

# Sanitation Infrastructure in the Tribal Communities: A Comparative Analysis of the Barman and Naga Families

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**Abstract:** *Accomplishment of sanitation basically depends on its infrastructure, ie, basic sanitation facilities, comprising toilet, drains, water, a separate kitchen and cooking fuel. In India there exists a disparity in access to safe drinking water and improved sanitation among different regions. A wide variation in the pace of implementation of total sanitation campaign is seen among the Northeastern states. Yet they have scored fairly well on sanitation where toilet coverage and studies have reported a satisfying sanitation in the region. But to know the status of modern sanitation practices one better looks into the basic infrastructure of sanitation. If basic infrastructure is found to have been existing there can be expected various services covered under sanitation. The tribal people communities settled in the rural and urban areas are the simplest of social organizations offering the best opportunity to know about the sanitation infrastructure. This paper therefore makes a comparative analysis of the sanitation infrastructure of urban and rural families of two tribes; namely, the Barman and the Naga in the district of Cachar of the Assam State, the largest one, in the region.*

**Keywords:** Sanitation, infrastructure, tribal, communities, Barman, Naga

## 1. Introduction

Sanitation refers to maintenance of hygienic conditions through such services as garbage collection, waste water disposal and keeping drinking water, foods, or anything else, with which people come into contact, free of micro-organisms such as viruses so as to establish conditions favourable to health (<https://en.wikipedia.org/wiki/Sanitation>, accessed on 22.10.2020 at 4.28 pm). Accomplishment of sanitation basically depends on its infrastructure, ie, basic sanitation facilities, comprising toilet, drains, water, a separate kitchen and cooking fuel. Though poverty alleviation, drinking water supply and sanitation have been on public health agenda in India since long, there exists a huge disparity in access to safe drinking water and improved sanitation among different regions (Kuriakose and Iyer 2012). In rural areas also sanitation situation has reflected a reduction in the magnitude of the problem, but it is not so satisfying (Pathak 2013). In India infrastructure development plays a role in both economic development and poverty reduction as well as to achieve the Millennium Development Goals (MDG) and other declarations that includes sanitation as well (Sharma (2013). In North-east India the medical and scientific consciousness of sanitation began to gradually rise with socio-economic development from around 1950 after political Independence. Before that, particularly rural people suffered from age-old ignorance and superstitions, especially with regards to health and hygiene including sanitation (Mahanta 2008). In spite of a wide variation in their pace of implementation of total sanitation campaign the Northeastern states have scored fairly well on sanitation where toilet coverage has reached almost a peak and they need to develop a 'Post-Nirmal State Policy' for capacity-building in the activities like solid and liquid waste management, eco-sanitation, menstrual hygiene management, etc (Sharma 2012). As the studies report a satisfying progress of sanitation in the region and universal sanitation is now being taken up as one of the components

of health care facilities in an action plan of WHO and UNICEF to be achieved by 2030 (UNICEF 2016), it naturally provokes one to look into the basic infrastructure of sanitation that is available among the simplest people like tribal communities in the region. This paper therefore makes a comparative analysis of the sanitation infrastructure of urban and rural families of two tribes; namely, the Barman and the Naga in the district of Cachar of the Assam State, the largest one in the region.

## 2. Methodology

For the study primary data have been collected by administering a structured interview schedule to the samples/ populations of households/ families from the Barman and Naga communities in the Silchar town and two villages, one each, of the communities; namely, Devipur (Barman village) and Bhaga Bazar Naga Habitation in the Narsingpur Development Block of the Cachar district, selected purposively. In the Silchar town the Naga people are mainly settled in three localities; namely, Kaguilung (Nagapatty/near Fatak Bazar), Tarapur and Meherpur, and the Barman people are also settled in three localities; namely, Tarapur, Malugram and Rongpur. The two villages; namely, Bhagabazar (Naga village) and Devipur (Barman village) are located at two ends of Dholai (a Bengali village) under the Narsingpur Development Block. Localities in the Silchar town have 235 and 95 households and the two villages, one each, of the Naga and Barman communities have 12 and 35 households respectively. Considering large numbers of the Naga and Barman households in the Silchar town, a sample of 50% households, each, was taken from the localities of the two communities by using systematic random sampling method, which came to be 164 households (Naga- 120 & Barman- 44). On the other hand, the number of the households in the Naga and Barman villages is less, ie, 48 in all (Naga-12 and Barman-36) and, therefore, all these households have been visited for data collection. Thus,

the main sample consisted of 212 households.

The Barmans are all Hindu by religion while the Nagas still largely believes in ancestral faith as well as Hindu gods and a section has converted into Christianity. Family has been fast transitioning from joint to nuclear in the Naga community while the Barmans are moving in the same direction with comparatively slow pace. Yet the Naga people have comparatively a large size of family. The Naga people have comparatively early marriage solemnized before completing education and settling occupationally. Most of the Barman families are APL whereas BPL families are mostly seen among the Naga families. Monthly income of the Barmans is far better than the Naga people as they are in Govt. job while Naga people depend on their traditional business and low level contractual jobs in different Govt. institutions. So quality of job is not at all comparable with the Barman people who are mostly engaged in Govt. jobs. Most of the Barman families have pucca/ good housing structures while most of the Naga families are living in Assam type structure. Besides, the Barman people are comparatively better in using household assets as compared with the Naga people. The Barmans are living with more space while the Naga people are living in congested space. Both the communities use electricity as source of power but more Barmans use inverter also for power backup. The Barmans have far better socioeconomic conditions than their

Naga counterparts in the urban and rural areas due to different cultural orientations.

### 3. The Sanitation Infrastructure

The tribal families are settled in villages as well as towns in the district as well the state and the region. However, rural-urban variation of sanitation is perceptible among the families. Therefore, sanitation infrastructure of the Barman and Naga families in the Silchar town and the respective village of the two tribes is being analysed here in terms of toilet, drains, water, separate kitchen, cooking fuel and cleaning / washing tools.

#### 3.1 Types of Toilet

The global importance of modern toilet is revealed from the agenda of Millennium Development Goals where modern and scientific sanitation is set as the prime target. As it is nowadays believed that without modern toilet it is quite impossible to lead a hygienic life, it is quite natural to know about types of toilet the communities are using today. There are various types they use; namely, toilets like sanitary/ pucca toilet, semi-pucca toilet, low cost toilet, closed shed toilet and community toilet. The tribal families are distributed into these types of toilet so as to know their sanitation status in the following table:

**Table 1:** Types of Toilet in the Barman and Naga Families (Percentage in Parentheses)

Type of Toilet	No. of Barman Families			No. of Naga Families		
	Urban	Rural	Total	Urban	Rural	Total
Sanitary Toilet	44 (100)	14 (38.89)	58 (72.50)	16 (13.33)	-	16 (12.12)
Semi-pucca Toilet	-	-	0	17 (14.17)	-	17 (12.88)
Low Cost Toilet	-	21 (58.33)	21 (26.25)	-	-	0
Closed Shed (Kachcha) Toilet	-	1 (2.78)	1 (1.25)	-	-	0
Pot Hole	-	-	0	2 (1.67)	-	2 (1.52)
Others/ Community Toilet	-	-	0	85 (70.83)	12 (100)	97 (73.48)
Total	44 (100)	36 (100)	80 (100)	120 (100)	12 (100)	132 (100)

Source: Field Interview Conducted from 1<sup>st</sup> July to 31<sup>st</sup> October 2019.

From the above table one finds that of the Barman families three fourths (72.5%) are having sanitary (modern /pucca) toilet, followed by the low cost toilet (26.25). In the urban area all the families use sanitary toilet while in the rural about three fifths (58.33%) of the Barman families have low cost toilet, followed by the sanitary toilet (38.89).

On the other hand, in the Naga community about three fourths (73.48%) of the families are using community toilet which is unhygienic in nature as it's not cleaned regularly and properly. Only 12.12% families have private sanitary toilet. Besides these two types, the rest of the families have semi-pucca, kachcha and portable toilets. Specially, the Naga families in the rural area and those in the urban area (70.83%) have community toilets. Thus, Naga people have comparatively much poor conditions of sanitation.

#### 3.2 Drainage System

Waste water stagnated in or around a house may be a potent source of all types of disease which are spread by flies, microbes, air and water. Without proper drainage system habitations may be vulnerable to risk for community health, due to possibility of massive pollution and contamination. So it is very much important to know about the drainage system of the tribal families to understand their sanitation practices. They have three types of drains; viz., open kahcha, open pucca, and closed pucca. There are families with houses without drainage system also. By drainage systems the tribal families are distributed in the following table:

**Table 2: Drainage Systems in the Barman and Naga Families (Percentage in Parentheses)**

Type of Drains	No. of Barman Families			No. of Naga Families		
	Urban	Rural	Total	Urban	Rural	Total
Open Kachcha	34 (77.27)	36 (100)	70 (87.50)	-	-	0
Open Pucca	-	-	0	73 (60.83)	-	73 (55.30)
Closed Pucca	10 (22.73)		10 (12.50)	-	-	0
No Drain	-	-	0	47 (39.17)	12 (100)	59 (44.70)
Total	44 (100)	36 (100)	80 (100)	120 (100)	12 (100)	132 (100)

Source: Field Interview Conducted from 1<sup>st</sup> July to 31<sup>st</sup> October 2019.

The above table shows that most of the Barman families have open kachcha drain (87.50%) and the rest have closed pucca drain (12.50%) whereas majority of the Naga families have open pucca drain (55.30%) and the rest have no drain at all in their houses.

Among the Barmans, over three fourths (77.27%) of the urban families have open kachcha drain and the rest have open pucca drain (22.23%) whereas all of their rural families have open kachcha drain. Among the Nagas three fifths (60.83%) of the urban families have open kachcha drain and the rest of the urban families and all of their rural families have no drain at all.

Thus, the Naga families have no drain in rural houses and about two fifths of their families also have no drains. These points to a poor sanitation condition of the Naga houses. On

the other hand, all the Barman houses have drain in the urban and rural areas, though in the rural area it's all open kachcha drains only. Hence the Barman families have far better condition of drainage in their houses.

### 3.3 Sources of Drinking Water

Availability of drinking water is globally gaining importance due to various reasons related to health and quality of life. In India also there is scarcity of pure drinking water in many regions. Hence, pure drinking water assumes importance for health and sanitation concerns. The two tribal communities have mainly three sources of drinking water; namely, water tap, tube well and pond. So, various sources of drinking water in the families of the two communities are shown in the following table:

**Table 3: Drinking Water Sources of the Barman and Naga Families (Percentage in Parentheses)**

Type of Water Source	No. of Barman Families			No. of Naga Families		
	Urban	Rural	Total	Urban	Rural	Total
Tap	38 (86.36)	28 (63.64)	66 (82.50)	120 (100)	-	120 (90.91)
Tube Well and Water Tap	6 (13.64)	8 (18.18)	14 (17.50)	-	-	-
Pond	-	-	-	-	12 (100)	12 (9.09)
Total	44 (100)	36 (100)	80 (100)	120 (100)	12 (100)	132 (100)

Source: Field Interview Conducted from 1<sup>st</sup> July to 31<sup>st</sup> October 2019.

The above table shows that tap water is consumed by most of the families of the Barman (82.50%) and the Naga (90.91%) communities of the urban and rural areas.

Of the urban Barman families over four fifths (86.36%) depended on tap for drinking water while over three fifths (63.635) of the rural Barman families dependent on the tap water. The rest of the Urban and rural Barman families have tap and tube well both as source of water. In the Naga community all the urban families have tap and all the rural families have pond as sources of drinking water.

Thus, the tap is the major source of drinking water in the rural and urban families of both the communities. The urban and rural Naga families have only tap and pond respectively as source of drinking water while small section of both the

rural and urban families access tube well as well as tap for drinking water. This means that the Naga families in the rural areas do not have access to safe drinking water (tap water).

### 3.4 Kitchen Types

As a place for cooking kitchen has a vital importance for health and hygiene of house dwellers. A kitchen in common or living space is prone to possible pollution and contamination which may be hazardous to family health. In the tribal families two types of kitchen are found; namely, separate and common kitchens. To know the types of kitchen among the Barman and Naga families in the rural and urban areas their distribution is given in the following table:

**Table 4:** Kitchen Types in the Barman and Naga Families (Percentage in Parentheses)

Type of Kitchen	No. of Barman Families			No. of Naga Families		
	Urban	Rural	Total	Urban	Rural	Total
Separate Space	36 (81.82)	10 (27.78)	46 (57.50)	21 (17.50)	2 (16.67)	23 (17.42)
Common/ Living Space	8 (18.18)	26 (72.22)	34 (42.50)	99 (82.50)	10 (83.33)	109 (82.58)
Total	44 (100)	36 (100)	80 (100)	120 (100)	12 (100)	132 (100)

Source: Field Interview Conducted from 1<sup>st</sup> July to 31<sup>st</sup> October 2019.

From the above table it is seen that nearly three fifths (57.50%) of the Barman families have a separate kitchen while over four fifths (82.58%) of the Naga families have kitchen in common/ living space. Over four fifths (81.82%) of the urban Barman families have a separate kitchen in their houses while nearly three fourths (72.22%) of the rural Barman families have kitchen in the common/ living space.

Overall, nearly three fifths (57.59%) of the Barman families have a separate kitchen. On the other hand, over four fifths (83.33%) of the urban and over four fifths (82.58%) of the rural Naga families have kitchen in common space of their houses.

Thus, the urban Barman families have separate kitchen in most of the families while in Naga families, both, urban and rural, have kitchen in a common space only. It indicates the emergence of separate kitchen in the urban Barman families largely (81.82) and in a significant section of the rural

Barman families (27.78%) while the Naga families, urban and rural, have small section (less than one fifth) with a separate kitchen in the house. This means that the Nagas are still inclined to a traditional concept of common kitchen which is rather unhygienic.

### 3.5 Cooking Fuel

With the increased population and congested living, cooking fuel nowadays has a greater significance in terms of health, particularly air pollution. Smoke from cooking fuel in houses is a potent hazard to health, causing much harm in lungs in particular and body in general. Nowadays, smokeless fuel is considered a hygienically safe fuel and also a component of sanitation. The two communities use three types cooking fuels; namely, wood, kerosene and LPG. Distribution of the families of the two tribal communities into these types is given in the following table:

**Table 5:** Cooking Fuel Types in the Barman and Naga Families (Percentage in Parentheses)

Type of Fuel	No. of Barman Families			No. of Naga Families		
	Urban	Rural	Total	Urban	Rural	Total
Fire Wood and Kerosene		2 (5.56)	2 (2.50)			
Kerosene				11 (9.19)	7 (58.33)	18 (13.64)
LPG	44 (100)	34 (94.44)	78 (97.50)	109 (90.83)	5 (41.67)	114 (86.36)
Total	44 (100)	36 (100)	80 (100)	120 (100)	12 (100)	132 (100)

Source: Field Interview Conducted from 1<sup>st</sup> July to 31<sup>st</sup> October 2019.

The table reveals that most of the Barman families used LPG as cooking fuel (100% in the urban area & 94.44% in rural area) and a very small section of the rural Barman families use fire wood as well as kerosene as cooking fuel. On the other hand, most of the urban Naga families (90.83%) use LPG and about three fifths (58.33%) of the rural Naga families use kerosene and the rest use LPG.

Thus, most of the Barman families, urban as well as rural, and most of the urban Naga families use safe cooking fuel while majority of the rural Naga families have dependence on kerosene. Comparatively, the Barman families in the urban and rural areas are in better condition so far cooking fuel they used.

## 4. Results

In brief the following are results drawn from the being presented here

4.1 Of the Barman families three fourths (72.5%) are having sanitary (modern /pucca) toilet, followed by the low cost toilet (26.25). In the urban area all the families use sanitary toilet while in the rural about three fifths (58.33%) of the Barman families have low cost toilet, followed by the sanitary toilet (38.89). On the other hand, in the Naga community about three fourths (73.48%) of the families are using community toilet which is unhygienic in nature as it's not cleaned regularly and properly. Only 12.12% families have private sanitary toilet. Besides these two types, the rest of the families have semi-pucca, kachcha and portable toilets. Specially, the Naga families in the rural area and those in the urban area (70.83%) have community toilets. Thus, Naga people have comparatively much poor conditions of sanitation.

4.2 Most of the Barman families have open kachcha drain (87.50%) and the rest have closed pucca drain (12.50%) whereas majority of the Naga families have open pucca drain (55.30%) and the rest have no drain at all in their

houses. Among the Barman, over three fourths (77.27%) of the urban families have open kaccha drain and the rest have open pucca drain (22.23%) whereas all of their rural families have open kaccha drain. Among the Nagas three fifths (60.83%) of the urban families have open kaccha drain and the rest of the urban families and all of their rural families have no drain at all. Thus, the Naga families have no drain in rural houses and about two fifths of their families also have no drains. These points to a poor sanitation condition of the Naga houses. On the other hand, all the Barman houses have drain in the urban and rural areas, though in the rural area it's all open kachcha drains only. Hence the Barman families have far better condition of drainage in their houses.

- 4.3 Safe drinking water is an important component of sanitation and quality of life of people. Among the tribal families, tap water is consumed by most of the families of the Barman (82.50%) and the Naga (90.91%) communities of the urban and rural areas. Of the urban Barman families over four fifths (86.36%) depended on tap for drinking water while over three fifths (63.63%) of the rural Barman families dependent on the tap water. The rest of the Urban and rural Barman families have tap and tube well both as source of water. In the Naga community all the urban families have tap and all the rural families have pond as sources of drinking water. Thus, the tap is the major source of drinking water in the rural and urban families of both the communities. The urban and rural Naga families have only tap and pond respectively as source of drinking water while small section of both the rural and urban families access tube well as well as tap for drinking water. This means that the Naga families in the rural areas do not have access to safe drinking water (tap water).
- 4.4 From the viewpoint of quality as well as hygienic living of a family, separation of kitchen from living space in a house is a basic condition. Nearly three fifths (57.50%) of the Barman families have separate kitchens while over four fifths (82.58%) of the Naga families have kitchen in common/ living space. Over four fifths (81.82%) of the urban Barman families have a separate kitchen in their houses while nearly three fourths (72.22%) of the rural Barman families have kitchen in the common/ living space. Overall, nearly three fifths (57.59%) of the Barman families have a separate kitchen. On the other hand, over four fifths (83.33%) of the urban and over four fifths (82.58%) of the rural Naga families have kitchen in common space of their houses. Thus, the urban Barman families have separate kitchen in most of the families while in Naga families, both, urban and rural, have kitchen in a common space only. It indicates the emergence of separate kitchen in the urban Barman families largely (81.82) and in a significant section of the rural Barman families (27.78%) while the Naga families, urban and rural, have small section (less than one fifth) with a separate kitchen in the house. This means that the Nagas are still inclined to a traditional concept of common kitchen which is rather unhygienic.
- 4.5 Besides a separate kitchen, use of modern fuel for cooking is a requisite for hygienic living of the family members as well as those who cook meals, ie, generally

women only in most of the societies being based on patriarchy. Most of the Barman families used LPG as cooking fuel (100% in the urban area & (94.44% in rural area) and a very small section of the rural Barman families use fire wood as well as kerosene as cooking fuel. On the other hand, most of the urban Naga families (90.83%) use LPG and about three fifths (58.33%) of the rural Naga families use kerosene and the rest use LPG. Thus, most of the Barman families, urban as well as rural, and most of the urban Naga families use safe cooking fuel while majority of the rural Naga families have dependence on kerosene. Comparatively, the Barman families in the urban and rural areas are in better condition so far cooking fuel they used.

## 5. Conclusion

Most of the Barman people have access to modern sanitary toilet while a large number of the Naga people still use community toilet which is responsible for diseases among them. The Barman habitations have drainage system while in rainy season several Naga locations are logged with water due to lack proper or no drainage system. The Barman have access of tap water for drinking purpose while a section of Naga people still depend on the pond water which is a possible threat for their life. The Barmans are using LPG as the prime source of cooking fuel while a section of the Naga people still depend on kerosene. The Naga people still use common kitchen for their cooking purpose whereas a significant section of even the rural Barman families use LPG. The Naga community is lagging behind in almost every aspect in comparison with the Barman community across the rural and urban areas. This difference owes primarily to their cultural transition. The Barmans have totally Hinduized and they give top priority to good education followed by a good Government job to enhance their economic status, following the cultural model of the Bengali (majority) community whereas the Nagas still persist largely with their traditional faith as well as traditionally pursued petty, casual and daily wage jobs and businesses with no focus on education for economic betterment.

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