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ALTERNATIVES TO SHIFTING CULTIVATION

Dr. P. K. Paul[1] and Dr. P. P. Paul[2]

Introduction

Shifting cultivation is an age old practice of Jhumias and is believed to have originated in the neolithic period around 7000 B.C. This age old traditional system of farming is still being practiced on the hill slopes in different areas in several parts of the world including Tripura also (Menon 1975, Paul & Paul 2000).

According to Tangwan and Nag 1975, the task force constituted by Government of India estimated that the area affected by shifting cultivation in the entire North East is 1,351,500 hacter which comes to 10.24% of the total forest area (13,198,200) in contrast to Tripura which is 111,5000 hacter accounting to 17.7% of the total forest area (629,200 hacter). This 111,500 hacter area under partial and full jhuming land, today, is of great concern to researchers, planners and policy makers due to devastating affects on deforestation, soil erosion, soil/ crop productivity decline, ecological imbalances etc. by jhuming. Again, the socio-economic structure of the state is still dependent on rural backward agriculture in the plain land and jhum/ shifting cultivation in the hills (Goswami, 1995). In accordance with this, till date several attempts have been made to stop/ modify jhuming (shifting cultivation) pattern for better rehabilitation of the jhumias. Thus, this article envisages delineation and corroboration of various ways and means for economically sound rehabilitation of jhumias through improvised jhuming, as adopted by the state/ central Government and research organisations.

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The possibilities are highlighted below.

Three Tier System

This system of farming has been developed by Indian Council of Agricultural Research (ICAR) where a hiller, hillock is seperated into 3 ridges. The upper ridge (1/3rd portion) envisages silvi-pastoral system. The middle ridge (1/3rd portion) facilitates raising of horticultural crops viz. citrus, pineapple, papaya, guava etc. along with leguminous crops like pea, arhar, cowpea etc. and agronomic crops viz. paddy, jute mesta etc. in the lower half/ foot hill region. The main advantage of this system is that it checks soil erosion, increases percolation rate of water and increases productivity of the region.

Terracing

Terracing or contour bunding on foot hills are beneficial in conservation of soil and water through growing of perennial jodder grasses and legumes. Half-moon terraces are advantageous for planting fruit trees along with ragi, maize, seasame etc. Crops like rice may be grown in tower terrace to maximise production. Besides these, run off from the hill slopes can be harvested and stored with earthen dams and fish farming. However, although this system is widely prevalent in North Eastern Hill Region. Yet, in Tripura less hill slope accompanied with soft surface texture has hindered the beneficiaries in constructing it.

Contour Farming

When row crops are plassed crosswise at a slope rather than running up and down, the rows act as minute terraces and tend to hold rain water (Soni and Shandilya, 1992) alongwith soil particles. In jhum area planting of cultivated crops viz. vegetables, fruits, spices, cash crops, forest trees etc. will play a vital role in reducing soil erosion. Side by side this will also help in increasing percolation rate of water into the soil and nourish plant roots for a better yields.

Watershed

Soil erosion can be controlled in the affected areas by integrated watershed management. Eighteen numbers of National watershed

Development Project for Rainfed Agriculture (NWDPRA) and five numbers of National Watershed Development Projects for Shifting Cultivation Areas (NWDPRA) have been given to Tripura Tribal Autonomous District Council (TTAADC) for implementation during 1999-2000 by the Department of Agriculture, Tripura.

Rubber Cultivation

Rubber is a poor mans crop. Its plantations are generally raised on denuded land which have remained bareess for years. Today, rubber based tribal resettlement projects are also progressing in Tripura as a collaborative scheme of the Rubber Board and the Government of Tripura where the sustainable farming approach is given preference (Vinod et. atl. 1995). Today, government has taken necessary steps by raising viable rubber holdings on land alloted by the government and through finances provided by Rubber Board and Nationalised Banks (Saha, 1986).

Farming System Technology

Recently farming system technology has been adopted by ICAR to replace jhuming (Maiti 1995). This is done through integration of different production components eg. livestock (large/ small) rearing, poultry breeding and agriculture.

Soil Conservation

Soil being a non renewable natural resource needs great attention towards conservation. The National Land use and Conservation Board aims at providing developed land with irrigation to each jhumia family for taking horticultural, commercial or plantation crops or forest trees. Till 1986-87, a total of 2500 families have been resettled on about 5000 hacter at a cost of Rs. 2.17 crores and subsequently it launched a scheme in 1987-88 in 7 states of North Eastern Region and states of Andhra Pradesh and Orissa with an outlay of Rs. 75.00 crores to resettle 2500 families over 5 years (National Land use and Conservation Board, 1988).

Rehabilitation Programmes

Tripura Rehabilitation in Plantation (TRP) and Primitive Group Programme (PGP) emphasis earning way for the tribal jhumias from the

destructive and uneconomical practice of jhuming through implementation of plantations, constructing water conservation, soil conservation structure etc. Tripura Rehabilitation in Plantation and Primitive Group Programme, 1995 implemented nemerous schemes for women also.

Financial Assistance

According to the Department of Agriculture in Tripura, assistance was provided to 5000 Jhumia families @Rs. 4000/- per family for purchase of jhum seeds, weeding, plant protection measures etc. during 1999-2000. Another 1200 families were assisted with a package worth Rs. 5.000/- per family on watershed basis in selected pockets. During the year 2000 - 2001 Rs. 80.00 lakhs was earmarked for providing assistance to 1600 jhumia families @ Rs. 5.000/- per family under different horticultural based programme.

Besides these aspects we also feel that there are some basic gaps working at present among planners and jhumias. Planners should definitely bring to the knowledge of jhumias on scientific cultivation and pest management through extension workers. Proper knowledge on choice of seeds/ crops alongwith their location specificity, high yielding varieties, adequate spacing, incorporation of organic manure/ fertilizers, judicious irrigation from water harvested structures, roughing judicious application of pesticides/ germicides etc. in and around the dibbling sopn is of utmost importance. Above all proper guidelines in mixed and multistored cropping will provide an added advantage.

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KHASI MATRILINEAL SYSTEM AND ITS CHANGING PATTERN

Dr. Surojit Sen Gupta

Matrilineal societies constitute only about 15 percent of world's societies though it exists in various parts of the world. A concentration of materilinel tribes can be traced along West Africa especially, eastward across the contient. The Navaho and the Zuni at South-Western United States are also matrilineal in nature as also several other tribes of eastern and central American. Guadaleanar in the Eastern Solomon Island is also characterised by matrilineal descent. In India, there is the much discussed matrilineal Nairs of south, some regiments of the hill tribes of North-East India are matrilineal in nature. Matrilineal systems are also found in Melanesia in the South pacific, of which the Trobriand Islands are best described by Malinowski.

The term 'Matrilineal' suggests tow things : 'matri'- mother and 'lineal'- line. In simple language it means the practice of tracing the lineage from the mother. In sociological literature, however, much more is involved in this simple explation.

Descent in a matrilineal group is traced from a series of ancestress or mothers or from brothers of founding ancestress. The name, status and role are also determined through females. Inheritance and succession which signify important economic aspects are also transmitted through females. Another principle of matriliny lies in the patterns of residence and form of marriage which are also female oriented.

In matrilineal societies, female play a very significant role. However, it is essential to differentiates 'Matrilineal Systems' from a 'Matriarchy'.

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In matrilineal system, major social activities revolve round the women, but they are not the pivot of control or authority. In patrilineal societies, the line of descent and inheritance which is through man coincide with authority, but not so in a matrilineal organisation. In the latter, males also wield considerable authority, but they happen to be the mother's brothers or nephews and not the father and sons.

In the hilly regions of North-East India, one of the few existing matrilineal peoples, the Khasis, make their home. They have their own form of culture and life style.

Khasi Social Organization

The basic unit of Khasi society is the *iing* or family. The word family- has two connotations in this context. It can mean a unit of father, mother and children. It is also a loose term for a household comprising of two or three *iings* or families, who are usually the descendants of one grandmother. The spouses of the descendents are excluded from this category. This category is also referred to as the descendents of one *kpoh,* from the womb of one mother, grandmother or great-grandmother.

The Khasis do not have a written record of their family tree or genology. They usually trace their direct relationship to the *kpoh* or womb of one great grandmother. Beyond that, relationships are recognised as being a part of a *kur* who at one point of time were closely related.

The *kur* in its widest aspect of relationship is usually recognised by a particular name or *Jait*. Members of one *Jait* cannot marry among themselves, even though the point of expect relationship have been lost in time. Two or more *Jaits* can be termed as *shi Kur,* originally from one *kur,* for whom the rule of exogamy apply.

The term *iing* usually means a domestic unit or a household. The *iings* might have different hearths but each is responsible in the same way for the wealfare of the main hearth of the mother whether it be emotional, financial or physical and support at all times needed. The *iings* is a more intimate concept of domestic unity among sisters, children

and grandchildren. *Kpoh* is a general term which more often takes into account only the number of members descended from one womb.

The Matrilineal Units of the Khasi

The Khasis have matrilocal residence and matrilineal descent, participation in the family religion and the common sepulcher, where bones of the members of the family are interred after death, are the two elements that bind the members together. As descent is matrilineal, only the children of the female of the family can become members of the family.

The Khasi matrilineal system follows the principle of female ultimogeniture in matters of inheritance. By this, it is meant that the youngest daughter called the *khadduh* or the last surviving daughter has rights to inherit from the mother. Customarily, all daughters, except the youngest, are expected to leave their natal home after marriage to set up independent households. The youngest daughter continues to stay in her natal home with her husband. Two vital issues are brought into focus, firstly there is a constant splitting off of the lineage and each daughter starting her own. Secondly, the continuity of lineage is expressed in terms of mother, youngest daughter units.

According to the matrilineal system, prevailing amongest the Khasi, the inheritance to property is from mother to the daughter. The *khadduh* enjoys the privileges of getting the lion's share of the property including the residential house of her parents. Her sisters are entitled to smaller shares of the family property. The status of the youngest daughter is of special importance, she is the embodiment of everything, that is enduring and sacred in the Khasi concept of family. Her house is call *ka iing khadduh*, or the youngest daughter's house, which has special sanctity, this is the ancestral house of generations of youngest daughters which provides refuge or shelter for the indigent and improvement of the members of the family. This undoubtedly accounts for the rarity of beggars in the Khasi society. As long as a man remains unmarried, he stays in his parents' house and contributes whatever

he earns to the common fund. According to custom, the earning of a man before his marriage goes to his family, which later may become part of the ancestral property.

In Khasi society property is of two kinds- inalienable and alienable. The first type is a legacy, an ancestral property, which is known as *nongtymmen.* This property cannot be disposed of without the general consent of the whole family or clan. The second type consists only of the earnings of the present members. This property is known as *non-khynraw.* The *khadduh* is one who is responsible for all the family religious rites, her house is called *ka iing seng, iing niam and iing kur* meaning the organising house, religious house or the clan's house. She has to bear the expenses of these rites, and the funeral rites of her parents including the important ceremony of placing the bones of the dead under a family small stone cist or *mawshyieng* and finally to transfer them to the clan's bigger stone ossuary or the *mawbah.* Although the *khadduh* has to bear all these expenses, but some contribution is given by the children of the deceased. In all cases, the maternal uncle, has great influence and prestige in the family. Even so, the father of the family is in no way subservient to him, he enjoys a high status in both his own and his wife's family.

Therefore, the issue of property inheritance has to be discussed in the light of the distinction made between (1) ancestral property and (2) self-acquired property. As mentioned, the youngest daughter inherits ancestral property; however, this does not imply that other daughters do not receive anything. Depending on the economic capacity of the parents, the others may also receive property of gifts in cash as well as in kind, to help them to set up a seperate household. Every daughter gets an equal share with the *khadduh* getting an additional portion to meet all expenses incurred by her for maintenance of property and for other obligations and responsibilities.

As nurture of the family line, the *khadduh* has a significant role in the domestic sphere. She has the responsibilities of caring and protecting

all members of her matrikin. She is to look after her aged parents and other members of her matrikin if they suffer from any misfortune. This includes her brothers and sisters who either remain single or divorced. This also includes the children of her sisters. If in case of death of a sister, she becomes responsible for her children. Even when no property is inherited the responsibility of caring and protecting for the old parents and other matrikins still falls on the *khadduh.* She, therefore, has a burden which on many occasions is not shared by other sisters. That is way among the Khasis previously there was no beggar.

The matrilineal system of the Khasi family is based on the female line. But the family property is under the control and supervision of the uncles or the brothers. The Khasis did not have any traditional law of inheritance. The customary right or the right to property in the strictly legal sense was not in vogue among them. It may be wrong to think that their custom had ever conferred on the youngest daughter the right of a legal heir. According to their custom, the youngest daughter is only the custodian, of the properties which should be managed and controlled by her maternal uncles and on their death, hy her brothers. The youngest daughter has of course a number of duties and privileges and the youngest daughter of each family in each generation succeded to the office of custodianship over family property and religion.

Though the youngest daughter is a custodian of the family properties, yet she has no absolute authority over them. She could not sell or dispose of any part of them. For the purpose of disposing any family property-land or other movable or immovable properties it is the family council consisting of the maternal uncles and brothers of the youngest daughter, who should decide and give consent to her. The eldest maternal uncle who should preside over the discussion, has in fact the final say in the matter.

A maternal uncle in the Khasi custom used to occupy a pride of place in a family, or a kinship group. He exercises control over the management of the properties of the family. Thus, authority and control

are in the hands of the maternal uncle. He acts as the true representative of the family or kin group.

Khasi family law favours a trend towards a matriarchal organization, but in its operation the extended family, *kur,* is broken into small families, *iings,* which again are federated into *kur* by economic interests and religious sentiments. The distinctness and inter-relation of *iings* and the *kur* can also be seen in the fact that the exogamous restrictions are first defined in terms of *kur* and are then further extended in terms of *iing.*

Changes in the Matrilineal System

The Khasis has come a long way from the traditional agricultural society to that of the modern urbanized society. Many Khasi people are holding blue-collared as well as white-collared jobs far removed from the traditional agrarian setting. Are the customs and traditions which were evolved to suit an agrarian based society still relevant? Has modernisation weakened or strengthened the matrilineal system?

We shall now see that the first challenge to Khasi matriliny came from altogether a different direction. Under the impact of Christainity, the concept of the institution of the *ka Khadduh* has undergone a transformation. It has lost its pristine sanctimonious association which was a special device to keep the matrilineal kins intensely attached to the natal *iing.*

Christainity came on the scene with its partiarchial values and cultural concepts. First generation converts completely cut themselves off from practising the traditional religion. Many were ostracized and rejected by their *kur.* But there does not seem to be any conflict with retaining matriliny. It is only in recent times that matrilineal tradition has faced some problems. The first challenge has come from Christianity and its patriarchal values.

The second challenge has come from growing exposure and interaction with patriarchal culture. Khasi society has had interaction with other neighbouring cultures in the past. Ever since independence, the Khasi locality has been increasingly open to the larger society.

Besides, many Khasis have gone out of their homes for education and employment. Because of cross-cultural marriages and for various other reasons some Khasi children, specially in the urban areas are using their father's clan name or both their father's and mother's clan name.

The influx of partilineal societies, and interreligious marriage have greatly weakened the Khasi concept of family, especially the matrilineal descent groups of the *iing* and the *kpoh.* Cross-cultural influence of patrilineal societies tend to orient the present generation to the conjugal, nuclear family rather than to the *iing*. Processes of modernisation in a transitional society and the resultant changes in all spheres of life bring with them the added strain on matrilineal descent groups.

Modernisation has brought about changes in the traditional society. Its contribution to strengthening matrilineal family has the consequences of creating at least more responsibility on the parents and lessening the responsibility of uncles. In other words, while the immediate and major responsibility of the father is now with his wife, and children, his role as an uncle in his sister's house is still significant, though not with the same authority as he used to enjoy before. In today's context a husband (or a father) invests almost everything with his wife and children (except his clan's name, of course) and hardly make substantial material investment with his sister's home. Again, the gap in her home is now filled by a husband/ a father. This shift of responsibility from uncles to fathers was in most cases promoted by the Christian missionaries.

The changes have also taken place whereby the youngest daughter can make a claim to the family properties as a legal heir. This change was facilitated during the British rule when wrong interpretation of the local custom was made by court lawyers who did not understand the language and depended much upon interpreters. This has greatly helped the youngest daughter to successfully manipulate and treat the properties, ancestral as personal or self-acquired and dispose them according to her own wish. While the power of the youngest daughter has thus increased beyond custodianship, the customary role and power of the maternal

uncle has declined.

Legal Attempt for Change

As education came and spread among the tribes, the efficacy of the matrilineal system of descent and inheritance began to be questioned. Right from the beginning of the twentieth century, serious concerns has been raised by those among the elite group. This concern has been intensified during the last 40 years or more. The views of many people, young and old, men and women, have constantly been expressed regarding the merits and demirits of the traditional system of matriliny. Many write-ups pleading for a change-over to the partilineal system have been published from time to time.

In 1961, an organization by the name of *ka seng lktiar Longbriew Manbriew* was formed in Khasi Hills to sphearhead a movement for a change in the system. Its constititution provided for a radical change both in descent and rights of succession and inheritance. But it could not make much headway. At some stage a section of the members of the organization wanted a mere change in the light of interitance. The movement continued since then.

On the 14th of April 1990, a new organization called the *Syngkhong Rympei Thymmai* was launched to further intensify the movement. The new organisation thus replaces the erstwhile *Ka seng lktiar Longbriew Manbriew* and has presently spread and expanded its membership. The sole objective of the organisation according to its constitution is to motivate the Khasi society to change from matriliny to patriliny. The organisation was born out of a genuine social response and reaction to the stress and strain that matriliny is facing in the modern context. This group which includes a few women as well, believes the answer to ills of Khasi society is to change from matriliny to patriliny.

Thus, at this juncture the Khasis as race sincerely and dispassionately ask these questions, "What shall we do then? shall we change or shall we not change?" Some say, "We must not change. We must keep our matrilineal system as it is our uniquely distinguishing mark."

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TRADITIONAL HEALTH PRACTICES AMONG TRIBAL WOMEN IN TRIPURA

Dr. Manoshi Das

Introduction

According to LAD Williams, Ethno medicine refers to the study of traditional medical practice which is concerned with the cultural interpretation of health, diseases and illness and also addresses the healthcare seeking process and healing practices. The practice of ethno medicine is a complex multi-disciplinary system constituting the use of plants, spirituality and the natural environment and has been the source of healing for people for millennia.

North-east India has valuable heritage of herbal remedies. Its rural people and tribals living in remote/forest areas still depend to a great extent on the indigenous systems of medicine/cultivation. So far studies in this regard have been reported from a very limited number of the tribes of North-east region viz, Mikir, Karbis, Miris, Khasi, Jaitai, Garo, Monpas, Nishi, Aptani, Reang, Debbarma, Uchai, Tripura, Mog etc. A wide range of plants with ethno-botanical value against some very important diseases have been reported but much larger numbers of flock medicines have remained endemic to certain tribal pockets in North-east India. Therefore further detailed studies on the ethno-botanical aspects in the region may provide meaningful ways for the promotion of traditional herbal medicinal plants/land races of crop plants for the benefit of mankind at large.

It is amazing to note that about 130 major tribal groups are settled in north-eastern states. In Tripura there are several tribes. These are Bhill, Bhutia, Chaimal, Chakma, Garo, Halam, Jamatia, Khasia, Kuki Lepcha, Lushai, Mog, Munda, Kora, Noatia, Orang, Riang, Santhal, Tripuri, Uchai etc.

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Most of the tribal communities as a rule live inside dense forests in hilly areas and consequently enjoy an effective isolation from the main stream of the country. Their more or less isolated life prevents them from exploiting many of the advantages of modern civilization. On many occasions they are found rejecting the programmes of modernization implemented by the governmental and voluntary agencies. They are still depending upon their own traditional medical practices when contracted by diseases. The ingredients of their medicines include herbs in toto, roots, barks, Leaves, fruits and other plant parts, animal derivatives and also a few minerals. They have certain age old techniques and methods of preparation and administration of medicines for different diseases Healing rituals employed for invoking the intervention of supernatural forces are an integral component of the treatment procedure. On the whole, it seems that traditional medicine helps the tribals to check the diseases satisfactorily and to lead a healthy life.

However ethno medicine of the tribal is now influenced by a number of forces external to the community, which are capable of bringing out changes into this traditional system. Modern medicine is the most important agent of change influencing the ethno medical system. As a part of the tribal welfare programmes, the government has opened a number of curative centers like hospitals, dispensaries and primary health centers (PHC) in the tribal areas and also has employed mobile dispensaries to improve the availability of medical facilities for them. In addition to this modern medicine is also available to them form a number of private nursing homes and hospitals functioning in rural areas within an easily reachable distance from the abode of the tribals. However, on many occasions, the tribals show much reluctance in accepting modern medicine, for the treatment of diseases. It is observed that sometimes their resistance towards modern medicine is disease specific. They accept modern medicine is disease specific. They accept modern medicine for certain diseases but reject it for some others. This selective approach is a major hurdle for the health person in the successful implementation of their programmes and is also an interesting topic for social anthropologists to deal with.

Hence the problem proposed to be investigated in the present study is the ethnomedical practices found among the tribals and the extent to which this system is influenced by various factors of change.

In pre-modern societies, in all probability and especially in india, health was a part of culture, defined as a total way of life by the people themselves. Thinking about health was integrated into the way of living as a whole. Here, the important notion was to focus on creating a "healthy living", meaning thereby that the physical, social, mental and religious aspects were intertwined with each other.

However, it is equally true that when the traditional knowledge behind a practice is lost, the practice becomes a superstition, and therefore, it becomes in many cases counterproductive. Because our living condition are sufficiently changed in the modern times, and we are using many new food items and other consumer products, changes in our social environment make these practices either redundant or very difficult to engage in. Only when we retrieve the knowledge behind these practices may one see whether they still serve useful purpose.

The present work focuses on the health practices of tribal women in Ratanpr, South Tripura and the knowledge-related to these practices. It is shown by the fact that behind traditional practices governing tribal women in that area, especially during the important events of their lifecycle like menstruation, childbirth, and the rearing of children, there is knowledge of how these practices contribute to 'health'.

Materials and Methods

Objectives of the study

1. To examine the socio economic features, educational status and demographic attitudes of the tribal women among Uchai, Tripura, Mog, Reang and Debbarma Tribes.
2. To understand the health practices of tribal women with special reference to reproductive and child health.

Design of the Study

Study Area

To conduct the study, out of 8 district of Tripura south District was selected. Ratanpur ADC Village under Hrishyamukh R.D.Block of South Tripura district has been selected purposively for the fulfilment of the study.

Sample Size

To achieve the objectives 80 families from Ratanpur ADC Village have been selected on the basis of secondary data collected from the local Panchayat office.

Primary Data

Primary Data has been collected from the households of 80 respondents using pretested schedule. The quantitative data are collected though the schedule from the women and their husbands of the family in face to face interview.

Secondary Data

Secondary Data have been collected from the internet, Journals, articles, magazines.

Method of Data Analysis

The Data were analyzed by using simple percentile method in tabular form.

Limitations of the study:

The data has been collected in a delimited space and time. So neither the database nor the observations can be universal. The study is confined to only one village of Tripura. Study is empirical and analytical while statistical analysis of data could not be ensured due to its limitations.

Result and Discussion

According to the analysis, interviews and field observation there are some major findings which were briefly discussed here:-

1. A major portion of head of the household (52.5%) were engaged as daily labour. The lowest category was business i.e.3.75%.

2. About 43.75% families' monthly incomes were lying between the range of Rs. 2001-3000 and 16.25% between Rs. 1001-2000. These data clearly describes the poor economic condition of respondents' households.
3. A large share (41.25%) of the respondents studied up to primary level. Illiterate persons were 36.25% while only 1.25% was graduate.
4. Most of the families lived completely in Kachcha houses. 96.25% houses were made up of bamboo, thatch, tin and mud wall.
5. The system of sanitation reveals a totally unhygienic picture. All the households used 'kachcha'/pit type of sanitation.
6. Half of the surveyed households used to collect drinking water from well and 31.25% of them collected spring water and only 18.75% used tap water.
7. 52.5% of women did not seek a medical checkup after delivery. Following delivery, the women was in some ways more vulnerable than when she was pregnant; there were some cases in which the women may not feel the need for a medical checkup. Only 41.25% of women got medical check-up after delivery.
8. One of the significant findings of this survey was that among 80 women majority of them were isolated during menstruation. The place where they stayed during this period 8.75% of the women respondents said that they stayed in a separate room in the house. 41.25% of the women stayed alone in bed and 48.75% of the women stayed as usual in the houses.
9. Among 80 women more than half (51.25%) didn't go for ante-natal services.
10. 76.5% of the deliveries were performed by dais (51.5% by trained and 25% by untrained).
11. 35% of the women stated that they rested in a place coated with cow dung after their delivery. There is a tradition to coat the walls and the floor of the room where the delivery is to take place with

cow dung.

12. Traditionally the dais did not use anything for post- natal vaginal cleaning. When asked whether the women were using cotton wool or sterilized cotton cloth for cleaning 16.25% said yes, 56.25% percent said no and 27.5% of them did not give any answer. The survey revealed that other means of cleaning the vaginal parts were now being used by the dais who had undergone training.100% percent of the women reported using soap in hot water .50% of the women stated that they continued this cleaning routine for 22 days,26.5% continued this cleaning 1 month.
13. 91.25% of the women had less food up to the first 11days, 1.25% even reported eating normal in the first 11days. The percentage of women who had their normal food intake during the next 15 days in post- delivery period increased from 1.25% to52.5%.
14. In keeping with the tradition that women were allowed a period of eleven days rest following delivery, 82.5% of women reported that they performed less or no work during that time.
15. Within 1-11 days, the women is considered impure and she is also weak, 11-12days after the ceremony on the 11days she is allowed to do some work outside but cannot cook or touch the water as she is still considered impure. From the 22nd day she is allowed to cook and do all the task inside the kitchen and the house, after 40days she is allowed to go to the jungle/forest.
16. Immunization programmes are provided by government of India free of charge for all children. 33.75% women who reported not taking their children for immunization.
17. 37.5% of the women reported getting their first menstrual cycle during breast feeding after one year. 7.5% had got it with in the second year and surprisingly 25% women reported that they were breast feeding the child until 6 to 8 month. 2.5% of the women reported getting their first menstrual cycle during breast feeding after 3-4month.

18. A majority of the women 58.75% stated that they had no severe problems of post- delivery. 13.75% how ever reported that they had some problems out of which 28.75% sought help of a medical doctor .17.5% sought help of dai/midwife.
19. 25% women experienced late placenta, 13.75% experienced excessive bleeding. No problems were experienced by 52.5% of the women during delivery which is an indicator that their active lives helped them during this process.
20. Only 11.25% of the women reported that the five safety precautions were observed during delivery. The five safety precautions are sterilized blade, clean-hands, short nails, rubber sheet and a string to tie the cord.
21. Although the initial intention of this survey was to discover what kinds of problems women experienced specifically related to pregnancy few women claimed that they had swelling, bleeding, or other specifically ante-natal problems. However, most women experienced back pain (57.5%), Weakness (47.5%), Swelling (1.25%) and bleeding (30%) in that area.
22. Among 80 women, 49 (61.25%) stated that the cords was cut by the nurse. 47.5%of the women reported that the dai used a blade for cut cord. 20% of the women reported that the dai used a wang/ oyan (bamboo shrub strike) and 27.5% women said that they did not know what was used.
23. The women commonly avoided hard work during, menstruation, pregnancy and post delivery period.
24. In Post delivery period food intake of women was only dry fish, salt with rice.
25. Women from Ratanpur ADC village stated that the food commonly avoided during menstrual period are sour, fish, pulse, pork, rice, meat , potato, karpani, snail, fry, ladies finger, greasy vegetables (lati) egg etc. These foods were not consumed during menstruation as these were considered 'hot' food and would cause more bleed-

ing. As regards the food women commonly avoided during pregnancy, the reasons given by most women were that they could not digest these items, and that these made them feel sick and heavy. In post delivery period all the women stated that they avoided fried foods, oily foods, chillies, sour foods, lemon, potato, gourd, goat meat, duck meat, baskural (bamboo sharb), aral leafs crab as they created trouble for the delicate digestion of the new born baby.

Conclusion

Ethno medicine means the medical practices for the treatment of ethnic or aborigine people for their health care needs. Present study focuses on the utilization of plants available with the people of Ratanpur ADC Village, they are using the traditional knowledge for the treatment of gynecological disorders. There is an urgent need for systematic documentation of this knowledge by using scientific tools. Traditional beliefs give value and meaning to each phase of the women's life. The practice of burying the placenta under a fruit bearing tree indicates the perception of the unity of life with nature. The tree and the environment are an integral part of the nourishment cycle, which links cultural practices and practical benefit. Traditions and practices represent continuity and are a manifestation of culture, which is the embodiment of a way of life. Any intervention, which is not based on the lived experiences of communities, does not become a part of a way of life . Health care is not merely a service to be delivered but it should build on people's knowledge. We need to understand the health practices of women in the Ratanpur ADC Village in a total context, rather than isolating them to arrive at inferences which relegates these practices as backward. The lived experiences of women related to their lifecycle events have to be viewed in the context of their world-view , and their integral relationship with the physical environment in which they live. For understanding the health practices of women one has to see their interconnectedness and inter-relatedness in a holistic manner creat-

ing a rhythm and movement.

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COMPONENTS OF LIVESTOCK INCOME AMONG TRIBES OF TAMILNADU : AN ECONOMIC ANALYSIS

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Introduction

The tribes contribute about one-twelfth (8.4 crores) of the total Indian population in the year 2001. Almost 90 per cent of the Indian tribes are engaged in agriculture and livestock rearing. Other economic activities of the tribes are food gathering (including hunting and fishing), pastoral, handicrafts, trade and commerce and industrial labour. Among various income generating activities in hilly areas, livestock deems to be one of the major sources of income (Sanjay Kumar et al., 2000 and Bhati et al., 1996). However, the livestock holding pattern and the quantified income from different livestock species among the tribal population are not so open. Data pertaining to the tribal livestock holding and contribution of livestock for tribal sustainability is useful for any economic development for the tribal community. Though various studies on sources of income for livestock farmers were carried out in India, studies are limited with reference to the tribal farmers. Hence, the present study was carried out to find out the sources of income through various livestock species among the tribal farmers of Tamil Nadu.

Methodology

For the present study, data was collected from the sample tribal farmers of six hilly areas of Tamil Nadu. The ten villages from each hilly areas namely Kolli hill in Namakkal district, Yercaud hill in Salem district, Ooty hill in the Nilgiris district, Kodaikanal in Dindigul district, Yelagiri hill in Vellore district and Sitheri hill in Dharmapuri district which are having high

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tribal population engaged in livestock farming activities were chosen for the study. Finally 150 tribal farmers were selected from ten villages of each hill through proportionate random sampling method to yield the total sample of 900 tribal farmers in the study area. The date were collected by the personal interview method with the use of pre-tested interview schedules. The reference years of this study were 2004-05 to 2005-06. Conventional analysis such as average, percentage and tabular analysis were used to analyse the data and to present and interpret the results of the study.

To analyse the livestock holding pattern, various livestock species are converted into "Animal Unit". An animal unit is a common animal denominator, based on feed consumption. It is assumed that one mature cow represents an animal unit. Then, the comparative (to a mature cow) feed consumption of other age groups or classes of animals determine the proporation of an animal unit which they represent. For example, it is generally estimated that the ration of one mature cow will feed 5 mature sheep/ goat, or that 5 mature sheep/ goat equal 1.0 animal unit. Hence, to calculate the number of animals on the farm, the animal unit described by Ensminger (1977) as shown in Trible 1 was used in this study.

Animal units of different classes and ages of livestock

Type of Livestock	Animal units
Cattle	
Cow, with or without unweaned calf	1.0
at side, or heifer two years old or older	
Bull, two years old or older	1.3
Young cattle, one to two years	0.8
Weaned calves to yearlings	0.6
Sheep	
Five mature ewes, with or without	1.0
unweaned lambs at side	
Five rams, two years old or over	1.3

Five yearlings	0.8
Five weaned lambs to yearlings	0.6
Swine	
Sow	0.4
Boar	0.5
Pigs upto 200 pounds	0.2
Chickens	
75 layers or breeders	1.0
Source : Ensminger, 1977	

Results and Discussion

Livestock holding pattern among the sample households

The average livestock holding per sample household (in animal units) is presented in Table 1. It could be noted from the table that, the average livestock holding per sample household in large farmer category (5.24 animal units) was more followed by small farmer (4.66 animal units), marginal farmer (3.50 animal units) and landless farmer (3.05 animal units) category in the selected tribal areas. It also revealed that the landless farmer owned 1.17, 0.75, 0.44, 0.38, 0.27 and 0.02 animal units of cattle, goat, buffalo, bullock, sheep and pig/ poultry (each 0.02 units) respectively in the study area. Among different species of livestock, cattle holding was predominant in large farmer category (1.79 animal units) followed by marginal farmer (1.49 animal units) and small farmer (1.23 animal units). The average Goat holding per sample household was almost equal in marginal and small farmer categories (0.66 and 0.68 animal units) and it is peculiar to note that the goat holding size decreased (0.75 to 0.59 animal units) with the increase in the land holding size of the farmer, whereas, the size of poultry holding increased (0.02 to 0.05 animal unit) with the increase in the land holding size of the farmer in the study area.

In the case of landless farmer category, among different hills,

cattle occupied the major share in Ooty (58.66 per cent) and Sitheri hills (39.95 per cent). In Yelagiri hills, sheep had the major contribution (41.81 per cent) while the goat contributed more in Kodaikanal (95.51 per cent). In the marginal farmer category, cattle occupied the dominant share in Ooty hills (72.30 per cent), followed by Yelagiri hills (49.54 per cent) and Kolli hill (46.62 per cent) and the contribution of bullock was more in Sitheri hills (59.91 per cent) followed by Yercaud hills (48.00 per cent) and Goat in Kodaikanal hills (60.89 per cent). In large farmer category, three hilly areas viz., Kodaikanal, Kolli hills and Yelagiri hills had the highest share of cattle in the sample tribal households as 66.57 per cent, 56.60 per cent and 47.08 per cent respectively, while, the contribution of bullock was noted to be more in Sitheri hills (56.45 per cent) and Yercaud hills (52.80 per cent) in the study area. It could also be noted that among the six hilly areas, the buffalo rearing activity was practiced only in Ooty hills.

Further, the overall category also revealed that, the cattle was the major livestock species with the share of 34.81 per cent (1.41 units), followed by bullock 24.69 per cent (1 unit), buffalo 19.02 per cent (0.77 unit), goat 16.55 per cent (0.67 unit), sheep 3.70 per cent (0.15 unit), poultry 0.74 per cent (0.30 unit) and pig was the least one with a share of 0.49 per cent (0.02 unit), with an overall average livestock holding of 4.05 animal units in the study area. Among different hills, cattle were reared as the major livestock species in Kodaikanal (48.07 per cent), Yelagiri hills (47.46 per cent) and Kolli hills (43.82 per cent). In Ooty hills, the buffalo was the major livestock species (64.30 per cent) and the reason might be because of the native breed, Toda buffalo, which is involved in all the religious functions of the tribal farmers. In case of Yercaud (42.67 per cent) and Sitheri hills (54.73 per cent), bullock was the major livestock species, which are utilized for ploughing works in the agricultural operations. From the above facts it could be concluded that, the increase in the

landholding size resulted in (more demand for livestock to diversify their family income and reduce the risk and thereby) the increase of the average livestock holding of the sample tribal households in the study area.

Components of Livestock Income

The components of total livestock income is presented in Table 2. The overall livestock income among the landless farmer category was Rs. 7809.61 in which the income from cattle occupied the major share (42.35 per cent) followed by goat (24.90 per cent), bullock (11.36 per cent), buffalo (10.73 per cent), sheep (6.79 per cent), poultry (2.47 per cent) and pig (1.40 per cent)

In the landless category, among the various hills, the total livestock income was highest in Ooty hills (Rs. 14305.41) and lowest in Kodaikanal hills (Rs. 2273.16) and the possible reasons for this could be, the crossbred cattle and buffalos were reared by the landless livestock farmers and further the average livestock holding size per household was also highest in Ooty hills (6.58 animal units) and lowest in Kodaikanal hills (0.89 animal unit). The income from cattle rearing was noted to be highest in all the hills (ranging from 41.16 per cent in Kolli hills to 62.94 per cent in Ooty hills) except in Yercaud hills (8.63 per cent), where the major share of livestock income was from goat rearing (78.58 per cent). In case of marginal farmer category, the overall average total livestock income was estimated to be Rs. 10289.56 in which the contribution of various species to the total livestock income was observed to be cattle (39.37 per cent), bullock (21.71 per cent), goat (19.25 per cent), buffalo (13.27 per cent), sheep (2.88 per cent), poultry (2.39 per cent) and pig (1.13 per cent). Among the various hills, the total livestock income being highest in Ooty hills (Rs. 14115.96) closely followed by Yelagiri hills (Rs. 14069.70) and lowest in Kolli hills (Rs. 6597.40).

In small farmer category, the overall average total livestock income was estimated to be Rs. 12823.95 and per cent contribution

to this total income by various species of livestock was noted as cattle (40.66 per cent), bullock (22.20 per cent), goat (14.88 per cent), buffalo (14.36 per cent), sheep (4.80 per cent), poultry (2.64 per cent) and pig (0.46 per cent) in the study area. The highest income among different hills was noticed in Ooty hills (Rs. 21323.86) and the lowest income was in Kodaikanal hills (Rs. 7867.25). In the case of large farmer category, the overall income was estimated to be Rs. 14445.07 (The highest in Ooty hills - Rs. 20,942.74 and the lowest in Kolli hills - Rs. 8580.66). Here also, the income from cattle was found to be the major contributing factor to the total livestock income in majority of hills viz., Kolli hills (61.99 per cent), Kodaikanal hills (58.11 per cent) and Yelagiri hills (51.49 per cent) while the buffalo income has contributed maximum in Ooty hills (72.44 per cent).

The overall analysis of all hills revealed that the total average livestock income per sample household in the tribal area was Rs. 11224.89 in which, cattle contributed the major share (40.50 per cent) followed by bullock (21.14 per cent), goat (16.86 per cent), buffalo (13.95 per cent), sheep (4.23 per cent) and poultry (2.59 per cent). Singh et al., (1998) also reported similar results that the cattle contribute about 40 per cent of the farm income. The contribution of pig enterprise in the total livestock income was meager (0.73 per cent) in the present study in contrast to 16 per cent in the study undertaken by Singh (2000) in Ranchi district of Bihar, which might be due to the customs of the tribal households. It could also be deduced from the table that, apart from cattle, bullocks had contributed more to the total livestock income of the tribal farmers. The income from cattle rearing activity was the major factor in Kolli hills (44.89 per cent) and Yelagiri hills (54.07 per cent). In case of Yercaud and Kodaikanal hills, goat rearing activity has contributed maximum to the total livestock income. The income derived from buffalo rearing has contributed maximum (54.47 per cent) to the total livestock income of the farmers in

Ooty hills since, Toda buffaloes are maintained as the cultural heritage by the tribal farmers. In Sitheri as the bullock rearing was found to be contributing maximum to the total livestock income (41.21 per cent).

By and large, it could be implied that, among the different livestock species, cattle and goat contributed more to the total livestock income of the landless farmer category, while, in other categories of farmers, cattle and bullock contributed more to the total livestock income in the study area.

Conclusion

From the study it may be concluded that the increase in the landholding size has a direct relationship with the average livestock holding of the sample tribal households. Various species of livestock are contributing in generation of livestock income and among the different livestock species, cattle and goat contributed more to the total livestock income of the landless farmer category, while, in other categories of farmers, cattle and bullock contributed more to the total livestock income in the study area. Based on the relative importance of livestock species and their contribution to the total livestock income, suitable hill-specific and species- specific tribal livestock developmental programmes may be implemented for the betterment of the tribal farmers of Tamil Nadu.

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Table 1
Average livestock holding per sample household

(in animal units)

Name of the study area	Cattle	Buffalo	Bullock	Sheep	Goat	Pig	Poultry	Total
LANDLESS								
Kolli hill	0.69 (37.70)	-	0.26 (14.21)	-	0.80 (43.72)	0.05 (2.73)	0.03 (1.64)	1.83 (100.00)
Yercaud hill	0.14 (5.26)	-	0.33 (12.41)	-	2.19 (82.33)	-	-	2.66 (100.00)
Ooty hill	3.86 (58.66)	2.72 (41.34)	-	-	-	-	-	6.58 (100.00)
Kodaikanal hill	-	-	-	-	0.85 (95.51)	-	0.04 (4.49)	0.89 (100.00)
Yelagiri hill	1.18 (39.46)	-	0.39 (13.04)	1.25 (41.81)	0.08 (2.68)	0.06 (2.01)	0.03 (1.00)	2.99 (100.00)
Sitheri hill	1.55 (39.95)	-	1.49 (38.40)	0.35 (9.02)	0.46 (11.86)	-	0.03 (0.77)	3.88 (100.00)
Overall	1.17 (38.36)	0.44 (14.43)	0.38 (12.46)	0.27 (8.84)	0.75 (24.59)	0.02 (0.66)	0.02 (0.66)	3.05 (100.00)
MARGINAL								
Kolli hill	1.24 (46.62)	-	0.71 (26.69)	-	0.61 (22.93)	0.06 (2.26)	0.04 (1.50)	2.66 (100.00)
Yercaud hill	0.31 (9.54)	-	1.56 (48.00)	-	1.38 (42.46)	-	-	3.25 (100.00)
Ooty hill	3.68 (72.30)	1.20 (23.58)	0.06 (1.18)	-	0.15 (2.94)	-	-	5.09 (100.00)
Kodaikanal hill	0.63 (35.20)	-	-	-	1.09 (60.89)	-	0.07 (3.91)	1.79 (100.00)
Yelagiri hill	1.61 (49.54)	-	0.68 (20.92)	0.57 (17.54)	0.26 (8.00)	0.08 (2.46)	0.05 (1.54)	3.25 (100.00)
Sitheri hill	0.88 (20.28)	-	2.60 (59.91)	0.17 (3.92)	0.66 (15.20)	-	0.03 (0.69)	4.34 (100.00)
Overall	1.49 (42.57)	0.23 (6.57)	0.95 (27.14)	0.12 (3.43)	0.66 (18.86)	0.02 (0.57)	0.03 (0.86)	3.50 (100.00)
SMALL								
Kolli hill	1.24 (35.73)	-	1.39 (40.06)	-	0.70 (20.17)	0.10 (2.88)	0.04 (1.16)	3.47 (100.00)
Yercaud hill	0.73 (16.82)	-	2.08 (47.93)	-	1.53 (35.25)	-	-	4.34 (100.00)
Ooty hill	1.00 (10.72)	8.33 (89.28)	-	-	-	-	-	9.33 (100.00)
Kodaikanal hill	1.23 (52.79)	-	-	-	1.00 (42.92)	-	0.10 (4.29)	2.33 (100.00)
Yelagiri hill	2.15 (52.31)	-	1.34 (32.60)	0.39 (9.49)	0.16 (3.89)	0.02 (0.49)	0.05 (1.22)	4.11 (100.00)
Sitheri hill	1.08 (22.64)	-	2.86 (59.96)	0.15 (3.14)	0.66 (13.84)	-	0.02 (0.42)	4.77 (100.00)
Overall	1.23 (26.39)	1.29 (27.68)	1.31 (28.11)	0.09 (1.93)	0.68 (14.59)	0.02 (0.43)	0.04 (0.87)	4.66 (100.00)

Table 1 (Contd..)

Average livestock holding per sample household

Name of the study area	Cattle	Buffalo	Bullock	Sheep	Goat	Pig	Poultry	Total
LARGE								
Kolli hill	1.80 (56.60)	-	0.61 (19.18)	-	0.58 (18.24)	0.13 (4.09)	0.06 (1.89)	3.18 (100.00)
Yercaud hill	1.35 (27.00)	-	2.64 (52.80)	-	1.01 (20.20)	-	-	5.00 (100.00)
Ooty hill	0.72 (8.39)	7.85 (91.49)	-	-	-	-	0.01 (0.12)	8.58 (100.00)
Kodaikanal hill	2.41 (66.57)	-	-	-	1.07 (29.56)	-	0.14 (3.87)	3.62 (100.00)
Yelagiri hill	3.06 (47.08)	-	2.45 (37.69)	0.64 (9.85)	0.22 (3.38)	0.05 (0.77)	0.08 (1.23)	6.50 (100.00)
Sitheri hill	1.25 (26.43)	-	2.67 (56.45)	0.17 (3.59)	0.60 (12.68)	-	0.04 (0.85)	4.73 (100.00)
Overall	1.79 (34.16)	1.20 (22.90)	1.44 (27.48)	0.14 (2.67)	0.59 (11.26)	0.03 (0.57)	0.05 (0.96)	5.24 (100.00)
OVERALL								
Kolli hill	1.24 (43.82)	-	0.80 (28.27)	-	0.67 (23.67)	0.08 (2.83)	0.49 (1.41)	2.83 (100.00)
Yercaud hill	0.60 (16.00)	-	1.60 (42.67)	-	1.55 (41.33)	-	-	3.75 (100.00)
Ooty hill	2.49 (34.73)	4.61 (64.30)	0.02 (0.27)	-	0.05 (0.70)	-	-	7.17 (100.00)
Kodaikanal hill	1.00 (48.07)	-	-	-	0.99 (47.60)	-	0.09 (4.33)	2.08 (100.00)
Yelagiri hill	1.96 (47.46)	-	1.17 (28.33)	0.72 (17.43)	0.18 (4.36)	0.05 (1.21)	0.05 (1.21)	4.13 (100.00)
Sitheri hill	1.17 (26.35)	-	2.43 (54.73)	0.21 (4.73)	0.60 (13.51)	-	0.03 (0.68)	4.44 (100.00)
Overall	1.41 (34.81)	0.77 (19.02)	1.00 (24.69)	0.15 (3.70)	0.67 (16.55)	0.02 (0.49)	0.03 (0.74)	4.05 (100.00)

(Figures in parentheses indicate percentages to total)

Table 2

Components of Livestock income among sample tribal households

Name of the study area	Cattle	Buffalo	Bullock	Sheep	Goat	Pig	Poultry	Total
LANDLESS								
Kolli hill	2010.17 (41.16)	-	637.50 (13.05)	-	1693.33 (34.68)	306.00 (6.27)	236.33 (4.84)	4883.33 (100.00)
Yercaud hill	657.50 (8.63)	-	975.00 (12.79)	-	5990.00 (78.58)	-	-	7622.50 (100.00)
Ooty hill	9004.32 (62.94)	5209.19 (36.41)	-	-	-	-	-	14305.41 (100.00)
Kodaikanal hill	-	-	-	-	1887.75 (83.05)	-	385.41 (16.95	2273.16 (100.00)
Yelagiri hill	5412.65 (52.86)	-	1424.33 (13.91)	2120.62 (20.71)	754.66 (7.37)	399.34 (3.90)	127.99 (1.25)	10239.59 (100.00)
Sitheri hill	3552.69 (41.89)	-	2512.86 (29.63)	1063.46 (12.54)	962.85 (11.36)	-	388.64 (4.58)	8480.50 (100.00)
Overall	3307.02 (42.35)	838.00 (10.73)	887.17 (11.36)	530.63 (6.79)	1944.77 (24.90)	109.36 (1.40)	192.66 (2.47)	7809.61 (100.00)

Table 2 (Contd..)

Components of Livestock income among sample tribal households

MARGINAL								
Kolli hill	2870.65 (43.51)	-	1572.83 (23.84)	-	1754.13 (26.59)	204.13 (3.09)	195.66 (2.97)	6597.40 (100.00)
Yercaud hill	2160.00 (22.20	-	3127.50 (32.13)	-	4445.00 (45.67)	-	-	9732.50 (100.00)
Ooty hill	6795.35 (48.14)	7027.00 (49.78)	44.68 (0.32)	-	248.93 (1.76)	-	-	14115.96 (100.00)
Kodaikanal hill	1839.99 (33.73)	-	-	-	2625.91 (48.14)	-	988.62 (18.13)	5454.52 (100.00)
Yelagiri hill	7981.74 (56.73)	-	2258.19 (16.05)	1523.75 (10.83)	1716.50 (12.20)	469.96 (3.34)	119.59 (0.85)	14069.70 (100.00)
Sitheri hill	1750.00 (16.95)	-	6270.28 (60.75)	269.00 (2.61)	1607.64 (15.57)	-	424.87 (4.12)	10321.79 (100.00)
Overall	4051.49 (39.37)	1364.75 (13.27)	2234.25 (21.71)	296.32 (2.88)	1980.61 (19.25)	116.48 (1.13)	245.66 (0.86)	10289.56 (100.00)
SMALL								
Kolli hill	2804.78 (35.12)	-	3007.84 (37.66)	-	1632.05 (20.44)	295.68 (3.70)	245.57 (3.08)	7985.92 (100.00)
Yercaud hill	2622.86 (23.22)	-	4655.71 (41.22)	-	4017.15 (35.56)	-	-	11295.72 (100.00)
Ooty hill	9432.00 (44.23)	11891.86 (55.77)	-	-	-	-		21323.86 (100.00)
Kodaikanal hill	3176.76 (40.38)	-	-	-	3515.67 (44.69)	-	1174.82 (14.93)	7867.25 (100.00)
Yelagiri hill	9986.98 (55.09)	-	6032.40 (33.28)	1878.56 (10.36)	210.14 (1.16)	13.14 (0.07)	7.25 (0.04)	18128.47 (100.00)
Sitheri hill	4152.89 (34.64)	-	3425.00 (28.57)	1837.42 (15.33)	2032.43 (16.95)	-	541.32 (4.51)	11989.06 (100.00)
Overall	5214.74 (40.66)	1841.66 (14.36)	2847.03 (22.20)	616.13 (4.80)	1907.71 (14.88)	57.57 (0.46)	339.11 (2.64)	12823.95 (100.00)
LARGE								
Kolli hill	5318.84 (61.99)	-	1396.66 (16.28)	-	1269.16 (14.79)	238.00 (2.77)	358.00 (4.17)	8580.66 (100.00)
Yercaud hill	4108.58 (28.15)	-	6137.31 (42.05)	-	4348.55 (29.80)	-	-	14594.44 (100.00)
Ooty hill	5755.48 (8.39)	15170.32 (72.44)	-	-	-	-	16.94 (0.08)	20942.74 (100.00)
Kodaikanal hill	5974.89 (58.11)	-	-	-	3061.99 (29.78)	-	1245.00 (12.11)	10281.88 (100.00)
Yelagiri hill	9634.08 (51.49)	-	7999.41 (42.75)	708.86 (3.79)	200.13 (1.07)	6.56 (0.04)	160.85 (0.86)	18709.89 (100.00)
Sitheri hill	3945.31 (29.03)	-	6012.53 (44.24)	1986.94 (14.62)	1074.29 (7.90)	-	572.08 (4.21)	13591.15 (100.00)
Overall	5802.77 (40.17)	2328.12 (16.12)	3698.63 (25.60)	467.09 (3.23)	1708.47 (11.84)	35.35 (0.24)	404.64 (2.80)	14445.07 (100.00)
OVERALL								
Kolli hill	3168.87 (44.89)	-	1771.47 (25.10)	-	1609.17 (22.80)	258.13 (3.66)	250.90 (3.55)	7058.54 (100.00)
Yercaud hill	2322.00 (21.76)	-	3612.37 (33.86)	-	4734.67 (44.38)	-	-	10669.04 (100.00)
Ooty hill	7740.54 (44.87)	9396.69 (54.47)	20.68 (0.12)	-	94.00 (0.54)	-	-	17251.91 (100.00)
Kodaikanal hill	2573.31 (41.57)	-	-	-	2713.83 (43.84)	-	903.05 (14.59)	6190.19 (100.00)
Yelagiri hill	8150.08 (54.07)	-	4256.09 (28.23)	1575.56 (10.45)	754.70 (5.01)	231.81 (1.54)	105.25 (0.70)	15073.49 (100.00)
Sitheri hill	3323.64 (29.94)	-	4574.66 (41.21)	1273.47 (11.47)	1446.02 (13.03)	-	481.82 (4.35)	11099.61 (100.00)
Overall	4546.41 (40.50)	1566.11 (13.95)	2372.55 (21.14)	474.84 (4.23)	1892.06 (16.86)	81.66 (0.73)	291.26 (2.59)	11224.89 (100.00)

(Figures in parentheses indicate percentages to total)

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INTEGRATED APPROACHES FOR ECONOMIC DEVELOPMENT OF SHIFTING CULTIVATORS

Dr. B.B Sarkar[1] and Arun Debbarma[2]

Shifting cultivation is popularly known as "Jhum" or "Huk" by the tribes of Tripura. It is also known as "Slash and Burn" or "Rotation Farming". The Tribal man who practices shifting cultivation is known as "Jhumia or Huk Khaichanai". For survival and as a part of tribal way of life and culture shifting cultivation has been practised by tribals of Tripura since time immemorable. The characteristic of primitive shifting cultivations are rotation of field rather than crops, mixed cropping of indigenous varieties of Rice (Mai) with a wide range of other local crops like Maize (Magodum), Cotton (Khool), Mesta (Pat), Sesamum (Shiping), Pegion pae (Masika), Bajra (Masinga). Minor millet (Masoi), Pumpkin (Chakumara), Cucumber (Sasha, Dramai, Thisamu), Ashgourd (Khaklu), Brinjal (Fantak), Chilli (Maso), Bean (Dibia), Colocasia (Tha), Water melon (Morphol), Muskmelon (Thaisamu bangi), Jhum coriender (Kunjupui) and flowers (Kusum phool, Chatrabangal) etc.

All These crops are sown by dibbling method and grows completely under rainfed condition without irrigation. In shifting cultivation process of Tripura, right of individual ownership is only on the crops and not on the land. Production process helps to develop co-operation among family members and neighbours. Shifting cultivation is very closely associated with the socio-economic life of the local tribal communities of Tripura and most of their songs, dances and social customs including marriage system are inter-linked with this primitive agricultural practices.

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But at present, due to reduction of jhuming cycle, shifting cultivation has proved uneconomic. More over, shifting cultivation has ill effects viz. responsible for deforestation, encourage soil erosion, ecologically harmful and destructive to environment, reduce water holding and recharge capacity of soil, threat to wild animal and valuable plant germplasm. But shifting cultivation was main livelihood and socio cultural heritage of all the tribes of Tripura before 18th century as because plough cultivation was introduced in Tripura only 100 years ago. At that time jhum cycle was prolong, resulting good harvest and jhumia farmers could be able to fulfil their family requirement for round the year. Now due to decreasing trend of traditional jhum yield, jhumia farmers can hardly manage their family's food requirement only for two to four months from their jhum produced and at present poor jhumias are living from hand to mouth.

Again shifting in different places year after year is one of the reason for the economic undevelopment of jhumias or shifting cultivators. But the poor shifting cultivators are ignorant of the ill effects of shifting cultivation and are yet to test the benefit of modern science and technology. The Hardcore shifting cultivators are very conservative and are not enthusiastic to change the old tradition.

The Government of India and State Government has launched many schemes since independence to control shifting cultivation, but failed as because shifting cultivation is still in existence in the interior hilly areas of Tripura due to socio-cultural heritage.

Considering the cultural sentiment of tribal shifting cultivators at this transaction period improved package of practices for jhum may be adopted for increasing production and productivity of juhm crops are (1) Replacement of old diseased/ pests infested degenerated jhum varieties with improved varieties (2) Quality jhum seed supply in time is also one of constrain for which improvement of traditional jhum varieties and production chain of quality jhum seedly may be taken up. (3) Use of manure and fertilisers to maintain soil health (4) Seed treatment and

adoption of integrated pest and diseases management technology (5) Placement of different crops in scientific manner for better production and proper utlization of jhum land. (6) Sowing of seeds inline across the slopes to conserve soil and moisture. (7) Broadcasting leguminous seeds i.e. blackgram, green gram, pegion pea etc. at the time of harvest of jhum paddy for increasing soil fertility and to act as cover crop to protect soil loss. (8) Inclusion of crops like banana, pineapple, papaya, bamboo etc in the jhum plots to encourage settle cultivation of shifting cultivators for better economic return and also to maintain socio-cultural heritage.

Comparative economic studies on traditional jhum cultivation versus improved jhum cultivation revealed that a jhumia family can earn only Rs. 356 and Rs. 7381 per annum from one hactor, traditional jhum and improved jhum plot respectively. So, at present situation depending only on shifting cultivation jhumias would never become self sufficient to maintain their livelihood.

A studies on tribal families of Dhalai agricultural District reveled that source of income derived from jhum cultivation 22.57%, Agricultural crops -18.57%, Horiticulture - 21.14%, wages daily labour - 10.28%, livestock - 9%, collection and selling of forest product including bamboo and firewood- 8.42%, plantation crops- 6.14% and Fishery - 3.85%. Again at present tribal families incur their expenditure 42% for procurement of main food item i.e rice. The others items of family expenditure are cloths including winter bedding 10.5%, dry fish - 6.5%, wine - 8.86%, smoking - 3.5%, kerosene oil - 2%, vegetables- 2.17%, soap/ washing power/ cosmetic etc- 2.1%, medical 1.3%, utensil - 1.2%, spices - 1.5%, dal - 4.0%, meat - 2.5%, fish 1.17%, salt/ mustard oil - 2%, social customs and rituals - 3.2% and others - 5.5%.

The studies of preference of occupation of tribal youth from Jhumia families observed that educated tribal youths above Madhyamik qualification are interested for government service or assured job in Government undertaking organisations. However, illiterate or under qualified school dropout tribal youths of Tripura

expressed their views for economic settlements mainly on traditional jhum cultivation - 6.7%, improved jhum cultivation - 12.85%, settled cultivation on agricultural crops- 18.34%, settled cultivation on fruits and vegetables - 22.71%, plantation crops- 13.99%, animal husbandry - 18.56%, fishery - 4.28% and others - 2.56%.

Considering the above facts of shifting cultivators family, the following approaches may be offered for their sustainable economic settlement in Tripura.

1. Horticulture

The shifting cultivators are lovers of fruits, vegetables and flowers. The agro-climate of Tripura are suitable for production of a good number of tropical and sub-tropical fruits like banana, pineapple, citrus, litchi, jackfruit, papaya, mango etc. and vegetable crops like pumpkin, spine gourd, pointed gourd, bottle gourd, ash gourd, ridge gourd, cucumber, radish, cabbage, cauliflower, amaranth, brinjal, tomato, potato, lady's finger, taro (mukhi kachu), eddoes (jal kachu), gaint taro (man kachu), elephant foot yam (batema) etc. Now area base planning is necessary in shifting cultivation area for the scientific cultivation of selected fruits and vegetables. The improved horticultural ecologically sustainable technologies should be blended with traditional wisdom of the shifting cultivators.

2. Agriculture

The shifting cultivators are born primitive agriculturalist. Failure of monsoon, infestation of traditional jhum crops by inset pest and diseases causes poor yield.

Plain land in the shifting cultivation area is a limiting factor for intensive agriculture. Irrigation facilities are also very poor in the shifting cultivation area. However multipurpose water harvesting structure may be constructed to store rain water. These can also serve as fishery water area, house hold use and provide irrigation water for crops and meet the requirement of domestic livestock. Training is a process through which a person can equip himself with skill, good quality

training can help the shifting cultivators for economic settlement through regular economic earning. For the said purpose trained agricultural worker need to stay in the shifting cultivation area and may act as guide and friend of shifting cultivators for adopting improved methods of upland cultivation for field crops like cereals, pulses, oilseeds, fibre crops etc. as well as horticultural crops like fruits, nuts, vegetables and spices etc. as per feasibilities of land.

3. Animal Husbandry

Jhum cultivation is the principle source of livelihood for majority of interior shifting cultivators of Tripura, but at present due to reduction of jhuming cycle, production of this primitive agriculture is declining and shifting cultivators are living much below the proverty line. Further it is observed that shifting cultivators are habituated to rear domestic pig, goat, cattle and poultry birds in the home state. Rearing of these domestic animals and birds specially indigenous breed in small number is a tradition of tribal life and culture. The goats, pig, poultry birds etc. are also necessary to offer to their gods and to perform social ritual and custom etc. In addition these domestic animals and birds provide them a steady source of supplementary income, so animal rearing may easily be accetable to the tribal shifting cultivators. A recent survey on economic settlement, 18.56% of tribal youths showed interest as preference of occupation on animal rearing farming in Tripura. Out of these, tribal youths expressed their views to accept piggery, goatery, dairy and poultry farming which is 11.57%, 2.57%, 1.85% and 2.57% respectively. During the study it is also observed that most of the animal resource belongs to shifting cultivators are local breed and production of meat, milk and eggs etc. are less. So improved high yielding breeds may be supplied to the shifting cultivators for better production.

4. Plantation Crops

Plantation crops like rubber, tea, coffee, cocoa, coconut, cashew nut, areca nut, red oil palm etc. can be successfully grown under agro-climatic condition of Tripura. All these crops has industrial and

employment generation potentialities if grown in sizable quantity in compact area. In this connection it may be mentioned here that growing mono crop in vast area continuously may not be desirable, considering the environmental and natural hazard. So diversification of plantation crops need to be taken into consideration during selection of plantation crops.

5. Forestry

The important forest plants of Tripura are sal (shorea robusta), segun, karai, chamal, gamair, garjan etc. The common bamboo species growing naturally in the forests of Tripura are (1) Muli (Melocanna baccifera), (2) Mirtinga (Bambusa tulda), (3) Pecha (Dendrocalamus hamiltonii), (4) Rupai (Dendrocalamus longispathus), (5) Dalu (Schizostechyum dulloa), (6) Kaliyai or Kali (Gigantochloa andamanica, syn. Oxytenanthera nigrociliata), (7) Lata (Melocalamus compactiflorus) etc. Besides these a few bamboo species are generally cultivated in Tripura, and they are (1) Barak (Bambusa balcooa), (2) Bari or jai (Bambusa vulgaris), (3) Bom or Bethuya (Bambusa cocharensis), (4) Kanak Kaich (Thyrsostachys oliveri), (5) Makal (Bambusa nutans), (6) Tetuya (Bambusa jaintiana), (7) Paora or pharua (Bambusa polymorpha), (8) Lathi bans (Dendrocalamus strictus), (9) Knata barak or shilbarak (Bambusa bambos) etc. Very recently State Forest Department introduced a delicious, round the year bamboo shoots producing species Karul bans (Dendrocalamus asper) in Tripura for cultivation. Now it is necessary for preservation of existing forest plantation and to stop indiscriminant collection of timber, fire wood and bamboo alongwith creation of new forest and bamboo plantation for generation of employment opportunities and improving the livelihood of the tribal shifting cultivators.

6. Fishery

The shifting cultivators of Tripura are very fond of dry fish, kuchia (Amphipnous cuchia), crabs and tortoises etc. The lunga land in between hill slopes are abundantly available in tribal dominating shifting cultivation area. These lunga or swamps can be easily converted into

fishery water area, with reclamation and construction of bunds in one side. These type of wate areas are popularly known as 'mini barrage' and suitable for psiciculture. Proper scientific training may be provided to the Jhumia farmers on improved method of psiciculture including processing and preservation of fish, so that they will be encouraged for self employment and economic settlement based on pisciculture.

7. Rural Industry/ Other Occupation

In Tripura 77% of the population are engaged in Agri-Horti-Plantation sectors and only 4% in the industrial activities. Rural industrial occupation like carpentry, tailoring, bamboo-cane and wooden crafts, handloom, bee keeping, mushroom cultivation, sericulture, fruit and vegetable processing, small business, nursery establishment etc. may be provided to the shifting cultivators for economic settlement as per their own choice. In this connection it may be mentioned here that shifting cultivators are simple but traditionally conservative. So concept of modern rural industrial technology, skill is to be imparted gradually for the economic settlement and it is conceived to engaged them in their traditional pursuits which are acceptable to them.

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SOLAR ENERGY IN TRIBAL AREAS : AN ASSESSMENT IN TRIPURA

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Introduction

Solar is the Latin word for sun-a powerful source of energy that can be used to heat, cool, and light our homes and businesses. Energy from the sun falls on the earth in one hour is more than is used by everyone in the world in one year. A variety of technologies convert sunlight to usable energy for households. The most commonly used solar technologies for homes and businesses are solar water heating, passive solar design for space heating and cooling, and solar photovoltaics for electricity.

Though India receives the second highest solar radiation after California in the U.S., the solar equipment and solar energy market is not growing here, mainly owing to the high cost of the Silicon based solar cells used for generation of energy from solar PV. Most parts of India receive 5,000 trillion kWh (4-7 kWh/square meter per day) of solar radiation with 250 to 300 sunny days in a year. Rajasthan, Gujarat, and parts of Jammu & Kashmir receive the maximum amount of solar radiation and thus have highest solar energy potential. Despite this, as of now, India has solar installed capacity of approximately 15 MW (both grid and distributed) only.

Photovoltaic (solar cell) Systems

Solar cells convert sunlight directly into electricity. Solar cells are often used to power calculators and watches. They are made of semiconducting materials similar to those used in computer chips. When sunlight is absorbed by these materials, the solar energy knocks electrons

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loose from their atoms, allowing the electrons to flow through the material to produce electricity. This process of converting light (photons) to electricity (voltage) is called the photovoltaic (PV) effect.

Photovoltaic (or PV) systems convert light energy into electricity. The term "photo" is a stem from the Greek "phos," which means "light." "Volt" is named for Alessandro Volta (1745-1827), a pioneer in the study of electricity. "Photo-voltaic," then, could literally mean "light-electricity." Most commonly known as "solar cells," PV systems are already an important part of our lives. The simplest systems power many of the small calculators and wrist watches we use every day. More complicated systems provide electricity for pumping water, powering communications equipment, and even lighting our homes and running our appliances. In a surprising number of cases, PV power is the cheapest form of electricity for performing these tasks.

Photovoltaic cells convert light energy into electricity at the atomic level. Although first discovered in 1839, the process of producing electric current in a solid material with the aid of sunlight wasn't truly understood for more than a hundred years. Throughout the second half of the 20th century, the science has been refined and the process has been more fully explained. As a result, the cost of these devices has put them into the mainstream of modern energy producers. This was caused in part by advances in the technology, where PV conversion efficiencies have improved considerably.

French physicist Edmond Becquerel first described the photovoltaic (PV) effect in 1839, but it remained a curiosity of science for the next three quarters of a century. At only 19, Becquerel found that certain materials would produce small amounts of electric current when exposed to light. The effect was first studied in solids, such as selenium, by Heinrich Hertz in the 1870s. Soon afterward, selenium PV cells were converting light to electricity at 1% to 2% efficiency. As a result, selenium was quickly adopted in the emerging field of photography for use in light-measuring devices.

Role of Solar Photovoltaics

Photovoltaics (PV) already provide electricity to an estimated 500,000 to 1 million rural households in developing countries who lack access to electricity grids. Worldwide, two billion people lack access to electricity, so the potential for continued application of PV is large, with resultant economic, local environmental, and global environmental benefits. Traditionally, bilateral donor assistance has resulted in hardware installations but has placed less emphasis on the key ingredients for sustainability, such as viable service networks and trained personnel.

Present Status

Renewable Energy in India

Renewable energy sector growth in India during the last four years has been significant, even for electricity generation from renewable sources. The grid connected systems with installed capacities in the MW range indicate a growth of 96% for wind power, 26% in small hydro, 234% for biomass/co-generation power and 200% for solar photovoltaic power. Even for the decentralized systems, the growth for solar home lighting systems has been 300%, solar lanterns 99% and solar photovoltaic water pumps 196%. This is a phenomenal growth in the renewable energy sector mainly for applications that were considered to be supplied only through major electricity utilities. Renewable energy systems are also being looked upon as a major application for electrification of 20,000 remote and unelectrified villages and hamlets by 2007 and all households in such villages and hamlets by 2012.

Renewable Energy in Tripura

SPV Programme

Under this programme total 500 nos. Solar Home Lighting Systems and 50 Solar Street Lighting Systems are to be distributed all over the State. Beneficiary contribution for HLS (Model-I)-3800/-, HLS (Model-II)-6500/- HLS (Model-IV) - 10500/- and SLS-7000/-. Ministry of Non-renewable Energy (MNRE), GOI sanctioned one Project for

"Electrification of 251 Remote Hamlets in Tripura" under RVE Programme covering 7278 nos families by proving Solar Home Lighting System,Model-II throughtout the State of Tripura.

Remote Village Electrification Programme

TREDA implemented two schemes under RVE namely,

i) Electrification of 30 Census Villages

ii) Electrification of 488 Hamlets

iii) Electrification of 205 hamlets in Tripura

Under the aforesaid schemes TREDA completed Installation & Commissioning of 24,950 nos. Home Lighting System (HLS) and 180 no's Street Lighting System (SLS) in Tripura. TREDA already completed these projects under RVE Programme.

An Evaluation

Research Methodology

The study had been conducted with the principal objective of evaluating the impact generated by SPV system and also provides a detailed report on the socio economic conditions of the beneficiaries. The specific objectives are:

1. To study the socio economic condition of the beneficiaries of SPV.
2. To study the performance of SPV in Rural areas.

The study was conducted in West district of Tripura. The Ramkrishnapur VDC, ADC village under Mungiakami R.D. Block, West Tripura. Mungiakami R.D. Block in the West Tripura district was chosen on the basis of highest implementation of SPV system block in all Tripura and it is one of the most backward Blocks in Tripura and also totally Scheduled Tribe dominated area. From this Block one village nearby forest area had been selected for the study. Out of total 529 households of the village, 100 nos. of ST households were selected through purposive random sampling method. For knowing the different schemes available in Tripura and the achievements, secondary data was collected from Tripura Renewable Energy Development Agency (TREDA). The primary data

were collected directly from the village area through household survey, with the help of pre-framed structural schedules to fulfill the objective of the study.

Major Findings

The following findings come out from the analysis of the primary data of village.

Socio-Economic Condition

1. The concentration of population was more in the age group of 36-60, and it was about 30 percent of the total population.
2. Sex ratio was more than the sex ratio of India and it was 1023.
3. Child sex ratio was more than the sex ratio in India and it was 1136. It seems very good for girl child in these areas.
4. 71 percent of the populations were married in the villages.
5. Literacy rate was 79 percent, but women literacy rate was less than the male literacy rate, some of them were only able to sign. Graduate and Post graduate persons in the village were not found.
6. 47 percent of the villagers were depending on agricultural labour for both their primary and secondary occupation. 12 percent people were engaged with Govt. service and only 8 percent with business sector.
7. Out of 100, 48 percent families were below poverty level.
8. 50 percent of the households' monthly income limits from Rs.4001-6000.
9. 73 percent of the surveyed HH were Nuclear families.
10. All households in the surveyed village have their own land.
11. All households have above 5 kani non-agricultural land.
12. All households in the surveyed village have their own house.
13. 98 percent of the surveyed house holds have tin as roof material.
14. 97 percent of the studied households had mud floor.
15. 42 percent of the wall of the studied households was made of tin.
16. Use of the house in the studied village was residential.
17. 79 percent of the households have one room in their house.

18. 84 percent of the households have separate kitchens.
19. 50 percent of the families had 1-2 children and only 2 percent had above 6 children.
20. 79 percent of the households had their own electricity facilities.
21. 71 percent of the people used open well as their major source of drinking water. Proper drinking water facility was not available in the village.
22. 77 percent of the households have no water purifier in their house.
23. Proper sanitation facility was not available in the village.
24. 56 percent of the villagers were using pit type sanitation which was provided under TSC scheme. Some villagers have sanitary latrine. Till now few peoples used to go jungle for defection.
25. Wood was the major (92 percent) source of fuel for cooking purpose; gas facility (8 percent) was very less in those areas.
26. 39% households have vehicles and 47% households have television.
27. 35.53 percent of the households have pig as livestock based livelihood opportunities.
28. 81.7 percent of the household have their separate place for domestic animals.
29. 51 percent of the household were totally or partly engaged with cultivation.
30. 84.31 percent of the people practiced fruits cultivation.
31. The irrigation facilities was absent in the surveyed village. Rain water was only source of irrigation for cultivation.

Solar Energy

1. In the surveyed households 100% of the households got the benefit of solar home light system.
2. 86 percent of the households installed their SPV system during the year 2006.
3. 87 percent of the villagers were paid Rs. 500 as cost of the SPV system.

4. 74 percent of the SPV systems were not in useable situation.
5. Among the not users, 54 percent of the households sold their SPV system for some purposes.
6. In the surveyed village maximum sale (40 percent) was done for treatment purpose. It describes that the health condition of the surveyed village was not in a good position. Defective SPV system was also another major reason of sale (38 percent).
7. Every households use their SPV system more than 3 hrs. in a day .
8. Adults were mostly primary users (64 percent) by the SPV system than children.
9. 79 percent of the households' monthly expenditure was between Rs. 50-100 on lights before SPV system.
10. 63 percent of the households were not satisfied with the SPV system.
11. Those who were satisfied among them satisfaction level was good (73 percent).
12. Those who were facing problems with SPV device among them all were facing technical problems in using the SPV system.
13. 60 percent of the households were facing poor quality battery problems.
14. Sales agreement never done at the time of distribution of SPV system to the households of the study area.
15. There was no service centre available in the studied area.

Recommendation

Under the above mentioned circumstances some suggestions can be put forward for overall socio-economic development of the village & on analyzing the above factors it is recommended that:-

1. Defective SPV system may provide employment opportunities to youths in the village as well as nearby villages by giving them repairing training.
2. NGOs like ARKANEER may be involved for providing solar related training.

3. VDCs must be involved for selecting the beneficiaries while providing the SPV system.
4. Independent agencies may look after the selection and implementation process.
5. SHGs involvement is necessary for awareness creation on SPV among people.
6. Initiatives can be taken on creation of new clusters and providing solar related training.

Conclusion

The study of Solar Photovoltage System reflected that in Tripura the SPV system had been provided through Remote Village Electrification Program. But the proper utilization of the system was not done by the beneficiaries. If the proper utilization of the system could be done by the beneficiaries, then it can be used as an alternative source of energy in remote areas.

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ANNEXURE

Table : 1- Different Schemes available in Tripura Renewable Energy Development Agency

Illegibility criteria		Cost of each System	CFA support	Beneficiary Contribution
All households of approved Un-electrified villages/hamlets.	Model-II	Rs.11,980/-	Rs.11250/-	1500/-
Illegibility criteria		**Cost of each System**	**CFA support**	**Beneficiary Contribution**
All households of approved Un-electrified villages/hamlets.	Model-II	Rs.13,149/-	Rs.11250/-	1500/-
Illegibility criteria:		**Cost of each System**	**Subsidy**	**Beneficiary Contribution**
BPL Girl Child Studying in Class-IX-XII APL/BPL beneficiary in all blocks		Rs.3750/-	Rs.3750/-	Free
Illegibility criteria:		**Cost of each System**	**Subsidy**	**Beneficiary Contribution**
Resident of Tripura	Model-I	Rs. 8000/-	Rs.4200/-	Rs.3800/-
	Model-II	Rs.14250/-	Rs.7750/-	Rs.6500/-
	Model-IV	Rs.23945/-	Rs.13445/-	Rs.10,500/-
	SLS	Rs.26950/-	Rs.19950/-	Rs.7000/-

Source : Tripura Renewable Energy Development Agency

Table : 2 - Achievements of TREDA during 2007-08 to 2011-12 [Up to March- 2012]

Remote Village Electrification Programme[Electrification of 29 villages and 341nos hamlets in Tripura]

- Name of the System- Solar Home Lighting System,M-V
- Nos of familly covered- 18000nos
- Name of the System Installed & Commissioned- Solar Street Lighting

System[180nos]

Remote Village Electrification Programme [Electrification of 205 nos hamlets in Tripura]

- Name of the System- Solar Home Lighting System,M-II
- Nos of familly covered- 6950 nos

Remote Village Electrification Programme [Electrification of 251 nos hamlets in Tripura]

- Name of the System- Solar Home Lighting System,M-II
- Nos of familly will be cover - 7278 nos
- Total System Installed & Commissioned-7136 nos

Solar Lantern Programme[15500 nos Solar Lantern , M-IIA]

- Name of the System - Solar Lantern,M-IIA
- Total System Installed & Commissioned-15,000 nos in Rural Areas & 500 nos among BPL Girl Child, free of cost, w ıo studing in class-IX-XII

Solar Lantern Programme [20,000 nos Solar Lantern , M-IIA]

- Name of the System - Solar Lantern,M-IIA
- Total System Installed & Commissioned-19,559 nos in Nagar Panchayat & AMC Area

Source : Tripura Renewable Energy Development Agency

Table: 3- Electrification Programme for Electrification of 30 Census Villages in Tripura

Name of the Block	Name of the Villages	Total families covered	SPV Gadgets installed & Commissioned
West Tripura District			
Mandai RD Block	Atukthang	185	Solar Home Lighting System,Model-V
	Jameleng	173	
Mungiakami RD Block	Dakshin gakulnagar	570	
	Nonachera	654	
	Karaibari	49	
	Ramkrishna bari	120	

	Uttar Promodnagar	307	
Tulashikar RDBlock	Sukhiabari	70	
	Reima Chera	23	
	Mainakbari	169	
	Jagna Kobra Bari	379	
Padmabill RD Block	Khegraibari	64	
Dhalai District			
Chawmanu RD Block	Purba Chawmanu	40	Solar Home Lighting System,Model-V
Ambassa RD Block	Khowai Para	168	
	Batabari	118	
	Pustarai Para	162	
	Sardink Para	104	
	Radgarambari	154	
	Gangaprasad Para	103	
Dumburnagar RD Block	Bhagirath para	255	
	Purba raima	100	
South Tripura District			
Amarpur RD Block	Khederkote(Khedernal)	54	Solar Home Lighting System,Model-V
	Sardung(Sarbung)	289	
	Dakshin Baramura	523	
	Baramura Deotamura	407	
Rupaichari RD Block	Kaptali	361	
Karbuk RD Block	Jarimura	30	
	Mukchari	437	
	Chakpur	35	
Total		**6103**	

Source : Tripura Renewable Energy Development Agency

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A STUDY ON THE SCIENTIFIC TEMPER OF TRIBAL PEOPLE OF TRIPURA IN REGARD TO SELF MEDICATION

Manabendra Debnath

Introduction

Practice of self medication is an ancient event among the tribal people of Tripura, which was exclusively on ayurvedic system only. Nowadays they are not devoid of other modern systems, and also not in against of self medication, which one may be of supporting evidence of traditionalism. From this study, it can be confirmed that the comparative assessment of the scientific temper of tribal people whether is at par with the modernity of the society in regard to self medication.

In 1999, a national report highlighted that processed and synthetic drugs are replacing traditional plant products. The report estimated that there are 4 million drug mis-users in the South-Asian region, with India accounting for nearly 3 million and Bangladesh another 500000.

Self medication is the selection and use of medications by individuals to treat self-recognized illness or symptoms. Self-medication is one element of self-care. It is one in which individuals treat their self recognized illness or ailments with medicines which are approved and available without prescription, and which are safe and effective when used as directed. Responsible self-medication requires that --

1. All the medicines used are of prove safety, quality and efficacy.
2. All the medicines used for self-medication are indicated in particular self-recognizable condition and for some chronic or recurrent conditions (following initial medical diagnosis). In all the cases these medicines should be specifically designed

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for this purpose and their appropriate dose and dosage forms should be clearly given.

They should be supported by information, like -

a) How to use and route of administration
b) What will be the effect after taking
c) Possible side effects
d) Interaction of the medicine taken with other drugs, food etc.
e) Precautions and warnings
f) For how long the drug to be taken and
g) When to seek the advice of the professional.

More and more population is inclining towards self-medication. This is due to number of factors, such as socioeconomic, lifestyle, accessibility, management of acute-chronic and recurrent illness and rehabilitation, demographic and epidemiological, health sector reforms, and availability of new products.

Modern medicines spare us all from an incredible amount of suffering. If you doubt, imaging a world without antibiotics to cure infections, analgesics to alleviate pain or any of the many drugs we use to ease stiff joints and help weakened hearts. Medicines are like umbrellas, like knives, food, apples, matches, shoes and games. Medicines are not without there risks and for many tribal people misusing or over using the medicines is an invitation to trouble. As many as 1,40,000 people die each year from bad reaction to medicine. Any where from 3-11% of all hospitalization result from adverse drug events, that is anywhere from 1-3.6 million people annually. It estimated that around 7,70,000 hospitalized patients in US experience an adverse drug event. Drug related morbidity (sickness) and mortality have been estimated to cost more then $136 billion a year in US. This is the scenario in well developed country like America. One can imagine the situation in India where people have the least knowledge about the medicines.

Keeping all the aspects in mind, we were attempted to conduct a

survey to observe the scientific temper of the tribal people regarding the self-medication.

Materials And Method

A survey has been conducted by the help of school/ college going volunteers in the Agartala City, Capital of Tripura, a state of North-East India. For this purpose, an eventually prepared printed format in Bengali version was used. Prepared format was designed as per the predicted factors considered for observation. In this regard, we are reporting the same as per the result obtained from the survey and discussed. The results discussed here in the form of % manner for easy to understand irrespective to all categorized people.

Results And Discussion

In the course of study the views of total 212 numbers male and 94 nos. females were considered. Among them 05 numbers were below 18 years, 173 numbers of 19-40 years and 128 numbers of above 40 years. We have seen the ecucational qualification of the subjects as 60 numbers matriculation passed, 38 numbers bellow matriculate, 53 numbers H.S. passed, 13 numbers graduate and post-graduates 24 numbers. In our study, 60 numbers subjects were unemployed, 118 numbers were employed, 41 numbers were businessmen, 47 numbers housewives and 40 numbers were in others category. 25.4% were observed to have addiction and others were devoid of it.

In the query of confidence upon the treatment system, it has been found that 76.6% were inclined to allopathy system, 15.7% to homeopathy, 5.8% to ayurvedic and 1.9% to others. In normal disease condition, 43% generally were approaching physicians, 57% showed their confidence upon self medication and they were fixing dose depending on experience (20%), prediction (14.5%), the idea of shopkeeper (20%) and others (44.6%). Among the self medicated persons many (35.4%) had experience more than 10 years, 24.9% had more than 5 years experience, 18.6% had 5 years experience, 7.2% had 4 years 5.1% had 3 years, 6.7% had 2 years and 2.1% had 1 years

experience. Interestingly it has been found that upon self medication 57.2% received full cure, 41.1% almost 90% cure and only 1.7% could not assess the same. Again nill physical difficulties after self medication reported by 90.8%, 8.8% found some extra difficulties and only 0.4% could not tell upon it. In facing the extra difficulties 89.3% generally were approaching physicians, 9.5% were changing the brand and only 1.2% was keeping mum them-selves. Only 14.6% had special inclination on certain medication and 85.4% were free from this. Though a large group was reported to favour self medication, than also we have seen that only 44% were intended to encourage others, whereas 565 were refrained from this activity. Interestingly a large numbers of tribal people (75.6%) was agreed that self medications is not appropriate process of treatment. But only 24.4% had shown their confidence on it. At last, let us see why tribal people accept self medication : 12.2% indicated the cause of lack of time, 20.6% indicated the financial weakness, 22.9% due to get speedy cure, 8.9% only as primary health care, 3.7% due to their negligence, 1.4% as receiving fruitful result, 3.7% having knowledge about medicine and 26.6% due to the some other causes.

From the above observation, one can easily remark that the scientific temper, in regard to the self-medication, of the tribal people residing at Agartala, Tripura was appreciable, as a large numbers inclined to self-medication and receiving results and beside this they were agreed that self medication is not appropriate process of treatment, for which we need to approach our physicians because the prescription i.e. suggestion of knowledgeable physicians play a great role in saving our society.

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CHAKMAS AT THE BRINK OF EXISTENCE : A SOCIO-CULTURAL STUDY

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Introduction

Raymond Williams interprets the term "Culture" as one of the most complicated terms in English language. Summarising his discussion on the topic we find that firstly it is a general process of intellectual, spiritual and aesthetic development; secondly, it is a particular way of life of a people, a period or a group and thirdly it is the works and practices of intellectual and especially artistic activity. In the backdrop of this clarification of the term, a brief survey of the Chakma socio-economic and cultural life may be undertaken to assess how far the socio-cultural identity of the Chakma as a tribe is sustained till date after being challenged on several occasions from the dominating forces since the colonial period.

The word 'Chakma' is a broad term for the predominant hill tribe of CHT living in the corridor link of **Arakan**. Both the existing British administrators and scholars working on these tracts of hills from mid-18th century to mid 20th century named this tribe as 'Chakma'. Concentrated in the central and northern parts of Chittagong Hill Tracts, they live amidst several other ethnic groups. More than 90% of them live in Rangamati and Khagrachhara districts. About 100,000 Chakmas also live in India, particularly in the states of **Arunachal Pradesh, Mizoram and Tripura**. Small groups have settled in other countries as well. The first written reference to Chakmas of the **Chittagong Hill Tracts** dates from about 1550 AD when the Portuguese map-maker **Lavanha** indicated on the earliest surviving map of Bengal that the Chakmas lived in a settlement on the **Karnafuli** river.

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Even the scholars with diverge opinions agree on the point that the Chakmas have migrated to their present homeland. But one group of scholars links Chakmas with central **Mayanmar** and Arakan, and with the groups such as the sak (chak, Thek) living in the Chittagong hills and **Arakans**. The other theory, relatively weaker one, assumes that Chakmas migrated to the **Chittagong Hills** from **Champaknagar** in Northern India. In the late eighteenth century, Chakmas were found not only in Chittagong Hill Tracts but also in other hilly areas of the present-day districts of **Chittagong** and **Cox's Bazar**. The British occupied **Chittagong Hill Tracts** in 1860 and forbade shifting cultivation. The Chakma cultivators moved east to the Chittagong Hill Tracts. Prior to this, the Chittagong Hill Tracts had not been part of any state, although they had long been influenced by the waxing and waning of power centers in Tripura (to the North), Arakan (to the South) and Bengal (to the West). In the seventeenth and eighteenth centuries, the Mughal empire collected tribute (Cotton) from the area through the Chakma chief residing in an elevated landmass in the **Karnafuli** river channel. His family had considerable landholdings in the plains of **Chittagong**, i.e. inside the Mughal territory, and resided in **Rangunia**. The British continued the arrangement but made the Chakma chief responsible for tax collection in the central region of the new possession. The Chakma chief, now a colonial celebrity endowed with the title of raja and some of the trappings of indirect rule, moved to Rangamati, the capital of the new district that the British named Chittagong Hill Tracts. The colonial tax system also gave new powers to the old functionaries at the local level (talukdar, dewan, khisa), which came to form the Chakma gentry. Thus, social differentiation grew as an elite developed, basing its lifestyle on a share of the government tax and on educational achievements. The Chittagong Hill Tracts Regulation of 1900 formalised this system and also stressed the fact that the area, though administered from Calcutta was not a regular part of Bengal. This status was reconfirmed in the 1930s. After independence (1947), the Chittagong Hill Tracts were

incorporated into East Pakistan and later into (1971) Bangladesh. The special administrative status of the Chittagong Hill Tracts continued, and the Regulation of 1900 was never clearly withdrawn, despite piecemeal mutations. For this reason, the office of the Chakma (and Bohmong and Mong) chief survives till today.

In 1950s a large hydroelectric project was commissioned at Kaptai, a riverside village close to Rangamati. When the Kaptai dam was completed in 1960, a big lake was formed in the Karnafuli valley, flooding many villages and leading to the great exodus. About 100,000 people are thought to have fled the waters and most of them were Chakmas. In the flooded fields and felled jungles may be read the fate of the tribal peoples threatened with the embalming of their customs and traditions in folk-museums. Many settled elsewhere including reserved forest areas. The climax of their predicament reached in 1964 when tens of thousands of them sought refuge in India.

Added to this is the population growth that made hill cultivation more problematic mainly because crop-free periods had to be shortened-and more Chakmas had to find non-agricultural jobs. The government policy of transmigration of hundreds of thousands of poor Bengali lowland cultivators in the 1970s is one of the major reasons of this growth. They were brought to the Chittagong hills under military protection. Land scarcity increased sharply and Chakmas (and other hill people) saw their lifestyle threatened further. Many were forced into low-income wage labour. Chakmas felt that their grievances were not taken seriously by the authorities-first in Pakistan and then in Bangladesh. Although hopes were aroused among the Chakmas that the formation of the new nation would ensure the protection of the language and religion of the tribe, in reality it was found that in the constitution-making process of Bangladesh as a nation-state, the demands of a hill peoples delegation under the leadership of Manabendra Narayan Larma were rejected by Sheikh Mujibar Rahman, who urged them to become Bengalis and forget their tribal identities, and reportedly threatened to turn them

into minorities in the CHT by settling Bengalis there. Larma rejected the imposition of Bengali nationalism. The failure of the state to recognize the identity of hill people and their political and economic marginalization led Larma to form the Parbattya Chattagram Jana Samhiti Samiti (PCJSS-- the Chittagong Hill Tracts Peoples' Solidarity Association) in March 1972. Subsequently, a military wing called Shanti Bahini was added to it. Thus, the seeds of Jumma nationalism-- an identity that the PCJSS now claims for the hill people-- were sown. Shanti Bahini began its operation when they ambushed a Bangladesh military convoy in 1977. Thus, these peaceful hills have been subjected to an extraordinary violence, which in turn evoked a violent response. Between 1980 and 1997, almost 10,000 people are known to have died in the low-intensity war which ravaged the already damaged environment and culture of the Chakmas. From 1970s, Buddhist temples, monasteries and Christian churches were desecrated by gangs of settlers as well as by the army. The jumma (the term of collective self-identification used by CHT peoples) faced a persistent gander-specific mistreatment in the form of rape, forced marriage and forced conversion- all suggest a racist contempt for the hill people which seems to have intensified with the increasing post- 1975 Islamisation of Bangladesh. This was actually part of a well-orchestrated BDF campaign to emasculate the jumma politically and socially as a prelude to their complete marginalisation, if not physical annihilation. In her article entitled Ethnic Conflict in the Post Accord Situation : The case of Chittagong Hill Tracts, Bangladesh, Meghna Guha Thakuruta drew a gruesome picture of the inhuman torture meted out on the innocent Chakma community both by the military and by the Bengali community. The cause, as most observers agree, of the Bangladeshi anti-jumma drive was not about ethnicity per se but only about that ethnicity in the context of control of jumma-held land. The PCJSS, led mainly by Chakmas, signed a peace agreement with the Bangladesh government in 1997. The jumma leadership sought an autonomous status and separate legislature for the CHT based on the

1900 Regulations, not simply to protect their right to be ethnically and culturally different but as the best guarantee for preserving their land rights.

Dr. Kisa, a Chakma doctor in Rangamati, is a historian of the tribal people. He identified three major acts of violence against the Chakmas, each inflicted by a form of colonialism. First, the imposition by the British of monetary tribute on a noncash economy. The second blow was the creation of the Kaptai Lake for electricity by the Pakistanis. The third came with the influx of Bengali settlers-- ecouraged by the military government. The tribal people have retreated further into the ruined hills, poor dusty settements reached by long staircases carved into the bare flanks, replanted with, for the most part, exotic trees.

Born in 1933, Dr. Kisa says, 'I never saw any shop in the marketplace that sold rice. Salt, earthenware and dried fish -- these were the only marketed items. Clothing was never bought or sold. All women learned to weave, and until she could do so, no young woman would find a husband. At that time, people's demands were very small. People had no property. Everything they owned-- iron, tools, clothing-- could be contained in a small bamboo basket, the traditional design of braided grass worn around the forehead, and the woven basket on the back.' The strains of rice resulting from the jhum cultivation, Dr. Kisa further adds, were so distinctive that they could easily be distinguished by their fragrance as they grow on the lopes.

The principle point of contention is the difficulty which any Bangladeshi Government would face in dispossessing Bengalis of land they now possess, and returning it to non-Muslims. Although part of the agreement was the rehabilitation of settlers who had usurped tribal land, there is nowhere else for them to go. Some of the Chakmas have returned to their homes, but the Land Commission which was to have been set up to ensure this was equitably carried out, has yet to come into existence. Further, only a fraction of the 500 or more military and paramilitary camps have been closed, and the promised Hill Tracts District and

Regional Councils are not operating. From this sketchy history of the growth of the Chakma as a tribe and their tales of woes resulting from the atrocities by ruling parties we move next to the evolution of their socio- cultural activities.

Traditionally, the Chakma lifestyle was closely linked with shifting cultivation. Chakmas also cultivated land in river valleys. They had a well-developed system of land rights, which differed sharply from those in the plains. According to early observers, the living standard of cultivators in the Chittagong hills was relatively high. The bamboo was essential as building material. The bamboo had so many other uses that the Chakma lifestyle has been described as a 'bamboo civilisation'. So far their religion is concerned, the vast majority of Chakmas are Buddhists, and they form the largest Buddhist population in Bangladesh. However, some believe that the Chakmas were Hindus during their early period of settlement in Arakan. Brahmanism was the religion in Arakan from about the fifth century to the eleventh century. The Chakmas later became Buddhists. In their system of religion one can find ambiguous blending of Buddhism, Vaishnavism and even Islam.

Chakmas distinguish themselves from surrounding groups by their language. Originally Chakmas might have used to speak a Tibeto-Burman language but their present language is Indo-European. Structurally, it has some resemblances with Chittagonian Bengali from which it differs by a distinct vocabulary. The Chakma language has its own script, although today this is not commonly used and Chakma is now usually written in Bengali letters. Chakma literature runs from the oral traditions of the *gengkhuli* singers through literary periodicals.

The Buddhist culture is inflected by older beliefs, including the mediation of Bonobhante, a jungle priest who meditated in the forests, the vestiges of Sufi tradition absorbed by the culture. Even at that time, people performed puja to streams and rivers, and would recognise Gorma, goddess of water, and Debaraj, a sky goddess. Like many traditional cultures, some customs had a symbolic existential beauty : when someone

died, a thread was tied from the body of the deceased to all surviving relatives-- sons, daughters, wife, husband and so no. Only when the priest cuts the thread than the spirit of the dead depart. It needs to be mentioned also that the Chakmas celebrate the funeral ceremony with great pomp and dignity. The corpse is kept in a wooden box for five to seven days after which men and women gather to burn it and make gifts according to their means. At this point, I like to refer briefly to some of the rich heritage of pujas and festivals of the Chakmas. In the outer phase of the society the rituals of Hinayani Buddhism prevails while in the inner circle worshipping is conducted in accordance with the tantras. The customary popular pujas and festivals of the Chakmas may be divided into four groups- family, clan, village and general. The most famous festival of the Chakmas is Bizhu festival. Most popular dances of the Chakmas are Bizhu dance, Jhum dance, Kadalpur dance, Thanmana dance etc. The Chakma folk songs can be grouped into *Genkhuli geet* or Chakma ballad songs composed of heroic deeds, *Uvo geet* or love songs, *Ali geet* or cradle songs and *Bijhu geet* or songs to celebrate Bizhu festivals. Even the folk tales of the Chakmas have a distinctive identity. These stories have a jumma background and almost all the stories have hills as the setting. The power of magic, both benevolent and evil, is strongly felt.

Meanwhile, right from the colonial days the Chakmas continue to lose their identity. Their songs are influenced by Bengali words and melodies; schools offer instruction only in Bengali. Shame inhibits many younger people from wearing the traditional ornaments, and also to use the indigenous language for speaking. The artefacts mame of bamboo-- fish-traps, bird-traps, storage baskets for fodder, fruit, yama or leaves, flutes and pipes-- can no longer be made because the bamboo has gone.

The present Chakma king is now a barrister living in Dhaka. 'There is nowhere left for us to go', says Sukheshwar Chakma, a teacher. 'We have taken refuge in the dense forests of the mind. But that doesn't provide livelihood.'

The people of the Hill Tracts, with their songs and dances

perpetuated only by self-conscious cultural groups, are in danger of becoming like many indigenous peoples all over the world-- ethnicity without a culture.

Almost rootless and bereft of the cultural traditions, the Chakmas are now free to go and mourn in city slums, with all the consolations the modern world can offer them - alcohol, drugs and despair. Such inpoverishment cannot be measured by the instruments of economic performance. It represents a loss, not only to themselves, but also to the world. Many dejected indigenous families abandoned their traditional way of life in order to integrate in the larger society by moving to urban areas and becoming heavily influenced by Bengali language and more recently by Western language and culture. The middle class, conscious of social status, speaks only Bengali, Hindi or English and completely disassociate from their indigenous roots and they are discouraged to speak their language in order to pursue higher education. There are changes too in the language of the indigenous people due to changes in occupational patterns, social interaction with non-indigenous people and the influences of the national and international media. The skills required for reading and writing have practically disappeared since few people know how to use the ancient scripts and there is no support from the government for indigenous people to initiate their own educational system. The curriculum of the schools in Bangladesh is by and large to be blamed for this. The medium of instruction is exclusively Bengali or English in most registered and non-registered schools. Since the curriculum is the same as for the other government schools all over Bangladesh, the cultural and historical content is in Bengali character transmitting the dominant values, trends, and ideas. The Bengali language therefore becomes more familiar than their traditional indigenous language.

True, the language is still spoken, but its existence is threatened because it is not taught in schools and there are fewer speakers among the younger generation. Some may think that preserving indigenous

languages is a lost cause and feel helpless that government authorities will never support any educational programmes for indigenous students. Speaking the language enables a Chakma to 'search for a collective' identity and to connect with the prople. The language embodies a value system on how the people ought to live and relate to each other. This language enables indigenous people to give names to relations among kin, to identify roles and responsibilities among family members, and to develop ties with the broader clan group. There are no English or Bengali words for these specific relationships because the socio-cultural and family life is different. If the language is destroyed, there will be a break down of these relationships, culture, and the indigenous way of life. Keeping the language alive is a matter of survival because this language embodies their worldviews and how they define themselves.

There are two alternatives for the indigenous students : to assimilate themselves to the Bengali mainstream or feel alienated by it and express this by protest. This alienation from Bengali society is not a good option for their survival since it will not improve their social status or education level. The feeling of being excluded from the mainstream society is inevitable because indigenous people are a small minority who are often discriminated in schools. The indigenous minority speakers often accept the subjugation of the majority, and language shifts often occur under these stressful socio-economic circumstances, where there is no realistic option but to give in. The Bengali language can therefore be seen as a symbol of the domination of the Bangladeshi state, as it is for the Bengalis a symbol for national unity. Language is thus a good example to illustrate the complexity of identity construction along cultural differences that must always be analyzed with regard to political issues. The language of the Chakma tribe is often misunderstood by the central authority. Consequently this can be easily dismissed as being primitive and outdated.

The neglect of mother tongue is a symptom of a society that fails to recognize the importance of cultural preservation. There needs to be a self-conscious effort toward reconstruction of indigenous identity.

Nevertheless, it is felt that there is not any group of people in the margins who have been able to mobilize themselves, socially, culturally, economically and politically who have not gone through some sort of re-identification and re-territorialization in order to overcome their exclusion and marginalization. For the Chakmas too it seems to be a lost battle having lost its support even from within the family. In recent years they have been experiencing impact of several influences. This necessitated some cultural adjustment. In this process even the Chakmas of Tripura have taken to settled cultivation leaving behind their age-old mode of *Jhum* (shifting) cultivation. As a result the relationship between the Chakmas and their environment got disturbed. They are gradually becoming wage labourer from self-sufficient *jhumias.*

Preserving indigenous languages, and the maintenance of the cultures they circumscribe, are vital to the preservation of indigenous people's indentity. These languages constitute precious verbal media for conveying and reflecting ideas, concepts, and emotions that relate to the experience of living with their land. Indigenous languages can be perceived as the embodiment of cultural distinctiveness and their preservation can also be upheld as a rallying point to mobilize and legitimize indigenous political activism. Indigenous people in the Chittagong Hill Tracts of Bangladesh have struggled almost unsuccessfully to establish innovative political links to assert control over a broad range of indigenous issues and concerns such as restoring the linguistic rights and cultural preservation.

The most alarming news for the third world countires is that ten languages are dying out every year. A particular way of life of a people as stated by Raymond Williams is at stake- be it the language of the Chakmas or of any indigenous people's community. With that, the rich cultural heritage of some tribes or communities is also on the verge of extinction. The folk dialects and the culture of the leading linguistic communities of Bangladesh and adjoining states in India are also under the threat of extinction. Globalisation has set the trend of a uni-polar

world. So domination of the linguistic communities of the world by two, three powrful linguistic communities is the present day inclination.

Therefore, the weaker linguistic communities that includes most of the linguistic communities of India and other third world countries must join hands to thwart the present effort by those dominating groups and ensure that no weaker linguistic community lose its language and culture henceforth. The major linguistic communities of Bangladesh and other adjoining states in India should take initiatives so that the rich cultural heritage of the Chakmas is not lost for ever. In view of the correlation between language, identity and educational achievement among indigenous students, indigenous language renewal should be an indispensable human right. The denial of the land rights to the indigenous people to subsist as a separate and district people with their own tradition, culture and practices is being seriously undermined in the CHT. In 1964, the status of the CHT as 'excluded area' was changed to 'tribal area' indicating the area as the home of the tribal people. With the special status abolished, the ethnic leadership lost control over land among other things. This status should be revived.

It is worth mentioning here the role played by the people of Tripura to retain the culture and language of the Chakmas. The Government has taken steps to observe the religious ceremonies and encourage their cultural activities. The Chakma language is taught in Government schools as optional language. They are enjoying special status in various fields in Tripura. Let thousand flowers bloom-should be the goal for our own survival.

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REPORT ON CERTAIN BIODIVERSE PLANTS AND ITS IMPACT IN TRIBAL LIFE

Trijash Debbarma and Biplab De

Introduction

Tripura is a small state of the North East is proud of having country's noted music directors and signers Sachin Deb Barman and Rahul Deb Barman. The history of Tripura dates back to the Mahabharata, the puranas and pillar inscriptions of the emperor Ashoka. The 19th Century marked the beginning of the modern era in Tripura when king Maharaja Birchandra Manikya Bahadur modeled his administrative set up on the British India Pattern and brought in various reforms. His successors ruled over Tripura till 1947 when it was annexed to Indian union on 'c' state. Tripura become to be administered by the central government. It attained a full state hood on January 21, 1972.

The state of Tripura, with a geographical area of 10,492 sq km. which in only 0.32% of India's total territory. The state is predominantly hilly and is surrounded on three sides by the deltic basin of Bangladesh. Tripura lies in between 22.56^0 and 24.32^0 North Latitude and 91.09^0 and 92.20^0 East Longitude. Tripura is connected with Indian main land only through Assam. The entire north east region of the country along with Tripura belongs to the east Himalayan climatic belt. The state Tripura, is categorized by hill ecology. Tripura has a diversed ecosystem ranging from forest to grasslands to fresh water wetlands. There are various types of wetlands found in the state in which most of it are generally water logged (seasonal)

Climate

The state generally has a warm and tropical humid climate with four distinct seasons. The man average rain fall of the state is about 2100 mm and the temperature in the state varies from 10^{0}C to 35^{0}C.

Tripura has geographical area of 10.490 sq km. of which 6292 sq km i.e 59.98% is recorded as forest. As per 2003 state of forest report of FSI, the forest/ tree cover is over 77% of the landmass.

Tripura has diverse ecosystem ranging from forest grassland to fresh water wetlands. The state of Tripura is very rich in biodiversity and which directly has a great impact in the life of the tribal people of the state. There are various types of medicinal plants which grows naturally in the forest. These plants have got very high medicinal values. Some of these plants are noted below, with their medicinal uses. The biodiversity of the plants are also marked in some of the cases with its impact in tribal life.

1. **Amang** - A wild plant known as amang in kokborok. A small plant, whose leaves are being pasted and used for joining of bones in fracture. The juice of the leaves are being extracted and a paste is being made with the help of leaves extract and it is used for joining of bones.
2. **Mayung Bwasandwi** - A wild plant known as mayung bwasandwi in kokborok. This plant is used as a medicine because it has got an analgesic action. Most of the people in an around Agartala uses it for its analgesic action. The tribal people sometimes uses the plant for ornamental purpose. But the name of the plant in kokborok is still not well defined (heliotropium indicum) and also for beautification of the head scarf during dancing and merry making in certain festivals.
3. **Kanji**- A wild tree known as kanji in kokborok. The tree whose fruits are being used for the treatment of conjunctivitis.
4. **Bel**- The tree whose fruits are large, aromatic and sweet. The green fruits, riped fruits and leaves are being used. The half riped fruits are used as digestive and is said to be an excellent remedy for the treatment of diarrhoea. The ripe fruit which is generally sweet and aromatic has a laxative action. The leaf of this plant has an antibiotic effect. In addition to that the leaf are used in "Gang Puja". "Mwtai Kotor" a festival in the month of Bengali New Year, in which the leaves of Bel are tied in a thread and is surrounded around bedi to perform puja for the well being of the people of the state

5. **Neem**- Trees are large and flowers are white, and the parts that are being used are leaves and barks. Leaves are used internally and externally. The leaves of the neem are used for curing skin disease. It has also got antibiotic activity.

   In addition to that its stems are used for brushing leeth. It is belived that Ochai uses it for curing a person from the ill effects of bad evils. The leaves are dried and on being burnt, its fumes are used to drive away mosquitoes and flies.

6. **Golachi**- The trees are woody and flowers are white with their centre yellow in colour. The latex of the stem has a great medicinal value. The latex is used for curing inflammation. It is also applied externally for curing tonsilitis. In addition to that the flower is used during Garia Puja. It is thought to be sacred and is one of the most important flower to be used during the Garia Puja festival.

7. **Tulsi Kasam**- The plants are under shrubs or shrubs. The plants are strongly aromatic. The leaves and the seeds are used for medicinal purpose. The juice of the leaves are used in curing bronchitis and cold. Seeds are useful in the treatment of urinary problems. It is also used to treat skin and eye disease. Tulsi leaves is also used to cover the eyes and mouth of the dead person as it is throught to be sacred.

8. **Krishnakali**- It is a slender twiner and the flowers are generally blue and white in colour. The roots and the flowers are used for medicinal purposes. The root juice is use for the treatment of painful micturation and the flower juice is use to treat constipation in children. In addition to that the flower is used for worshiping lord shiva as it is one of the most important flower offered as in puranas. It is belived that if this flower is offered during the puja than lord shiva will be pleased and fulfill the wishes of devotees.

Besides these medicinal plants there are various others plants which are harb, shrubs or trees and which are being used for medicinal purposes. As Tripura is very rich in biodiversity, it greatly affects the life of the people those who are living here. In Tripura there are 19 different species of

bamboo's found. The social and the economic life of the people of Tripura is directly or indirectly related to bamboo. The tribal people those who generally live in the villages and outskirts are directly or indirectly dependent on bamboo.

More over to earn their living, poultry and pig farming has become very common among the people living in the villages. They earn their livelihood by selling pork and also some of them earn by selling pork curry. There are various birds and animals found in the state which is generally indigenous to the state only. Among these the 'spectacle monkey' (Trchyapthecus Phayre) is one of them which has been declared as a state animal.

Conclusion

As Tripura is very rich in biodiversity, it has a great impact on the lives of the tribal people. The people are directly linked to the diversity that is found in the state. The variety of flora which are found and the faunal diversity has a great impact on the tribal life from which they get food, medicine and also try to become economically strong by utilizing the various resources that is found in natural condition.

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THE LIFE STYLE OF MOG TRIBE

Smt. Krairi Mog Choudhury

The origin of the word 'Mog' or 'Mogh' is shrouded in controvercy. It has been termed a bengali word in the periodical of Burmese Research Society. Whereas, the Bengali dictionary of Bangiya Sahitya Parishad does not have any suggestion for it. A certain dictionary has declared the word to be a derivation from the Burmese word 'Mong' which often precedes the name a Burmese gentleman. Then some have denoted the word to have come from the ancient state of Magadh. In English dictionaries the word has been shown as Mog- Mogen- Mowg that were used in the 15th and 16th centuries befor the name of Arakanese.

Since ancient time the Mog community has been known as 'Mraima'. On the other hand Mraima has come from 'Marmaja' or 'Mrainmacha' in brahmi scripts with a system of writing from left to right. From an ancient history of Burma titled "Mraima Samaing Rajowang" we come to know that people of Krishna and Godavari basins in south India established settlements in South-Eastern parts of Burma in the 17th Century. People who settled in that area came to be known as 'Talaing' to the Burmese people. Their state was known as 'Haisawadi' with 'Pegu' as its capital city. Two princes namely 'Saahmala' and 'Owimala' set up this city in about573 AD. During that period they were the first to have spread this Mraimacha script in the south-east Burma.

As the people of Mraima community had been expressing their thoughts through this ancient script sustaining a special characteristic of their own, they are known as Mraima community. In Bharater Itihas Pari-Krama (Ancient) by Sri Prabhatangshu Maiti, the British and Mughal termed the Mraima people as 'Mog' and since then the Mraima people have been

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known to the Bengali as Mog. Whereas the word 'Mog' itself is an alien word. Today the Mogs living in Bangladesh are known as 'Marma'.

In about 957 AD. the people of Mog community migrating from Arakan came to settle in Tripura and scattered in Udaipur. Amarpur, Santir Bazar, Belonia, Sabroom areas of south Tripura district. At a later date the Mogs of Udaipur shifted to either Belonia and Sabroom or to Bangladesh. A fraction of them also settled in Khowai, Teliamura, Ambassa, Kulai and Gandachara area. According to the 2001 census, their total population in Tripura is 30,385. The Mraima society or Mogs are divided into sub-sections like-palaingsa, Rigresa, Kyoktyasa, Frangsa, Maarosa, Khyangsa, Kakdaingsa, Longdoksa, Oweieningsa, Rakhaingsa, Awagyoisa etc.

The social customs in the life line of Mog community canbe divided into several stages such as.-

i) In the first phase-childhood- In the Mog community ceremonially a child is kept in a cradle after three days of the birth. Then the child is named by the priest or Baidya and a horoscope is prepared. "Manari ssarhuya Khaing" is the famous cradle song in Mog community.

ii) In adolescence period a boy has to take prabajya which is called "Syang prupuye" where male children are made to take ascetic life at least for seven days befor marrage. The initiated boys come back to normal life after observing "Syangpru Poye" ceremony. Youngsters have another festival to enjoy. It is known as Lapaing Chooye Festival. When a boy grown to adulthood in celebrating "Lapaing Chuya Puye" he is declared as 'Subosamang' or a hero of the youths.

'Rangda Puye'- It is a festival or ceremony celebrated exclusively for unmarried girls. On a auspicious day like Owa festival, Sangraing- a Rangaing (Cloth) is fastened around the chest of a young girl. From this day this girl is known as a young woman in the society.

Among the young male and female a various type of dances and songs are performed since ancient time. In jhum and hills festivals 'Owo Lamp dance', 'Sangraing'- Ambrella dance etc. words of the mind of

youths is expressed through songs and dances.

Marriage- Taking beetles and sweets parents of young boy propose a marriage to the guardian of a girl. After getting consent from both the parties marriage is fixed on an specious day and wedding ceremony takes place at groom's residence. In case of elopement of a girl, money has to be paid to the guardian of girl in the name 'Dafa' on their demand. 'Subosamang' or hero of the youth has the name of "Akaying Kha".

Service Life

In Mog society most of them are depending on jhum cultivation for their livelihood. Seeing a favourable day harvest is done. Concentrating on jhum-cultivation in the name of "Kapya and Byasa" song in sung among boys and girls. In that period "Abangma Puja" is celebrated. When paddy is brought at home "Koksopuye" (new food ceremony) is celebrated. Traditionally, they are shifting cultivators, but have now adopted to settled plough cultivation. They desire their livelihood as forest department labourers, or by selling firewood, keeping poultry, cow, goat, pig etc.

House are made of easily available meterials like fax and bamboo collected from the jungle, on a high platform.

In every Mog village there is a Buddhist temple lake and a resthouse for tourist beside the road. This rest houses are known as "Rofong Chang".

The head of a settlement is called 'Roasugri', who is assisted by roaja and exercises social control over the community.

According to 2001 census, 39.62 percent of the Mog are returned as workers of them, 51.26 percent are cultivators and 46.82 percent agricultural labourers. Workers engaged in livestock, forestry etc. accounted for 2.02 percent Government service and 2.02 percent are in other vocations.

The Mog women use their traditional ornamants and flowers. Their ornaments name are - Laokow, Peddi, Rhrui frongsee, Hoing drusee, Potting, Nahsaing, Kawkhyang, Chhulee, Daing, Laochuye, Paingbre Chainggyang, Naboung etc. Mog women traditional dresses are-

Thablling, Bidee angye, Rangaing, Rongma, Puchhu etc. Men use their traditional dresses like- Longgye, Rangje, Gongbong etc. In the Mog traditional weaving craft only women are engaged exclusively.

Their staple food is rice, fish, dryfish, meat, bamboo shoot and other vegetables.

Traditional followers of Buddhism the Mog attach great importance to Buddha Purnima, Owa-Cho-Labre, Owagya labre, Kathin Chibar dan Utsab, Sangraing festival etc.

A brief description on some of the festivals is a follows :-

Buddha Purnima

In the month of Baishak three great occurances in the life of Lord Buddha took place i.e. Birth, Enlightenment and Parinirvana. On the day of Buddha Purnima "Yongree-long-Puye" or offering water at the roots of Boddhi- tree is observed. The devotees singing devotional songs, line up to offer water at the Boddhi-tree. On this occasion Padisa-Puye (Kalpa taru festival) is also celebrated in the temple. At night 'Ming long' or sky lamp is released from the temple.

Sangraing

Sangraing is like Chaitra Sankranti of the Bengalis. It is celebrated at the meeting point of the outgoing year and the coming year. On this day-cakes, rice, sweets, fruits etc. are prepared. Sangraing Rak-since morning people in hordes go to the temple to offer flowers, candles, incence sticks and food to the Lord Buddha. At noon the statue of Buddha is given bath with chandan and coconut water. Then Buddhist monks also take bath with Sangraing water. At last the youngsters enjoy springkling water at each other. This is done as a symbol of washing off defilements of our body and soul. This festival is celebrated with cultural activities like dancing and singing along with traditional sports this festival is celebrated.

Education

Within the community, they speak the Mog language, which is closely related to the Tibeto-Burman language, and also use the Mog scripts. In Mog language the alphabets are called- " Akkhra". The students where

taught Mog scripts by the Buddhist Monks at the monastaries and schools.

The Bengali language and the Bengali scripts are also used for inter-group communications. Now some of them have learned english in the school.

Oldage

Among the Mog Tribes some of them leave family in their old age by adopting aseptic in order to spend their rest of the life. Some of them remained in the family and spend their life by performing some religious works.

Funeral ceremony

If a death befalls in the Mog society then a wooden box is made and decorated with colourful papers. The corpse is taken to the funeral ground in this box. Till the body is taken for burning, Buddhist religious texts called Saakhaing or Saassija are read out. Adrum is also played in peculiar rhythm which symbolizes death. The dead body is cremated in presence of a large number of crowd who gather there.

When a Guru of Buddhist Monk dies, his dead body is kept in the form of momy for many months. Their after on a particular day in a grand celebration like "Dong Taipuye" on Chariet Festival, with a wonderful song and dance called "Suaing Akah", the corpse is taken to the pyro with chandan. But fire is not set on directly, instead powerful crackers are thrown from some distance to light the fire. Mog tribes think that cremation of a dead is most holy.

In this way, from birth to death various festivals and ceremonies is observed in the Mog society. It is also true that despite of complications and problems the Mogs have been trying to retain their own cultural heritage through the above mentioned festivals and ceremonies.

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RELATIONSHIP BETWEEN CONCRETE INTELLIGENCE AND BMI AMONG THE TRIBAL AND NON-TRIBAL STUDENTS STUDYING IN CLASS SIX IN AGARTALA

Biplab Dey

Introduction

The term "Intelligence" is derived from a Latin word, framed by Cicero to translate a Greek word used by Aristotole to include all cognitive processes. The cognitive capacity was called intelligence and it was thought to be inherited,innate and general in nature. Again science describes that "Intelligence" may be defined as an ultimate resultant of total brain functions and the nerve cells ,the functional unit of the brain,need life long access for accumulating experiences stored in memory, ready for immediate use; which deal with consciousness, analytical ability, memory, thoughts, knowledge and sleep-wake fulness; which are correlating with the mind or may define as part of the mind. The term intelligence is so commonly used, but it is so complex that it is difficult to give a comprehensive and precise definition of intelligence, which would be accepted by most . But, an intelligent person is always in an advantageous position in the society. Thus, in a nutshell, we can express intelligence as the capacity to understand the world ,think rationally and use resources effectively when faced with challenges. But how this can be measured ? To overcome this problem the concrete intelligence recording is one of the method. it is a measure of intelligence that takes into account an individual's mental and chronological ages.

In this compilation, we are reporting the relationship of concrete intelligence with BMI (Body Mass Index) if any, of the male and female tribal and non tribal students studying in class-VI in different schools,

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Physical activity and good nutrition are key factors in leading a healthy at Agartala, in the State of Tripura. lifestyle and reducing risk for disease.To observe the health status, BMI is one of the parameter. BMI = {Weight in Kg / (Height in cm)^2} x 10,000. BMI is less than 18.5, indicate underweight 18.6-24.9 indicates normal, 25-29.9 indicates overweight and 30 or above is obese.

Materials And Method

Present investigation was carried out by conducting survey randomly among the male and female tribal and non-tribal students of class VI in different schools at Agartala. Their concrete intelligences were measured by following Alexander's pass - along test. According to this method, ,normal range is 19-35.Then their height in cm and weight in kg were recorded to calculate the individual BMI by following standard formula. The relationship between Concrete intelligence and BMI of obtained data in table 1 and 2 is discussed.

Result and Discussion

The concrete intelligence recorded here in table 1 and 2 were describing normal range for all the students.28 numbers of both tribal and non-tribal male students and 33 numbers of female students (tribal and non-tribal) were also found underweight. Others were in normal range.Therefore,nutrition is very much essential for all round development of the students. In this point of view, Mid-Day -Meal for primary level students were appropriate and it is suggestible for secondary level students i.e. at least from class VI to X students. On consideration of all normal weight students, it was keenly found that as BMI increases, the intelligence was also observed to be more in cases. Moreover, it is noted in maximum cases that having same concrete intelligence, the male students were showing slightly more BMI than female students, which may be due to the sexual differences . Though the data of each male and female are less then also it has been found that non-tribal students are showing more concrete intelligence in average than tribal students (both male and females). Obviously, we cannot claim that nutrition is only able to provide intelligence to the students but it may be one of the most important

factor which can provide good health with healthy approach and it brings automatically a stable intelligence along with long -term memory.

Table - 1 : BMI and concrete intelligence of Male and Female Non-tribal Students studying in Class six at Agartala

Volunteer No.	Category	BMI	Concrete Intelligence
1	Male	14.87	25
2	Male	21.11	30
3	Male	15.14	20
4	Male	15.97	25
5	Male	16.22	25
6	Male	16.86	25
7	Male	20.53	20
8	Male	22.05	20
9	Male	16.09	30
10	Male	19.92	20
11	Male	14.87	20
12	Male	13.92	20
13	Male	19.07	20
14	Male	21.00	20
15	Male	21.08	25
16	Male	15.06	20
17	Male	19.87	20
18	Male	21.05	20
19	Male	15.01	15
20	Male	20.07	20
21	Male	14.93	20
22	Male	17.11	25
23	Male	18.91	25
24	Male	20.56	25

Volunteer No.	Category	BMI	Concrete Intelligence
1	Female	21.00	30
2	Female	15.15	25
3	Female	17.80	25
4	Female	18.01	30
5	Female	13.56	25
6	Female	14.09	20
7	Female	14.87	25
8	Female	17.63	20
9	Female	12.80	20
10	Female	16.56	25
11	Female	19.52	20
12	Female	16.32	30
13	Female	17.12	20
14	Female	12.05	30
15	Female	13.85	25
16	Female	13.97	20
17	Female	15.55	25
18	Female	20.92	25
19	Female	15.59	25
20	Female	16.44	20
21	Female	20.24	30
22	Female	22.70	25
23	Female	15.54	25
24	Female	20.12	20

25	Male	16.68	25
26	Male	14.16	20
27	Male	20.72	20

25	Female	23.47	20

Table - 2 : BMI and concrete intelligence of Male and Female Non-tribal Students studying in Class six at Agartala

Volunteer No.	Category	BMI	Concrete Intelligence
1	Male	20.08	20
2	Male	17.68	20
3	Male	16.37	20
4	Male	14.34	20
5	Male	17.21	20
6	Male	12.16	20
7	Male	14.67	20
8	Male	21.12	25
9	Male	22.02	25
10	Male	19.78	20
11	Male	18.07	20
12	Male	17.93	20
13	Male	17.15	20
14	Male	20.17	30
15	Male	23.14	27
16	Male	18.55	20
17	Male	16.97	20
18	Male	22.16	25
19	Male	19.03	20
20	Male	17.72	20
21	Male	15.64	25
22	Male	15.75	25
23	Male	20.08	20
24	Male	17.68	20
25	Male	16.37	20
26	Male	14.34	20
27	Male	17.21	20
28	Male	12.16	20

Volunteer No.	Category	BMI	Concrete Intelligence
1	Female	23.47	20
2	Female	15.11	20
3	Female	19.63	20
4	Female	15.37	25
5	Female	19.49	20
6	Female	18.32	25
7	Female	18.66	25
8	Female	17.26	20
9	Female	15.81	30
10	Female	18.38	20
11	Female	14.58	20
12	Female	12.39	20
13	Female	14.59	25
14	Female	21.52	25
15	Female	19.02	25
16	Female	18.36	20
17	Female	13.07	20
18	Female	20.47	25
19	Female	16.01	20
20	Female	14.09	20
21	Female	19.89	25
22	Female	15.95	25
23	Female	20.75	20
24	Female	18.54	20
25	Female	16.03	25

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TRIBAL RESEARCH & CULTURAL INSTITUTE

The Tribal Research & Cultural Institute was established in the year 1970 under the Tribal Welfare Department with following broad objectives :

- To conduct different research studies like development of language & culture, socio economic condition of Tripura tribes, collection of historical elements and evaluation studies.
- To assist research scholars in the conduct of research works related to the tribes of Tripura.
- To promote Tribal culture like tribal folk song, folk dance, folk music through Tripura State Academy of Tribal Culture affiliated to Tripura University (A Central University).
- To demonstrate tribal heritage, culture, socio-economic condition, dresses, ornament and every day life through a State Tribal Museum.
- To document Socio-economic & traditional aspects of Tripura tribes through production of films and establishment of a rich Social Science Library.
- To organise State & National Level Seminar on Tribal life & Culture and Languages.
- To publish books related to Socio-economic condition on Tribal life & culture of the State and reprints the rare and old books related to Tripura.

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