

LANDFORM AND POPULATION DISTRIBUTION IN IMPHAL TAMPAK OF MANIPUR STATE, INDIA

Dr. Thongam Meghajit Meitei

Asst. Professor of Geography

Ideal Girls' College

Akampat, Imphal, Manipur, India

Abstract

Landform influence the distributional pattern of population not only at macro level but also at micro level. At macro level mountains, plateaus and plains effect the distribution of population strikingly. For having various advantages offered by plains in addition to natural soil fertility most human prefers to reside over the plains rather than plateaus and mountains. Within the plain regions population distribution is also governed by minor landforms. The present paper analyses the relationship between population distribution and landforms with special reference to Imphal Tampak of Manipur state, India.

Keywords:

Landforms, Population distribution, Imphal Tampak, Rivers, Foothills, and Lakes.

Introduction

Imphal Tampak (commonly translated into Imphal Valley or sometimes Manipur Valley in English, in the present study the term "plain" is also used in the place of valley) is centrally located encircled by hill and mountain ranges within the Manipur state, India (Fig.1). The study area covers Imphal East, Imphal West, Thoubal, Bishnupur and Kakching (a newly formed district bifurcated from the Thoubal district) districts and parts of hill districts (if settled by Meiteis). Its (Imphal Tampak) length is 85 km (North-South) and its width is 37 km (East to West). General elevation varies from 746m to 838m. lowest point in measured at near Sugnu with 746m above MSL. There are lakes, swamps, and isolated hills and hillocks within the Tampak (Imphal valley). These features cover an area of about 550 sq.km. The thickness of alluvium varies from 100 to 150m. The total area of Imphal Tampak is 2166 sq.km, it is 9.70 percent of total geographical area of the Manipur state. The Tampak (Imphal valley) has a population of 15,89,834 persons which is about 56 percent of the total population of Manipur state (2011, Census). Imphal Tampak is surrounded by hill and mountain ranges of Kamjong, Tengnoupal, Chandel and Churachandpur districts in the east and south, and Churachandpur and Kangpokpi districts in the west, north and east.

Physical Features

Imphal Tampak (Imphal Plain) is a slightly sloping plain towards south. There are numerous hills and hillocks scattered here and there within the plain. The term '**denudo-tectono**' is applied to these hills and hillocks, thus these features are known by **denudo-tectono hills** and **hillocks** (Meitei, 2010, P.39). The names of these hills and hillocks are Cheirao Ching, Langol Ching, Chinga, Chingamacha, Heibok Ching,, Langthabal Ching, Chaobok, Tentha Ching, Maibam Lotpa Ching, Phojing and Machin Manao Ching (Ching means hill). There are many spurs extended from the main hill ranges projecting towards the plain. There are also numerous lakes, swamps, and mounds. Loktak lake is the largest lake and played a prominent role in the economy of Manipur state. Thanga, Ithing, Sendra, Yaoshulakpa Khoudem Ching, Mukap, Manda and Karang decorating the Loktak Lake

like isles. Ikop Pat, Lamphel Pat, Waithou Pat, Loushi Pat, Heingang Pat, Khoidum Pat, Yaral Pat, Ikop Pat etc. are other lakes and swamps (Pat means lake). Loktak lake is the single name representing many small connected water bodies and swamps. Some of the lakes and swamps are tectonic origin and some of them are backswamps. The adjoining areas are nothing but piedmonts (foothills)

Objectives and Methodology

Population distribution is largely determined by landforms. Plain regions fulfil the requirements for human habitation. The present work analyses the relationship between population distribution and landform with special reference to Imphal Tampak. Such relationship is studied in two modes. First, a general discussion of population distribution over Imphal Tampak has been made. Second, concentration of population over the particular geomorphic features has been discussed.

In the present analysis identification of landform types has been done. In the next step, identification of villages and towns situated along the rivers has been by incorporating village location maps of Census of India and field work has also been conducted for confirmation. Likewise, I also identify the villages and towns located along the lake shorelines and foothills. Population data of villages and towns has been extracted from the Census Handbooks (2011). Here one point is to be noted that small settlements are amalgamated to the nearby large villages, so there is no population data of such villages in the Census Handbook. As a result, in the present work someone will find omission of villages which he/she knows. At the same time, he/she must remember that the omitted villages are the part of nearby large villages and their population data also included in the population figures of that large villages. Two maps – geomorphological map and population distribution map, have been prepared for clear presentation of data. In the preparation of geomorphological map **Polish Legend System** has been adopted with modification (St-Onge, 1968).

Drainage

Imphal Tampak (Imphal valley) is drained by Imphal River and its tributaries, and streams emptied into the Loktak Lake, Phumlen Pat and Ikop Pat. Iril River is the largest and longest tributary of the Imphal River. It originates from the Lamkui and Kadam hills in the north-east of Mao near the northern border of the state (Manipur) and joins the Imphal River at Lilong after 120 km. long journey. Thoubal River originates from the Huimi hill of Ukhrul district and joins Imphal River at Irong Ichil, 4 km. east of Mayang Imphal town after 105 km. long journey. Kongba River is originating from Kongba Maru and joint to the Imphal River at Kongba Irong about 1 km. upstream from Iril and Imphal confluence point. Sengmai Turel (Turel means river) sources from the east of Pallel and joins the Imphal River at Sekmaijin. Chakpi river from the south-eastern corner of the state (Manipur) and joins the Imphal River at Sugunu. Khuga River originates from the Singhat hills of Churachandpur district and joins the Imphal River at Ithai, just above the Ithai Barrage. Leimakhong originates from the Koubru mountain range and joined to the Imphal River at Pheidinga. Sekmai Turel also originates from the Koubru mountain range and joins the Imphal River at Sekmai.

Thirteen large and small streams namely Nambul, Thongjaorok, Kharok, Potsangbam (Charoikhul at the upstream and Narkhong Turel at donwstream), Ningthoukhong Turel, Khujairok, Thinungei Khong, Lamganbi, Sanathoi, Irumbi, Thamnapokpi Khong, Laikhrambi amd Moirang Turel (Turellu at upstream) which originate from the western mountain ranges stretching along the western boundary of Imphal Tampak drained into the Loktak Lake. Nambul River empties into the Loktak Lake under the name Yangoi Maril. Nambul River has four tributaries namely Luwangli, Naga Turel, Waishel Maril and Mera Khong (now no more connected to Nambul Turel. Maklang Turel is the tributary of the Nambol River. In the past Nambol River was the prime tributary of the Nambul River but today the river empties into the Loktak Lake at the extreme north-western side. This Nambol river rises from the western hill ranges of Imphal Tampak and flows through Nambol Town.

Arong and Wangjing Rivers flow down from the hill ranges stretching along the eastern boundary line of Imphal Tampak and emptied into the Ikop Pat. Khongjom Tural also flows down from these hill ranges that emptied into the Loushi Pat. There are minor (lower order) streams that emptied into the Pumlun Pat.

Imphal River originates from Bolen Pat 15 km north-west of Kangpokpi, elevation 2334m. In its upper course it is called **Tiki River** and flows upto Indo-Myanmar International boundary through a gorge under the name Manipur river from the confluence point where Khuga meets the Imphal river and finally joined to the Chindwin river at Kalemmyo, Myanmar.

Geomorphology

Imphal Tampak (Imphal valley) is formed due to accumulation of river borne sediments and neritic sediments of lakes and swamps over the **pull-apart basin** which experiences subsequent tectonic movements. The thickness of alluvium varies from

100 to 150m. The alluviums deposited along the foothills and old river terraces are designated as high level or older alluviums by **Oldham** (1883). Newly deposited alluviums along the rivers are newer alluviums.

Natural levees, backswamps, tectonic lakes, denudo-tectono hills and hillocks, alluvial fans and cones, crevasse splays, mounds and elongated ridges are the geomorphic features occurred in and around Imphal Tampak (Fig. 2). Imphal Tampak itself falls in the category of river built-plain. At macro level it may be considered as a big flood plain characterised by many streams, lakes, swamps, hills and hillocks, and mounds.

Natural levees are well developed along Imphal, Iril, Kongba, Thoubal, Arong, Khuga, and Nambul rivers. Crevasse splays are formed at the breaching points lying along the banks of Imphal, Kongba, Iril and Thoubal rivers. Alluvial fans and cones are seen at the foothills of the denudo-tectono hills and hillocks scattered here and there within the valley and along the foothills of hill and mountain ranges encircling the plain. Elongated ridges are nothing but crestlines of denudo-tectono hills. Nowadays, backswamps and some of the tectonic lakes are reclaimed for paddy fields. The denudo-tectono hills and hillocks also deteriorating their original features due to human interference and even levelled them.

Population Distribution

The distribution of population over the Earth's surface is uneven. Distribution of population refers to "the way people are spread over the surface of the Earth. distribution may be linear or dispersed or agglomerated" (Gosh, 1985, P. 22) Dots (uniform and multiple) are used by geographers to show distribution patterns of population on maps. Geographers used both dots and spheres if they want to show rural and urban population on a single map. Population distribution also shown by means of Choropleth map. In the present study only uniform dots has been used to show population distribution of Imphal Tampak.

Configuration of land (landform), climatic condition, fertility of soil, availability of water, availability of minerals, migration, Govt. policy, etc. are the factors affecting population distribution. Present study analyses how landforms influence the distributional pattern of population at micro scales with little emphasis at macro level.

Landform and Population Distribution

Landform is the one of the important factors that influence the population distribution. Landforms influence the distributional pattern of population not only at macro level but also at micro level. At macro level mountains, plateaus and plains affect the distribution of population strikingly. People prefer to reside at plains areas than hilly and mountainous terrains. People also prefer reside over the plateau if there is significant amount of economic mineral resources. For having various advantages offered by plains in addition to natural soil fertility most human prefer to reside over the plains rather than any other second order landforms (mountain and plateau). About 80 percent of total population of the world live in the plains.

Steep slopes, hill tops (peaks), high altitude areas, drainage, subsoils water table and other third order geomorphic features such as natural levees, backswamps, fans, etc. affecting the population distribution at micro or local level. People do not want to live at steep slope areas, high altitude areas, poorly drained low lying areas such as backswamps and marshy lands. There is no settlement or little settlement at these places. Instead people prefer to live at low altitude areas, gentle or level slope areas, good drainage areas such as natural levee zones, etc. Piedmont zones are dotted by settlement linearly. Within a fluvially formed plain, houses are well distributed linearly along the river within the natural levee zones. Beyond the natural levee zones there are depressed water logged less drained backswamps. Alluvial cones and fans are not suited for human habitation because these landforms liable to destroy anytime by rivers which formed them. But, we have seen houses decorating the some abandoned alluvial cones and fans formed by small intermittent streams.

Population of Imphal Tampak

According to 2011 Census, Imphal Tampak has a population of 15, 89, 834, which is the about 56 percent of the total population of Manipur state. Amongst the districts Imphal West has contributed largest number of population with 5,17,992 persons and Bishnupur districts contributed lowest number of population (2, 37, 399 persons). Imphal East (excluding Jiribam sub-division) and Thoubal districts are the home of 4,12,275 and 4,22,168 persons respectively.

Out of total 15,89,834 persons, 8,52,253 persons live in the rural areas and 7,37,581 persons are the inhabitants of towns. The difference between urban and rural population is 1,14,672 persons. It means that the Imphal Tampak is highly urbanized. The urban population of the Tampak is about 26 percent of the total population of the Manipur state and rural population shares about 30 percent.

The density of population of the Imphal Tampak is 734 persons per sq.km in 2011. It means that in the Census Year of 2011, every one sq.km area of the Tampak is the home of 734 persons. The districts which possesses highest density of population is Imphal West (928 persons per sq.km) and Bishnupur district positioned in the lowest (479 persons per sq.km). Thoubal and Imphal East districts stand in the second and third position with population density of 821 persons and 688 persons per sq.km respectively. The degree of density of population of Imphal Tampak is far ahead of the state (128 persons per sq.km).

Population Distribution Over Imphal Tampak

Imphal Tampak is a fertile alluvial plain dotted by denodo-tecono hills and hillocks, lakes, marshy lands and backswamps. According to 2011 Census, population of Imphal Tampak is 15,89,834 persons, thus, the Tampak (Imphal Tampak) is the home of about 56 percent of the total population of the state. At micro level, within the Tampak 3rd order landforms (micro features) influencing the distribution of population (Fig.3). From the very past people prefer to live along the rivers at natural levee zones. Thus, population is well distributed at natural levee zones. Because men want to live at higher ground not in the lower ground. Natural levee zones are higher than the surroundings and also free from the inundation during rainy season. Meiteis and Meitei Pangals (Manipur Muslim) are very much fond of kitchen gardening (surplus is sold and get some earning). Kitchen gardening is more suited at higher ground. There is old Manipuri (Meitei) saying that “*Ingkhol atongba lou akutpa*”. The central idea of this proverb is that “higher ground is more suited for kitchen gardening and lower ground is suited for paddy cultivation.

At the same time in the past river is the means of transportation and also main source of good water. This is also one of the reasons for well distribution of population along the rivers. However, man selects natural levees not backswamps for settlement. For all these reasons Meiteis and Meitei Pangals prefer to live along the rivers at natural levee zones since as related above, natural levee zones are higher ground and free from inundation during flood/ rainy seasons. Beyond the natural levee zones is the less drained marshy lands/backswamps. These zones are commonly used or reclaimed for paddy cultivation and other agricultural practices. Even towns/cities are also developed at the natural levee zones e.g. Lilong, Thoubal, Kakching etc. Thus not only rural population, urban people also prefer to live at natural levee zones.

Population also distributed at the foothills of denudo-tectono hills and hillocks scattered within the Imphal Tampak. Man avoids ridges and steep slopes of these hills and hillocks. Piedmont zones of hill and mountain ranges encircling the tampak also dotted by Meitei settlements. Man also taking shelter at some alluvial cones and fans formed by small intermittent stream draining the denudo-tectono hills and hillocks scattered here and there within the Tampak and hill slopes of hill and mountain ranges facing the Imphal Tampak. It is worthwhile to mention that in the following analysis population data of 2011 Census has been incorporated.

Population Distribution Along the Rivers

Along the Imphal River (Manipur River). Population is well distributed at natural levees located along the Imphal river. A total population of 1,76,647 persons (2011, Census) of census villages, census towns and Nagar Panchayat live along the Imphal river at or near the natural levee zones; of which 1,04,119 male and female population live with great zeal at left side natural levee and 72,528 man and female population live with full of joy at right side natural levee. Out of total 1,04,119 male and female population of census villages, census towns (Heingang, Khurai Sajor Leikai and Torban Kshetri Leikai) and Nagar Panchayat (Samurou minor part) concentrating at left side natural levee; 40,986 and 59,166 persons are of Imphal East (Porompat sub-division – 38,372 and Keirao Bitra sub-division - 2,614) and Thoubal (Lilong sub-division-36,469 and Kakching sub-division -22,697) district respectively. Remaining 3,967 persons are of Lamshang sub-division of Imphal West district.

A population of 72,528 of Census villages and Census towns (Lairikyengbam Leikai and Thongju and Kyamgei) live at or near the right side natural levee of Imphal river. Out of 72,528 persons, 32,983 is of Porompat sub-division of Imphal East district, and 9,181 and 18,442 are of Lamshang sub-division and Wangoi sub-division of Imphal West district respectively. Remaining 11,922 population is of Moirang sub-division of Bishnupur district. It is worthwhile to mention that a large number of population of Thongju and Kyamgei of Porompat sub-division of Imphal East district live beyond the natural levee zone and at the same time sizable number of population of these two census towns concentrated at the natural levee zones of abandoned channel of Imphal River locally “**Turel Amanbi**”.

Sekmai (pop. 4,366), Singjamei, Samurou (NP, pop. 10,721) and Mayang Imphal (Pop. 24,239) of Imphal West district are the urban settlements having big market centres located at right bank side of Imphal River. Lilong of Imphal West (NP & OG, pop. 12,427), Koirengi (Pop. 1,448) and Ningom Thongjao have small market centres. Out of total population of these settlement/market centres, a large number of population concentrated at natural levee zones. Lamlong and Sugunu (NP, pop. 5,132) are the big market centres situated at left bank side of the Imphal River. A sizable urban population concentrated around these market centres at or near the natural levee zones. A big number of male and female population of Lilong in Thoubal district (NP, pop. 22,888) which is situated at the confluence point where Iril River meets Imphal River at the left bank natural levees of Iril and Imphal Rivers around the big market centre (Lilong Bazar, Thoubal district).

A large number of male and female population of Imphal Municipality Area resides along the Imphal River. Male and female population of Thoudam Leikai, Thangjam Leikai, Khurai Ahongei and Telipati of Ward No. 23 (pop. 9,335); Hatta and New Nambulane of Ward No. 22 (pop. 16,048); part of New Nambulane, MLA Quarters and Officers' Colony of Ward No. 21 (pop. 11,446); Sanjenthong, Mahabali and Bamon Leikai (Thumbuthong) of ward no. 19 (pop. 9,874); and Bamon Leikai (Nahabam) and Bheigabati Leikai of Ward No. 18 (pop. 6,783) taking shelter along the left bank side of Imphal River in Porompat sub-division of Imphal East district. A good number of people of Khuman Lampak Sports Complex and Minuthong of Ward No. 26 (pop. 18,149; Kangla of Ward No. 0 (pop.nil); Babupara of Ward No. 24 (pop. 8,760); Moirangkhom, Moirangkhom Kabui Khul, Loklaobung of Ward No. 14 (pop. 7,246); Thokchom Leikai; Chongtham Leikai, Baga Leikai and Leisangthem Leikai of Ward No. 15 (pop. 7,520); and Okram Leikai, OInam Thingel, and Waikhom Leikai of Ward No. 17 (pop. 11,672) resides along the right bank of Imphal River. Except Ward No. 26, all the wards (0,24,14,15&17) are parts of Lamphel sub-division of Imphal West. Ward No. 26 is located in the Porompat sub-division of Imphal East district.

Along the Iril River. Iril River flows only in the Imphal East district. A total of 73,897 rural and urban (census town) population taking shelter along the Iril river. Out of this population, 42,195 persons live at right bank natural levee zone and 31,702 persons settle at left bank natural levee zone. 11,248 and 15,892 persons of total population of right bank are of Sawombung Sub-division and Porompat Sub-division of Imphal East district respectively. Remaining 15,055 persons are of Keirao Bitra sub-division. Out of total left bank population, 21,617 persons are of Sawombung sub-division; 7,331 persons live in Porompat sub-division; and 2,754 persons settle with proud in Kkeirao Bitra sub-division. There are only two market centres along thr Iril Tural at right bank side. The two market centres are Ssagolmang (pop. 967) and Kshetrigao (CT, pop. 10,534) Sagolmang is in the Sawombung sub-division and Kshetrigao, one of the developed muslim settlements, is in the Porompat sub-division. A considerable number of persons lived the natural levee zones.

Along the Thoubal River. A rural population of 61,881 live at left and right side natural levees of Thoubal river. Out of 61,881 persons, 27,339 male and female population of Keirao Bitra sub-division of Imphal East district settle at the right side natural levee zone and 34,542 persons of Thoubal sub-division (11,310) and Lilong sub-division (23,232) of Thoubal district concentrated at left bank natural levee zone. Thoubal (pop. 45,947) and Yairipok (NP, pop. 9,569) are urban settlements having large market centres. Main market centres are located at left bank side (considerable number of business establishments of both market centres are also occurred at right bank side). A large number of these urban settlements live with prosperously at both left and right side natural levee zones. Here, one point is to be noted that population of Keisham, Singam, Wangkhei and Phoudel villages located at left bank is included in the population of Yairipok Nagar Panchayat.

Along the Kongba River. Kongba river drains the Imphal East district only. The river attracts 53,447 male and female population, of which 32,408 persons live at left bank natural levee zone and 21,039 settled at right bank side. Out of total left bank population (32,408), 9,513,18,392 and 4,503 persons are of Sawombung sub-division, Porompat sub-division and Keirao Bitra sub-division respectively. Likewise, out of total of right bank (21,039) 6,941 male and female population live in Sawombung sub-division and 14,098 persons are of Porompat sub-division. There is only one big market centre along the Kongba River, the Kongba Bazar, situated at right bank side in Porompat sub-division. A sizable number of population settles around the market centre at natural levee zones.

Along the Nambul River. Nambul river flows in the Imphal West district and empties to Loktak Lake as Yangoi Maril. The river attracts 40,913 rural and Census towns (Takyel Mapal and Naoriya Pakhanglakpa) population. Out of this total population 34,220 persons lived at or near right bank natural levee zone and 6,693 male and female population settle at left bank natural levee zone. Along the right side of the river at natural levee zone 15,259 male and female population live in Wangoi sub-division; 13,276 persons settle in Lamphel sub-division; and 5,685 happily lived in Lamshang sub-division. Out of left bank population (6,693), 2,901 persons live in Wangoi sub-dvision and 3,792 male and female population settle at Lamshang sub-division.

Nambul River attracts a total population 90,399 of 11 wards of Imphal Municipality Area. Out of this 48,021 males and female population of Iroisemba, Lamboi Khongnangkong and Khulem Leikai of Ward No. 27 (pop. 9,417); Naoremthong, Uripok Achom Leikai, Uripok Polem Leikai, Uirpok Huidrom Leikai and Laikhurembi of Ward No. 6 (pop.8,206); Paona Bazar, Kakhulong and Keishamthong Kabui of Ward No. 24 (pop. 8,760); Yaiskul and Yumnam Leikai of Ward No. 14 (pop. 7,246), Ngakraba Leirak and Chingamathak Nameirakpam Leikai of Ward No. 15 (pop. 7,520; and Chingamakha, Ningthoujam Leikai and Ahongsangbam Leikai and Heirangoithong of Ward No. 16 live along the left bank. Remaining 42,378 population of Sagolband Bijoygovinda, Salam Leikai, Waheng Leikai and Thokchom Leikai of Ward No. 8 (pop. 7,577); Keishampat Junction and Thangjam Leikai of Ward No. 9 (pop. 8,338); Keishamthong and Elang Leikai of Ward No. 11 (pop. 7,707); Ahanthem Leirak, Thangjam Leirak, and Khangempalli Panthak of Ward No. 12 (pop. 8,020); and Pisum Huidrom Leikai; Nimgombam Leikai, Pishumthong and Pishum Oinam Leikai of Ward No. 13 (pop. 10,736) taking shelter at or near the right bank of Nambul river. A good number of population of Lamshang (Np, pop. 8,130) and Langjing (CT. 5,451) also taking shelter at left and right (Lamshang) and right (Langjing) sides natural levee zones of Nambul River.

Along the Wangjing River. Wangjing River flows in the Thoubal sub-division of Thoubal district. Along this river a total population of 51,986 (24,389 at left bank and 27,597 right bank) of Census villages and one Nagar Panchayat (Wangjing NP) live happily. Out of this total population a fairly large number of population settle at or near the both natural levee zones. Wangjing (NP, pop. 8,055) has a medium size market centre at just right side natural levee zone and a small market centre also developed at the opposite side. Here one point is to be noted that population of Wangjing Tekcham Leika and Wangjing Sorokhaibam Leikai villages located at right side and Wangjing Wangkhei located at left side is included in the population of Wangjing Nagar Panchayat.

Along the Arong Turel. A total population of 12,956 male and female population settles along the Arong Turel (Turel means river/stream) which drains the Thoubal sub-division, Thoubal district. Out of this total population 3,427 and 664 persons live along the left and right banks of right hand side main branch of the river. Along the left side branch 5,330 persons taking shelter at its left bank. A good number of Charangpat village (pop. 3,535) concentrated along the both sides of this branch. A large number of population of Athokpam has been distributed at right bank of the Arong. **Lai Turel** is another main tributary of Arong Turel. Along the both banks of this tributary streams, a sizable number of population of Khangabok (pop. 16,344) live happily. A good number of Sikhong Sekmai (NP, pop. 7,390) settles along the **Nongdambi Turel**, the upstream Arong Turel.

Along the Nambol and Maklang Turel. In Nambol sub-division of Bishnupur district, a good number of population of Kamang, Khajiri Maning Leikai, Mongjing, Nambol Proper, Nambol Kongkham and Khathong settles along the Nambol river. All these settlements combined and create one town, Nambol (MCI, pop. 17,081) by the Census of India, Villagers of Tairenpokpi (pop. 892) in Lamshang sub-division, Imphal West district happily lived at the left bank of **Maklang Turel**, a prime tributary of Nambol Turel. A total 10,258 male and female population of Maklang (pop. 1,271), Ngairangbam (pop. 2,578), Khumbong (2,283), Khaidem (pop. 1,750) and Heigrujam (pop. 2,283) taking shelter at or near the both sides natural levee zones of Maklang Turel in Lamshang sub-division (Maklang and Ngarangbam) and Patsoi sub-division (Khumbong, Khaidem and Heigrujam) of Imphal West district. In Nambol sub-division, Bishnupur district, a considerable number of population of Phoiing Chingning (Nodiya Thongkhong) and Khajiri Mamang Leikai lives along the left bank of Maklang Turel. These two settlements are the part of Nambol (MCI), Villagers of Sajirok Khul (pop. 443) and Moidangpok Khullen (pop. 3,429) settled along the both sides of **Sajirok and Leingang Lok** (both are the tributaries of Maklang Turel) in Patsoi sub-division of Imphal West.

Along Other Minor Rivers. A rural population of 9,289 of Kakching sub-division (now upgraded as Kakching District) of Thoubal district taking shelter along the **Sengmai River** (4,193 at right bank and 5,096 at left bank). A sizable number of population of Kakching town (including Ward No. 1 & 2, pop. 26,791) has been distributed along the both sides of the Sengmai River at or near the natural levee zones. 4,216 male and female population of Kakching sub-division of Thoubal district live at left bank of **Chakpi River**, a tributary of Manipur River. Sugunu (NP, pop. 5,132) is located at the confluence point of Manipur River and Chakpi. A considerable number of population Sugunu live at or near the right bank natural levee zone of Chakpi River and left bank natural levee of Manipur River. **Khuga River**, a tributary of Manipur River attracts a population of 5,361 of Moirang sub-division, Bishnupur district at its left bank. A large number of population of Kumbi (NP, pop. 9,546) lives along the Khuga River at both left and right bank natural levee zones. A rural population of 1,821 of Moirang sub-division, Bishnupur district concentrated at right bank of Khordak (a feeder channel that connects Loktak Lake and Manipur River, and the excess amount of water received during the rainy season naturally drains out from the Loktak Lake to the Manipur River and during lean season water runs from the Manipur River to the Lake through Khordak).

A sizable population of Ward No. 3 & 7 of Moirang Municipal Council Area (pop. 3236), Bishnupur district settle at both sides of **Moirang River** (called Turellu in its upper course) and a good number of male and female population of Kwakta Nagar Panchayat (pop. 8,579), Bishnupur district, Moirang sub-division live along the right and left bank of Moirang River. A good number male and female population of Ningthoukhong Municipal Council (pop. 13,078), Bishnupur sub-division of Bishnupur district taking shelter at both sides of natural levee zones of **Ningthoukhong Turel**. Potsangbam Turel or **Narkhong Turel** and (known as Charoikhul Lok in its upper course) attracts a huge amount of population of Potsangbam village (pop. 3,721), Bishnupur sub-division, Bishnupur district. An attractive number of population of Keinou (pop. 4,935) in the Nambol sub-division of Bishnupur district is distributed at both side of **Keinou Turel**.

A good number of population of Kha-Ningthoukhong (pop. 844), Thinungei (pop. 4,027), Phubala (pop. 2,800), Sunushipai (pop. 1,561) and Thamnapokpi (pop. 2,201) has been concentrated along the both sides of Khujai Rok, Thinungei Khong, Lamganbi, Sunushipai Turel, Irumbi and Thingjin Lok respectively in Bishnupur and Moirang (only Thamnapokpi) sub-divisions, Bishnupur district. A little population of Moirang Town (MCI, pop. 19,893) settles at both sides of **Laikhrambi**, a stream empties into the Loktak Lake at the point where about half of Kilometer away north-west of CBD of Moirang Town. Ngaidel Lok and Laija Marin are the tributaries of Moirang Turel and drain the Moirang sub-division of Bishnupur district. Along these tributary streams, a considerable number of population of Terra Khongsangbi (along the Ngaidel Lok) and Tronglaobi (along the Laija Marin) villages settles. These two settlements are the part of Kwakta Nagar Panchayat (pop. 8,579).

A large number of population of Phundrei (pop. 3087) and Sapam (pop. 3,442) villages in Thoubal sub-division, Thoubal district settles along the left bank of **Khongjom Turel** and also a sizable number of population of Khongjom (pop. 2,334) concentrated at the both sides of this stream. Maximum number of population of Langathel village (pop. 4,742) lived happily along the both sides of **Langathel Turel**. Khongjom and Langathel streams originate from the eastern hill ranges lying just east of Imphal Tampak (Thoubal sub-division area) and empty to the **Loushi Pat** (a nearly dried-up lake, and part of Thoubal and Kakching sub-divisions of Thoubal district).

In Lamshang sub-division of Imphal west district, a total population of 15,652 male and female population settles along the primary and secondary tributaries of Nambol River at or near the natural levee zones. Out of this, 705 persons of Lairensajik village along the right bank of **Singda River**, 2,138 persons of Phumlou village along the **Puleipokpi Loukhong**; 2,895 persons of Mayang Langjing village population along the **Haosi Turel Marin** and 1,985 persons of Senjam Khunou village along the **Kameng Khong** live happily. Along the **Luwangli River** (a major tributary of Nambol river and they meet at Lamdeng Khunou just east of Lamsang PS) a large number of population of Loitang Leikinthabi (pop. 424) and Loitang Khunou (pop. 1,081) taking shelter at right bank side, and of Kameng (pop. 974) at left bank side. A fairly large number of population of Khurkhul (pop. 6,450) settles along the both sides of Luwangli River. Besides, a considerable amount of male and female population of Lamsang Nagar Panchayat (pop. 8,130) concentrated along the Luwangli River, Singda and Haosi Turel Marin (last two are the tributaries of Luwangli River).

Along the left bank side of **Merakhong** (a tributary of Nambol River), a considerable number of population of Lairenjam (pop. 2,651), Wangoi sub-division, Imphal West taking shelter. A good number of population of Greater Imphal (Porompat sub-division, Imphal East district) and Imphal Municipality Areas (Lamphelpat sub-division, Imphal West district) live along the **Naga Turel**, a tributary of Nambol river. Lairikyengbam Leikai (CT, pop. 4,586), Kairang Meitei (pop. 1,250), and Kontha Ahallup (pop. 2,183) are the left bank settlement; and Laipham Siphai (CT, pop. 5,268) is the right bank settlement in Greater Imphal. A total urban population of 42,798 of Imphal MCI settles along the Naga Turel. Ward No. 25 (pop. 7,043) and 26 (pop. 10,149); and Ward No. 2 (pop. 10,951), Ward No. 3 (pop. 7,465) and Ward No. 4 (pop. 7,190) located at both sides and left bank side of Naga Turel respectively. Mantripukhri, Nagaram, Pandon, Kabo Leikai, and North AOC (part) of Ward No. 26; North AOC (part) and D.M. College Campus and Thagal Bazar of Ward No. 25, Khuyathong of Ward No. 2; Nagamapal Kangjabi Leirak and Nagamapal Lamabam Leirak of Ward No. 3; and RIMS Road Machin and Nagamapal Khwai Brahmapur (Singjubung Leirak and Laishram Leirak) of Ward No. 4 are the Leikais (a Manipur word for groups of settlement within a large settlement/section of a village) situated along the Naga Turel.

Waishel Marin, a tributary of Nambol river (in the olden days Waishel Marin was used as a means of transportation by using small boats) drains the parts of Imphal Municipality Area and also parts of Greater Imphal of Lamphel sub-division of Imphal West district. A total urban population of 34,671 of Leimajam Leikai of Ward No. 8 (pop. 7,577); Thouda Bhabok Leikai of Ward No. 9 (pop. 8,338); Irom Leikai and Nganappi Thong (part), of Ward No. 12 (pop. 8,020); and Nganappi Thong (part) and Kwakeithel Moirang Pural of Ward No. 13 (pop. 10,736) of Imphal (MCI) settles along the Waishel Marin. A good number

of people of Naoriya Pakhanglakpa (CT, pop. 7,501) and Heinou Khongnembi (pop. 3,591) also settle along the Waishel Marin. Table - 1 indicate number of population attracted by rivers in Imphal Tamapk.

Population Distribution Along the Foothills

Along the foothills of Nongmaiching-Ngariyan-Kaina Hill Range. This hill range along with Phunal-Waithou hill range is the longest hill range decorating the Imphal Tampak and home of 20,712 male and female population (Table - 2). A total population of 19,488 male and female population of Kaina (pop. 154), Angtha (pop. 2,913), Lemba Khul (pop. 22), Karpur Sungba (pop. 144), Ngariyan Muslim (no. pop. Data), Huikap (pop. 3,383), Andro (NP, pop. 8,744), Tarong Thel (no population data), Nongren (pop. 1,759), Nungkhat (pop. 115) Sanjenba (pop. 896) and Takhel (pop. 1,358) villages settles at eastern side foothills zones (Piedmont) of this hill range. At the western foothill zone a population of 1,224 of Keirao Wangkhem (pop. 1,071) and Langthrei Loukon (pop. 153) villages living with zeal. Nongren, Sanjenbam, and Takhel villages are in Sawombung sub-division and remaining villages belong to Keirao Bitra sub-division of Imphal East district.

Along the foothills of Phunal-Waithou Hill Range. As stated above this hill range along with Nongmaiching-Ngariyan-Kaina hill range is the largest hill range stretching over the Imphal Tampak and a total population of 7,073 taking shelter at its foothill (Table - 2). Male and female population of Khanarok (pop. 570), Chanam Sandrok (pop. 1,597), Thiyam Konjil (pop. 2077) and Keirao Langdum (part, pop. 2,275) villages live happily along the eastern side foothills of this hill range. Waithou Chiru (pop. 554), Usoipokpi (part of Lilong NP), Waithou (no population data), Arapti (part) and Urup (part) are the villages located along the western side foothills of Phunal-Waithou hill range. In recent years there is increasing trend of occupation of foothill at Arapti and Urup areas. The new settlements are also spring-up along the Imphal-Moreh Road (also Indo-Myanmar Road, NH-102) at the foothills of Phunal Waithou hill range from Usoipokpi to Tangjeng. Usoipokpi and Waithou villages are the parts of Lilong sub-division of Thoubal district and remaining villages are in the Keirao Bitra sub-division of Imphal East district.

Along the Gwarok Hill Range. This hill range lies in the Thoubal sub-division of Thoubal district and home of 2,079 villagers (Table - 2). It stretches from north to south direction parallel to the Eastern Hill Range (also Mamang Ching) that bordering the Imphal Tampak like a piece of dead earthworm which is about to split into two parts by virtue of having a wound mark in its middle point. A total population of 442 male and female population of Aripat (no pop.data), Lourebam (pop. 242) and Langmaithek (pop. 200) villages live along the eastern side foothills of this hill range. Along the western side foothill villagers of Pechi (pop. 830) and Bangi (pop. 807) lived happily.

Along the Foothills of Eastern Hill Range. This hill range is shining like a great wall that encircles the eastern boundary line of middle portion of Imphal Tampak. A total population of 2,522 of Ingang Lok (pop. 593, Ingourok in Census Hanbook), Ingourok (Part of Sikhong Sekmai NP), Yaithibi Khunou (pop. 548), Phomjehkong (pop. 235) and Chingdompok (pop. 1,146) villages taking shelter at the foothill of this hill range (Table – 2). All these villages are the parts of Thoubal sub-division, Thoubal district.

Along the foothill Western Hill Range. A total population of 25,132 settles along the foothill of Western hill range (Table - 2) which stretches NNE-SSW directions like a wall along the Western boundary line of Imphal Tampak. Out of which 12,001 male and female population belong to Lamsang sub-division of Imphal West district (Kanglatongbi pop. 7,152, Koutruk pop. 472, Sangaithel pop. 1,232, Kangchup pop. 286, Pheyeng pop. 2,728 and Keithelmanbi pop. 131); and 13,131 persons are of Nambol and Bishnupur sub-divisions, Bishnupur district (Leimaram (Part) pop. NA, Bishnupur Town including all the wards and Joypur Khunou pop. 12,167 and Tengkhel Khunou pop. 964).

Along the foothills of Heibok Ching. Heibok Ching is located at Wangoi sub-division of Imphal West district just south of Manipur University Campus and has the shape of star having three arms. Male and female population of Khoubum (a Kabui tribe village), Naral Konjin (pop. 1,007), Tarahei Pangal and Langthabal Ching Anikarak Kabui Khul settle along the foothill of this hill. There is no separate population data of Khoubum, Tarahei Pangal and Langthabal Ching Anikarak Kabui Khul villages because these villages merged to the nearby larger villages in other words they are the parts of nearby larger villages. Khoubum village and Langthabal Ching Anikarak Kabui Khul village merged to Langthabal Kunja (OG); and Tarahei Pangal village also merged to Langthabal Phuramakhong.

Along the Langol-Cheiraoching-Chingmeirong Hill. Dwellers of Langol Housing Complex (Ward No. 5, pop. 24,162), Langol Tarung and Sinam Leikai (Ward No. 1, pop. 11,342), and Meitei Langol and Chingmeirong (Ward No. 26 (part), pop.

18,149) of Imphal MCI happily lived at eastern and southern foothills zones of this hill in Lamphel sub-division of Imphal West district.

Along the foothills of **Tentha Ching** villagers of Mantak (pop. 720), Keirak (part, pop. 4,912), and Tentha ((part), pop. 9,087) taking shelter in Thoubal (Tentha) and Kakching (Montak and Keirak) sub-divisions of Thoubal district. Tingri (pop. 520) and Maharabi (pop. 1275) villagers lived happily at the foothills in Lamshang sub-division of Imphal West.

Population Distribution Along the Shorelines

Along the shorelines of Loktak Lake. A good number of total population of Moirang Town (except Ward No. 3 & 7 pop. 16,657; total pop. of Moirang MCI is 19,893) settles along the shoreline of Loktak Lake. A total population of 18,007 male and female of Karang (pop. 1,859), Ithing (pop. 1,832), and Thanga (pop. 14,316) villages taking shelter along the shoreline of Loktak Lake in Moirang sub-division of Bishnupur district. Here one point is to be noted that these villages are located along the foothills of Karang, Sendra, Ithing and Thanga hills and it is also mentioned that they are the isles of the Loktak Lake.

Near the western shoreline of Loktak Lake, a total population of 21,368 of Upokpi Khunou (pop. 400), Ngaikhong Khullen (pop. 5,256), Toubul (pop. 4,542), Khoijuman Khullen (pop. 2,951), Khoijuman (pop. 2,738), Nachou (pop. 4,313), and Ningthoukhong Awang (pop. 1,168) live happily in Bishnupur sub-division of Bishnupur district. Villages of Keibul (part of Moirang MCI) lived happily in Bishnupur sub-division of Bishnupur district and villagers of Keibul (part of Moirang MCI) also lived happily in Moirang sub-division of Bishnupur district. A sizable population of Ningthoukhong (MCI, pop. 13,078), Thinungei (pop. 4,027), Phubala (pop. 2,800), Sunushipai (pop. 1,561), and Naranseina (pop. 2,648) villages of Bishnupur sub-division, Bishnupur district and Thamnepokpi (pop. 2,201) village of Moirang sub-division, Bishnupur district also settles near the western shoreline of Loktak Lake. Villagers of Ishok Village (pop. 3055) in Nambol sub-division, Bishnupur district settle near the northern shoreline of the lake around the Ishok Ching (Ishok Hill). Along the southern shoreline 701 male and female population of Wapokpi concentrated in Moirang sub-division, Bishnupur district.

The eastern shoreline of the Loktak Lake is connected first with paddy field (mostly emerged during the rainy season) then the settlement area of Wakching Khullen (pop. 1,304), Irom Meijrao (pop. 2,373), Samushang (pop. 1,645), Mayang Imphal (MCI, pop. 24,239) Phoubakchao (pop. 3,588), Komlakhong (pop. 2,385), and Laphupat Tera (pop. 4,129) villages of Wangoi sub-division, Imphal West district.

Along the shoreline of Loushi Pat (Pat means lake). The Pat (Pat means lake) is now near to drie-up due to draining of lake water into Ikop Pat for converting lake bed to the paddy fields. Male and female villagers of Loushipat (pop. 4), Irengband (pop. 10,600), Langthabal Khunou (no population data), Papal (pop. 1,133) and Tekcham (pop. 3,825) villages distributed along the northern shoreline of this lake. Loushipat and Irengband villages are parts of Thoubal sub-division of Thoubal district. A sizable number of Kakchhing Wairi (Ward No. 1 & 2, pop. 5347 of Kakching MCI, pop. 32,138) settles near the southern shoreline of Loushi Pat.

Along the Shoreline of other lakes. A population of 1,964 of Tangjeng village distributed near the shoreline of Tangjeng Pat in Moirang sub-division of Bishnupur district. Villagers of Kharungpat village (pop. 184) settle near the southern shoreline of **Ikop Pat** in the Kakching sub-division, Thoubal district and a good number of population of Leishangthem village (part of Thoubal MCI) also near the southern shoreline of Ikop Pat. Near the northern shoreline of **Pumlun Pat**, a total population of 1,330 of Khoidum (pop. 521) and Laphupat (pop. 709) villages taking shelter in Kakching sub-division of Thoubal district. Table - 3 shows number of population distributed along the lake shorelines in Imphal Tampak.

Conclusion

Imphal Tampak is the home of 15,89,834 persons (55.67% of total population of Manipur). Out of 15,89,834 persons, 11,56,443 male and female population (72.74% of the total population of Imphal Tampak) of Imphal Tampak live with zeal at three geomorphic features (natural levee, lake shoreline and Piedmont) linearly and agglomerately (Fig. 3). Out of 11,56,443 persons, 9,07,469 persons settle along the rivers at natural levee zones; 1,29,480 persons concentrated at piedmont zones; and 1,19,494 male and female population live along the lake shorelines (Table - 4). 4,33,391 persons (72.26% of the total population of Imphal Tampak) settle along the roads. It is known that rivers attract highest number of population followed by piedmonts (foothills) and then by lakes in Imphal Tampak. Lastly, population distribution is largely governed by geomorphic features in Imphal Tampak.

Table - 1**Population Concentrated Along the Rivers Draining the Imphal Tampak**

SI No.	Name of River	Population (2011 Census)
1.	Imphal	2,85,380
2.	Nambul	1,31,312
3.	Iril	73,897
4.	Thoubal	61,881
5.	Kongba	53,447
6.	Wangjing	52,579
7.	Sengmai	36,080
8.	Arong	12,956
9.	Maklang	11,150
10.	Others	1,88,787
	Total	9,07,469

Table - 2**Population Distributed Along the Peidmont Zones of Imphal Tampak**

SI No.	Name of Hill Range/Hill	Population (2011 Census)
1.	Western Hill Range	25,132
2.	Nongmaiching-Ngariyan-Kaina Hill Range	20,712
3.	Phunal-Waithou Hill Range	7,073
4.	Eastern Hill Range	2,522
5.	Gwarok Range	2,079
6.	Others	71,962
	Total	1,29,480

Table - 3**Population Distributed Along the Lake Shorelines in Imphal Tampak**

SI No.	Name of Lake	Population (2011 Census)
1.	Loktak	95,107
2.	Loushi	20,909
3.	Others	3,478
	Total	1,19,494

Table - 4**Population Distribution Along the Rivers, Lake Shorelines and Foothills in Imphal Tampak**

SI No.	Geomorphic features	Population (2011 Census)
1.	Rivers	9,07,469
2.	Foothills	1,29,480
3.	Lake Shorelines	1,19,494

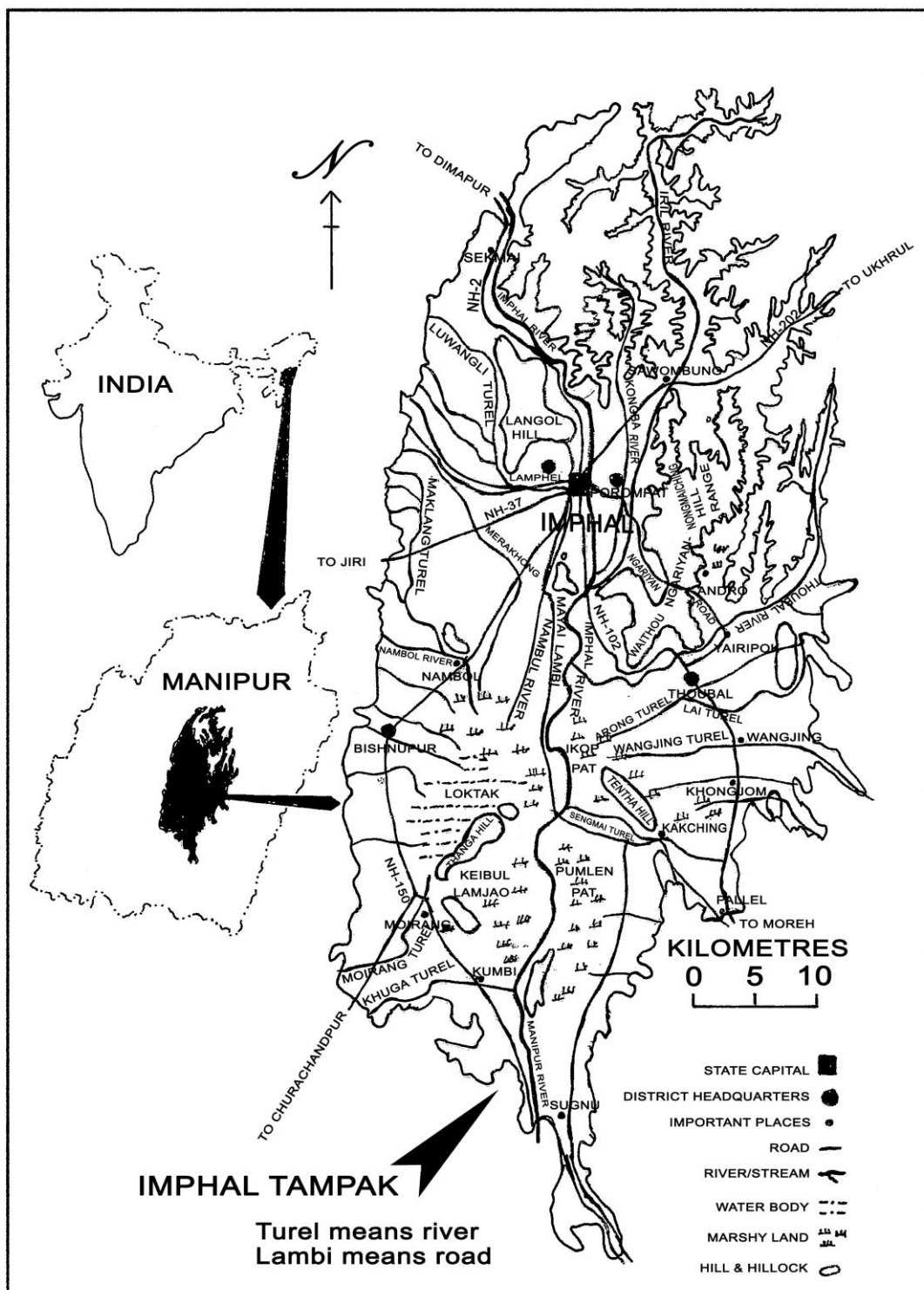


Fig.1. Location of Imphal Tampak (Imphal Plain).

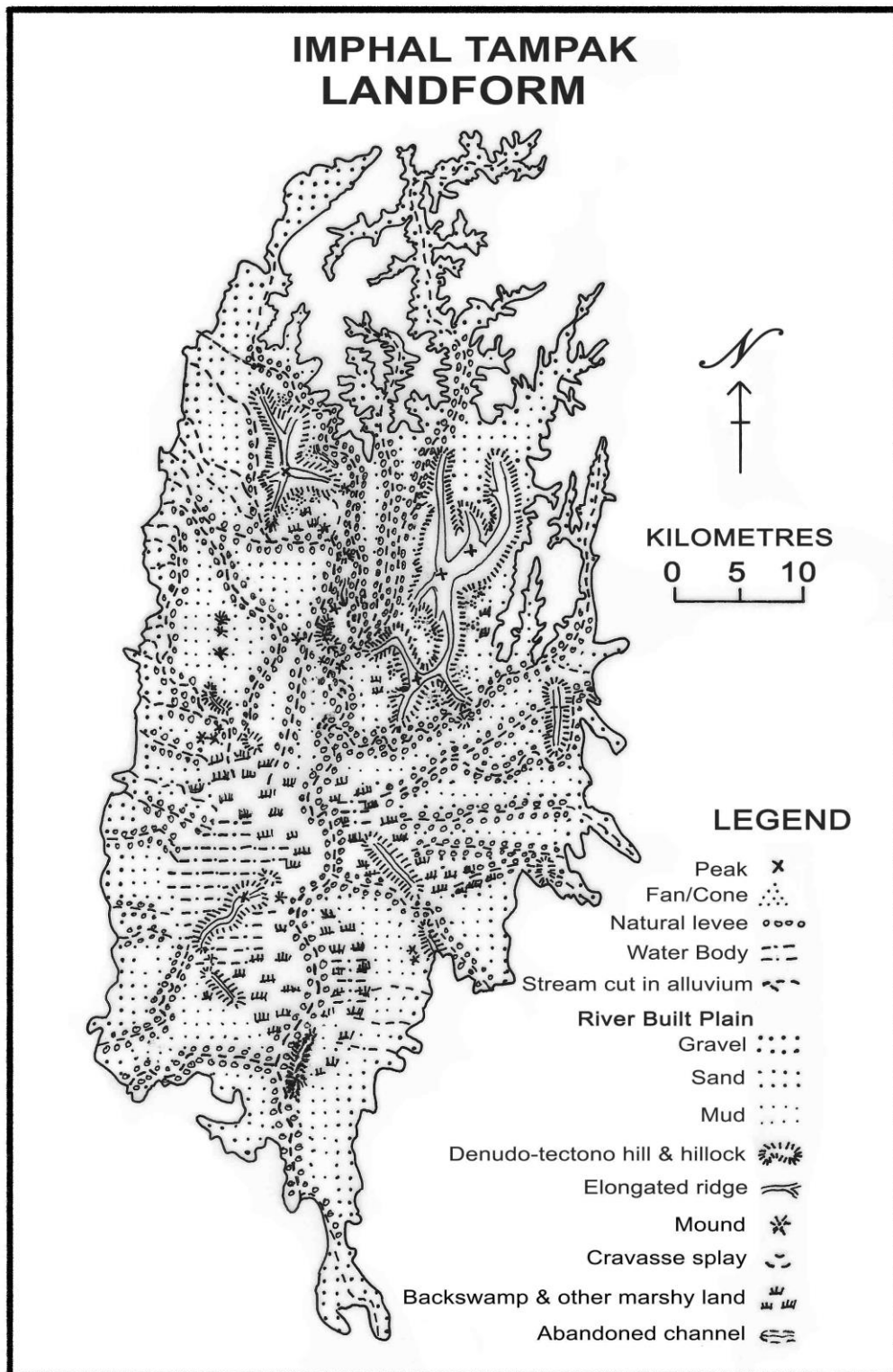


Fig.2 Geomorphological Map of Imphal Tampak

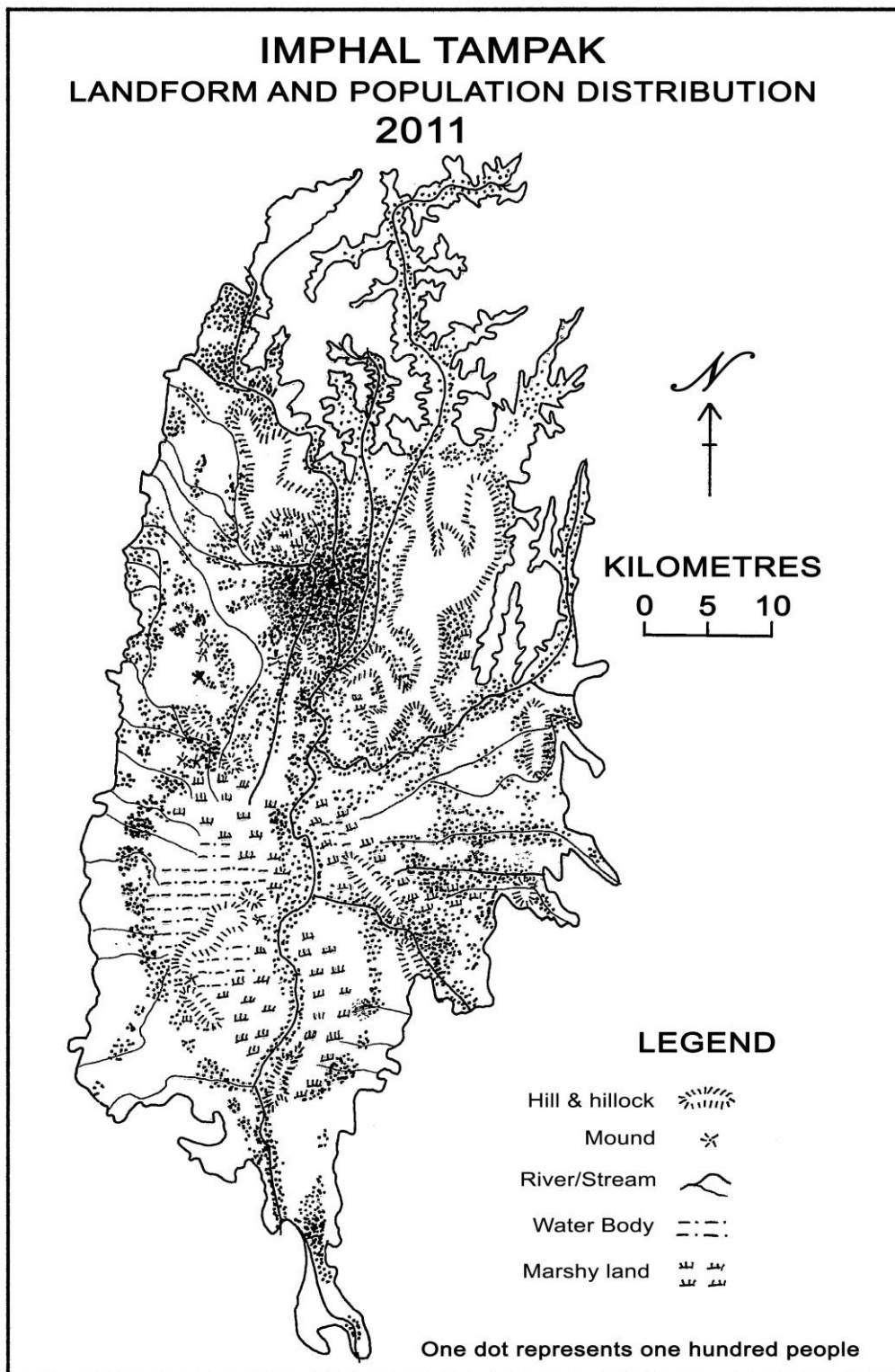


Fig.3 Map of Imphal Tampak showing relationship between landform and population distribution in 2011.

Acknowledgements

Present author expresses deep gratitude to his senior fellows and friends namely Dr. Kh. Jugindro Singh of Thoubal College; Dr. N. Kishorchand Singh of M.B. College; Dr. L. Ibochoubi Singh of Kakching Khunou College; Dr. M. Irabot Singh, Dr. Ch. Robindro Singh and Bidyarani Ningthoujam of Oriental College, Shri M. Jurendro Singh and Shri L. Ranbir Singh of Ideal Girls' College; Md. Ilyas of Lilong Haoreibi College; and Shri K. Babuchand Singh of Moirang College for co-operating and rendering help during the fieldwork.

References

- Ansari, S.A, 1985. **Some Aspects of the Geography of Manipur**, BR Publishing Corporation, Delhi.
- Census of India, 2011. Manipur, Series-15 Part XII-A
- Gosh, B.N. 1985. **Fundamentals of Population Geography**, Sterling Publishers Pvt. Ltd, New Delhi.
- Meitei, Thongam Meghajit 2010. **Lake Catchment Geomorphology**, Kamakhya Publishing House, Guwahati.
- Singh, Dr. Th. Nabakumar 2014. **Geography of Manipur**, Rajesh Publications, New Delhi.
- St-Onge, Denish A 1968. **Geomorphic Maps**, in R.W. Fairbridge (ed) **The Encyclopedia of Geomorphology**, p 388-403, Reinhold Book Corp., New York.