

THE JARAWA ARCHITECTURE OF DWELLINGS: A GLIMPSE OF HABITAT PATTERNS AND INTRA-SPATIAL SIGNIFICANCE

Sumitabha Chakraborty and Amitava Dinda**

Abstract: *Man's method of obtaining a livelihood is tremendously influenced by the demand of shelter, food and clothing. Habitat is a means by which humans place themselves and try to fulfill their demands by harnessing the immediate and obvious resources from nature in relation to the land. Habitat provides a continuum of space which is not limited to walls and elevation but to the broadest possible conception of space for a man. And for a good habitat, architecture is of immense importance. It is not for only designing and constructing the building, but for referring the constructive behaviour of the humans. The study of architecture in a community is not simply the study of houses as physical structures. It is a readymade environment, an object of thought, and a prime agent of socialization. Architecture leads to the proper utilization of natural space as per requirement of man as an individual or a group, emphasizing construction of any structure in an artistic manner through which man could enjoy his demands for shelter and for other activities, considering the knowledge of socio-cultural environment, ecology, as well as sense of aesthetic and cultural values. In Anthropology, architecture is the reflection of designing, distribution and utilization of space at the material level, reflection of ethnic solidarity at the social level and reflection of its religion and worldview at the philosophical level. Being a unique hunter-gather community, the 'Ang Chaddah (the Jarawa hut) possesses the same importance, which is the place of their happiness, place of discussion, place of socialization, place of formal education, place of enjoyment, place of harmony, place of exchanging views and ideas, place of planning the work schedule and much more. In this article, an attempt is made to highlight the traditional wisdom of resource utilization and architectural framework of the Jarawas. It explores how the habitat plays the vital role of interactive performances among the Jarawas.*

INTRODUCTION

Dwelling is a means by which humans place themselves in relation to the land. For dwelling, architecture has immense importance for designing and constructing the houses. Egenter once opined that architecture would mean everything that has been built by man and it is based on man's age-old constructive and dwelling behavior (Egenter 1992: pp 77, 79). Architecture of dwelling is a creation, helps man to survive, and provides him a shelter to live in a continuum of space, which is not limited to walls and elevation but to

* Anthropological Survey of India, Eastern Regional Centre, EN- 7-9, Sector- V, Salt Lake, Kolkata - 700091, E-mail: chakru4_su@yahoo.com

maintain a harmonious social fabric expressed through their culture, environment and economy. The present study has been carried out among the Jarawas of Andaman and Nicobar islands in India. The Jarawas is a hunting and gathering community. In a hunting-gathering community, the habitation is not simply the study of houses as physical structures. Needless to say, it is a readymade environment, an object of thought and a prime agent of socialization. The camp and campsite of the hunter-gatherer is unique in its characteristics. One of the features is nearness of any sweet waterhole and that is why the Kalahari Bushman moves seasonally, or more often, and disperses to utilize outlying water resources. The size and shape of the hunter-gatherer campsite is always variable according to the number of the band group and its members. In his study, Read D.W. (1978) indicated that the hunter and gatherer camps are characterized with a circular pattern of structural arrangement. The residence locations have certain spatial relationship within that arrangement, and are constant, regardless of population size. Like other hunter-gatherers, dwelling has the same importance and cultural value to the Jarawas, one of the hunter-gatherers of Andaman Islands. The camp is the place of their happiness; place of discussions; place of socialization; place of formal education; place of enjoyment; place of harmony; place of culture and what not. The Jarawa camp is important for both residential and logistical mobility patterns and it would typically signify not only subsistence activities but also other activities such as making of various material objects. Dwelling of the Jarawas is greatly influenced by the seasonal fluctuations of food resources, thus affecting their movement pattern from one place to another. Group migration and construction of settlement generally follow natural rhythms, and they often settle in a location to tap the resources known to be bountiful in that specific place at a particular time; when this resource become scarce, another is sought, thus calling for a camp shift. When the Jarawas are highly mobile, their camps are fairly ephemeral in structure, while a sturdy structure is built on a circular area and covered with a thick layer of leaves. The present study focuses on the following significant aspects - highlighting the structure of the camps in relation to utilization of space, types of huts and their characteristics, the activities performed among the members of the group within a particular campsite.

THE LAY OF THE LAND

From time immemorial, the Andaman Islands have had great historicity. Andaman - '*kalapanir desh*' - has become famous in the map of world history, perhaps, for two reasons - first, it was the abode of world famous pure hunting-gathering tribes, the ever demanding interest of anthropology and the

anthropologist as well, and secondly, from the administrative point of view, it was turned into an important penal settlement of the British authorities during the 19th century. The Andaman Islands are the 'unsinkable sword' stretching from Cape Negrais in Burma to Achin Head in Sumatra forming a single geographical system. The islands are the summits of submarine mountain ranges lying on the greater tectonic suture zone that extends from the eastern Himalaya along the Myanmar border to the Arakan and finally to Sumatra and lesser Sundas. This island is a part of a long Arakan fold formed during the middle of the Tertiary period and was apparently connected with the great movements that produced the Himalaya-Alpine mountain system and the Circum-Pacific fold (Radcliffe Brown, 1922). It consists of minor continuation of line of volcanic activity across the sea - Bay of Bengal.

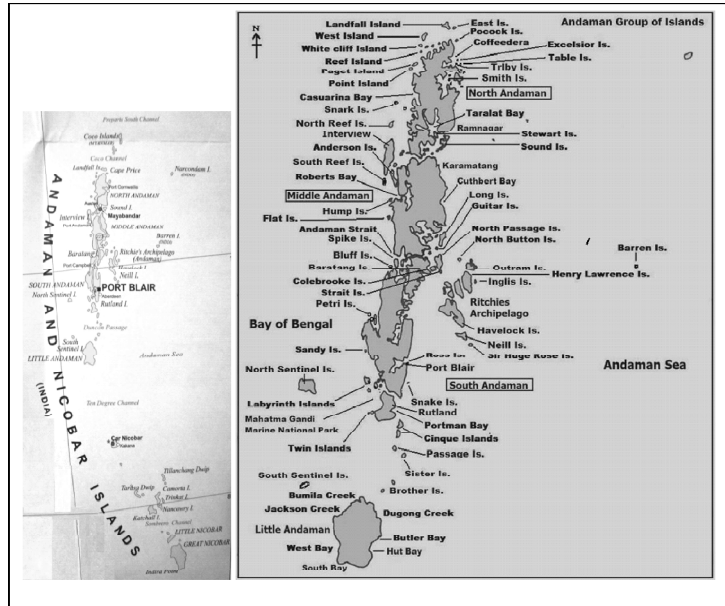
It is sprawling like an arc in the Bay of Bengal from a natural gateway to India from the east. The archipelago of Andaman and Nicobar consists of 352 islands having a total of 8,249 sq. km. of which only 24 islands were inhabited before the Tsunami attack in 2004. After the tsunami, many islands in Andaman archipelago submerged and many more have come up as new islands. The area of Andaman group is 6,408 sq. km. It is located between the 10th and 14th degrees of North latitude and 92 and 94 degrees of east longitude. The group of islands is divided into two districts - Andaman district in the north and Nicobar district in the south; ten degree channel separates both districts. The Andaman group of islands is basically an agglomeration of the Great Andaman and Little Andaman with a number of outlying islets spread here and there separately, of which the most important are Interview Island off the west coast, Ritchie's archipelago on the east, Rutland island at the extreme south and outlying North Sentinel island (Map - 1 & 2). On viewing from the sea, the islands appear as a series of hills covered from skyline to high water mark with dense and lofty tropical evergreen rain forest. The two marine channels actually divide the Great Andaman into north, middle and south portion. The extreme length of Andaman group is 219 miles with an extreme width of 32 miles. There are only a few perennial fresh water streams present in these islands.

The whole of Andaman and Nicobar islands is the abode of six indigenous tribes, amongst which four are of Negrito origin (Great Andamanese, Onge, Jarawa and Sentinelese) and two are of Mongoloid origin (Nicobarese and Shompen).

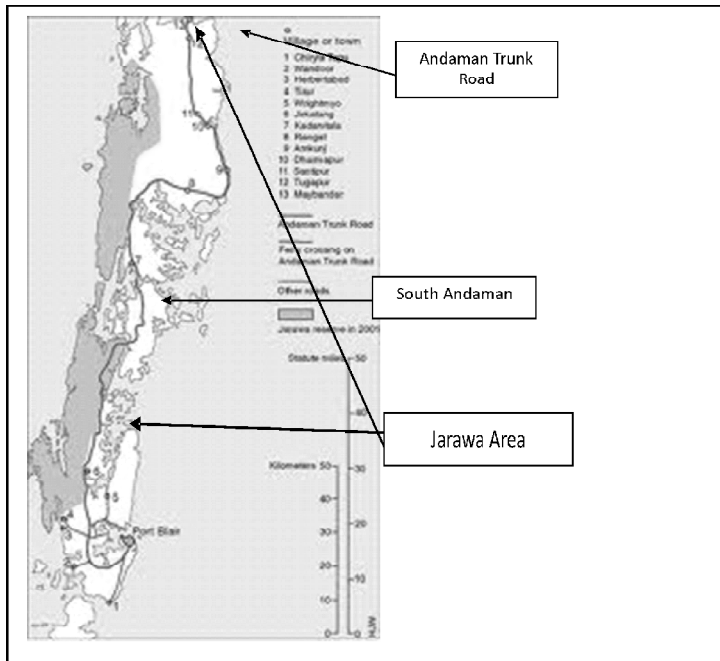
THE JARAWAS

The Jarawa is one of the most important hunter-gatherers in Andaman Islands that follows the foraging pattern of livelihood. Due to Negrito features, and

Map showing the Andaman Islands and Jarawa Area



Map 1: Andaman & Nicobar Islands



Map 2: Andaman Islands

having close resemblance with other Negroid tribes of south-east Asian countries (*Aeta* of Philippines and *Semang* of peninsular Malaysia), they are also grouped under 'Asiatic Negrito'.

Jarawa is not the actual ethnic identity of the people. Radcliffe Brown (1922:12) mentioned the word Jarawa is apparently derived from the *Aka-bea* language of the Great Andamanese tribe which means 'stranger'. The native term of that group is '*Ang*' who originally are the descendents of a group of people emigrating their way across from Little Andaman and thrust themselves upon the inhabitants of Rutland Island and the south Andaman, maintaining their footing in the new country by force of arm (Radcliffe-Brown, 1922:13). The Jarawas are a self contained community having a social group 'band', possessing a common name, common habitation, common dialect, distinctive tradition, sense of unity, social custom, learned behavior, traits and mode of life. By subsistence, they are hunter-gatherers that move in a group of 15-20 or more members together. To them, a non-Jarawa tribe is identified as '*Eono*' and a non-Jarawa non-tribal outsider is identified as '*Enen*'.

As one of the important hunter-gatherers the Jarawa possess a nomadic life and lead to undertake journeys over a long distance in search of food and shelter. They always move in a group forming 'band' of seven or eight families. According to their tradition, they always harness energy for hunting up to an extent that enables them to get a good hunt, because they have nothing to store or preserve for future consumption. They have strong territorial affiliation and utilize both terrestrial and aquatic resources in a sustainable way. It is their custom to lay the body of a deceased person to rest inside the buttress of a tree trunk deep inside the jungle and desert that place. Body painting with clay and red ochre is a significant aspect of their culture and personal adornment. While making a permanent or semi-permanent habitation inside the deep forest, they always choose such a place where a sweet water resource and plentiful food are available nearby. But for a temporary habitation in the coastal area or in the side of ATR the same sweet water and food resources are taken into consideration.

In table No.1 a decadal population has been mentioned on the basis of various secondary information like Census of India figure, and record of Andaman Adim Janjati Vikash Samity. But in the year 2002, a Study Group was constituted by the Honourable High Court of Kolkata with the scientists of Anthropological Survey of India, Botanical Survey of India, Zoological Survey of India, Forest Survey of India and Health Department. The Study Group made an estimation on the basis of population census and their strength has been enumerated as about 265 souls.

Table 1
Decadal population of the Jarawas

<i>Jarawa Population</i>											<i>Area</i>	
1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2003	<i>West coast of South and Middle Andaman</i>
468	114	114	70*	NE	50	500*	275*	200*	280*	(240)	265**	

Sources:

* Population figure of Census of India

** Population enumeration by the study group.

() Population figure collected from Andaman Adim Janjati Vikash Samity (AAJVS).

The Jarawas are spread over the western coast of south and middle Andaman ranges from Tirur of south Andaman to Luis Inlet of middle Andaman. Apparently a sizeable area is actually necessary for every hunting-gathering group for the ultimate use of resources both aquatic and terrestrial. The resources of one area are necessarily limited and cannot support a group of twenty or more Jarawa persons and that is why they have to move continuously from one camp to another in the interior jungle. Such life style requires an exclusive reserve of terrestrial and aquatic resources. In this context Haviland's postulation is worth mentioning –

“...the hunter-gatherer population all over the world seems to stabilize in numbers well below the carrying capacity of the land. The population density of hunter-gatherers rarely exceeds one person per square mile, a very low density, yet their resources could support greater numbers” (Haviland, 1978: 365).

The present extent of about 650 square kilometers reserve territory for 265 enumerated Jarawa is about sufficient in the equation of two square kilometers of land per person and ensures the entire resources exclusively to them. Before entering into the present theme of the article, it is essential to highlight the Jarawa condition over the ages from colonial period to present day because repeated interference to a foraging community would harm their subsistence and overall livelihood.

ANTHROPOGENIC PRESSURE

The Jarawa has faced continuous disturbances over a period of time. The relationship between the colonizers and the Jarawas was cruel right from the beginning of the second Penal Settlement in 1856 till up to the Japanese occupation (1942 to 1945). The British authorities tried to tame the Jarawas by force with the help of the Great Andamanese, another hunter-gatherer group, which developed an enmity between the Great Andamanese and the Jarawas (Portman, 1899). Afterwards, during the period of punitive expedition, the

same British authorities raided the Jarawa territory, brutally killed a good number of Jarawa souls, damaged their habitat and looted their important material objects from the habitation (Census of India, 1961). During Japanese occupation, the Japanese authorities indiscriminately bombarded the whole of the islands. These consequent incidents caused insecurity, helplessness and generated anger towards the non-Jarawa people.

After independence in 1947, the Government of independent India under 'refugee rehabilitation programme' took the initiative to settle the refugees of East Pakistan (presently Bangladesh) in the Jarawa territory of south and middle Andaman Islands by creating new villages (Chandi, 2002). The refugees were allotted 15 bighas of cultivable land and 15 bighas of small hilly land (Chakraborty & Dinda, 2002) which was under thick forest coverage and of the Jarawa movement area. During initial years of the rehabilitation programme, huge forest coverage was cleared up. As a result, a sense of fear, insecurity crept into their minds because their survival was challenged, as the forest was their habitat and source of livelihood. Consequently, the villagers started encroachment of forest area and undertook exploitation of forest resources (honey, resin, pig, deer, firewood etc.) by means of poaching.

In the year 1960, keeping the welfare of the refugee in mind, the Andaman and Nicobar Administration made a plan to construct the Andaman Trunk Road from south to North Andaman dividing the dense evergreen tropical rain forest into two halves. At the time of construction, extensive felling of trees, blasting of explosives, construction of labour camps ultimately disturbed the prevailing ecosystem. During the course of these activities, many of the Jarawa habitations were bulldozed; many of the Jarawa souls had been buried brutally under the proposed track.

Many non-tribal settlements came up which led to encroachment of more forest land and poaching activities of marine and forest resources obviously increased by the settlers (Chakraborty & Dinda, 2002). As a result, the Jarawas had little scope of territorial mobility in search of resources and were eventually pushed into the western coast of south and middle Andaman (Umesh Kumar & Biswas, 2002). All these incidents created a tremendous cultural shock to them which gave rise to retaliation against any outsider.

DWELLING: UTILIZATION OF SPACE

The general picture is that the dwellings are located so that people are protected from sun and wind by trees in a zone. Rapoport, in a discussion of activity systems and systems of settings essential for the definition and cross-cultural comparison of dwellings, states that '...many activities which take place within

what we call a dwelling may occur in a widely dispersed system of settings in another culture which also, apparently, has dwellings. The units to be compared, therefore, are not the dwellings but the system of settings within which a particular system of activities takes place' (Rapoport, A. 1997: 9-20). By accepting an approach where the dwelling is the centre around which all activities are organized with a gradually decreasing 'settlementness' as one moves away from it, we are likely to adapt our terminology much better to the way nomadic cultures think.

The Jarawa think of their dwelling as the centre of the cosmos, always in the same place. In forest environments like Andaman forest, fuel resources 'circulate' and are therefore constantly accessible from a settlement location. Among the Jarawas in the middle and south Andaman it has been observed that permanent and semi-permanent camps are often reused on a regular basis. There seems to be no strict correlation between the location of the camps and the best hunting locations, but the Jarawas follow the rule of territorial affiliation. It has also been observed that whenever the old camps get dirty and stink, they need regeneration. This forces them to leave the old dwelling and reside in a fresh one. If a visiting family from another band group appears in another settlement area, they will normally put up their own tent, and at the time of leaving the place they often dismantle the structure including the frame because it is not certain that they will ever visit the same site again. It means that a settlement that is regularly inhabited by several Jarawa households must be regarded as a somewhat dynamic structure, even though single households tend to re-use their dwellings.

It is noteworthy that in the Jarawa campsite, there is a relationship between the population and the social use of space. A certain structural arrangement – a circular pattern – characterizes residence location and the spatial relationships within that arrangement are constant, regardless of population size. The Jarawa camps consist of a circle of individual family social activity space, hearth, and hearth side activity area oriented inward around a central common activity area following the 'ring model' (Yellen, 1977: 125-31). The limit of total nuclear area reflects the population of the camp or number of social units. Common activity area is used for dancing, and communal sharing of meat.

On seeing the Jarawa hut, two points are evident – first, camps are a collection of social units (bands) arranged in space; second, two different sets of dimensions – the area occupied by the separate social units and the spacing of those units on the ground – have reference to different sets of variables. Firstly, nuclear family areas are remarkably stable according to the number of individuals in a household (ranging from 1 to 6) and the duration of occupation. On the other hand, the spacing between the household is quiet

variable. The remaining variability is ascribable to the effect of the variation in space between the individual households.

In keeping with their hunting-gathering subsistence, the Jarawa have to move a long distance inside the forest as well as along the coastline. But it has been observed that the Jarawa strictly follow the area of mobility following territorial affiliation, and the conception of territory helps to set up their dwellings/camp site. On the basis of mobility, three broad areas have been identified -

- (i) **Baiab** - It is an area of south Andaman that roughly starts from Constance Bay and extends up to Port Campbell which includes many migrant population inhabited villages like Tirur, Temple Myo, Herbertabad, Collinpur, Manpur, Tusnabad, Caddlegunj, Aniket, Ferrargunj, Milel-Tilek and Jirkatang
- (ii) **Thidang** - This is an area of Middle Strait Island and the area of mobility is in the whole of Choulanga range, which is under thick forest coverage having many forest camps, B.D. Nullah forest camp, Potatang forest camp, etc.
- (iii) **Tanmad** - The area of middle Andaman and the area of the Jarawa mobility is from Lakera Lungta that extends up to Chhotalingbong Bay stretching longitudinally over a distance of about 25 kilometers, where some of the refugee settlement villages like Kadamtalla, Phultalla, Kaushalya Nagar and Chainpur are located.

In all these three territories there are numerous campsites of different categories that researchers have come across during the study. Each campsite name is different and signifies special characteristics. A few of such campsites are mentioned below -

Table 2
Name and position of visited camp sites (*chaddah*)

Middle Strait (Thidang)		
<i>Name</i>	<i>position</i>	<i>type</i>
<i>Peche-leg</i>	coastline	temporary
<i>Mimun</i> 12°03'13.3"N 92°42'19.6"E	inside the forest, near ATR	semi-permanent
<i>Waer-way</i>	coastline	temporary
<i>Ine-ethela</i> 12°06'24"N 92°43'02"E	inside the forest, near ATR	semi-permanent

contd. table

<i>Name</i>	<i>position</i>	<i>type</i>
Hui-naang 12°02'18.3"N 92°42'17.9"E	inside the forest, near ATR	semi-permanent
Ballang	<i>coastline</i>	<i>temporary</i>
Alao-ethela	inside the forest, near ATR	semi-permanent
Thui 12°06'55.3"N 92°42'51.3"E	inside the forest, near ATR	semi-permanent
Tutho-elo 12°07'37.1"N 92°43'16.7"E	Inside the forest, near ATR	semi-permanent
Ing-kathe-beda 12°08'25.6"N 92°38'21"E	<i>coastline</i>	<i>temporary</i>

Table 2 depicts the name and position of the Jarawa campsites. It has been clearly observed that the Jarawa usually make the temporary shelter when they are in transition either on the coastal side or along the Andaman Trunk Road (ATR). Permanent and semi-permanent habitations are few in number and principally have been seen inside the forest. During the field study inside the forest, coastal area and along the ATR, a number of habitation sites have been seen which are very distinctive in name and nature. Each habitation name is different and signifies special characteristics. A few of such habitation sites are mentioned below –

- *Thallang chaddah* – According to the Jarawa terminology ‘*thallang*’ means ‘papaya’. Once this site was filled with huge papaya trees and the name was given accordingly. It is situated about 4 kilometers inside the forest.
- *Ingate-beda chaddah* – On the basis of the Jarawa perception there are a number of sweet water streams (*Ing*) near the habitation site, which is on the western coast.
- *Alao-ethela chaddah* – Its position is 200 meters away from ATR towards the forest. This site is named due to availability of red ochre (*alaam*) which has tremendous medicinal value to the Jarawa and is often used to get relief from any kind of pain by applying its paste made by mixing with wild boar fat.
- *Thui chaddah* – Thui means the bi-valve shell, which is one of the very popular food items of the Jarawa. According to the availability

of this bivalve shell, the Jarawa usually set up semi-permanent habitation and stay there as long as the bivalve shell is available.

From the above discussion it is perceived that in spite of there being a kind of territorial affiliation among the Jarawas, they sometimes violate the rule and visit another territory for mingling with their brethren. In fact, the territories of most hunter-gatherers can support as many people as they typically do (Haviland, 1978: 365). During our study it has also been observed that the Jarawas of one territory often visit the other territories on a rotation basis. Whenever both the territorial group meet together at one place the host group always accommodates the guest group. The habitation of the encampment is abandoned every time a move is made and improvised again at the next halt, for they are easily built with the large leaves of the palm trees available in the forest. It had been observed that in a typical campsite, each habitation encloses a large space and is set up on more frequently visited sites. It is noteworthy to mention that the selection of a campsite depends upon the following considerations -

- (a) Availability of sweet water resource - The Jarawa like other foragers always prepare a campsite within the periphery of about 200-250 meters distance of any sweet water resource like perennial stream or nullah.
- (b) Availability of food items and honey - Observation during the study revealed that the Jarawa stay in a particular habitation site as long as the food resources, both aquatic and terrestrial are sufficient. It has also been observed that the Jarawa prefer to gather or hunt maximum amount of food by harnessing minimum calories as other foragers do, and for that, close proximity is very important. Other than these food items, honey has an immense importance in the Jarawa society because honey symbolizes relaxation and enjoyment of the pleasures of life. Turnbull (1948) explained that sexual activity among the youth of the hunter-gather society is heightened during the honey gathering season (p.143). It has been observed that during the honey collection season, the Jarawa mobility becomes heightened. After returning to the camp, everybody (adult male, female and even kids) consumes as much honey as possible from the bucket along with the larvae and take bath either in the stream or in the sea, which reflects the pleasure of their life.

TYPES OF HABITATION

Keeping in view the utilization of space and territorial mobility, the Jarawa first of all undertake natural clearing in the forest to prepare a campsite. Each

campsite encloses a large space and is set up on more frequently visited sites; moreover, how big the hut would be generally depends on the number of families and its members. There are three types of huts prevalent in each campsite in all the three Jarawa territories – (a) temporary hut, (ii) semi-permanent hut, (iii) permanent hut. In the temporary camp, there are six to ten or more small, temporary lean-to-type huts made for individual families when they are on quick move and stay one or two nights in a place, while the semi-permanent and permanent camps are made for longer duration of stay in a place. The semi-permanent and permanent huts can accommodate more families at a time in a circular way.

Temporary lean-to-type hut: Generally recognized as *thisheya chaddah* found in the coastal area or along the Andaman trunk road when the people are in motion. The size of the hut is 1.5 mts. length, one meter breadth and one meter height. Structurally, the hut is erected on four wooden poles. Two branches are fixed in such a fashion that a sizeable height remains open above; wooden poles of about half meter are fixed to form the back portion. Another two very short branches of about one-fourth meter are fixed to make the extreme back portion. Two parallel transverse branches, one in the front and one in the back are tied with bark fibre (*tha-n*). Some thin branches are placed horizontally in between the two branches fixed with the poles. Once the frame of the roof is made it is thatched accordingly with round palm leaves (*Liquala spinosa*). The leaves are then tied with cane strips to give a durable shape. They do not spend much time and labour on it as it is temporary in nature.

Semi-permanent hut: A semi-permanent camp is characterized by the presence of one big, semi-circular family hut and one small round shaped bachelors hut. This type of hut is recognized as *theoponian chaddah*. The size of the big family hut may vary according to the number of members. This type of hut is principally present inside the forest but during field study it was found near the western coast. Structurally, the hut observed during the field study is about 40 to 45 feet in length, 20 to 25 feet in breadth and 12 to 15 feet in height at the centre. It is erected on a number of wooden poles encircling the area. Before thatching, the ribs or frame of the roof is created using cane, starting from the tip. Every joint is bound by tying with cane ropes. Once the frame is completed, thatching should start and for that *dhani patti* (*Liquala spinosa*) is used one layer after another in such a fashion that the end of the leaves are overlapped by the flattened portion of the leaves. It prevents even a single drop of rain water from leaking through it. The thatching is again bound with cane strips in the upper and lower part so that the leaves can withstand for longer time. It has been observed that the inside of the semi-circular, semi-permanent hut can accommodate seven to nine families that

each has an earmarked space limit. Within the limited space the individual family member reside with their belongings – a thin log of wood used as pillow, baskets and buckets (*oo-hoo*), and a family hearth place. The precious and useful hunting implements – bow (*pato*) and arrow heads (*aao, taijag-tohab*), spear, knife (*tohad*), and chest guard are kept secretly in the inner wall of every individual demarcated family place that shows a unique example of proper space utilization. Besides the individual family hearth place, there is a common hearth placed at the centre of the hut on which the fat and flesh of community hunting is roasted. All the members of the band group always have equal rights to share from the community hunting as a communal property. The oval shaped thatching hangs down nearly touching the ground and only two openings are found for entrance and exit purpose.

Permanent hut: Some call it permanent hut and some others identify it as community hut, but such type of hut is recognized by the Jarawa as *tuhunaa chaddah*. Generally, this type of hut is located well inside the forest and its number is very few. During the study, only two such kind of huts were come across about five to six kilometers inside the forest. The principal structure of permanent hut is similar to the semi-permanent type of hut but the difference is in its size and amount of raw material used. According to the observation, the minimum length is about sixty to sixty-five feet, breadth is thirty to thirty-five feet and height is twenty-five feet at the centre. It encircles a semi-circular area. Along the centre there are eight big wooden beams set in a straight line, of which two poles touching both ends of the central wooden beams are very strong and driven into the ground stoutly, while the other six are comparatively thinner. There are two big common hearths at a distance of about ten feet in between the centre poles. The flesh and fat of community or group hunting is kept on top of the common hearth for roasting. Parallel to the central poles, there are a number of wooden poles present at a distance of about seven feet on both sides which touch the slopes of the thatch. The roof frame is made supporting the main wooden pillar transversely. The free end of the upper roof frame reaches down to the ground, and is fixed with a small, thin, wooden pole in a semi-circular shape. Once the frame has been erected firmly, the thatching starts with four layers of leaves alternately overlapping each other. These four layers of leaves are tied with cane above and below like sewing of mats for better endurance. Numerous wild boar skulls are hung from the ceiling of individual family demarcated places which may symbolize the hunting performance of individual hunters. The permanent hut can be reused after fresh thatching. It is very interesting to identify that the dome shaped upper part of the semi-permanent and permanent hut is conceptually similar with the sky and the canopy of the forest because of the structural pattern, and termed as *bang-nang*.

Bachelors hut: Other than the family hut, a bachelor hut (*thiwaia chaddah*) is present for accommodating the adolescent (*lepah*) boys only leading to an open space which is used as dancing ground for their recreation. It is circular in form; the thatched roof hangs down, but only up to a certain extent. A good portion is left uncovered in the surrounding part.

UTILIZATION OF NATURAL RESOURCES

It is observed that while building a hut, whether it is temporary or semi-permanent or permanent, the Jarawa always try to exploit the natural resources judiciously. It has been observed that for making of habitation, they always prefer not to cut the young, tender tree trunk, never cut the tender *dhani* palm and round palm leaves. Similarly, for livelihood, they never hunt the pregnant wild boar, monitor lizard, and never burn the beehive for honey collection. Moreover, as a classical hunter-gatherer there is a stigma present in their hunting and gathering behavior. They only exploit the natural resources which are either matured or rotten. The sense of regeneration of natural resources is always within their psyche.

ARTIFACTS IN THE HUT

Each and every type of hut consists of some basic livelihood artifacts like – bow (*pato*), arrow (*aao, taijag-tohab*), fishing net (*botho*), wooden honey bucket (*oo-hoo*), cane basket (*taig*), knife of big and small variety (*tohad*), chest guard, wooden log of certain length used as pillow, and a good amount of resin for making of torch.

SPACE ALLOCATION IN THE HUT

As with other hunter-gatherers, the Jarawa also strictly follow the rule of space allocation when eight to nine individual families reside together within a family hut of semi-permanent or permanent campsite. The individual family residing place is allocated on either side, keeping the centre line vacant for movement within the hut. A small fire place is present for each individual household where they roast or boil their gathering items like bi-valve shells, sea fish, yams, and insects. Floor of the household is covered with date palm leaves (locally called as *selai patti*). Cohabitation of one male member with a female member of the other family is strictly not permissible, and if that happens by chance, he or she will be excommunicated from the band group. Every household is distinctly made with husband, wife and their non-adolescent children. The adolescent boys (*lepah*) are free to live separately from the family, while the adolescent girl (*opeh*) still resides with the parents until her marriage.

SHARING OF SUBSISTENCE ITEMS IN THE CAMPSITE

It is another important area of the Jarawa camps which emphasize that sharing of some form of their subsistence items beyond the individual household serves as a means of buffering against variation in subsistence intake at the household level. It is observed that sharing is a valuable strategy of the Jarawas when obtaining a resource that yields high returns, but it is also evident that each attempt has a low chance of success. The gathered plant foods and hunt of small body-size animals (fishes, monitor lizard, egg of turtle, garve larvae etc.) are shared only among the members of individual household, but larger body-size animals (mainly good size wild boar) are shared widely among the members of local residential group (band). It is evident that after performing a big hunt, the hunter takes complete rest in his own hut, while the family members share the hunt first with the household members, then with the kin members and after that with the members of other households of the same local group (band). Sharing of meat widely by the Jarawas within a camp serves to ensure optimal utilization of the resource and to even out variations over time in any individual's access to meat. This is the way whereby the Jarawas cope with subsistence risk.

SOCIAL FABRIC OF DWELLINGS

The dwelling of the Jarawas has utmost importance to their society. It is an inextricable part of their life. For constructing a good campsite, every member of the local group (band) plays an important role.

- Division of labour – At the time of construction of dwelling, the male members generally collect the wooden poles and canes in a huge quantity and the female members usually gather leaves, bark fibers etc. When the Jarawa males are busy with erecting of the poles and making the ribs of the huts, the female members help their male brethren by providing the raw materials. When the males are busy with preparation of bow, arrowheads, buckets, baskets in the campsite, the female members usually collect sweet water from a nearby waterhole and collect firewood and resin for their use.
- Place of happiness –The Jarawa campsite is a place of their happiness. Whatever type of dwelling it is, whether it is lean to type, or semi-permanent or permanent, the members are free to gossip, share beliefs and values, interact and discuss with each other about their mobility and game strategy.
- Place of socialization – Initial teaching of youngsters begins at home. A small boy learns behavior from the members of the individual

camp. Moreover, he learns the technique of hunting and gathering. It has been observed that when a boy grows older, his adult camp member teaches him how to use a wooden barbed spearhead in a small bow. Furthermore, the adult members of the camp usually take them inside the jungle to make them accustomed with the niche. Gradually, a small kid learns the art of implement making, the art of hunting, chasing the hunt, art of making the dwelling, art of subsistence and livelihood. Thus a camp also acts as a place of formal education.

- Place of harmony and enjoyment – Each camp comprises of a number of families living together. They always live in harmony; intra-group feud has never been reported from any Jarawa camp. It has been observed that if any difference of opinion occurs among the members of the group it is amicably solved by the elderly members. Moreover, the female members take the responsibility of settling the differences of opinion and agony of the members. Every time, all disputes are positively resolved within the camp itself. If any unpleasant situation arises, the aged members of the group excommunicate the guilty person. The camp is always a place of harmony to them and viewed as a place of enjoyment. Whenever they are at leisure in the afternoon, they perform group dance in the open premises of the campsite.

CONCLUSION

The estimation of the Jarawa population from a camp area should be cleared by determining the camp size. The spacing between individual domestic units is also important. This distance will vary with social distance among the Jarawas. One interesting aspect evident in the Jarawa campsite is that there is a relationship between the population and the social use of space. A certain structural arrangement – a circular pattern – characterizes residence location and the certain spatial relationships within that arrangement are constant, regardless of population size. The Jarawa camps are formed of a circle of individual family social activity space, hearth, and hearth side activity area oriented inward around a central common activity area. The Jarawa think of their dwelling as the centre of the cosmos, always in the same place. In forest environments like Andaman forest, fuel resources ‘circulate’ and are therefore constantly accessible from a settlement location. It is the behavior of the Jarawas as an instance of actual hunter-gatherers.

Two points are evident from the discussion: that the Jarawa camps are collection of social units (bands) arranged in space; the area occupied by the separate social units and the spacing of those units on the ground have

reference to different sets of variables. The nuclear family areas are remarkably stable according to the number of individuals in a household (ranging from 1 to 6) and the duration of occupation. On the other hand, the spacing between the households is variable. The remaining variability is ascribable to the effect of the variation in space between the individual households.

The Jarawas of one territory often visit the other territories on a rotation basis. Whenever both the territorial groups meet together at one place the host group always accommodates the guest group. The habitation of the encampment are abandoned every time a move is made and is improvised again at the next halt, for they are easily built with the large leaves of the palm trees available in the forest. It had been observed that in a typical campsite, each habitation encloses a large space and is set up on more frequently visited sites. The selection of a campsite depends upon the availability of sweet water and availability of food and honey as it is the symbol of relaxation and enjoyment of pleasure of life.

As a classical hunter-gatherer the Jarawa has a strong behavior of exploiting the natural resources judiciously following the rule of sustainability. The sense of regeneration of natural resources is always in their psyche.

Sharing of subsistence items, especially the hunt is another area of importance valued within the dwelling systems. Sharing is a valuable strategy of the Jarawas when obtaining a resource that will yield high returns, but it is also evident that each attempt has a low chance of success. Sharing of meat within a camp serves to ensure optimal utilization of the resource and to even out variations over time in any individual's access to meat. This is the way whereby the Jarawas cope with subsistence risk.

The camp is the place of their happiness, place of discussions, place of socialization, place of formal education, place of enjoyment, place of harmony, place of culture and much more. Being a member of the camp the Jarawa practice division of labour; they are free to gossip, share beliefs and values, interact and discuss with each other about their mobility and game strategy. It is only the camp where the children can learn the techniques of implements making and its usefulness in maintaining their livelihood.

But over a period of time, many destructive alien influences have hampered their age-old tradition. Due to increase of outside population, the forest limit has shrunk, thereby restricting their easy movement within the forest, and the duration of setting up of semi-permanent and permanent camp has become shortened or minimized. A kind of 'push' and 'pull' factor has forced them to remain restricted within a demarcated area.

References

- Andaman Adim Janjati Vikash Samity (2002), *Annual Report*. Port Blair: Andaman & Nicobar Islands.
- Census of India. (1931), *The Andaman and Nicobar Islands. Part- I & II, vol. II*. Calcutta: Central Publication.
- Census of India. (1961), *The Andaman and Nicobar Islands. General Report. Part- I, vol. XVII (17)*. Delhi: Government of India Press.
- Census of India. (1971), *The Andaman and Nicobar Islands. General Report. Part- I, vol. XVII*. Delhi: Government of India Press.
- Census of India. (1981), *The Andaman and Nicobar Islands. General Economic Tables and Social and Cultural Tables. Part- III, A & B and Part- IV, A*.
- Census of India. (1991), *The Andaman and Nicobar Islands. General Economic Tables and Social and Cultural Tables. Part- III, A & B*.
- Chakraborty, S. and A. Dinda. (2002), *The Jarawas and Their Neighbours: The Post-Independence Scenario*. In *Jarawa Contact: Ours with them Theirs with us*. K. Mukhopadhyay, R.K. Bhattacharya and B.N. Sarkar ed. Pp. 43-57. Kolkata: Anthropological Survey of India.
- Chandi, Manish. (2002), *Territory and Landscape Around the Jarawa Reserve*. In *Jarawa Contact: Ours with them Theirs with us*. K. Mukhopadhyay, R.K. Bhattacharya and B.N. Sarkar ed. Pp. 43-57. Kolkata: Anthropological Survey of India.
- Egenter, Nold. (1992), *The Present Relevance of the Primitive in Architecture*. ISBN-13: 978-3905451016. Zurich, Switzerland: Structure Mundi.
- Haviland, William. (1978), *Anthropology*. New York: Holt, Rinehart and Winston.
- Portman, M.V. (1899), (Reprint 1990). *A History of our Relations with the Andamanese*. Vol. I & II. New Delhi and Madras: Asian Educational Services.
- Radcliffe-Brown, A.R. (1922), (Reprint 1948). *The Andaman Islanders*. Glencoe, Illinois: The Free Press.
- Rapoport, A. (1997), *System of Activities and System of settings*. In *Domestic Architecture and the use of space – An Interdisciplinary Cross-cultural Study*. S. Kent, eds. Pp. 9-20. Cambridge.
- Read, D.W. (1978), *Toward a Theory of Population size and area of Habitation*. *Current Anthropology* 19: 312-17.
- Turnbull, C. (1948), *Black War: The Extermination of the Tasmanian Aborigines*. Melbourne and London: F.W. Chesire.
- Yellen, J.E. (1977), *Archaeological Approach to the Present: Models for Reconstructing the Past*. New York: Academic Press.

