Indigenous Knowledge, Conservation and Management of Natural Resources among Primitive Tribal Groups of Andhra Pradesh

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INTRODUCTION

Since the 1950's , the rhetoric of development has gone through several stages – from its focus on economic growth, to growth with equity, to basic needs, to sustainable development and to participatory development (Hobart,1993).At present indigenous knowledge is seen as a pivotal in discussion on sustainable resource use and balanced development (Brokensha, 1980). In the 50's and 60's, theorists of development saw indigenous knowledge as inefficient, inferior and an obstacle to development. However, in current development discourse, formulations about indigenous knowledge recognize that derogatory characterization of the knowledge of the poor and marginalized populations may be hasty and naive. In contrast to modernization theorists, advocates of indigenous knowledge underscore the promise it holds for sustainable development (Warren, 1991; Orlove et al., 1996).

Thirty years ago, most of the academics working in the area of indigenous knowledge represented Anthropology, Development Sociology and Geography. Today, important contributions are also being made in the fields of Ecology, Social science, Veterinary medicine, forestry, human health, Aquatic science, Management, Botany, Zoology, Agronomy, Agricultural Economics, Rural Sociology - Fisheries, Information science, Wild management and water resource management. It is a fact that contemporary research and advocacy of indigenous knowledge is founded upon the earlier pioneering writings of anthropologists like Conklin and Lewis. It is also true that many of the early researchers who identified themselves as ethno-scientists continue the current work on indigenous knowledge and people. These knowledge systems have been variously described as 'People's Knowledge', 'ethno-science,' and 'folk-ecology' (Barker et al., 1977). The 'ethno' prefix is widely used in ethno-ecology, ethno-botany, ethno-zoology, ethno-medicine, ethnosoil science, ethno-agronomy, ethno-linguistics and ethno-aesthetics.

The use of the term 'indigenous' began with Robert Chamber's group at the Institute of Development studies, University of Sussex, in 1979. Others have written about indigenous technical knowledge, (A special issue of the IDS Bulletin featured the term 'Indigenous Technical knowledge') (ITK) which can be contrasted with modern scientific knowledge. Indigenous knowledge (IK) is local knowledge - knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities and research institutions. It is the basis for local level decision making in agriculture, health care, education, natural resource management, and a host of other activities in rural communities. Such knowledge is passed down from generation to generation in many societies by word of mouth. Indigenous knowledge has value not only for the culture but also for scientists and planners striving to improve conditions in rural localities (Warren, 1991, 1992). Indigenous knowledge differs from scientific knowledge in that the former is a closed system while the later is an open system. Indigenous knowledge also differs from western knowledge in subject matter. It is concerned primarily with those activities that are intimately connected with the livelihood of people rather than with abstract ideas and philosophies. In contrast, western knowledge is distanced from the daily lives of the people and gives a more analytical and abstract representation of the world. Metho-dological differences do exist between both forms of knowledge. While science is open, systematic, objective and analytical, indigenous knowledge is closed, non- systematic and without any concepts. Indigenous knowledge systems are embedded in social and cultural milieu of their particular community and scientific knowledge seeks to distinguish very clearly between these different dimensions (Agarwal, 1995). Various thematic fields of knowledge are as follows:

1. Environmental knowledge
   - 1.1 Knowledge on the natural environment (Ex: Plants , animals and eco-systems)

1.2 Knowledge on Anthropogenically modified environment
1.3 Knowledge on the social and political environment. (neighbouring groups, structures of the dominant groups, development projects)
2. Agricultural knowledge
3. Medical knowledge
4. Indigenous technical knowledge (ITK)
5 Organization and management including knowledge on conflict management (Legal knowledge)
6 Knowledge of persons, structures, and relationship within their own society (social cognition) (Hobart,1993)

Indigenous knowledge is an important natural resource that can facilitate the development process in cost-effective, participatory and sustainable way. The basic component of any country's knowledge system is its indigenous knowledge. It encompasses the skills, experiences and insights of people, applied to improve their livelihood. To ignore people's knowledge is almost to ensure failure in development (Brokensha, 1980). Since indigenous knowledge is essential to development, it is often suggested that it must be gathered and documented in a coherent and systematic fashion (Brokenshaw, 1980; Warren, 1995).

PRIMITIVE TRIBES

Government of India has identified 75 Primitive tribal groups (P.T.G) located in 14 states and Union territories including Andaman and Nicobar Islands. At present, there are 12 P.T.G's identified in Andhra Pradesh. They are Bodo Gadaba , Bodo Poroja , Chenchu , Dongaria Khond , Gutob Gadaba , Khond Poroja , Kolam , Konda Reddy , Konda Savara , Kutia Khond , Parengi Poroja and Thoti.

Some criteria were adopted by the government for identifying these groups such as pre-agricultural level of technology, low level of literacy and stagnant or diminishing population. The PTG consider their habitat and environment as a source of food and shelter. The habitat and environment are the property of the community and traditionally no restrictions are imposed on any member to eke out their subsistence. However, freedom of exploitation of resources does not mean over exploitation to satisfy their immediate needs. This type of utilization may be called 'sustainable subsistence' (Reddy, 2000). Traditionally, they are more attached to their habitats. They have close relationship with their land, water, flora and fauna. The tribal communities have acquired unique knowledge about the use of wild flora and fauna which is not known to non-tribals. In this paper, an attempt is made to examine the indigenous knowledge of three primitive tribal groups – Chenchu, Savara and Khond as three distinct case studies. This paper also delineates how these PTG's exploit their natural resources in a sustainable way.

CASE STUDIES

Chenchu

The Chenchus are predominantly found in Mehaboobnagar, Kurnool and Prakasam districts of Andhra Pradesh. According to Census (1991), their population is 40,869 persons. Chenchu is the only tribe in the state subsisting largely on gathering of forest products in Nallamalai forests. Income from the collection of non-timber forest produce (NTFP) is mainly secured by the sale of gum, honey, soap nuts, adda leaves, beedi leaves etc. Their main collection is gum. Some of them are involved in bamboo couping. Very few are employed as labourers in the work undertaken by the forest department. Traditionally, Chenchus depended on hunting and food collection. They used to collect tubers like *nallagadda, eravalagadda, noolagadda, chenchugadda* and leafy vegetables like, *devadaaru, boddaku, chenchalaku, nallakura* etc. In addition, they used to collect wild fruits like *konda ethapandlu, velagapandlu, regipandlu, bikkipandlu, sitaphalam, balusupandlu* etc. They used to hunt small game like rabbit, peacock, deer, wild fowl etc.

Transition from food gathering, roots, tubers and wild fruits to the collection of minor forest produce is the main important change in their economy. The entry of Chenchu into a cash economy has come about mainly by the activities of the Girijan Co-operative Corporation (GCC). In exploitation of forest products, Chenchus of Nallamalai forests exhibit good knowledge in forest conservation. They do not kill animals when they are pregnant. Hence, they conserve nature in their own interest. Similarly, Chenchus leave a portion of tubers or roots in the ground when they dig them for food. This practice in a way helps in regeneration of those roots and tubers. In order

to avoid disputes among them, Chenchus have devised a system of saving the forest resources by demarcation of areas for collection of forest produce by acquiring clan-wise and village-wise traditional rights. They divide the public land on the basis of needs of each house and their ability of collection of forest produce. The village community takes proper care of destitute, widows, physically challenged persons while allotting minor forest produce yielding trees and plants (Mohana Rao, 1999). While collecting broom-sticks, Chenchus select only fully grown plants and take care to see that ripened seeds fall on the ground for germination. Similarly, they neither cut tender bamboo nor collect tender beedi leaves which facilitate the growth of the plant.

It is a well known fact that tribal society is divided into different clans named after different plants, animals, birds which are totemic in nature. This totemic belief prevents Chenchus from cutting/killing such totemic plants and animals. This type of belief system contributed to forest conservation. It is observed that Chenchus of *Bheemarayunicheruvu* and *Peddamantanala* villages of Prakasam district adopted the method of catching fish by poisoning water. This process involves stupefying the fish with the powders of barks like *musti chakka, billudu chakka* etc. The local people take the bark, pound it, and mix it over the surface of water. The powder of the barks stupefies the fish, which are later caught easily with bare hands. Nallamalai forest provides varieties of medicinal plants that cater to the health needs of Chenchus. They apply powder of *nagamustichekka* for snake-bite. They collect *chillaginja*, a type of cleaning nut, traditionally used for purifying the dirty water used for drinking (Haimendorf, 1943).

Konda Savara

Traditionally, Konda Savaras are shifting or swidden cultivators. In Andhra Pradesh, shifting cultivation is also known as 'podu' which is extensively practiced in Srikakulam, Vizianagaram, Visakhapatnam, East and West Godavari districts. It is estimated that 62,504 families depend on shifting cultivation (Mohan Rao, 1999). The main concentration of Savaras is in Srikakulam and Vizianagaram districts of Andhra Pradesh. The Savaras of Seethampeta mandal of Srikakulam district do not cut certain trees which are of economic value. They do not cut mango, jeeluga chettu (*Caryota*). They cut the other tree trunks only up to two or three feet above ground level to facilitate regeneration. Even in Swidden cultivation, clear felling of trees is not resorted to and the stump remains which help regeneration of tree from new shoots. Savaras of Andhra Pradesh are habituated to cultivate a plot of land for two or three years and later left it as fallow for regeneration of vegetation.

They allow only branches and undergrowth to be used as manure and ensure the future fertility of soil. They clear a portion of the forest by chopping down the invaluable trees and burn the bushes. The burnt vegetation provides nutrients to the soil. Generally, they take up mixed crops like red gram (*kandulu*), millets like *Chollu* and oil seeds. This practices of mixed cropping increases the fertility of the soil. Savaras mostly depend on podu cultivation and their small villages lie mainly in huge hills, where level land suitable for plough cultivation is very limited or non-existent. Even very steep slopes are being cleared of jungle growth, and small millets and pulses are broadcast or dibbled in the ashes of burnt trees and brushwood. As the tree stumps are left open, there is little scope for erosion. Moreover, some of the stumps sprout again (Haimendorf, 1982).

Savaras of Seethampeta mandal, Srikakulam district, have indigenous engineering skills in diverting the perennial water sources from top of the hills for cultivation. In terrace cultivation, they level the field just like steps of a staircase and allow the water to flow from the plot on a higher level to the plot at a lower level. They use flaps of banana trunk as water pipes to facilitate free flow of water from one field to another field. They also feel guilty of cutting trees. An important aspect of religion of Savaras in Seethampeta mandal is the celebration of *'kotthala pandugalu'*. In this festival, offerings will be made to the concerned deity before consuming the new crop for the first time during the season. Such festivals are celebrated for mango, mahua flower, millets etc.; it is observed that in some cases, even touching the new produce before celebrating the *Kottalu festival* (the first eating ceremony) is tabooed. These festivals serve as cultural mechanism to control the plucking of unripe fruits and agricultural produce.

Khond

According to Census (1991), the total population of Khonds in Andhra Pradesh is 66,629. It is

classified as one of the primitive tribal groups in Andhra Pradesh. Its main concen-tration is in the densely wooded hill slopes of the Scheduled areas of Visakhapatnam district of Andhra Pradesh. Forest provides a variety of medicinal plants and herbs to cater to their health needs. According to Hughes Charles (1968), 'ethno-medicine deals with those beliefs and practices relating to health and disease which are the products of indigenous cultural develop-ment'. The local medicine man (*Guravagadu)* identifies and collects medicinal plants and herbs, prepare and administer the herbal medicine. The surrounding forest, the abode of Khonds, provides several valuable medicinal plants. There is an urgent need to identify the so far unknown and rare medicinal plants and strengthen the herbal pharmacopoeia. It is also necessary to carry out extensive investigations on the scientific value of various herbal medicines and also on the indigenous health care practices before the knowledge is totally lost. An attempt has been made to delineate the knowledge of ethno-medicine among the Khonds of Visakhapatnam district. Khonds are known to possess an elaborate indigenous medical system and native medical practices . The local medicine man/woman identifies and collects these medicinal plants and herbs and administers the herbal medicine to the needy patients. Chemical analysis of the rare medicinal plants and herbs is the need of the hour and the native knowledge can be used in a scientific way for the benefit of society.

Policy Implications

It is observed that several Chenchu, Savara and Khond elderly people possess fairly good knowledge of herbal medicine and forest conservation practices. But, serious attempts have not been made so far to document the invaluable indigenous knowledge of primitive tribal groups of Andhra Pradesh (Mishra, 2005). This important knowledge has value for anthropologists, scientists and planners for formulating tribal development alternatives. The indigenous knowledge offers new models for development that are both ecologically and socially sound (Posey, 1985). The main objective for the promotion of indigenous knowledge is its effective use for sustainable development (Quiroz, 1996). The widespread failure of 'top-down approach' to development in less developed countries has led to a focus on the 'bottom up participatory approach' (Landon, 1998; Bicker et al., 2004). This new approach has opened up challenging opportunities for anthropologists in contemporary development discourse. Sillitoe

Table 1: Indigenous medical practices among Khonds

S.No	*Name of the disease*	*Local name Plant/ root/leaves*	*Botanical name*	*Treatment*
1	For Snake-bite	Dumparasu ossoh	*Sansevieria roxfurghianaSchult.f* (Liliaceae)	1-2 % of the paste prepared from leaves and root is applied on the affected portion of the body three times a day for three consecutive days.
2	Jaundice	Podhu	*Oberonia ensiformis. Lindl.* (Orchidaceae)	Root, tubers and leaves are used in preparing a paste which is swallowed. Regularly once in a day till recovery.
3	Blood motions	Bandibissah Osso ottwakuccha	*Boerhaavia diffusa. Linn* (Nyctaginaceae)	All parts of the plant are used in the preparation of paste which is administered once in a day for three consecutive days
4	Fever	Parehpuri Ossoh Bheemududumpa	*Asparagus racemosus* wild (Liliaceae)	Tubers and leaves are used to control shivering in patients suffering from fever.
5	Vomitting and Diarrhoea	Upaka Ossoh (Wuledi chettu)	*Orthosiphon rubicundus Benth* (Lamiaceae)	Paste is prepared from tubers, dried into tablets and adminis-tered daily once in divided doses till recovery
6	Epilepsy or fits	Ubbu chettuKatti ossoh	*Desmodium gangeticum* DC (Fabaceae)	Plant parts mixed ground to prepare paste and administered once in a day for three days.

(1998) rightly argues that "the focus on empowerment, participation, and indigenous knowledge in development practice is producing a revolutionary shift in applied anthropology". It is observed that contemporary interventions in forestry like Joint Forest management (JFM) or Community forest management have also influenced tribal's relationship with the forest, with other villages and their own knowledge. Tribal's indigenous knowledge of forest con-servation and regeneration is also gradually disappearing. The community forest management scheme of the A.P State Forest department has neglected the indigenous knowledge of the tribal. In the interest of conservation and to obtain sustained revenue from non-timber forest pro-ducts, it is necessary for the government to involve the local tribals in the management of sacred groves under Joint or Community forest management.

There is an urgent need to document the existing indigenous knowledge of the Primitive Tribal Groups of Andhra Pradesh and evaluate their value for bio-diversity conservation. The efforts in this direction should be well co-ordinated between government agencies such as Forest department and academicians like, Anthropologists, Botanists, Geographers and N.G.O's at large.

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ABSTRACT Indigenous knowledge plays an important role in sustainable development. It is useful for scientists and planners striving for tribal development. The present paper examines indigenous knowledge and importance in conservation and management of natural resources among primitive tribal populations of Andhra Pradesh with special reference to Chenchu, Konda Savara and Khond . There is an urgent need to document the existing indigenous knowledge of these neglected groups before it is totally lost and also to evaluate its value for bio-diversity conservation

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