

Issues and challenges of urban growth in Nagaland

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Abstract

Objectives: This paper aim to bring out the prevailing issues the urban dwellers are confronting at present in the state of Nagaland and the challenges faced by both the urban planners and the government with reference to its two most urbanised town viz. Kohima Town and Dimapur Town.

Methods/Statistical Analysis: The study has been done in purposively selected districts and simple random sampling technique was used to select 400 respondents; 200 respondents each from Kohima and Dimapur town. For data analysis, we used simple statistical tools such as averages, percentiles and bar graph to make the work simple and for better understanding of the topic.

Findings: From the study, it is found that inadequate basic urban amenities like housing, water supply, public roads and prevailing issues like drainage system, air and water pollution and solid waste management problem has been seen as a detrimental factors for harmonious urban community life. These urban issues are getting more serious in the State due to lack of adequate capital resources to address and handle the problems on one hand and poor public service delivery system on the other hand. Due to limited works and documentation of these urban issues in the past has been a setback for the urban planners to bring out viable solution for urban problems. Thus, the need of the hour is that the municipalities and management agencies are required to come up with a comprehensive city plans and contain the burning issues before it becomes too late.

Application/ Improvement: The findings of this study will be of immense beneficial for urban related studies in small town as well as for the urban planners in the state, as no individual or agency has carried out any exclusive and intensive research so far for the state of Nagaland.

Key words: Urbanisation, Urban issues, Housing, Sanitation, Pollution.

1. Introduction

Urbanization is a process of switch from spread out pattern of human settlements to one of concentration in urban centres, a process in which towns and cities emerged and grow, characterised by heterogeneity and density of population [1]. The urban society is characterised by dynamism, greater social mobility and openness in relation to rigid and stable rural counterpart [2].

The history of urbanisation is as old as the beginning of the civilization in the world. But in Nagaland, it is generally accepted that the urbanisation process began with the coming of British during the late 19th century in the Naga Hills. Gradually, administrative headquarters and Sub-Division of the Naga Hills grew and became growth centres in due course of time. The momentum of urbanisation took up after the attainment of Statehood in 1963, which was reinforced by the improvement in transport network. The process of urbanisation in Nagaland thus become more rapid specially in administrative headquarters like Kohima, Dimapur and Mokokchung, concomitant with the expansion of government administrative activities in these towns and rapid growth of population. From only one town in 1951, the number has risen to 19 statutory towns and 6 census towns in 2011 [3]. Further, the existing towns being upgraded from Grade V to Grade IV and from III to II and even from II to I, indicating the rapid urban growth in the State [4].

Unlike other cities in India, urbanisation in Northeast region of India is not linked to broad economic based, rather it is based on administrative and other contingent factors like political and forced migration [5]. The causal effect of this urban growth is multidimensional and the complexity of urban growth has raised a condition for socio-economic problems and raise issues on basic human needs.

The existing urban service delivery systems are highly ineffective and undersupplied. Many towns are in a stage of transition from rural to urban without possessing the requisite urban characteristics [6]. High concentration of less educated and low income groups of population in the centre of the city constitute urban crisis [7]. In Nagaland too, unplanned process of urbanisation and concentration of urban population in the two major towns, such as Kohima and Dimapur have consequent effect on the life of urban dwellers. Kohima being the administrative headquarter and Dimapur, known as the commercial capital of the State, these are the two main urban centres where rapid growth is seen during the last decades.

Table 1. Urban Demographic Profile of Nagaland from 1991-2011

Districts/State	1991		2001		2011	
	Urban Population ('000)	Proportion of urban population	Urban Population ('000)	Proportion of urban population	Urban Population ('000)	Proportion of urban population
1	2	3	4	5	6	7
Kohima	117.3	24.53 (56.38*)	78.6	25.1 (22.27)	123.1	45.6 (21.21)
Dimapur	NA	37.08 (**)	123.9	40.17 (35.11)	197.3	51.95 (34.50)
Phek	8.4	8.9 (4.02)	12.9	8.68 (3.65)	24.6	15.07 (4.3)
Mokokchung	24.8	15.56 (11.9)	31.2	13.73 (8.85)	55.7	28.81 (9.74)
Wokha	14.4	17.4 (6.91)	37.7	23.4 (10.68)	34.9	21.05 (6.12)
Zunheboto	11.5	11.92 (5.51)	22.8	14.72 (6.47)	27.6	19.58 (4.8)
Tuensang	21	9.02 (10.09)	29.7	7.15 (8.4)	36.8	18.72 (6.44)
Mon	10.8	7.2 (5.19)	16.1	6.21 (4.57)	34.7	13.85 (6.1)
Peren	NA	NA	NA	NA	14.8	15.59 (2.4)
Kiphire	NA	NA	NA	NA	16.5	22.28 (2.88)
Longleng	NA	NA	NA	NA	7.6	15.04 (1.32)
Nagaland	208.2	17.21 (100)	352.8	17.74 (100)	571.7	28.97 (100)
India	217551	25.71	285354	26.33	377105	31.16

Sources: Census of India, 2011, Series 14, Nagaland [8]

State Human Development Report, Nagaland, 2004[9]

A Thematic Report, 2009 [10]

Nagaland's Demographic Somersault 2012 [11]

* Included urban population of Dimapur District till December 1997

** Dimapur District was bifurcated from Kohima District in 1997

Note: Figures in the parentheses indicate the proportion to total urban population of Nagaland

As per the census of India, 2011, Nagaland recorded the highest growth rate of urbanisation in the country during the last decade, which was 69% as against the national growth rate of 21%. In 1971, the proportion of urban population was only 10% of the State's total population, reached 17.21% in 1991 and 28.97 in 2011. However, the distribution of urban population is not uniform, where the concentration is higher in few towns like Kohima and Dimapur (Table 1). For instance, more than 55% of the State's urban population is concentrated in Dimapur and Kohima alone in 2011. Urban population constituted 51.95% in Dimapur, 45.6% in Kohima, followed by Mokokchung with 28.81%, the third place in 2011.

This asymmetrical distribution of urban population has created a situation, that there are mounting pressure in these growing urban centres to meet the increasing demand for basic urban needs on one hand, and the deteriorations of urban services and amenities on the other, which necessitates immediate attention.

2. Methodology

This analysis is based on both secondary and primary data. Primary data were collected from Dimapur and Kohima Towns during 2015-16. Sample of 400 respondents were purposively taken through stratified random sampling, 200 each from both Kohima Town and Dimapur Town. Secondary data were collected from various published and unpublished books, population census data, reports, articles, journals, official records, statistical documents, seminar papers and unpublished reports of other relevant sources. Data are analysed using statistical tools such as averages and percentile methods, and presented in figures and graph.

3. Contemporary issues

'Cities in developed countries have a wealth of infrastructure, financially amortized decades ago, as a base for their current and increasing level of productivity. Cities in developing countries have yet to build this capital' [12]. Urban development in Nagaland is confronted by many issues, which are diverse and increasing day-by-day with the increase in population. At the same time, the State is constrained by limited resources and also, corruption stands on the way to develop the urban infrastructure.

Table 2. Current major issues the Town/City (in percentage)

Issues /City/Town	Dimapur	Kohima	Total
1	2	3	4
Air pollution	39	11	25
Water pollution	25	12	18
Poor drainage management	67	47	57
Solid waste management	36	56	46
Deplorable road condition	79	39	59
Potable water issue	9	56	33
Transport/ trafficcongestion	47	71	59
Housing problem	23	40	31
Other issue(s)	3	2	2

Source: Field survey 2015-16

The survey result shows that poor roads and drainage problems occupied the highest response. This is followed by issues of solid waste management, availability of drinking water and housing problems. Other issues like air and water pollution and other socio-economic issues are put under the category of third most urban problems (Table 2).

3.1. Drainage system

Adequate drainage is necessary for sanitation and waste removal [13]. Absence of drainage systems is a serious issue to be addressed in all towns in Nagaland. It leads to serious inundation causing loss of property, disruption to economic activities, soil erosion, landslides and a major reason for road damage. Poor maintenance, choking due to waste disposal and encroachments are also serious causes of concern. Many towns in Nagaland do not have well-maintained drainage facilities at present. Even the two most populous urban centres, i.e, Kohima and Dimapur are facing drainage related issues. This could be better understood from Figure 1, that about 40% of the respondents in the survey from Dimapur and 33% from Kohima reported either absence of drainage system or only open kutch drainage system exist in their place of residence.

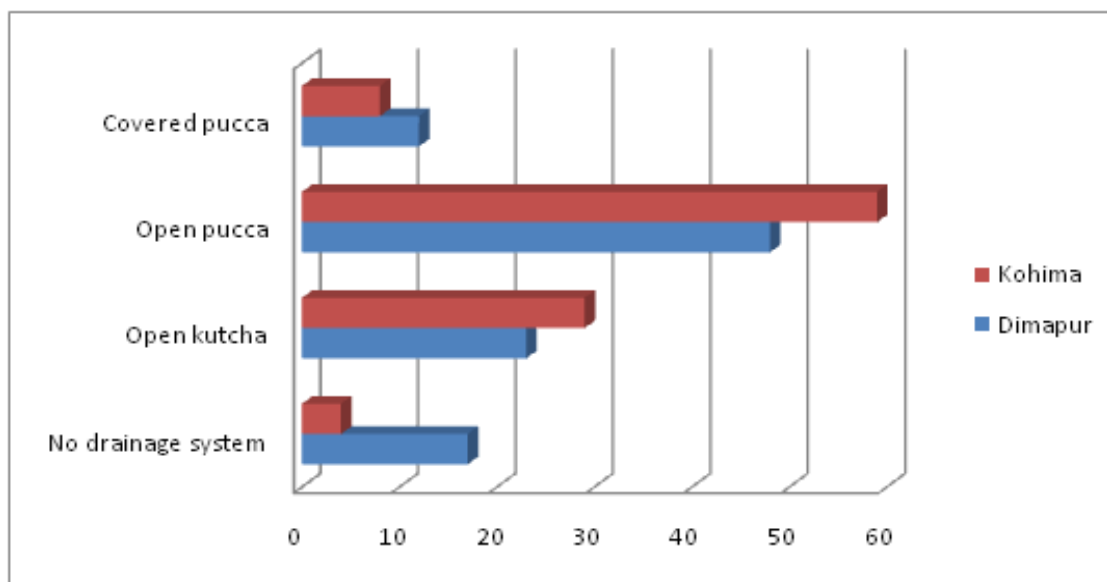
Only 12% from Dimapur and 8% from Kohima stated that they have covered-concrete drainage. It is also found that many respondents were not satisfied with those existing system of drainage mainly because of non-regular maintenance, un-authorised construction along the road-side and frequent water logging leading to flood-like situations during heavy/stormy downpours (Table 3).

Table 3. Reasons for unsatisfactory drainage system in the city/town (in percentage)

Reasons/City/Town	Dimapur	Kohima	Total
1	2	3	4
Narrow drainage	24	13	18.5
Non proper maintenance	42	30	36
Un-authorised construction	26	20	23
Frequent water logging	36	26	31
Non-covered drainage	30	16	23
Other(s)	0	2	1

Source: Field survey 2015-16

Figure 1. Drainage system in Kohima and Dimapur



Source: Computed from field survey data

3.2. Solid waste management

According to the report of State Action Plan on Climate change, in Nagaland, urban dwellers generate waste about 400 grams per capita per day. This implies that the total waste generation in urban centres in Nagaland would approximately amount to 223 tonnes every day or 81,395 tonnes every year. The local authorities were estimated to have the capacity to cater to only about 30-40% of the waste generated.

Table 4. Distribution of urban population by the system of garbage disposal arrangement in Kohima and Dimapur (in percentage)

Town/city	Dimapur	Kohima	Total
1	2	3	4
No such garbage disposal arrangement	17	5	11
By residence itself	42	10	26
By the Municipal Council	41	85	63
Total	100	100	100

Source: Field survey 2015-16

The collected waste is also disposed off without treatment. However, from the field survey it is found that municipal authorities caters to only 63% of solid waste disposal and the remaining were taken care by the residence or left un-attended. If we split up then in Kohima, 85% solid waste are managed by the local bodies and the remaining 15% are either clear by the residence or left unmanaged. In Dimapur, only 41% solid waste is managed by the municipality, about 42% are taken care by the residence and the remaining 17% of waste is left unmanaged (Table 4).

3.3. Road condition and Traffic issues

An effective transportation system not only connects different regions but it also improves the quality of life [14]. It also recognized roads development as a critical factor for economic development in the State. Kohima and Dimapur have the highest vehicle population in the State. These two cities together accounted for 64 percent of all vehicles registered in the State. In terms of road networks, most of the roads are narrow. State Government reports states that the average carriageway available is 3.0 to 5.5m which is further decreased by the unauthorized use of the roadsides and kerbs by hawkers, vendors, and shopkeepers, with the exception of highways. The current road condition in these two most urbanised centres has come under serious stress as urban population and economic activities increased in these centres.

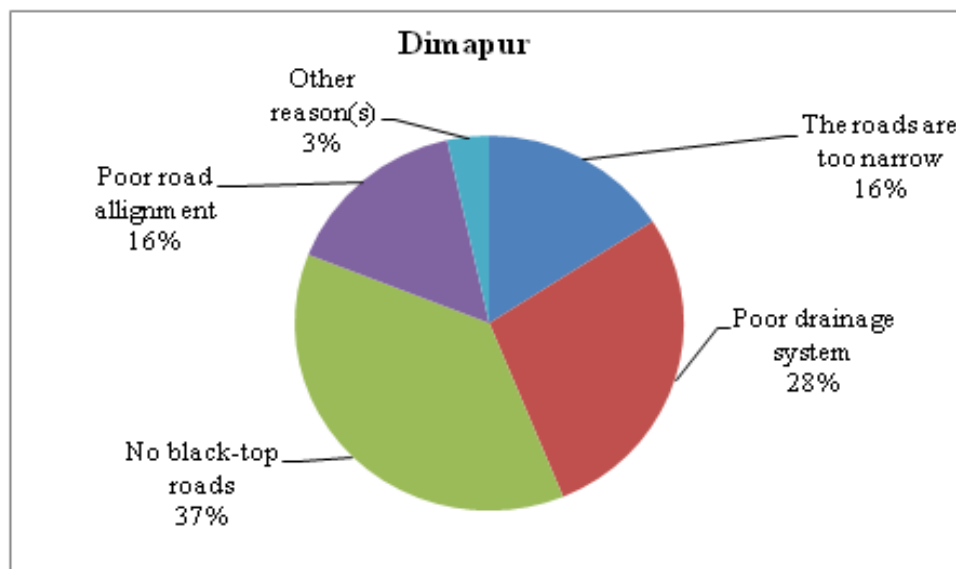
Increasing vehicular traffic coupled with non-expansion or improvement of roads has been causing much economic loss to the state and public. Looking at the prevailing road conditions in our state one can notice that the general public has got a lot of reasons to resent and lament on the roads and carriageways in the state (Table 5).

Table 5. Reasons for non-satisfactory road condition in their respective ward/colonies (in percentage)

Reasons/City/Town	Dimapur	Kohima	Total
1	2	3	4
The roads are too narrow	25	26.5	26
Poor drainage system	44	35	39.5
No black-top roads	58.5	26.5	42.5
Poor road allignment	24.5	16.5	20.5
Other reason(s)	5.5	2.5	4

Source: Field survey 2015-16

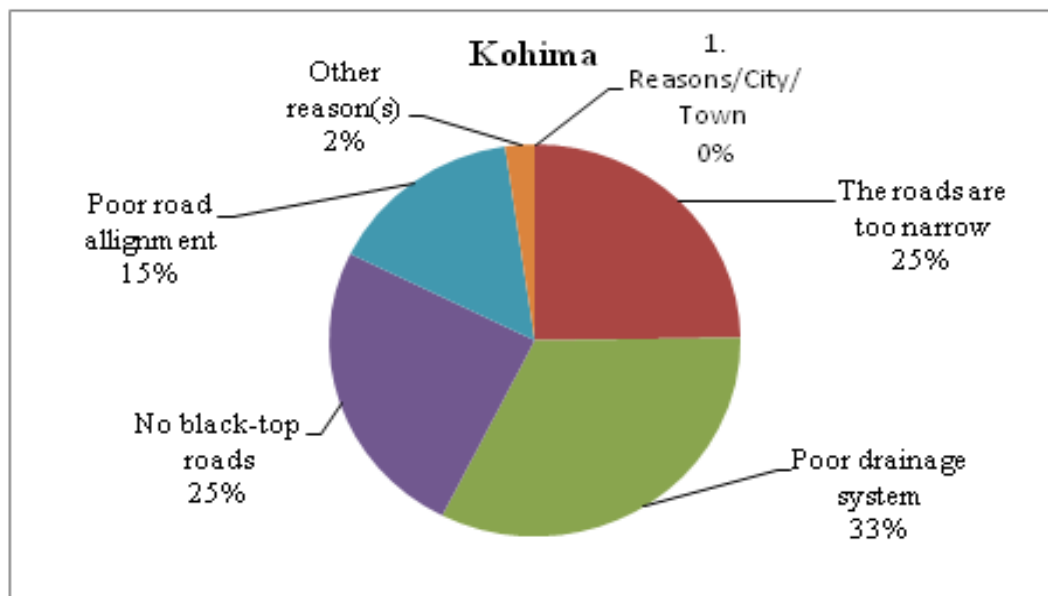
Figure 2. Reasons for poor road condition in Dimapur



Source: Computed from field survey data

From Figure 2 and 3, we can draw a clear picture with regard to road conditions in the city/towns. Non-black topping and poor drainage system are the obvious reasons for public cry, which is depicted in the survey that accounts for 65% in Dimapur and 58% in Kohima. Another major problem in Kohima is narrowness of the roads in the city center, which further worsens the traffic congestions and regulation.

Figure 3. Reasons for poor road condition in Kohima



Source: Computed from field survey data

Table 6. Type of toilet system in Dimapur and Kohima (in percentage)

Type of toilets /sex	Dimapur	Kohima	Total
1	2	3	4
Flush toilet	77	45	61
Pit latrine	10	25	17.5
Ventilated improved pit latrine	11	27	19
Open pit latrine	1	2	1.5
Other type	1	1	1
Total	100	100	100

Source: Field survey 2015-16

3.4. Sanitation and Drinking water

Various literatures supported that many low-income urban dwellers in poor regions used shared-latrines that are filthy, foul smelling, crowded and maintenance often becomes a problem for the users. From the field study, it is found that urban toilet facility has made a remarkable improvement. Only a negligible number of people have open pit or no toilet facilities in both the cities (Table 6). However, a considerable proportion of households use shared-toilets. Only 31% from Kohima and 87.5% from Dimapur reported that they have household exclusive toilets. The remaining households use common/shared toilets (Table 7).

In urban areas, the PHED is able to supply tap water to about 20 to 40% of the households. The remaining urban population relies on water from private suppliers, especially in Kohima and other hilly towns in the State and dug wells in the plain areas of Dimapur and other foothills. So, un-organized sector is playing a crucial role in supplying potable water to the urban dwellers in the state.

Infrastructure for water resource augmentation and water resource distribution has been created or is under creation in Kohima, Phek, Zunheboto, Wokha, Chumukedima, Mon, and Tuensang towns and it is expected that the percentage of coverage will increase.

Table 7. Distribution of urban population by the nature of toilet use in Kohima and Dimapur (in percentage)

Town/City	Dimapur			Kohima			Total
Nature of use /sex	Male	Female	Total	Male	Female	Total	(4+7)
1	2	3	4	5	6	7	8
Household exclusive use	49.5	38	87.5	27.5	3.5	31	59
Common use in the whole building	7.5	3.5	11	63.5	3.5	67	39
Community use	1.5	0	1.5	2	0	2	2
Total	58.5	41.5	100	93	7	100	100

Source: Field survey 2015-16

But at the same time, rapid increase in population, urbanisation and developmental activities in the urban centres has raised the demand for drinking water at the exponential rate and put more pressure on the available water resources in the state. However, findings from the survey indicated that about 85% of the people have their own/private water supply arrangement. Only 4% have access to public water supply and the other remaining group purchased water or used harvested rain water, having significant economic cost on family budget (Table 8).

Table 8. Sources of potable water supply in Kohima and Dimapur (in percentage)

Sources /sex	Dimapur	Kohima	Total
1	2	3	4
Private water tap	19.5	32	26
Protected dug well	38	35	36.5
Municipal water pipe	3	5	4
Harvested rain water	0	5	2.5
Tubewell/borewell	39.5	4	21.5
Other source	0	19	9.5
Total	100	100	100

Source: Field survey 2015-16

3.5. Housing

A proper place to live with the family in a community forms our basic necessity. The type of dwelling place resembles our living condition in the society. According to Lee [15], 'the state of housing has a direct impact on a country's level of public health and an indirect effect on labour productivity through the general morale of the workers. Practically all the developing countries face serious housing problems, particularly in the urban areas'. This statement holds good even in our towns and cities.

Table 9. Distribution of the population by the types of housing (in percentage)

TypeCity/Town	Dimapur	Kohima	Total
1	2	3	4
Kutchha	7	26	17
Semi Kutchha	14	32	23
Pucca	78	41	59
Other(s)	1	1	1
Total	100	100	100

Source: Field survey 2015-16

In the survey, it was observed that majority of the people (59%) were living in pucca house, followed by semi-kutchha house with 23% and kutchha houses 17%. One percent of them lived in other type of house. This other type of dwelling nature includes temporary camps at the work-site, huts made of straws and thatches at the construction site or partially built concrete structures at the work site (Table 9).

3.6. Air and Water pollution

According to the Nagaland Pollution Control Board (NPCB) report 2005, air quality has been deteriorated in recent years primarily due to vehicular emissions but they are concentrated mainly in Kohima and Dimapur. Also, a number of brick kilns in and around Dimapur contributes considerable amount to air pollution in city [16]. There exist no sewage treatment facilities in the State at present. Again we have limited information on the quality of fresh and ground water and monitoring activities on rivers in the state. Only River Dansari is found to be monitored in and around Dimapur on quarterly basis and ground water was assessed twice by NPCB in 2000 and 2002.

In their study, it was found that there is higher concentration of minerals and iron in the ground water in some pockets in Dimapur. The higher concentration of iron and minerals in the water implies the ground water is not safe for drinking, although it needs further investigation.

4. Challenges

Urban growth is a desirable condition in any economy but it should not be at the cost of general welfare. Urban population is growing at an exponential rate not only in Nagaland but in all prospective urban areas in India in spite of weak capital-infrastructure base. During the period from 2001 to 2011, the population of Dimapur increased by more than 59%, Kohima by 56 and Mokokchung by 78%. This growth rate is higher in Mon and Phek with 115 and 90% respectively, nevertheless in absolute terms, they are at manageable levels. If urban population continues to increase at the current rate, especially in Kohima and Dimapur, in 2 to 3 decades our towns and cities will be infested with problems of congestions and urban resources will be overburdened. Similarly, in the absence of adequate supply of basic urban amenities, all the prevailing urban issues whether socio-economic or political, health or mental, pollution or drinking water issues will also multiply at the same time. For instance, according to draft paper on urban development and planning, 2012, Wokha has been identified as highly drinking water vulnerable district and Kohima, Mokokchung and Mon as moderately vulnerable at present. Again, lack of sewage treatment, sanitation problems, poor waste management, inadequate traffic management, lack of regulatory and planning tools such as master city plan and building by laws etc. are the major issues at present.

In addition, we have issues such as land acquisition issues, planning and management deficits and coordination from various stake holders. Above that the local authorities and management agencies have very little resources at their disposal in terms of capital, technology and man-power to tackle these ever growing urban issues [17,18].

5. Conclusion

The State Government need to respond effectively to the issues discussed above through systematic plans and management of resources in the urban centres. This calls for renewed thrust towards improvement in governance and urban service delivery system. At the same time, every opportunity should be explored and harness for resource and revenue mobilisation. So we need a comprehensive city planning whereby every individual should take the responsibility and contribute towards the development of the city/towns.

A well coordination mechanism is needed, whereby representatives of all concerned institutions and agencies should collectively take decision on key issues. This will be a stepping stone to ensure the cities and towns are productive, liveable, and sustainable growth centres in the State.

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