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TRENDS AND SITUATION OF HOUSING AT ATHPAHARIYA COMMUNITY IN DHANKUTA

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Abstract

Sanitary housing is one of the basic requirements for healthy living, for safety also included as fundamental right. Housing situation of households and structure reflects the socio economic and cultural identity of people. It is also determined by environmental condition. Athpahariya Rai community is a rare community found especially at Dhankuta. A self-administered structured and unstructured questionnaire in Nepali language was used to obtain information from household head, observation, discussion with key informant are used in this study. Most of the traditional households are in insanitary condition with cattle shed. The structure of household has been slightly changed with improving socio economic status and support of Dhankuta municipality but there is not any significant change in living standard of people with low productivity of land, lack of safe drinking water, low level of literacy etc. Roof is changed from straw to zinc sheet and bamboo wall has been changed into stone and mud wall, there are very few household with concrete structure. Modernity towards shelter is just started in terms of shelter in the study area.

Key words: Building materials, Human settlement, House types, roof, Wall, Rural house.

Introduction

The global population exhibits great spatial variability in settlement patterns. Settlements provide a spatial focus for most human activity, and therefore also strongly affect local land cover, water quality, and biodiversity (Gude, 2006, 131–151). Consequently, human settlement acts as the most fundamental link between people and Earth, and reflects the interaction of people with the surrounding environment (Fragkias2009, 189–199). Settlement locations are determined by local amenities, economic factors, communications and are always subject to food availability and production capacity (Luck, 2007, 201–212). They are thus influenced to a large extent by topography, water accessibility, and transportation proximity (Robinson, 2012, 164–176). As a result, the locations of human settlements are unevenly distributed across various spatial scales. Analyzing the spatial patterns of settlements can contribute to greater understanding of land use changes, cultures and lifestyles, etc. Site- and situation-specific geographical factors can critically influence human settlement patterns (Liu, 2005, 450–455) .The topographical factors of human settlement expansion and observed that the lands with lower gradient were always more favorable for development (Li et al. 2005).

Rural habitats, while locating their houses, would like to have easy access to their certain basic requirements. The location of rural settlement in relation to these factors could be placed. They

are: Source of water, source of fuel, grazing land, building materials, access to market center, flood havoc, ravages of malaria. These factors are divided in to two sets : i) source of water, fuel, building materials, agricultural field, grazing land and marker center and ii) ravages of malaria, flood havoc and aspect of slope . The first set is easy access, whereas the three factors of the second set are negative and hence settlement avoids (Shrestha and Rijal, 2016). Now a day's malaria isn'tnecessary factors for location of settlement.

Types of houses

House refers to a structure where household is using it as a shelter and which is closed or surrounded by walls or curtains made of any types of materials such as mud, wood planks, bricks, stone, concrete, etc (Kayasthe and Shrestha, 2003).

Houses can be built in a large variety of configurations. A basic division is between free-standing or Single-family houses and various types of attached or multi-user dwellings. Both may vary greatly in scale and amount of accommodation provided. Although there appear to be many different types, many of the variations listed below are purely matters of style rather than spatial arrangement or scale.

by Structure Type

- Single family (detached)
- Condominium
- Apartment
- Co-op
- Townhome
- Bungalow
- Ranch-Style
- Cottage
- Cabin
- Chalet
- Multi-family
- In-law suite (aka basement suite)
- Carriage/Coach house
- Tiny home
- Mobile Home
- Mansion
- McMansion
- Yurt
- Floating on Water Residence (aka Floating Home or Houseboat but there are differences)
- Tree house
- Castle
- Palace
- Chateau
- Villa
- Manor
- Fort
- Underground House
- Cave
- Container Home

(Home stratosphere, 2018). https://www.homestratosphere.com/types-of-houses/

By roof structure:

- Flat roof
- Sloping roof

By building materials

- Pucca house
- kutcha house

By Climatic condition:

- Polar region house
- Tropical humid region house
- Dry region house

By permanencies

- Permanents house
- Temporary house

(www.youtube.com2018) /watch?v=-casfzsV8p4&t=61s

On the basis of construction materials used in walls and roof of the residential, Nepalese houses are divided into four categories. These categories are: Pakki (permanent), Ardha Pakki (Semi-permanent), Kachchi (temporary) and others. Pakki house refers to that with both walls and roof made of permanent construction material like cement, bonded brick, concrete, stone, slate, tile, galvanized sheet, etc. Ardha Pakki house belongs to the category where either the wall or the roof is constructed with permanent materials and the other is constructed with temporary materials. In Kachchi house, non-durable materials like wooden flakes, bamboo, straw/thatch, mud, unbaked bricks, etc. are mainly used in both walls and roof. Other category of house includes a very temporary type of residential unit that is made with non-durable materials. This 'Other' type of housing unit is, generally, made with plastic sheet, bamboo, straw/thatch, etc (Kayastha and Shrestha, et. al, 2003)

Building materials

Building material is any material which is used for a construction purpose. Many naturally occurring substances, such as clay, sand, wood and rocks, even twigs and leaves have been used to construct buildings. The manufacture of building materials is an established industry in many countries and the use of these materials is typically segmented into specific specialty trades, such as carpentry, plumbing, roofing and insulation work. This reference deals with habitats and structures including homes. Building materials can be generally categorized into two sources, natural and synthetic. Natural building materials are those that are unprocessed. Synthetic materials are made in industrial settings after much human manipulations, such as plastics and petroleum based paints. Both have their uses. Mud, stone, and fibrous plants are the most basic building materials, aside from tents made of flexible materials such as cloth or skins. People all over the world have used these three materials together to create homes to suit their local weather conditions. Thatch is one of the oldest of building materials known; grass is a good insulator and easily harvested. Many African tribes have lived in homes made completely of grasses year round. In Europe, thatch roofs on homes were once prevalent but the material fell out of favor as industrialization and improved transport increased the availability of other materials.The Constructor: civil engineering home organization listed the materials of building are:

Mud and clay
Rock
Brush
Wood
Brick and Blocks
Cement composites
Metal
Sand
Glass
Ceramics
Plastic
Foam
Concrete

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Environmental concerns are also becoming a major world topic concerning the availability and sustainability of certain materials, and the extraction of such large quantities needed for the human habitat (Mishra, may 20, 2018).

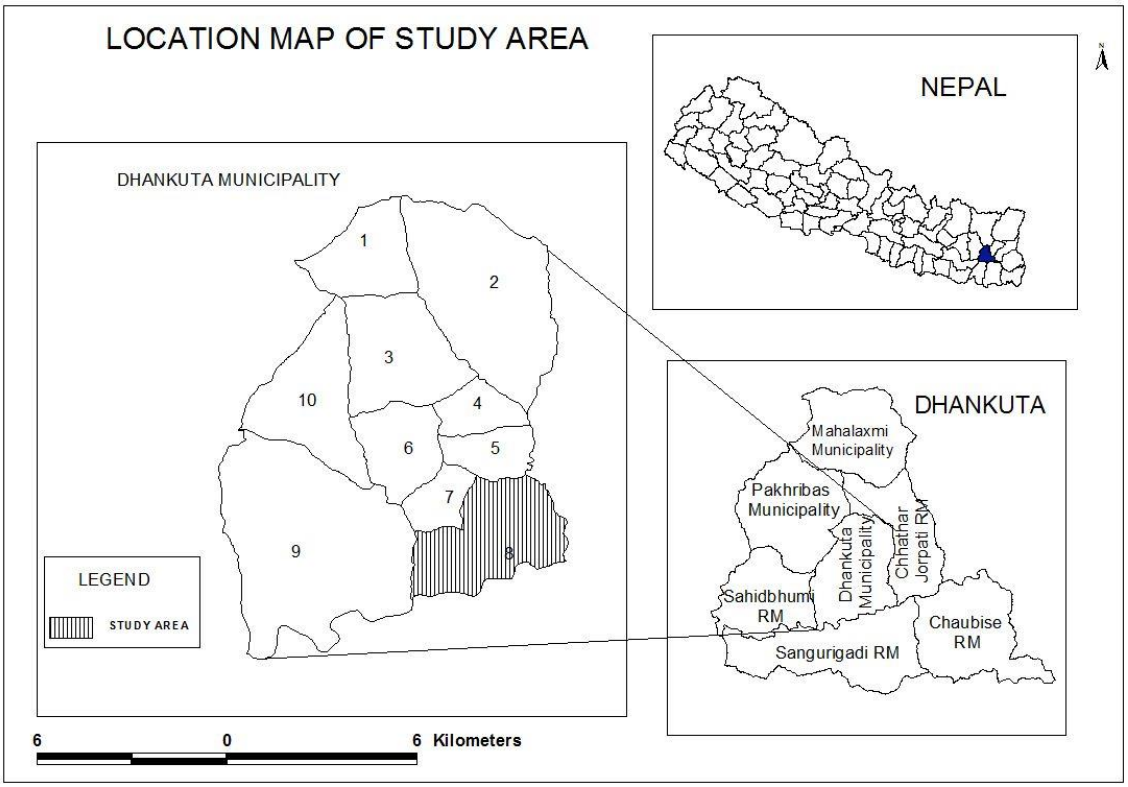
Most of the population lives in rural villages where houses are made of stone or mud bricks, with thatched roofs and raised eaves. Bamboo and reed huts are also prevalent. Most houses have two stories, but some contain only two rooms, a sleeping room and a room for cooking.

Study Area

Dhankuta district lies in the middle hill within province No.1. It covers an area of 901.1km2 with a population of 163,412. Male population is 79,020 and Female population is 82,378among total population. (Thanyankiya karyalaya Dhankuta, 2074).

Dhankuta Municipality is situated in the central part of Dhankuta District.It shares the border with Chharthar Jourpati Rural Municipality in the East and north, Sangurigadhi Rural Municipality is located in the south, Sahidbhumi Rural Municipality in the west and Pakhribash Municipalityto the North–west part. It is extended from 26^0 55' 4.8" to 27^0 02' 56.4" Northern latitude and 87^0 16' 16.5" to 87^0 22' 58.5" Eastern longitude. This area covers 110.8sq.km. The total household size of the Dhankuta Municipality is9,460 with36,619population, among them 17,167aremales and 19452are female. Major Ethnic groups of this areaare Khas/Brahmin, Newar,Athpahariya Rai, Tamang, Magar, Sherpa, Gurung (Dhankuta Nagarpalika ko Bastugat Bibaran, 2074).

The study is concentrated with Dhankuta Municipality ward No. 8. This ward lies in the south-east part from Dhankuta Bazaar. This ward is extended in 11.38sq.km. Total household size of this area is 459 with 1939 population, among them 864 are male and 1075are female (Thanyankiya karyalaya Dhankuta, et.al, 2074). Athpahariya Rai is a main ethnic habitant. Agriculture is the main economic foundation of this area.



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Methods and materials

Data are obtained from both primary and secondary sources. Primary data has been collected through total household survey (Census method) in Dhankuta Municipality ward No. 8.Structured and unstructured questionnaire, observation discussion with key informant has been applied to collect data. Duration of field survey was 25th July to 11th August, 2018. Secondary data were collected from Published Books, reports, articles and internet etc.

All the collected data have been classified, sorted and tabulated for giving more comprehension. Statistical tools like percentage and average have been used for analyzing the data. Figures are also included for analysis.

Result and discussion

Types of Nepalese houses

Nepalese houses type is concerned with construction materials.Broadlyit is divided into 3 categories, they are:Pakki, Ardha pakki and Kachchi. Basically Stone, mud, Bamboo, leaf walls with slate, thatch/straw, wooden mud roof houses found in rural area. Concrete buildings are found in urban centers. On the basis of used materials, housing situation of Nepal is shown by following table.

Table 1: Household types of Nepal 1991-2011 (Household in Percent)

Types of House	1991	2001	2011
Pakki	23.5	36.6	58.4
Ardha-pakki	24.8	29.2	31.0
Kachchi	49.7	33.5	9.5
Others	2.0	0.7	0.1
Not Reported	-	-	1.0
Total %	100	100	100
Number	3,328,721	4,174,374	5,423,297

Source: Central Bureau of Statistics (2003) Population Monograph ofNepal Vol. I, Table 5.1.Central Bureau of Statistics (2014) National Report-1,

In Nepal, the Pakki type of house is an increasing trend. In 1991 less than 24% of houses were Pakki type, which has been reached 58% till 2011. The data shows that during the period of 1991 to 2011 the Kachchi type of house has been decreased from 50% to 10%. There has been a significant shift in the pattern of types of houses from Kachchi to Ardha Pakki and Ardha-Pakki to Pakki during each inter-censual period.

Types of NepaleseRural houses

Nepal is small country with wide variety in building structure. They introduce adistinct element of the landscape, expressive of both the environmental conditions of a region and cultural tradition of people. It also expresses of a region and their rural economy. Nepalese rural housesare divided in to three major types: a) The Himalayan type, b) The Hill type and, c) The tarai type (Shrestha and Rijal , et. al 2016).

The Himalaya region is located in north part of Nepal with cold region. The influence of insulation is well reflected in the orientationof houses. Houses are built close together, frequently with common walls. The houses generally two storey with walls of piled stones, crudely built. Roof s is usually constructed by timber covered with slate or thick boards.

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The Hilly region is located in the middle part of Nepal. Houses are two storeys with mud brick and stone. Roofs shaped are thatch. The Houses are usually found with scatter pattern. Some are found in linear pattern.

Tarai region situated in the southern part of the country.Traditonal tarai houses are with one storey made of bamboolatticed wall which are plastered with cow dung and mud. The roofs are thatched and few are tiled.

The rural houses structure is changing towards kachchi to semi pakki, semi pakki to pakki due toavailabilityof the building materials and improving economic condition of Nepalese people.

Types of houses in Dhankuta municipality ward No.8

Main ethnic group of this area is Athpahariya Rai. Most of the houses are traditional type made of mud, stone and straw with *Mulghar* (for worship), cattle shed. This area mainly consist scatter pattern house buildings along with linear house pattern at roadside.

On basis of constructional materials

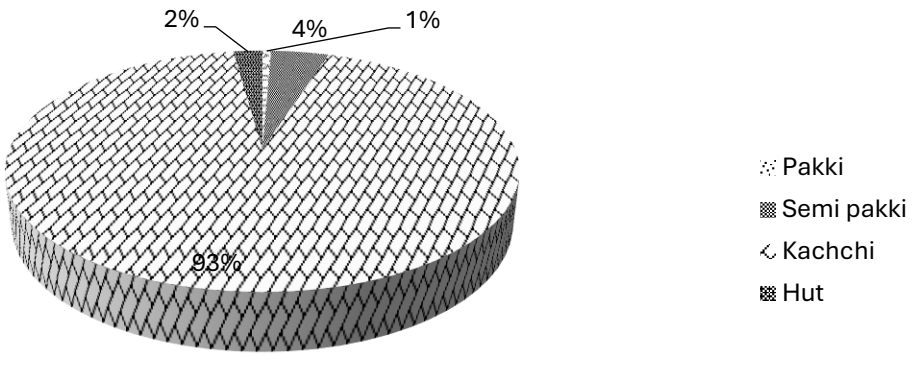
On basis of constructional materials, this area's houses divided in to major four categories: Pakki, semi pakki, kachchi and hut. About 93% houses are kachchi, some houses are semi pakki and pakki. which is shown in following table?

Table 2: Types of house in Dhankuta municipality 8

S.N.	Types of house	No. of households	%
1	Pakki	3	0.65
2	Semi pakki	20	4.36
3	Kachchi	426	92.81
4	Hut	10	2.18
Total		459	100.00

Source: Field survey, 2018

Figure 1: Types of household in Dhankuta Municipality-8



On the basis of type of the household 93% are Kachchi, 4.36% are semi pakki and 2.18% are hut. Negligible no of households (0.65%) are pakkiamong total 459 households. This data indicates Low level of literacy, low level of income, persistence of traditional values and norms are prevailing in this area.

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On the basis of storey

The number of floors in a building is highly associated with socio economic level of people. To arrange all family life within single storey is the compulsion of people. On the basis of storey people situation of housing is shown by following table.

Table No. 3: Types of house with basis of storey

S. N.	Number of storey	Number of house	%
1	One storey	238	51.85
2	Two storey	211	45.97
3	Three storey	10	2.18
Total		459	100

Source: Field study 2018.

Among total 459 households majority (52%) are with one storey or with ground floor only and 46% are with two storey and only 2% are with three storeys. No. of storeys are also indicator for socio economic status. Table shows that there is problem of good sanitary housing condition in study area.

On the basis of room

Appropriate no. of rooms are required according to household size for quality life. Availability of sufficient place is associated with overall development of family members. Which is also influenced by socio economic condition of people. Households according to number of rooms is presented by following table.

Table No. 4: No. of house on the basis of room

SN	No. of room	Number of households	percentage %
1	1-2 room	270	58.82
2	3-4 room	159	34.64
3	5-6 room	27	5.88
4	7-9 room	3	0.65
Total		459	100

Source: Field study 2018.

According to the table no 4 majority of the households (59%) household have 1-2 rooms only. Similarly there are 159 (35%) households have 3- 4 rooms and there are only 32 (6%) households have more than 5 rooms. Separate room for patients, students are desirable for healthy housing but there is insufficiency of rooms for people of all age group.

Changing household structure

Household structure is changing according to time, necessity and socio-economic status of people. It has been drastically changed in building materials with awareness of people, it is also determined by market service, road network and hazards like earthquake, firing etc. There is no significant change in household structure at study area except roof and used materials for walls. There is sufficient lack of concrete RCC buildings in this area. Basic cause behind the change in roof is lack of raw materials as straw and lack of skilled manpower at study area. Old traditional households wall are made with bamboo, mud, leaf and stone with straw roof

and recent households are slightly modified in room structure with zinc sheet roof. Age of Household in the study area is shown in following table.

Table 5: Age of built-up house

Age of house (in year)	Number of house	%
0-4	82	17.86
5-9	62	13.51
10-24	138	30.01
25-49	141	30.72
50-74	34	7.41
75-99	2	0.43
Total	459	100

Source: Field study 2018

Among the total 459 households majority of households are 10 – 49 years old. There are 36 (nearly 7%) households are more than 50 years old. Must of the old households are with traditional structure with small rooms, straw roof, leaf, bamboo, mud walls and household made before 10 years are with zinc sheet. Recently many households of the study area are using zinc sheet by removing old straw roof with the support of Dhankuta Municipality.

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