world countries (Pal and Dasgupta, 2011). In fact, indigenous knowledge used in various part of the world in general and India in particular is still less explored. Unless preserved, indigenous knowledge may pass into oblivion forever and cannot be revived at any cost. Indigenous knowledge is developed and adapted continuously to gradually changing environments and passed down from generation to generation and closely interwoven with people's cultural values. Indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives. Many traditional agricultural systems need to be redeveloped through incremental, rather than quantum change, based on traditional ecological knowledge; anything drastic may not find acceptance by the local communities (Dean, 1993).

Nowadays, many indigenous knowledge systems are at risk of becoming extinct because of rapidly changing natural environments and fast pacing economic, political, and cultural changes on a global scale. In recent years, considerable importance has been ascribed by a growing number of scientists and organizations in indigenous knowledge. Saha *et al.* (2006) put emphasis on validation of indigenous knowledge. But, indigenous knowledge used in various parts of North East in general and Manipur in particular is still less explored. Unless preserved, indigenous knowledge may pass into oblivion forever and cannot be revived at any cost.

Under the above background the present research emphasises on the following objectives: i) to facilitate sharing of practices and beliefs of villagers which can improve the level of interaction and can help in demystifying village practices and beliefs, ii) to discover

various ITK for future use and sustainability and iii) also to validate and develop natural package and practices.

MATERIALS AND METHODS

The village schedule tried to gather authentic data regarding the village. Information such as ethnic groups in the village, village organization, land use and land transfers, soil fertility, ITKs and TEKs available in rural areas, which are a rich repertoire of culture, practices, beliefs and approaches for understanding and appreciating rural people and rural knowledge. Much of it is embodied in the art, history and culture of the place concerned. There may or may not exist books to read on local culture and practices but they can be better appreciated through other media of expression such as local art, culture, dance, drama, etc. The study was conducted in three districts of Manipur state *viz.* Ukhrul, Tamenglong and Thoubal respectively. Two villages from one sub-division from each of the district were selected. Altogether 180 respondents data has been collected by personal interview method with the help of structured schedule as well as with the help of transect work and brainstorming session during 2013.

RESULTS AND DISCUSSION

During the research study in the hill districts of Manipur, utilization of indigenous technical knowledge in every aspects of livelihood of people was observed. Some examples are provided below

1. The food habit: The habit of consuming wild food plants and other minor vegetables found in the region. It was reported by forefathers to have medicinal values like,

- a. **Angom yensil** (*Polygonum chinense*) : Boiled leaves are used for wrapping on the old wounds for removing pus.
- b. **Awa kege** (*Jatropha curcus*) : Leaf extract used in toothache and promoting lactation, latex used in boils, skin sores and rheumatism
- c. **Chantrook** (*Capsella bursa pastoris*) : Used as salad, stops bleeding from internal organ.
- d. **Leibak Kundo** (*Portulaca oleracea*) : Leaves and stem used in gum and teeth problem, Good for liver disease. Herb used for kidney, bladder disease. Used as a tasty delicacies.

It is generally said that some tribals are stronger than the people living in cities. One reason may lie somewhere in the diet which mainly consist of wild food plants. But important aspect of contribution of wild food resources for good health and preventing disease is generally unrecognised. They are regarded as cheap source of energy, vitamins and minerals.

2. Agriculture related

- a) Wood ash is sprinkled on the leaves of chilly, beans and fruits like orange, banana and papaya for early bearing of fruits since it carries small amount of nutrients like phosphorus, iron, boron, manganese, copper, zinc and potassium.
- b) Burning of leftover straws and stubbles to clear left-over in the field destroys insect pests harbouring in the field. It also destroys pathogens in the diseased plants and prevents from spreading into the next crop. Also it adds ash to the soil which is beneficial.
- c) Paddy seeds are soaked in a cow dung solution for 2 days, sundried and sown to increase resistance of seedling to pest and diseases and also reduce the incidence of leaf spot and rice blast.

3. Animal husbandry related

- a) Treating diarrhoea with bamboo leaves. Bamboo leaves are given abundantly twice a day. Bamboo leaves contains 15.09% crude protein, 23.15% crude fibre, 1.43 ether extract, 18.35% ash, 170mg per 100g phosphorus, 1550mg per 100g calcium. It is antidiuretic. It helps to solidify stool.
- b) Feeding of tamarind leaves and mustard seeds to control bleeding dysentery. Animals are to be fed tamarind leaves and mustard seed with some water for consecutively 3 days in the morning in empty stomach. Tamarind contains malic acid, which is a mild laxative. The acid acts as diuretic. Geraniol and geraniol in tamarind are inhibitory to several photogenic fungi and bacteria. Tamarind pulp contains methyle salicylate, which acts like salicylate exerting antipyretic, anti-inflammatory and analgesic effects. It is astringent. Again, ferulic acid and coffee acid present in mustard are anti mutagens. Coumaric acid in mustard is antipyretic. It helps in curing of dysentery.
- c) Treating FMD with neem. Neem leaves boiled in water are used to wash the infected hoves. Neem leaves contain triterpenes and tetranortriterpenoids, nimbin, nimbidin, nimbinine, salanin, azadirone, tannins, acids and sulphur. It has antibacterial property. It acts as antiseptic to the wounds.
- d) Treating animals with turmeric against bloat. Paste of raw turmeric mixed with molasses and fed twice to the animal. Cineal, linalool present in the crude plant extract of turmeric relief stomach ache and molasses increase the water intake. This process helps in the removal of gas from the stomach.

- e) The parts of animal body is rubbed with the decoction of the whole parts of *Mimosa pudica* (Manipuri: kangphal ikaithabi) to cure from scabies and other allergic conditions in animals.
- f) The leaves of *Syzygium jambos* (hindi: gulab-jamun) mixed with tender shoot of *Arundo donax* (Manipuri; yenthou) traditionally used as medicine to increase milk yield in lactating cow.

4. Local knowledge

Local knowledge has also been found useful for ecosystem restoration. People also follow ethics that often help them regulate interactions with their natural environment. In Manipur, various ethnic groups have preserved and protected several forest patches and observed the "Umang Lai haraoba". The forest patches are owned by some deity and conserved by the local people largely on the basis of religious beliefs and cultural practices. They have preserved forest in its pristine. Villagers or the people of that locality consider any sort of damage in this sacred forest as a sin.

5. Indigenous knowledge for food processing

The ethnic groups of Manipuris consume fermented food and alcoholic beverages, among which soibum/soidon(fermented bambooshoot), ngari (fermented fish), hawaijar(fermented soyabean seed), Atingba(fermented alcoholic beverage). A lot of our ethnics group are economically dependent upon these local products.

- a) Soibum and soidon are the favourite and widely consumed in the state. Micro-organism found are lactic acid bacteria such as *Pediococcus pentosaceus*, *Lactobacillus plantarum*, *Enterococcus faecium* *Bacillus firmus* and *B. subtilis*.
- b) Ngari is a compulsory ingredient of everyday consumption in a Manipuri family. Micro-organism found are Lactic acid bacteria such as *Lactobacillus brevis*, *Leuconostoc mesenteroides*, *B. cereus*, *B. firmus* and yeast (*Debaryomyces hansenii*).
- c) Atingba (fermented alcoholic beverage) is an integral part of rituals in various ethnic groups in Manipur. Without it no festivals or ceremonies is completed. Microorganism found are Lactic acid bacteria such as *Pediococcus pentosaceus*, *B. licheniformis*, *B. subtilis* and yeast is (*Saccharomyces cerevisiae*).

Further, minerals present in uncooked rice, raw bamboo shoots and their fermented products were estimated. The results showed higher content of minerals in fermented products than that of the raw substrates.

6. Consumption of macro fungi, mushroom

Fungi grown on rotten wood such as

- a) Uchina (*Auricularia deligata*), is good for diabetes and constipation.
- b) Kanglayan (*Schizophyllum commune*) is prescribed for hoarseness, tonsillitis and diabetes
- c) Chengum (*Agaricus campestris*) is given to combat weakness and ricket, diet for T.B patient
- d) Uyen is similar to Shittake mushroom (*Lentinula edodes*) has good medicinal properties.

7. So many of the ITKs are known by these people since time immemorial and a lot have been collected during this research and validated scientifically with the help of further research and related scientist. Some are commonly known to us. Such as:

- a) If there is double rainbow and migration of ants carrying their eggs, uprising of ants with wings, there is possibility of heavy rain.
- b) Farmers usually dig well/pond for water. Farmers reveal location of white ants in the field is a clear indication of availability of ground water.
- c) Pulling jute ropes drenched with kerosene across nursery bed of rice helps as repellents for stem borer attack.

Indigenous knowledge unless documented is set to vanish or forgotten. So, many indigenous knowledge effectively used in one society can be used to solve the problem in another society in a similar agro-ecosystem, vis-a-vis recommended domain. So, documentation of indigenous knowledge can help to compare and contrast with international knowledge system. Through science based technology, improvement of the beneficial aspect of the indigenous knowledge system as well as those could be made. So, indigenous and modern approach

may be combined as the so called “technology blending” for the evolution of new technology. So it is very important part to do research to gain functional understanding of indigenous knowledge system which includes collection and assessment (validation) of such indigenous knowledge and finally its documentation and validation for saving of our ancient indigenous technical knowledge.

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