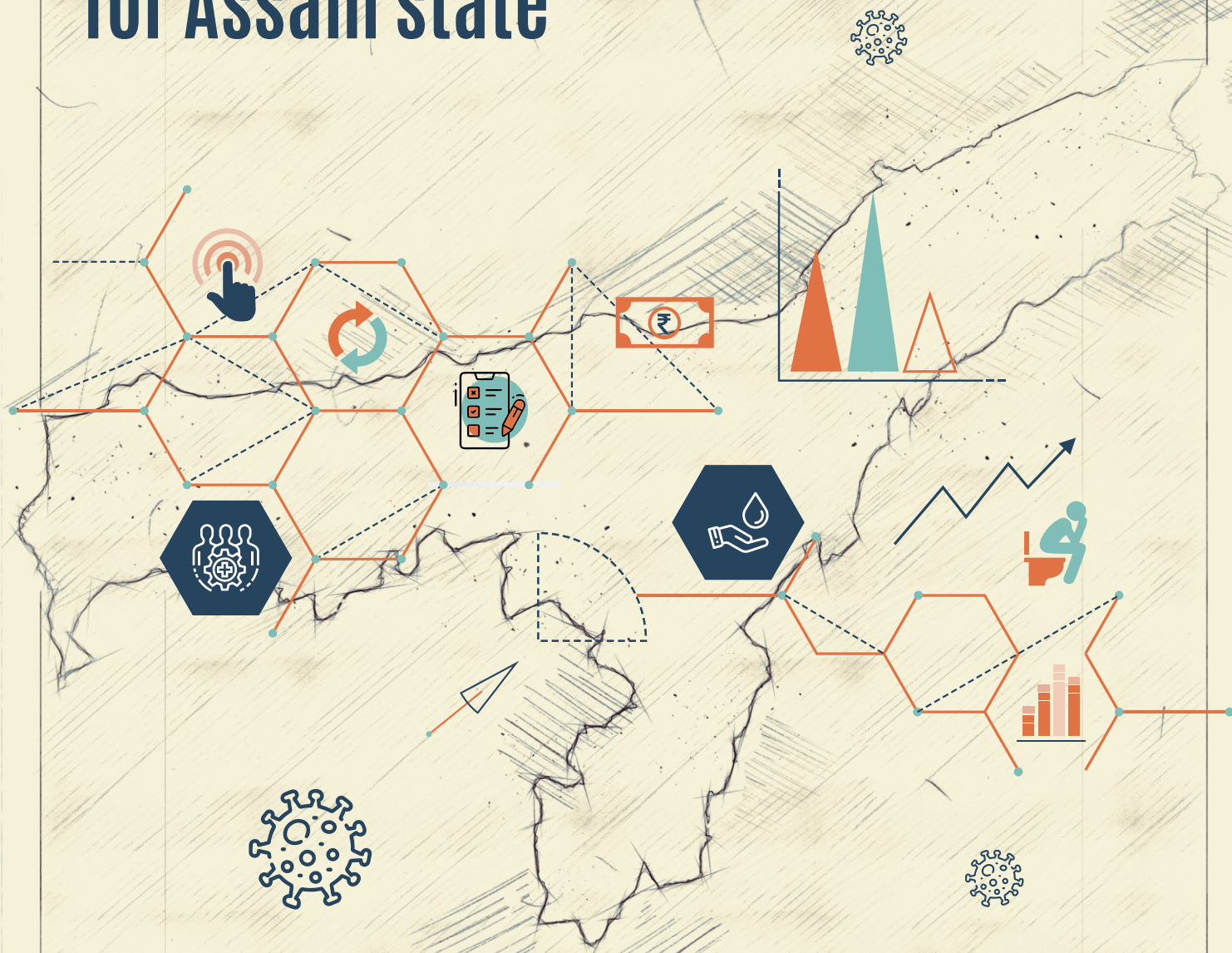


Learning from COVID-19 Urban Governance Perspective for Assam state



Research Study
2021-22



RCUES
Mumbai

Regional Centre for Urban & Environmental Studies
All India Institute of Local Self-Government, Mumbai

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Preface

The chaos caused by the outbreak of the SARS-CoV 2 shook the economies' roots and produced tremendous challenges in front of the governments, at all levels, to face. The repercussions of the shock was felt mostly at the level of the local governments, which worked closely with the people, and have faced unmanageable situations overwhelmed with grief and despair that might have long resonances through time.

The state of Assam is one of the seven north-eastern states of India, is surrounded by the states of Arunachal Pradesh, Nagaland, Mizoram, Meghalaya, Manipur and Tripura. This state was miserably struck by the coronavirus and three waves of the pandemic were hit. The news of breakdown of the public health machinery and the economy were all over the media. The social lives went at a stake; small traders went out of funds, unemployment increased and daily bread-earners were left with nothing to sustain their lives. Faced with the crisis, many social, economic and public health policies were hurriedly taken to somehow manage the situation, only in the hope of recovery later on. Under such circumstances, a holistic analysis was required to identifying the problems faced by the people along with their suggestions and feedback. In a way, this study aims at preparing a list of ***recommendations*** for the urban local bodies as a part of their strategies to increase efficiency of operation.

For the purpose of the study, two types of data were collected – secondary and primary. The secondary data from the government websites were collected in the areas of Health, Water, Sanitation and Hygiene, and Municipal Finance. Such data was collected across time covering the pre-pandemic and pandemic condition such that the data will allow for understanding of the gravity of the pandemic and also for identifying the emphasis areas along which the necessary shift required in the public spending/expenditure is required to overcome such situations. The primary data was collected with the help of questionnaire interview. The respondents were carefully selected through Multistage Sampling technique, to understand the problem faced, the perception, mitigation and the suggestions. The questionnaire had quantitative as well as qualitative questions to do the same. During the course of the survey 300 respondents from 300 different households, which were carefully selected by the said sampling techniques, were interviewed. Since, there were three districts, 100 samples from each district were selected.

The study was carried out in the three districts of Assam, namely, Kamrup Metropolitan governed by Guwahati Municipal Corporation, Nagaon governed by Nagaon Municipal Board and Hailakandi governed by Hailakandi Municipal Board. Following the data collection, holistic and micro-level analysis was done. After analysis, the study revealed interesting and important results that was used for policy recommendations to the respective urban local bodies to follow. Furthermore, the same recommendations may be used to prepare Action Plans for other urban local bodies as well. It has also prepared a model of efficient municipal operation in the last part of the report.

Acknowledgement

I take this opportunity to put on record our deep appreciation for the Ministry of Housing & Urban Affairs (MoHUA), Government of India (GoI) for providing us an opportunity to working for this study.

I also take this opportunity to express my gratitude towards Shri. Ranjit Chavan, President, All India Institute of Local Self Government for providing valuable guidance and support to complete this report. I also express my sincere thanks to Dr. Jairaj Phatak, IAS (Retd.), Director General, All India Institute of Local Self Government for his continued support in completing this report.

This Research Study was undertaken by South Asian Institute for Advanced Research and Development (SAIARD) with RCUES, AIILSG, Mumbai. I truly appreciate the sincere efforts of Dr. Biswajit Roy Chowdhury, Chairman, South Asian Institute for Advanced Research and Development (SAIARD), Kolkata and Mr. D Bhattacharya, Project Advisor, SAIARD, Kolkata in completing this report and coming up with recommendations for the urban local bodies as a part of their strategies to increase efficiency of operation in Assam state.

I am thankful to the RCUES's Research team for their continued support in completion of this research study report.

Director
RCUES, AIILSG, Mumbai

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List of Abbreviations

SAIARD: South Asian Institute of Advanced Research and Development

ULB: Urban Local Body

COVID-19: SARS-CoV-2

MOSPI: Ministry of Statistic and Program Implementation

MSME: Ministry of Micro, Small and Medium Enterprises

AIIB: Asian Infrastructure Investment Bank

KMA: Kamrup Metropolitan Area

GoA: Government of Assam

WHO: World Health Organization

EHA: Environmental Health Adviser

USAID: United States Agency for International Development

UNICEF: United Nations Children's Fund

RBI: The Reserve Bank of India

1. Introduction

1.1. Background of the study

The entire world was awestruck at the unprecedented outbreak of COVID-19 in 2020, and obviously, India was not left exceptional. In India, the pandemic started creating havoc in the second quarter of 2020. Till date, close to 35 million people in the India are affected by the virus, and around half a million (www.mohfw.gov.in; December 20, 2020) lives were lost. Being faced with such a challenge, a more holistic policies are required to be taken up at all tiers of the government. However, the local self-governments and local bodies, lying close to the people, automatically became the front-liners in the fight. But as it is understood, the fight was too difficult that required cautious and prolonged efforts at the frontlines. A study is carried out by the *South Asian Institute of Advanced Research and Development (SAIARD)* to prepare a guideline for the Urban Local Bodies to follow as a prescription to combat such shocks. On the other hand, the report based on the outcome of the study may also be utilized by the respective departments and finance commissions at the state level to provide the required support to the frontline Urban Local Bodies.

The repercussions of the shock induced by the outbreak of the COVID-19 has reached the whole economy and society, and put forth tremendous challenges in front of the governments, at all levels, to face. The local bodies have faced unmanageable situations overwhelmed with grief and despair that might have produced long resonances through time. During those harsh times, a unique phenomenon was observed that people flocked towards the large cities in the expectation to get the treatment easily. Under the anticipation that the city hospitals, both private and government, can provide the required treatment to the COVID patients, whereas, the villages and sub-urban health systems still lacked basic infrastructure to do so, has created an inter-twined network of crisis. The situation was such that, if any of the crisis points were left unaddressed, then the whole situation started worsening again. Under such circumstances, this study is carried out to design a mechanism and prepare a list of ***recommendations*** for the urban local bodies as a part of their strategies for future.

This study was carried out for the state of Assam, which is an important north-eastern state of India. The state shares its boundary with Arunachal Pradesh, Nagaland, Manipur, Mizoram, Meghalaya, Tripura, and West Bengal. The state shares international borders with Bangladesh, Myanmar, and the Kingdom of Bhutan. Assam is India's gateway to northeast and acts as a vital link for trade with Southeast Asian countries. The state is regarded as one of the seven sisters of the north-east and is well judged as the largest economy among the sisters. The figure below represents the gross state domestic products of the Indian states for the year 2018-19. The data was obtained from Ministry of Statistics and Programme Implementation on March 2021 (<https://statisticstimes.com>). If the north-eastern part of the country is considered, Assam lies in pink and rest of the states in maroon, and that observation indicates volume of Assam's economy as compared to the other sister-states.

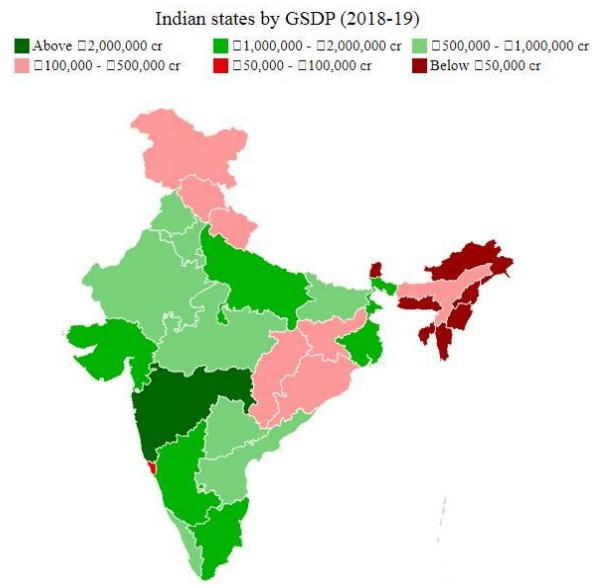


Figure 1: Indian states by GSDP for the year 2018-19.

Source: <https://statisticstimes.com/economy/india/indian-states-gdp.php>

Assam was miserably struck by the corona virus where around 5.87 lakhs of people were affected amidst which were 5.6 thousand were deceased. Two waves of the pandemic hit Assam, where the curve of the second one has still not got flattened and the third one is on the move. The news of breakdown of the public health machinery and the economy were all over the media. The social lives went at a stake; small traders went out of funds, unemployment increased and daily bread-earners were left with nothing to sustain their lives with. Faced with the crisis, many social, economic and public health policies were hurriedly taken to somehow manage the situation, only in the hope of recovering it later on. Another area where the normalcy is still put out of question is education. The schools and colleges are still shut, and with the new threat of Omicron virus, the resuming this sector is beyond consideration.

Assam or Assom being the gateway to the north-east, the overall clogged condition of the state may seriously hamper the economic and social development of the country. As the time has come to make up for the loss due to pandemic, putting effort for rejuvenation of this state becomes important. The all-important trade corridor, the Bharat Mala passes through the Barak Valley of this state. Understanding and admiring the importance of the state, last year (2021) in February, Prime Minister of India launched the 'Asom Mala' programme in Dhekiajuli of Sonitpur district with the intention to enhance the state's road infrastructure, boost economic progress and improve connectivity.

In October 2020, the Union Minister for Road Transport, Highways and MSMEs, laid foundation stones for the India's first multimodal logistic park in Assam; a project worth US\$ 93.87 million that would provide direct air, road, rail and waterway connectivity to citizens and will be established under the government's 'Bharatmala Pariyojana' initiative. Moreover, in order to improve reliability, capacity and security of the power transmission network in the northeastern state and to strengthen electricity transmission for all

associated infrastructure, India and the Asian Infrastructure Investment Bank (AIIB) signed a US\$ 304 million loan agreement for the Assam Intra-State Transmission System Enhancement Project. Furthermore, many infrastructural and social development projects have already taken up and many are left in the queue.

Under those circumstances, it is of utmost importance to bring back the normalcy and make government operations easy. Serious rejuvenation policies are being anticipated from the policy makers in the post-pandemic era. A holistic analysis of the whole situation may be required to be adopted to overcome the crisis.

1.2. Data and Methodology

For the purpose of the study, two types of data were collected – secondary and primary. The secondary data from the respective government departments were collected in the following areas –

- (i) Health,
- (ii) Water, sanitation and hygiene, and
- (iii) Municipal finance.

Such data was collected across time covering the pre-pandemic and pandemic condition such that the data will allow for understanding the gravity of the pandemic and also for identifying the emphasize areas. In a way, the study will be able to understand the necessary shift required in the public spending/expenditure to overcome such situations.

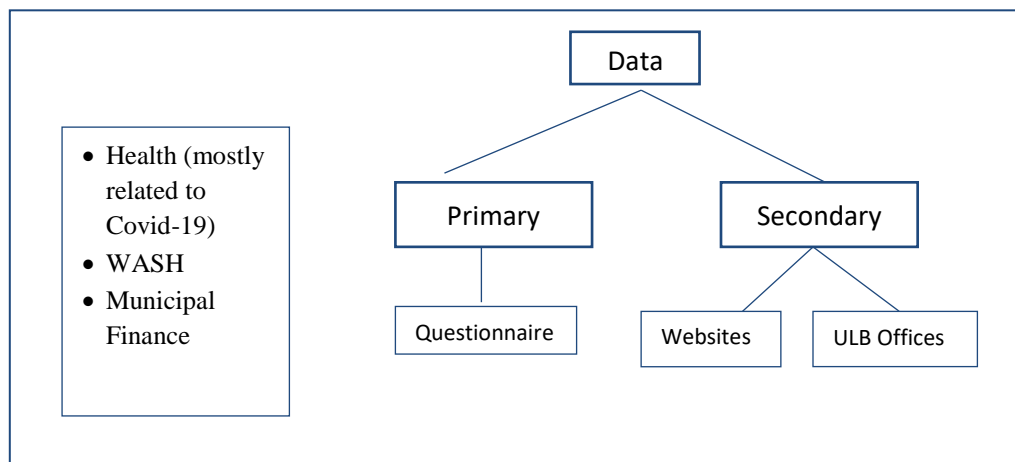


Figure 2: Sources of Data Collection and broader set of parameters.

The primary data was collected with the help of questionnaire interview. The respondents, carefully selected through Multistage Sampling technique, with the target carry out the understanding and analysis of the following factors – (i) the problem faced (ii) the perception, (iii) mitigation and, (iv) suggestions. The questionnaire had quantitative as well as qualitative questions to do the same.

The qualitative data was obtained in the binary and Likert scale format. In support of the data, photographs and voice interviews were also collected which can be found in the report later.

1.3. Geographical coverage

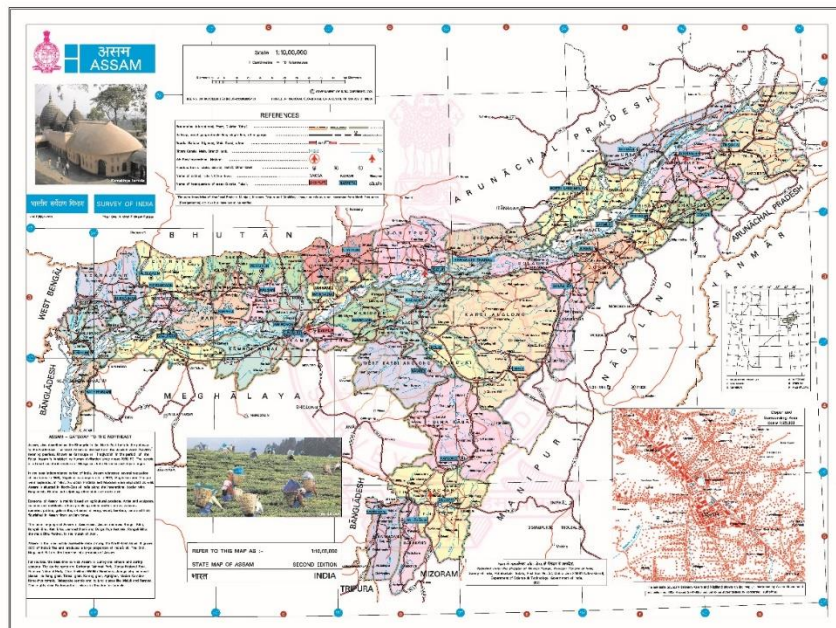


Figure 3: Map of Assam

Source: Assam District Map PDF (2021) <https://www.importantpdfdownload.in/assam-district-map-pdf/>

The Districts of Assam are further placed under five Regional Divisions. The list of Divisions is as given below:

Table 1: Geographical Divisions of Assam and the corresponding districts.

| Division Name | Divisional Office | Districts |
|---------------|-------------------|---|
| Barak Valley | Silchar | Cachar, Hailakandi , and Karimganj |
| Central Assam | Nagaon | Dima Hasao, Hojai, East KarbiAnglong, West KarbiAnglong, Morigaon, and Nagaon |
| Lower Assam | Guwahati | Baksa, Barpeta, Bongaigaon, Chirang, Dhubri, Goalpara, Nalbari, Kamrup Metropolitan , Kamrup Rural, Kokrajhar, and South Salmara-Mankachar |
| North Assam | Tezpur | Biswanath, Darrang, Sonitpur, and Udalguri |
| Upper Assam | Jorhat | Charaideo, Dhemaji, Dibrugarh, Golaghat, Jorhat, Lakhimpur, MajuliSivasagar, and Tinsukia |

According to the directorate of economics and statistics, Assam has 33 districts with 88 statutory towns and 126 census towns, and around twenty-six thousand villages. Due to the limitations of the time, the study could not cover all the districts and therefore a sampling was done covering **three** districts of Assam.

All the three districts were considered through appropriate sampling techniques. However, the sampling was done with the help of the final population tables of the Census of India, 2011. The sampling covered the various population and population density of the state. From each of the districts¹ proportionate number of sampling units was considered in the sampling. The district-wise population table of Assam is shown below along with the proposed districts for survey.

Table 2: District-wise population of the state of Assam along with the proposed districts for survey

| Name of the districts | No. of Households | Total Population | Male Population | Female Population |
|-----------------------------|-------------------|------------------|-----------------|-------------------|
| Nagaon* | 559340 | 2823768 | 1439112 | 1384656 |
| Dhubri | 414674 | 1949258 | 997848 | 951410 |
| Sonitpur | 392919 | 1924110 | 983904 | 940206 |
| Cachar | 379955 | 1736617 | 886284 | 850333 |
| Barpeta | 337929 | 1693622 | 867004 | 826618 |
| Kamrup | 311114 | 1517542 | 778461 | 739081 |
| Tinsukia | 268598 | 1327929 | 680231 | 647698 |
| Dibrugarh | 276867 | 1326335 | 676434 | 649901 |
| Kamrup Metropolitan* | 293112 | 1253938 | 647585 | 606353 |
| Karimganj | 247714 | 1228686 | 625864 | 602822 |
| Sivasagar | 248367 | 1151050 | 589216 | 561834 |
| Jorhat | 236262 | 1092256 | 556805 | 535451 |
| Golaghat | 227197 | 1066888 | 543161 | 523727 |
| Lakhimpur | 204307 | 1042137 | 529674 | 512463 |
| Goalpara | 198454 | 1008183 | 513292 | 494891 |
| Morigaon | 184602 | 957423 | 486651 | 470772 |
| KarbiAnglong | 177646 | 956313 | 490167 | 466146 |
| Baksa | 191701 | 950075 | 481330 | 468745 |
| Darrang | 187783 | 928500 | 475273 | 453227 |
| Kokrajhar | 181081 | 887142 | 452905 | 434237 |
| Udalguri | 168717 | 831668 | 421617 | 410051 |
| Nalbari | 155248 | 771639 | 396006 | 375633 |
| Bongaigaon | 150018 | 738804 | 375818 | 362986 |
| Dhemaji | 129869 | 686133 | 351249 | 334884 |
| Hailakandi* | 143350 | 659296 | 337890 | 321406 |
| Chirang | 97395 | 482162 | 244860 | 237302 |
| Dima Hasao | 42252 | 214102 | 110802 | 103300 |

* **selected districts for primary survey**

Source: Primary Census Abstract Total Table for Assam, Census 2011, Office of the Registrar General and Census Commissioner, Ministry of Home Affairs, Government of India.

¹The Census, 2011 documented the population for 27 districts in Assam, available in the Final Population tables of the Primary Census Abstract. See <https://censusindia.gov.in/DigitalLibrary/MFTableSeries.aspx>.

1.4. The Sample

The three proposed districts are in the order – Nagaon, Kamrup Metropolitan and Hailakandi. The list of the proposed areas along with the ULBs to be covered in sampling is as follows –

| <i>Proposed District</i> | <i>Urban Local Body</i> |
|---------------------------------|--------------------------------|
| Nagaon | Nagaon Municipal Board |
| Kamrup Metropolitan | Guwahati Municipal Corporation |
| Hailakandi | Hailakandi Municipal Board |

The selected districts are shown in the map below to identify the exact location.

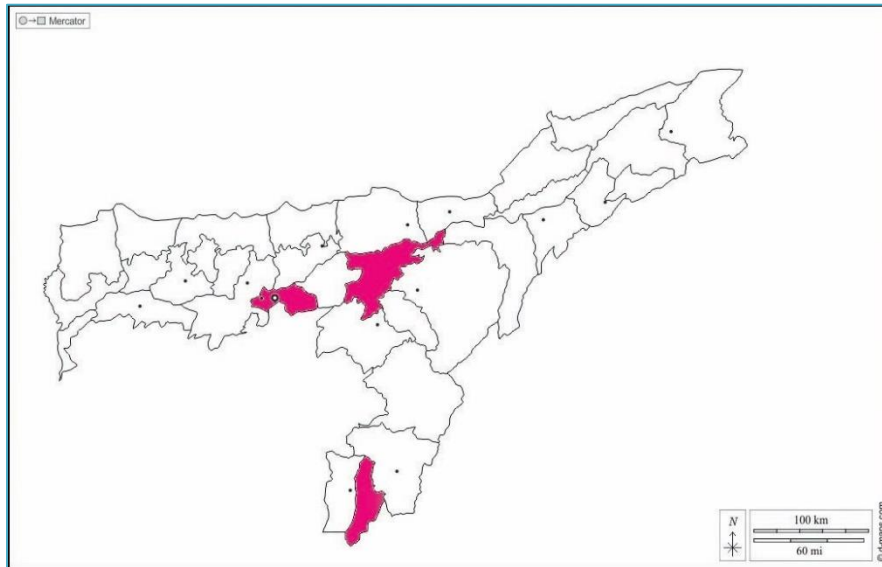


Figure 4: Districts selected for sampling

2. Learnings in Health Sector

2.1. Effect of COVID-19 in Assam

In Assam, as of January 5, 2022, number of confirmed cases has gone up to 580657, where the number of deceased cases was recorded to be 5502². The first wave of the virus hit Assam during last week of June to first week of November, 2020, and then the second wave hit miserably in the first week of April, 2021 and the trail lasted up to the second week of October of the same year. Now, another wave of the virus has already struck which is still on the move. Maximum cases were recorded from Kamrup Metropolitan Area (20663), Nagaon recorded 3895 cases and Hailakandi 1387 cases. A timeline graph of the occurrence of daily new cases for the state of Assam is obtained is shown below. The graph shows three waves of pandemic has already hit the state between June, 2020 and February 8, 2022 (<https://www.google.com/>)

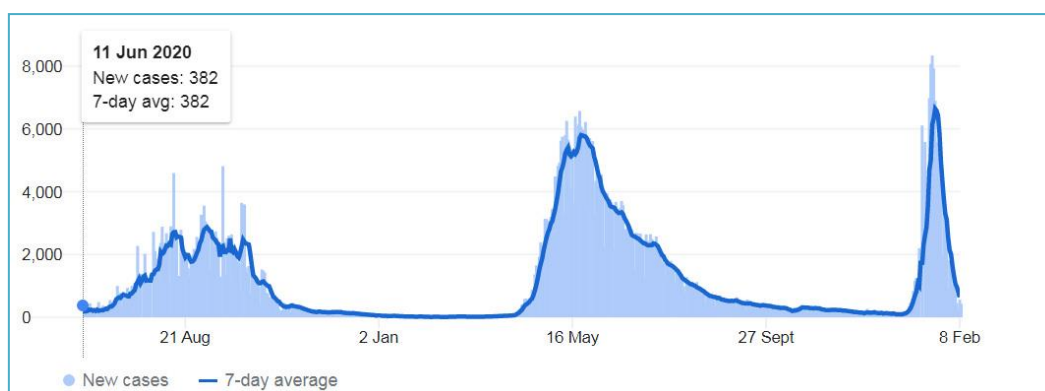


Figure 5: Day-wise COVID-19 cases in Assam.

Source: <https://www.google.com/search>

From here, there are two ways of understanding the scenario –

- i) Through the lens of the secondary data published by the respective authorities; or,
- ii) With the help of a field survey (one-one interview) to understand and realize what has happened from the version of the people who actually faced it.

The secondary data from the government websites have been referred throughout this report; however, for this section we are more interested in the observations from the field.

² Assam Covid-19 Dashboard (as on 05/01/2022, 06:57 pm), maintained by Government of Assam. Retrieved from covid19.assam.gov.in

2.2. People’s Choice of Health Care Institutions

In order to understand the field level reality, a primary survey was conducted with the help of a questionnaire on the selected districts. It was found that a total number of 119 people (out of 300 respondents; i.e., 39.67 %) were affected by COVID-19 in the recent past. This data completely out matches the published data on COVID-19.

Table 3: The Health institutions where the respondents went for the Treatment for COVID-19.

| Sl. No. | Health Care Institutions | Number of People | Percentage |
|---------|--------------------------|------------------|------------|
| 1. | Safe Home | 47 | 39.5 |
| 2. | Hosp. Govt. | 39 | 32.8 |
| 3. | Home | 11 | 9.2 |
| 4. | Hosp. Pvt. | 8 | 6.7 |
| 5. | Nursing Home | 4 | 3.4 |
| 6. | Other | 6 | 5.0 |

Source: Primary Survey

The most preferred places for treatment of COVID-19 were observed to be the safe homes and the government hospitals. The least preferred place was the nursing homes. The safe homes were specially designed with all the medical facilities such as the oxygen, medicines, nutritious food, etc., which made it a more reliable choice. Secondly, the government hospitals are affordable and trustworthy for people, and more importantly well-equipped with all the necessary facilities. These choices also have an underlying finding – that is, the state government of Assam had been quite serious and produced much effort to reach the health facilities out to the common people in harsh times. A summary of the choices is represented with the help of a pie-chart below.

The light orange and light blue colours representing the safe homes and government hospitals covers the most sections of the chart. Around 75 % is covered by the two. The rest of the 25 % is occupied by all other medical institutions, including nursing homes, private hospitals etc. Another aspect that is visible is that a significant number (10 %) of COVID affected stayed back at home for treatment.

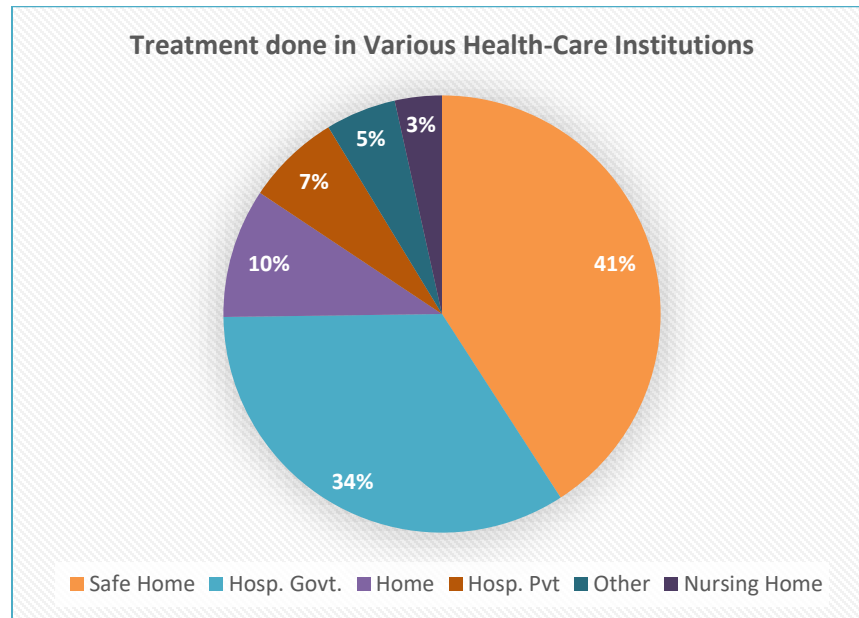


Figure 6: People’s choices of health institutions for the treatment of COVID-19.

2.3. People’s Perception about the Health Care Service: Special Emphasis to Pandemic Situation

The responses of the people (respondents) on healthcare system may be observed as their perception about the health care services. The data collected from 300 respondents across two types of health care institutions, viz., the hospitals and the medical centers, safe homes, etc. The responses were collected on twenty (20) parameters for each of the institutions, making the total count of forty (40) parameters. These represented in the following sections.

2.3.1. Health Care Institution: Hospital

The respondents were asked to mark from ‘excellent’ to ‘poor’ services on the various parameters/ activities and services related to a hospital where they went for treatment. The parameters are shown in the left-hand side column and the responses are shown as response count (in numbers).

Table 4: Responses of the people on twenty (20) hospital parameters.

| <i>Hospital parameters</i> | <i>Response count</i> | | | | |
|--|-----------------------|------------------|-------------|----------------------------------|-------------|
| | <i>excellent</i> | <i>very good</i> | <i>good</i> | <i>Satisfactory but not good</i> | <i>poor</i> |
| Hospital Administration | 47 | 96 | 66 | 19 | 3 |
| Hospital Doctor's behaviour | 73 | 98 | 53 | 7 | 0 |
| Hospital Doctor's medical expertise | 67 | 105 | 47 | 11 | 1 |
| Hospital Nurse's behaviour | 55 | 102 | 61 | 11 | 1 |
| Hospital Nurse's medical expertise | 51 | 104 | 59 | 14 | 2 |
| Hospital care-givers behaviour | 43 | 99 | 76 | 12 | 0 |
| Hospital care-giver's medical expertise | 41 | 96 | 77 | 15 | 1 |
| Hospital infrastructure | 54 | 107 | 57 | 10 | 2 |
| Hospital cleanliness and hygiene | 23 | 98 | 75 | 31 | 3 |
| Hospital bathroom/ toilets | 20 | 83 | 80 | 36 | 12 |
| Hospital drinking water | 45 | 76 | 73 | 27 | 9 |
| Hospital food | 23 | 72 | 93 | 30 | 9 |
| Hospital floor cleanliness | 25 | 91 | 78 | 30 | 6 |
| Hospital bed cleanliness/ bed hygiene | 26 | 82 | 81 | 34 | 8 |
| Hospital overall environment | 41 | 104 | 64 | 18 | 4 |
| Hospital medication bills | 78 | 106 | 36 | 7 | 4 |
| Hospital others bills | 82 | 104 | 34 | 6 | 5 |
| Hospital treatment cost | 75 | 111 | 32 | 8 | 5 |
| Hospital waiting time | 37 | 97 | 67 | 27 | 3 |
| Hospital management | 44 | 104 | 62 | 18 | 3 |

Source: Primary Survey

A graphical representation of the above findings is shown with the help of the grouped bar diagram below. Since 32.8 percent people has undergone their treatment in government hospitals, the responses signifies mostly the parameters of those hospitals. Again, the perceptions to some extent, vary by word of mouth, since the experiences are often narrated and gets disseminated from one people to another.

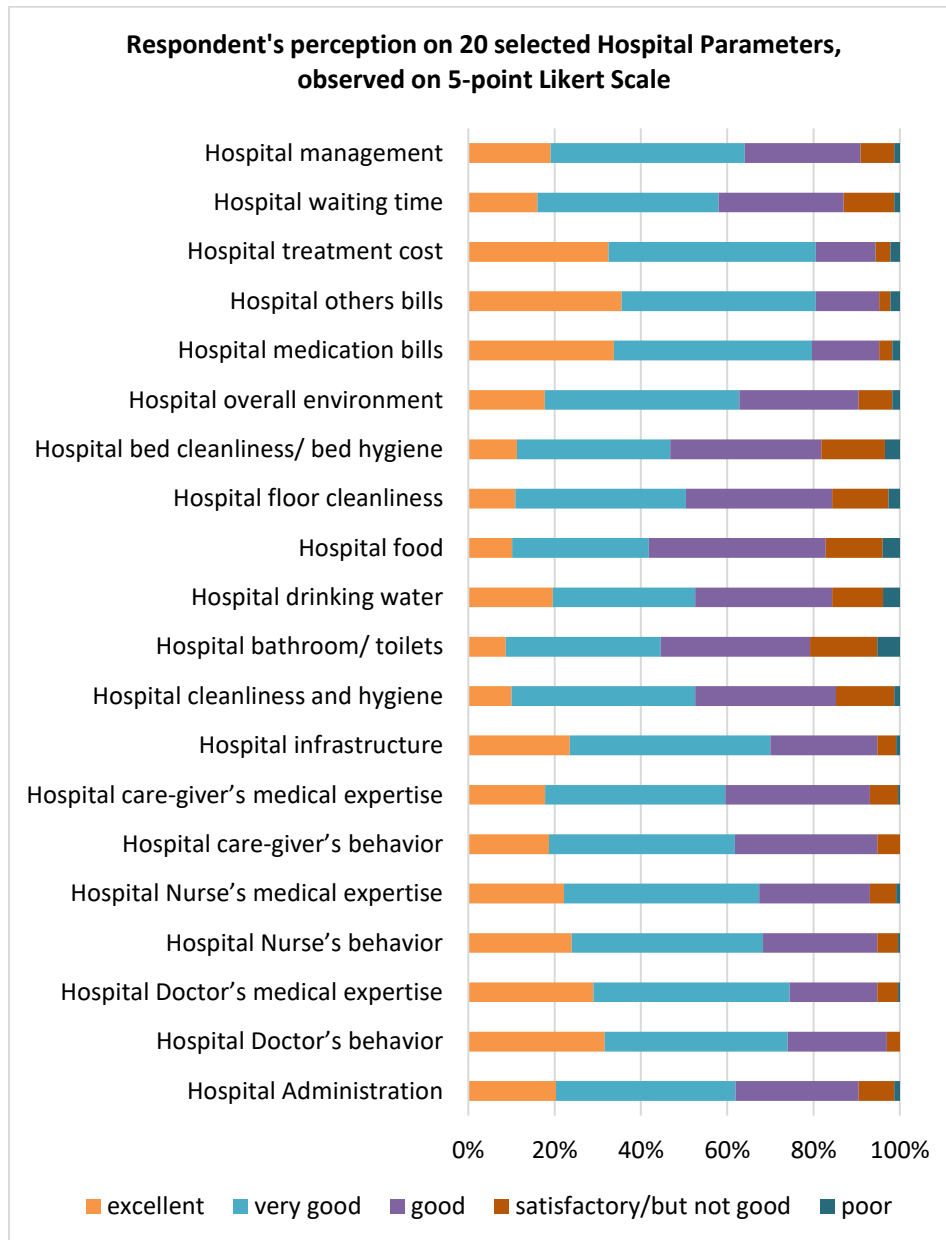


Figure 7: Respondent's perception on 20 selected Hospital Parameters, observed on 5-point Likert Scale.

Through an extensive secondary data survey and primary ground survey, it has been observed that the local people are happy with the health services, provided by the state government. For treatment, generally people prefer to go to safe homes or government hospitals and do not prefer much going to

nursing home. This reveals that the state government is very serious about the health facilities for the people during the difficult time.

By the responses of the local people about the health care services especially during the Pandemic situation is very much satisfactory. In all the parameters such as behavior of the hospital staffs, management, cleanliness and hygiene, quality of food and water, hospital environment and the hospital bill, people have shown their level of satisfaction with the services provided by the government hospitals. In the following chart it is clearly stating that more than 60% people are happy with the health care service by the safe home or government hospitals.

2.3.2. Health Care Institution: Medical Center/ Primary Health Center/ Nursing Home/etc.

The respondents were asked to mark from 'excellent' to 'poor' service on the various parameters/ activities and services related to a hospital where they went for treatment. The number of responses (response count) were then counted against each of those parameters as shown in the table below.

Table 5: Responses of the people on twenty (20) parameters of Health Institutions other than Hospitals.

| Parameters | Response count | | | | |
|--|------------------|------------------|-------------|----------------------------------|-------------|
| | <i>excellent</i> | <i>very good</i> | <i>good</i> | <i>Satisfactory but not good</i> | <i>poor</i> |
| Medical Center/ Primary Health center/ Nursing Home/etc. Administration | 75 | 70 | 37 | 7 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Doctor's behavior | 86 | 67 | 30 | 4 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Doctor's medical expertise | 83 | 64 | 35 | 5 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Nurse's behavior | 75 | 74 | 32 | 4 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Nurses's medical expertise | 75 | 72 | 34 | 4 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. care-giver's behavior | 67 | 83 | 30 | 5 | 3 |

| | | | | | |
|---|----|----|----|----|----|
| Medical Center/ Primary Health center/ Nursing Home/etc. care-giver's medical expertise | 66 | 82 | 32 | 5 | 3 |
| Medical Center/ Primary Health center/ Nursing Home/etc. infrastructure | 98 | 72 | 17 | 0 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. cleanliness and hygiene | 98 | 71 | 16 | 3 | 1 |
| Medical Center/ Primary Health center/ Nursing Home/etc. bathroom/ toilets | 96 | 72 | 17 | 4 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. drinking water | 96 | 65 | 19 | 9 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. food | 89 | 65 | 20 | 12 | 1 |
| Medical Center/ Primary Health center/ Nursing Home/etc. floor cleanliness | 83 | 77 | 23 | 5 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. bed cleanliness/ bed hygiene | 82 | 74 | 25 | 6 | 1 |
| Medical Center/ Primary Health center/ Nursing Home/etc. overall environment | 75 | 78 | 29 | 3 | 2 |
| Medical Center/ Primary Health center/ Nursing Home/etc. medication bills | 11 | 24 | 61 | 56 | 36 |
| Medical Center/ Primary Health center/ Nursing Home/etc. others bills | 8 | 24 | 63 | 56 | 37 |
| Medical Center/ Primary Health center/ Nursing Home/etc. treatment cost | 9 | 22 | 63 | 55 | 38 |
| Medical Center/ Primary Health center/ Nursing Home/etc. waiting time | 50 | 83 | 32 | 20 | 3 |
| Medical Center/ Primary Health center/ Nursing Home/etc. management | 56 | 80 | 38 | 11 | 3 |

A graphical representation of the above findings is shown with the help of the grouped bar diagram is given below.

People have also expressed their level of satisfactions for the services provided by the nursing home, primary health center and other medical centers apart from safe home or government hospitals. During the survey nearly 20 parameters were considered to understand people's perspective. The quality of services they have provided, their behavior towards the people, infrastructure, food and water facilities, the bills, in every aspect people are found to be satisfied. From the below charts it can be found that almost 60% to 70% people have expressed their level of satisfaction with excellent and very good. Overall the study and assessment says that the local people are very much satisfied with the health care services provided by the government.

The two major short-comings of the system are –

- The cleanliness, hygiene, water and food were not up to the mark for the hospitals, and that was found from the responses of the beneficiaries; and
- The bills were not satisfactory for the medical centers, nursing homes and other private institutions as reported by the respective beneficiaries.

The same findings are found in the figure below. The treatment costs and medical bills shown in the figure below were marked unsatisfactorily by those who went for treatment. Generally, the private institutions charge a higher price for their services. However, in case of shocks the subsidies can reduce the cost to a great extent. During the pandemic, when the entire economy was undergoing difficult and unmanageable times such policies of subsidizing could not be taken in time. Moreover, the health departments were more concerned with growing the bed numbers and facilities at the government hospitals and safe homes.

Looking into the first point, the cleanliness parameter was crucial and pertains to the norms to fight against Corona virus. Hence, that hygiene and cleanliness should have been taken care of by the respective authorities. Along with that the drinking water available to the patients was also marked poorly or unsatisfactorily by the respective beneficiaries. Under any circumstance, the Indian Medical Association and the international organizations like World Health Organization emphasizes on availability of safe drinking water and food, and hygiene at all medical facilities. Therefore, it may be suggested here that proper monitoring of the same is done. The management authorities and officials of the health departments may perform sudden invigilation to keep track of those indicators that ensures overall public health and safety. Here, the municipal bodies too can play their part by sending officials to the sites to investigate and send ground level reports to the respective departments.

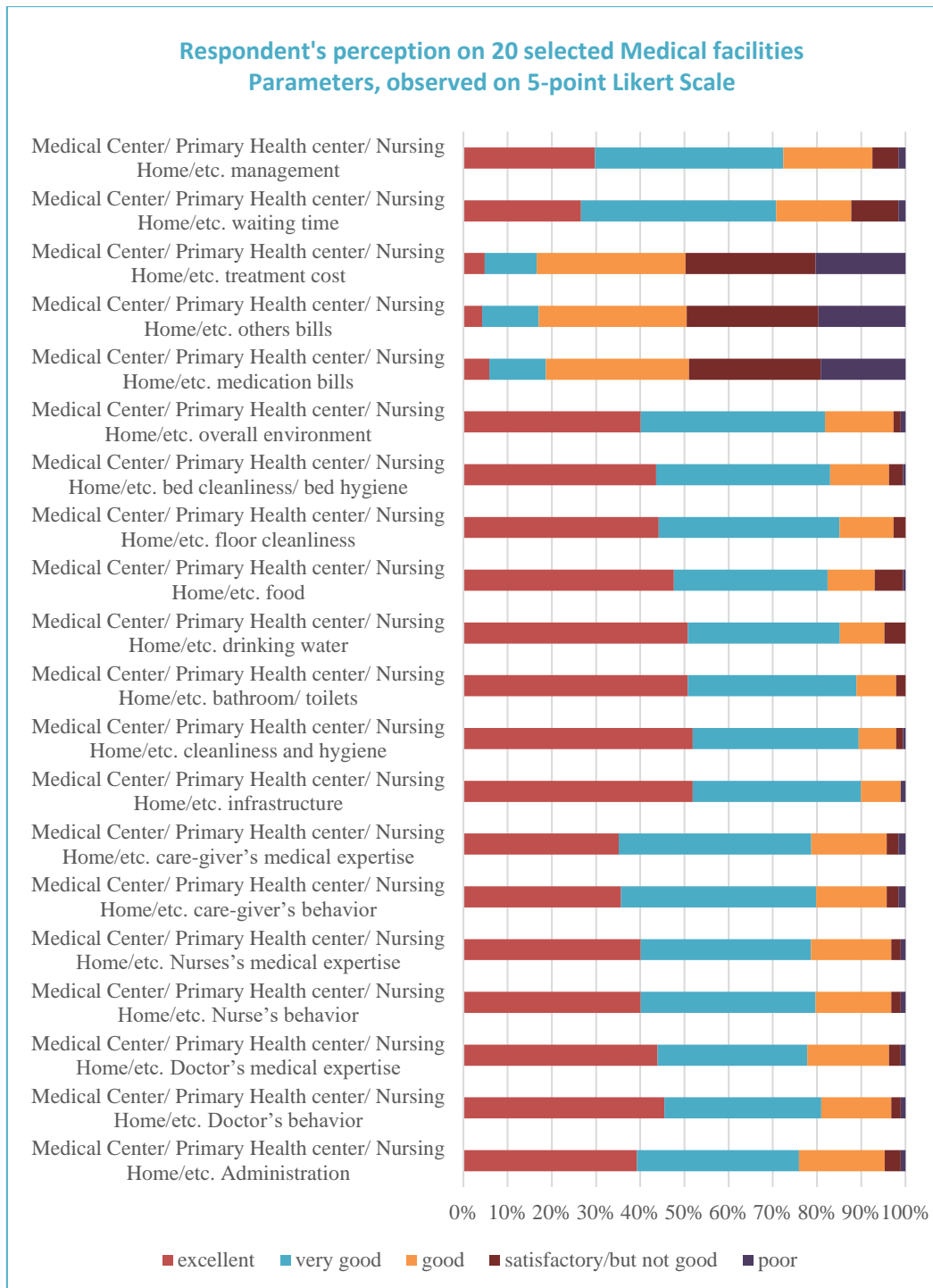


Figure 8: Respondent's perception on 20 selected Medical facilities Parameters, observed on 5-point Likert Scale.

3. Water, Sanitation and Hygiene

3.1. Importance of Water, Sanitation and Hygiene

Water, sanitation and hygiene are closely related to the health facilities, as one complements the other. According to World Health Organization (WHO), adequate water, sanitation and hygiene are essential components of providing basic health services to all. Components such as cleanliness, hand-washing with soap, cleaning and washing using disinfectants, using hygienic bathrooms, latrines, etc.; all these ensures the prevention of infections and spread of diseases. Moreover, the waste management and disposal techniques too are considered as vital to healthy life. Such services require adequate level of resource settings otherwise, the population, the service providing staffs and as well as the service seekers become more vulnerable to high risks.

In the words of Rochelle Rainey, *Environmental Health Adviser*, and Merri Weinger, *Environmental Health Team Leader, United States Agency for International Development (USAID)*, *“The lack of safe water, functional toilets, and hand washing facilities in healthcare settings poses significant health risks to patients, healthcare workers and nearby communities. The ongoing global problem of health facility-acquired infections (HAI) has highlighted the consequences of the lack of water and sanitation facilities and practice of key hygiene behaviours.”* UNICEF have broadly stated – *“Growing up in a clean and safe environment is every child’s right. Access to clean water, basic toilets, and good hygiene practices not only keeps children thriving, but also gives them a healthier start in life.”*³

UNICEF data (2020) reveals that in India, people having access to improved sanitation is less than 50 percent, while in case of urban areas the same is less than 40 percent at the national level. Moreover, open defecation has always been a major problem in India: the data shows that in 2020, more than 25 percent of people in the urban areas practiced the same.

This report covers the various parameters of water, sanitation and hygiene: the respondents were asked whether they followed a specific hygienic norm. Their responses were then documented and analyzed to understand the actual situation of the people. This chapter has the following sections – (i) source of water for drinking and efforts to purify it, and (ii) Use of hygienic norms sanitation by people.

3.2. Source of Drinking Water and Usage Pattern

In this section, a study is carried out to understand the source of drinking water being used by the people and the efforts they make to purify it before drinking. All the 300 samples were considered for the study, which involves data from all the three districts. The table below shows the source and usage pattern of those households.

³<https://www.unicef.org/wash>

Table 6: Source of Drinking water and type of filtration process involved.

| | Piped Connection within premises | % | No piped present within premises/ other sources used | % |
|---------------------------------------|----------------------------------|------|--|------|
| Use Purifier | 60 | 48.0 | 54 | 30.9 |
| Boil water | 6 | 4.8 | 13 | 7.4 |
| Purchase from market | 3 | 2.4 | 6 | 3.4 |
| Purifier + Boil water | 29 | 23.2 | 52 | 29.7 |
| Purifier + Market | 7 | 5.6 | 14 | 8.0 |
| Boil water + Market | 1 | 0.8 | 5 | 2.9 |
| Purifier + Boil water + Market | 10 | 8.0 | 15 | 8.6 |
| Direct use | 9 | 7.2 | 16 | 9.1 |
| Total | 125 | 100 | 175 | 100 |

Source Primary Survey

During the course of this research, three major sources of water was found to be reported by the respondents – (1) water received from the piped connection within the premises, (2) water fetched from outside, and (3) purchased from the market for drinking. Here, there are two non-overlapping cases viz., either the households receive piped-water connection or they don't, and in both the cases certain segment of people made efforts to buy water from the market for drinking. Moreover, in both the cases some have reported to filter the water before drinking. The filtration process majorly involves the use of purifier or boiling.

For better understanding, Venn-diagram is used to represent the data. Firstly, the case of piped-water beneficiaries is shown.

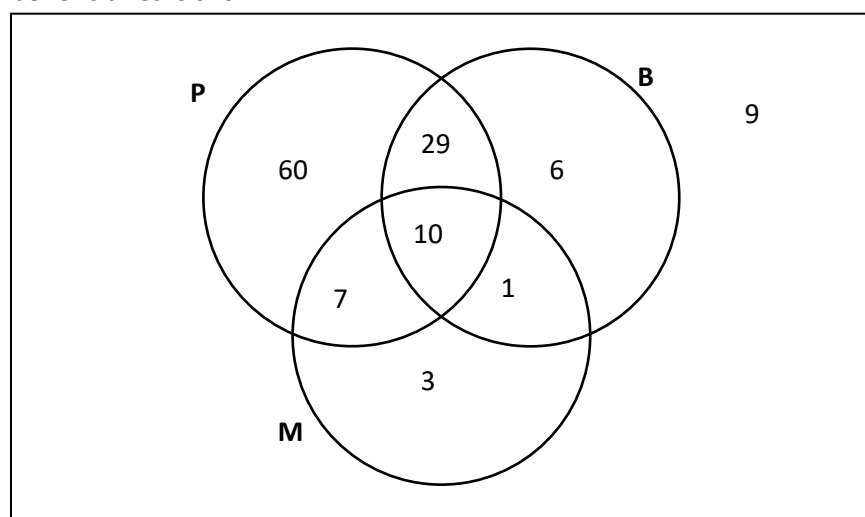


Figure 9: Beneficiaries of Piped-Water supply Connection receiving within Premises.

3.2.1. Beneficiaries of Piped-Water Connection within Premises

$P = \{\text{Using Purifier}\} = \{106\}$
 $B = \{\text{Boil Water}\} = \{46\}$
 $M = \{\text{Purchase Water from Market}\} = \{21\}$
 $P \cup B \cup M = \{116\}$
 $P \cap B = \{39\}$
 $B \cap M = \{11\}$
 $P \cap M = \{17\}$
 $P \cap B - M = \{29\}$
 $B \cap M - P = \{1\}$
 $P \cap M - B = \{7\}$
 $[P \cup B \cup M]' = \{9\}$

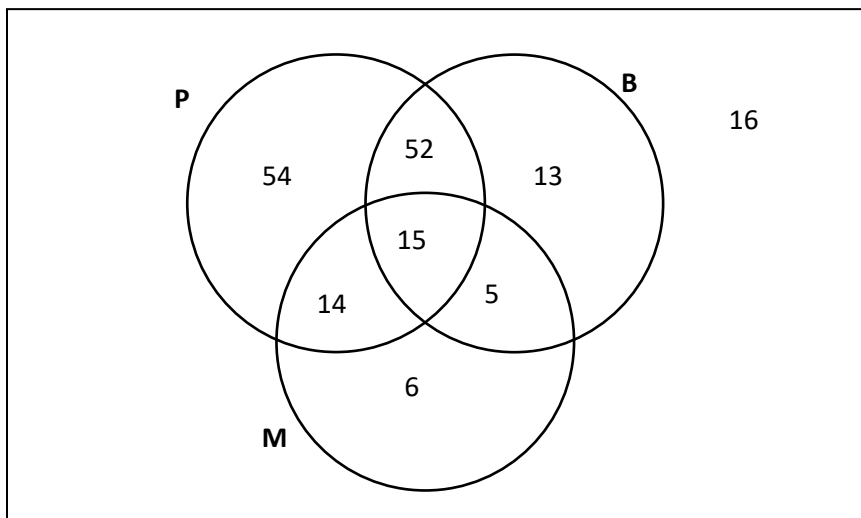


Figure 10: Non-Beneficiaries of Piped-Water supply Connection receiving within Premises.

3.2.2. Non-Beneficiaries of Piped-Water Connection

$P = \{\text{Using Purifier}\} = \{135\}$
 $B = \{\text{Boil Water}\} = \{85\}$
 $M = \{\text{Purchase Water from Market}\} = \{40\}$
 $P \cup B \cup M = \{159\}$
 $P \cap B = \{67\}$
 $B \cap M = \{20\}$
 $P \cap M = \{29\}$
 $P \cap B - M = \{52\}$
 $B \cap M - P = \{5\}$
 $P \cap M - B = \{14\}$
 $[P \cup B \cup M]' = \{16\}$

3.3. Hygienic Sanitation Practices

Survey reveals that households have good sanitation facilities with 96% having bathrooms and 99% having latrines. Among these approximately 96% of the bathrooms and latrines are enclosed and have a roof above.

74% of the bathrooms and 70% of the latrines have piped water connection. As per survey results, almost 100% household latrines are connected to septic tanks while 33% have piped sewer connection. 48% operate on the pour flush system. 68% of the households have drains for grey water outlet of which only 61% are covered. 22% of the households face problems in water-logging and it becomes worse with 8% disposing plastic bags into those open drains.

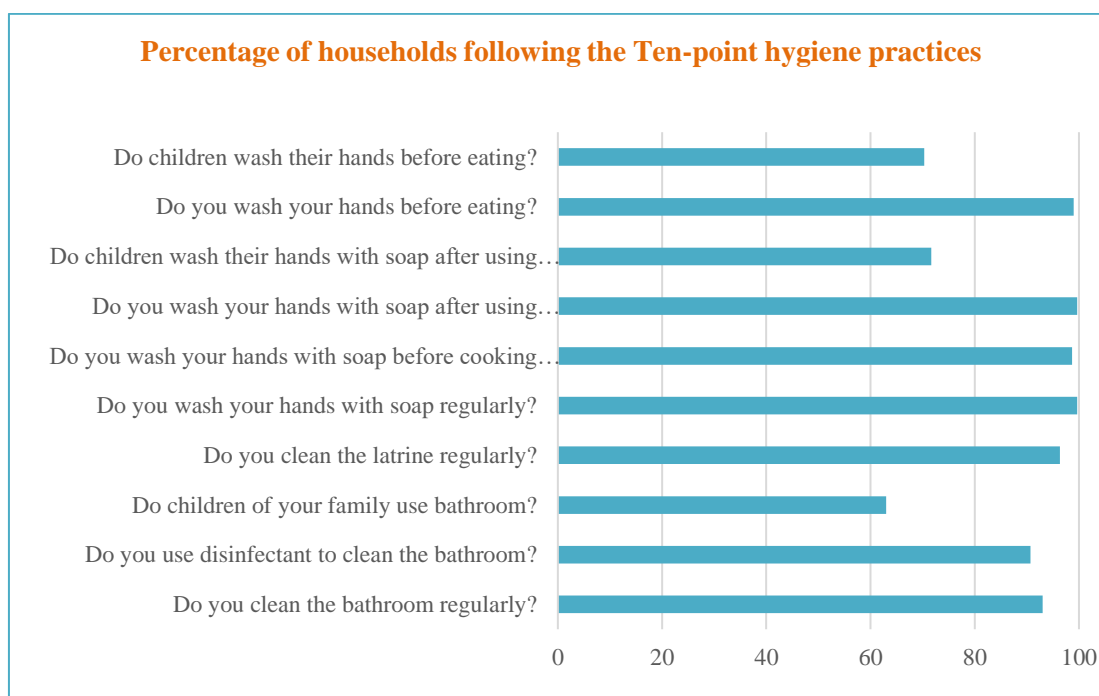


Figure 11: Percentage of households following the Ten-point hygiene practices.

The surveyed area has good hygiene practice as revealed from the following figure 11. However, as is evident from the figure, children in larger numbers need to adopt such practices so as to increase the percentages from 60-70 % to near about 100%.

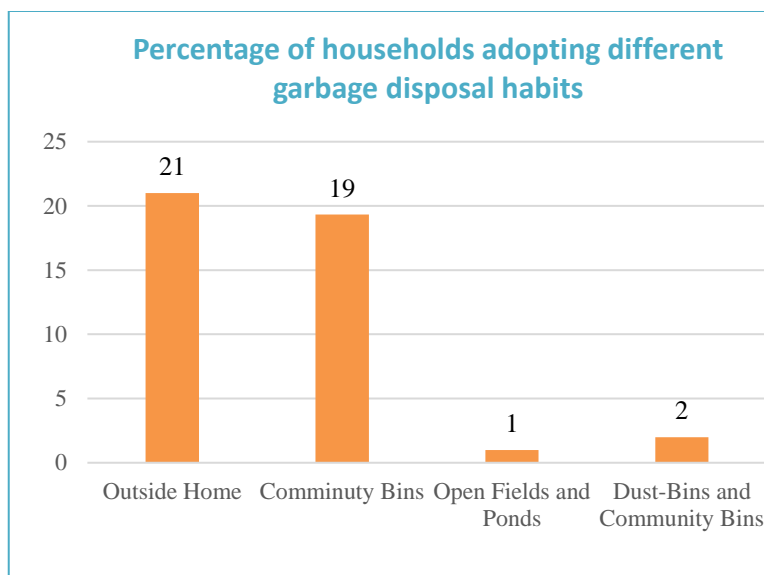


Figure 12: Percentage of households adopting different garbage disposal habits.

Source: Authors Estimates from Household Survey data.

Regarding solid waste disposal only about 65% have the facility of a door-to- door garbage collection. While 87% are aware of proper disposal techniques, only around 27% have come across any awareness/knowledge dissemination program. Households resort to various methods of waste disposal. Figure 12 gives the detailed figures.

During the field interviews with the respondents, few questions were asked about the hygienic practices from which the above analysis was done. Now, let us have a look at some of those questions and how many have turned ‘yes’ to those. It must be kept in mind that 100 samples from each of districts were picked, and hence, number represents the percentage responses of the sample as well.

Table 7: District-wise Response on Water, Sanitation and Hygiene parameters.

| Sl. No. | Water, Sanitation and Hygiene parameters | Kamrup metropolitan | Hailakandi | Nagaon |
|---------|---|---------------------|------------|--------|
| | | Yes | Yes | Yes |
| 1 | Do you have piped water supply at home? | 43 | 59 | 23 |
| 2 | Do you fetch water from outside? | 6 | 25 | 10 |
| 3 | Do you use water purifier at home? | 85 | 79 | 77 |
| 4 | Do you boil water before giving it to children? | 53 | 33 | 44 |
| 5 | Do you purchase water from the market for drinking? | 36 | 9 | 16 |
| 6 | Do you have bathroom at home? | 99 | 91 | 98 |
| 7 | Does the bathroom have enclose and roof? | 97 | 89 | 91 |
| 8 | Does your bathroom have water connection? | 78 | 65 | 70 |
| 9 | Does the children of your family use bathroom? | 77 | 59 | 53 |
| 10 | Do you clean the bathroom regularly? | 91 | 91 | 97 |

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| | | | | |
|-----------|---|----|-----|-----|
| 11 | Do you use disinfectant to clean the bathroom? | 85 | 91 | 96 |
| 12 | Do you have latrine at home? | 98 | 99 | 100 |
| 13 | Does the latrine have enclose and roof? | 96 | 99 | 91 |
| 14 | Does your latrine have water connection? | 75 | 66 | 66 |
| 15 | Does your latrine have flush pour system? | 57 | 48 | 39 |
| 16 | Does the children of your family use latrine? | 80 | 68 | 53 |
| 17 | Do you clean the latrine regularly? | 90 | 100 | 99 |
| 18 | Do you use disinfectant to clean the latrine? | 91 | 99 | 96 |
| 19 | Do you wash your hands with soap regularly? | 99 | 100 | 100 |
| 20 | Do you wash your hands with soap before cooking food? | 98 | 100 | 98 |
| 21 | Do you wash your hands with soap after using toilet and latrine? | 99 | 100 | 100 |
| 22 | Does the children wash their hands with soap after using toilet and latrine? | 87 | 72 | 56 |
| 23 | Does the children wash their hands before eating? | 86 | 70 | 55 |
| 24 | Do you use plastic bags at home? | 84 | 47 | 83 |
| 25 | Does your household have drain-outlet? | 76 | 49 | 78 |
| 26 | Is that drain covered? | 42 | 26 | 55 |
| 27 | Do you face water logging problems? | 26 | 20 | 20 |
| 28 | During water logging, does the dirty water come into your house? | 5 | 2 | 9 |
| 29 | Is there any waste collection system at your door-step? | 77 | 35 | 83 |
| 30 | Is there any awareness / knowledge dissemination program shown to you regarding waste disposal? | 21 | 35 | 24 |
| 31 | Are you aware of proper waste disposal technique? | 93 | 67 | 100 |

4. Urban Governance and Municipal Finance

4.1. Pattern of Municipal Finance

Municipal Finance – transfer to local bodies

Recently, RBI published a document where the fiscal impact of COVID-19 on third-tier government was studied. As the entire world experiences, the financial challenges produced by the pandemic, local governments in India is substantially facing the same over the last two years. A study by Wahba, et. al. (2021) remarks that local authorities would lose around 15-25 per cent of their revenues in 2021, which may make the maintenance of the current level of service delivery difficult to sustain. Similar challenges were put up front as 98 per cent of the respondents to the Reserve Bank’s qualitative survey 13 of municipal corporations reported different financial challenges viz., increase in expenditure; decline in revenue collection; and lack (or delayed release) of funds from the State governments during the second wave of the pandemic. Furthermore, around 70 percent of corporation bodies reported a decline in revenue. Municipal Corporations also faced the challenge to cut down expenditure on lesser preferred areas to make available funds for the COVID response.

As the loss of revenue by the municipal bodies became an unavoidable phenomenon during the second wave, revenue cut has further produced a cascading effect on health, social and environmental issues. Again, under pandemic situation the local bodies looked up to the higher tiers, viz., the state and central finances to meet the very basic expenses.

Let us have a look at the transfer of funds from the state to the ULBs followed in Assam in the last four years with the help of the following table.

Table 8: Allocation of funds to the ULBs from State Finance.

| | Allotment | Total Heads | % |
|------------------------|-----------|-------------|------|
| Allocation 2018 | 4 | 31 | 12.9 |
| Allocation 2019 | 4 | 31 | 12.9 |
| Allocation 2020 | 4 | 31 | 12.9 |
| Allocation 2021 | 5 | 31 | 16.1 |

Source: Assam Budget 2021-22 | Finance | Government of Assam, India

The budget of Assam showed thirty-two heads from which the funds could be transferred from the state to the lower tier. However, the allocation is mostly found to have been disbursed under four heads for urban areas; viz., Public Works, Urban Development, Loans for Urban Development and Capital Outlay on Urban Development. The table above shows that in the last financial year, the allocation has increased.

| 2059 | Public Works | 2401 | Crop Husbandry - Horticulture | 2406 | Forestry and Wild Life | 5054 | Capital Outlay on Roads and Bridges |
|------|-------------------------------|------|-------------------------------------|------|--|-----------|-------------------------------------|
| 2210 | Medical and Public Health | 2435 | Other Agricultural Programmes | 2515 | Other Rural Development Programmes | 2202 - 01 | General Education |
| 2211 | Family Welfare | 2702 | Minor Irrigation | 2216 | Housing | 2202 - 02 | General Education |
| 2215 | Water Supply and Sanitation | 2402 | Soil and Water Conservation | 2501 | Special Programmes for Rural Development | 2202 - 04 | General Education |
| 2408 | Food, Storage and Warehousing | 2403 | Animal Husbandry | 2505 | Rural Employment) | 2204 | Sports and Youth Services |
| 3456 | Civil Supplies | 2404 | Dairy Development | 2851 | Village and Small Industries | 2217 | Urban Development |
| 2235 | Social Security and Welfare | 2405 | Fisheries | 2801 | Power | 6217 | Loans for Urban Development |
| | | 2415 | Agricultural Research and Education | 3054 | Roads and Bridges | 4217 | Capital Outlay on Urban Development |

In the next section, a study is carried out to understand the people’s perception about the existing local governance and urban services.

4.2. People’s perception about services and governance

A government is elected by the people and for that reason the perceptions become more important. It not only act as a tool for feedback from the people but it also acts an evaluation technique. Therefore, scrutinizing and understanding the lag areas and gaps in deliverance documenting the perceptions becomes crucial. It will help the local bodies to critically analyze their performances and follow the recommendations of this report (given at the end) to improve operations.

Table 9: Support from the local government bodies as reported by the people during field survey.

| Support during Pandemic | Government/ Municipalities | Local Communities |
|-------------------------|----------------------------|-------------------|
| Support Received | 173 | 103 |
| % | 57.7 | 34.3 |

Source: Primary Survey

The data represented in the table above shows that during the pandemic only 57.7 percentage of people (covered in the survey) have received some sort of help from the government bodies, or the municipal bodies. A summary of the types of such support is shown in the figure 3.

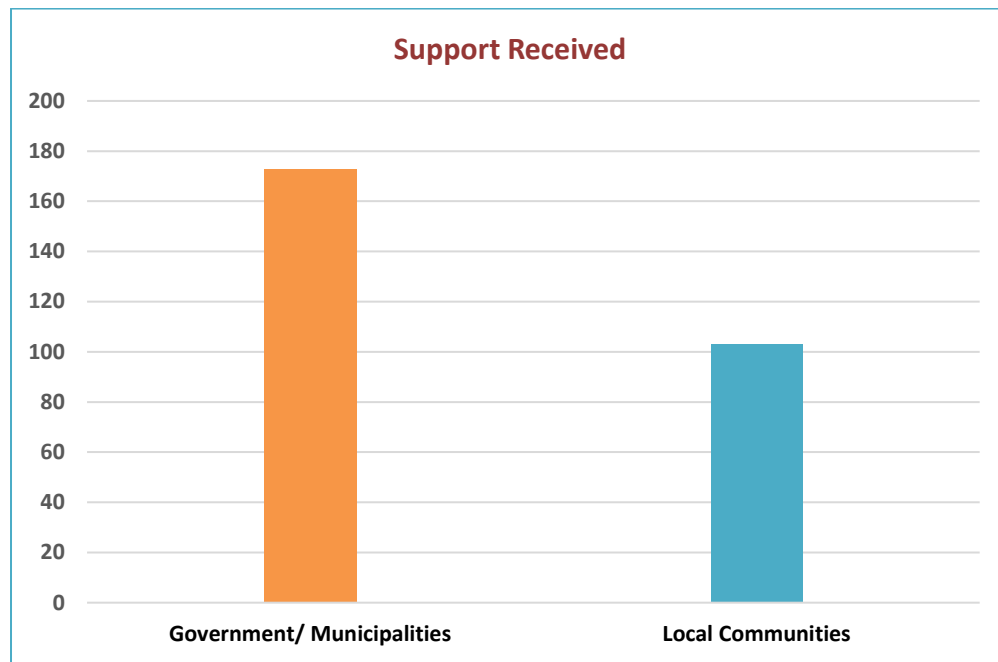


Figure 13: Bar Diagram showing the number of people who received support from the local government.

The figure 3 below summarizes the support of the ULBs based on thirteen types (items) on which the people has responded. During the one-one interview, they were asked whether they have received the particular type of support or not, and they have answered in *yes* or *no*. Those responses were then counted and used in the table, and a percentage out of 300 total responses was calculated.

The two major types of support received by people were the ration and the telephonic (medical) support. Apart from those, few have also received COVID-19 essential items, such as masks and sanitizers from the municipalities. The local self-governments have tried to stand up in troubled times, but the responses show that they weren't able to do up to the mark. This is mainly because of the suddenness of the shock and lack of preparation for the same. It may be held that in times of crisis the existing machinery of operations (in all cases) gets unmasked, and the loose ends started to show up. It is for this reason anticipating the difficult future all machineries need to stay equipped and prepared to fight out the same. Harmonies and disharmonies are both key components of any bunch feedbacks, and learning from the same is even more crucial for any management-based organizations like the municipal bodies. This study exactly does that critical report and appraisal of the operations for the ULBs, and suggested recommendations in the following chapter/section for them to take up and prepare Action Plans for future.

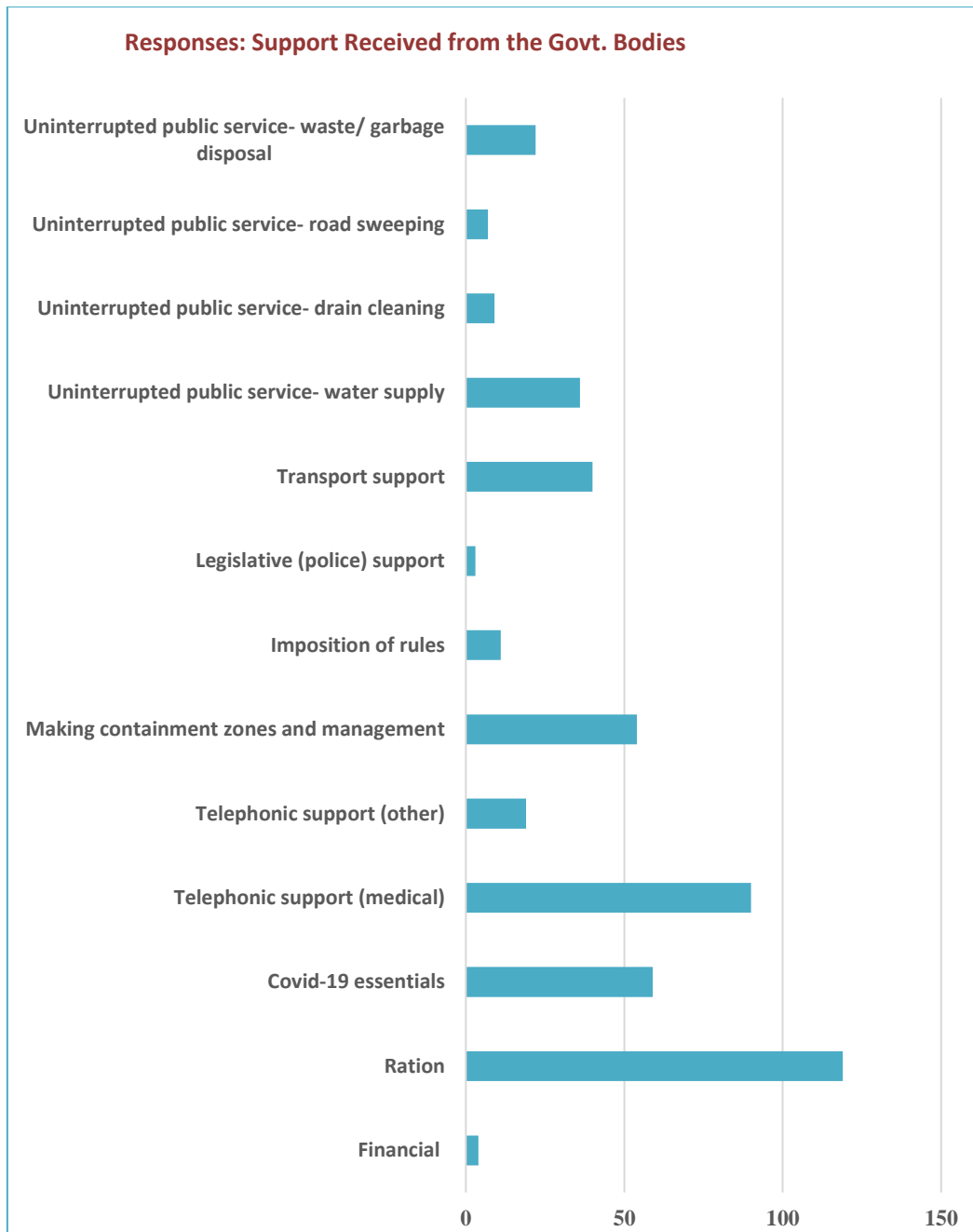


Figure 14: Responses based on the different supports received from the Government Bodies.

The responses were fairly less under all circumstances. There may be two reasons behind it –

- The interaction between the government (especially the municipal) bodies were pretty less, and/or
- Awareness level about the different urban services and the different operations is low among the general mass, and this is also due to the first bulleted fact.

Across the world, it has been observed that the participatory governance system has been successful. In some Latin American countries, people have been involved in the decision making process through voting on different issues whether to be taken up. If people are given with an option to vote on, the immediate responses will show the exact volume of the common mass supporting that, and even reveal the volume indifferent towards government decisions. Here, we can understand to features –

- ✓ Number of people supporting a particular view; and
- ✓ The volume remaining indifferent.

In one way, decision making becomes friendlier to public, and in another way it helps that particular level of government to estimate the efforts required to reach all uniformly. Ultimately, the adult-franchise based election of candidates for constructing cabinets becomes more predictable and transparent.

Again, crowd-sourcing is an essential and digital based mode of collecting information which can be taken up by the respective departments and ULBs at the earliest. A web-based or WhatsApp-based portal system may become very handy. The common people may use the application from one end by sending necessary information, like the photographs of open accumulated garbage, a roadside water tap not operating, an overcrowded narrow street, etc. these information may then be filtered properly by a few experts that forms the second layer. The third and final layer may comprise the decision makers who would send directives as to what should be done. Several types of decision making may come in the process, like the ones that the people can themselves take care of, some may be send to the authorities and some may be newly incorporated.

An initiative to prepare maps to document – demographic profile, Land-Use profile, morphological profile and urban services, may be taken by the ULBs. In order to do so, geographical information system can be used. This initiative may make the decision making process faster and more convenient than before.

All the above initiative requires funds. Therefore, the ULBs may start generating revenue at their end and propose for funds in those areas from the state and center. Actually, self-reliance should be encouraged at this stage in case of funds and a support from the governments in the above tiers may be asked for. To become self-reliant, a few measures stated below may be looked into –

- Cost recovery from urban services;
- Encouraging investment in municipal bonds;
- Subsidized cost recovery from local health centers; and
- Other possible avenues that ULBs may discover.

5. Recommendations

The study was conducted in three districts of Assam during November, 2021 to February, 2022. For the purpose of study, both secondary and primary data was used in analytical framework. The secondary sources were mainly Census of India, the department of finance of Assam website, and various policy documents present in the official websites of Assam Government. The primary data was collected from 300 households across three selected districts of Assam. After analysis, the study revealed interesting and important results that may be used for policy recommendations to the respective ULBs to follow. Furthermore, the same recommendations may be used to prepare Action Plans for other ULBs as well.

5.1. Major Observation

5.1.1. Health Sector

People preferred to move to the government hospitals and safe homes for treatment during crisis. The citizens of the state of Assam intended to avoid the private hospitals and nursing homes; however, few had to resort to the same. This indicates that the state regulated hospitals and other government regulated health systems were effective during the pandemic. Since, the pandemic posed a shock to the entire economy and society, and since health becomes the vital sector for combating such situations, the shock management system becomes the vital organ and tool. Here, the shock management system that was reportedly working with efficiency was state initiated. Hence, the local level health systems seem to have lesser control.

The bathrooms/ washrooms and toilets of the government hospitals were reported to be not clean and hygienic by the respondents. Even the drinking water available to the patients was poorly marked by the respondents in the 5-point Likert scale. On the other hand, the bills were major issue in case of the medical centres, primary health centres and private nursing homes.

Another prominent issue was the absence of any kind of local participation. Local committees or local groups were not found or reported by the respondents. In general, during the shock, many states and cities have seen the participation of people by forming local groups. The main advantage of the groups is that they are close to the people and knows them personally. Hence, such groups are capable of keeping information and staying in touch with the locales and that kind of delivery of services are not possible from a centralized position.

5.1.2. Water, Sanitation and Hygiene sector

The on-field study revealed that households receiving piped water connection (125 out of 300, i.e., 41 % approx.) is less than those not receiving the benefit. Usually, the municipal bodies are responsible for the urban service delivery, and therefore, it may be said that the responsibility of delivering the rest of the 49 % of the non-beneficiaries with piped water connection lies on the part of urban local bodies of those districts.

The responses on the WASH parameters to the field investigators were not sufficient as the respondents lacked knowledge about it. It is also the responsibility of the local bodies and local groups or communities to make aware of those useful parameters to the people. Hence, it may be said that a lack of awareness rests with the people of those districts with respect to the WASH parameters.

The garbage disposal habits were another crucial issue that needs to be discussed. Although, 65 % of the houses were receiving door-to-door waste collection, many have reported to dispose their household waste just outside house. In fact, 85 % people have reported to know the proper garbage disposal technique but the results showed that most of them were not following it. The municipal bodies are expected to look into the waste collection, transfer to disposal at land-filling sites, and any incompetency may have chronic adverse effects on the health of the society and productivity of the economy.

5.1.3. Municipal Finance

Municipal finance has always been crucial for development across the world. This due to two major reasons – firstly, without proper finance and funds the local bodies will not be able to perform, and secondly, it increases efficiency and competency level of urban services delivery. Here, the transfer of funds from the state to the ULBs has been uniform. However, on the other hand, the respondents have reported low on receipt of support. Thus, two streams of inferences may draw –

- i) The said transfers were not sufficient enough for the success of the State-Owned-Priority Schemes (SOPD); or
- ii) There may be utilization problem in the part of ULBs.

During the course of survey, the municipal authorities were asked to send the Audit and Accounts statements of the last few years. However, the required documents were not delivered at all, and that made the gap in this study. It is universally accepted fact that the transparency and relative accountability is very important for any organization, and in case of government bodies this factor is even more important. Since these urban local bodies of a democratic frame are elected units of the citizens, that factor is required to be maintained.

The country of India is rapidly moving towards digitization. To step along those steps, the local authorities are now required to prepare proper websites and portals and upload the necessary public documents, including the year to year accounts and audit reports, various demographic data, urban service related

data, maps, etc. However, the sites of those three municipal bodies lacked those specific data on the websites and no maps were found.

5.2. Recommendations

- 1) Improvement of Local Health System. The urban local bodies may take initiative to improve the existing health systems at the local level. The infrastructure, hygienic condition and medical facilities of the Primary Health Centers should be improved. To do so, special group(s) may be formed comprising local community leaders and ULBs officials to investigate, identify, monitor and suggest changes, and also estimate a cost to accomplish it. A portal (web-based or WhatsApp-based) may be started for crowd-sourcing of information to progress rapidly.
- 2) Local leadership may be encouraged through initiating the formation of local committees, and linking those committees with the ULBs for all-around better performance.
- 3) Delivery of piped-water supply to the households within their premises should improve, and thereby, increase the number of beneficiaries of piped-water supply of the municipal bodies. Since, the issues related to safe drinking water have been a matter of concern of all the major international institutions like United Nations, UN-HABITAT, World Health organizations, etc., and it is also a major concern of India, this issue should be taken seriously by the ULBs too. It will ensure health, economic progress and development of any region.
- 4) Knowledge and awareness of the people regarding sanitation and hygiene is an important indicator for human well-being. The ULBs may take initiative to reach out to every people under their jurisdiction to create awareness about the same.
- 5) Active and proper solid-waste collection to disposal chain is important for the protection of public health, safety, and environmental quality. It is time constrained and chain-based. Since, it was found that the solid waste management was not working at its optimum, the following set of recommendations may be put-up –
 - ✓ Use of capital or machine based approach – electric carts with hydraulic containers,
 - ✓ Use of mechanical dumpers, roll-on roll-offs at the transfer stations,
 - ✓ Use of mechanical sweepers (mini and large combined),
 - ✓ Use of compactors and dumpers to transfer waste to the disposal/ landfill sites,
 - ✓ Use of queue-portals for vehicles carrying wastes to the landfill sites, and
 - ✓ Secondary process and recycling, incineration, etc., and reduces waste.
- 6) Increase transparency and accountability of operation of ULBs through incorporation of accounting reform and yearly auditing of accounts. The officials of the ULBs should produce more responsibility and support researches for more effective outcomes.
- 7) The ULBs may also take initiatives to adopt digitization at the earliest and upload all documents relating to services and accounts for the public to view. In addition to that, the ULBs should also understand the importance of keeping GIS-based maps that tracks changes in various vectors/ layers to support decision making.
- 8) Lastly, a model of efficient workflow may be suggested as below.
 - Three players – Urban Local Bodies (ULBs), Local Communities (LC) and Special Purpose Group (SPG);

- Special Purpose Group (SPG) may work as – a bridge between state authorities and departments on one hand, and LCs and ULBs on the other;
- SPGs will monitor and suggest changes;
- SPGs may comprise municipal body representative, local leaders, health experts, and people from state departments;
- This trio model will focus on
 - Digitization and crowd-sourcing of information, encourage local leadership, introduce Action Plans, and deliver and prepare reports by collecting data from the ULBs regularly.

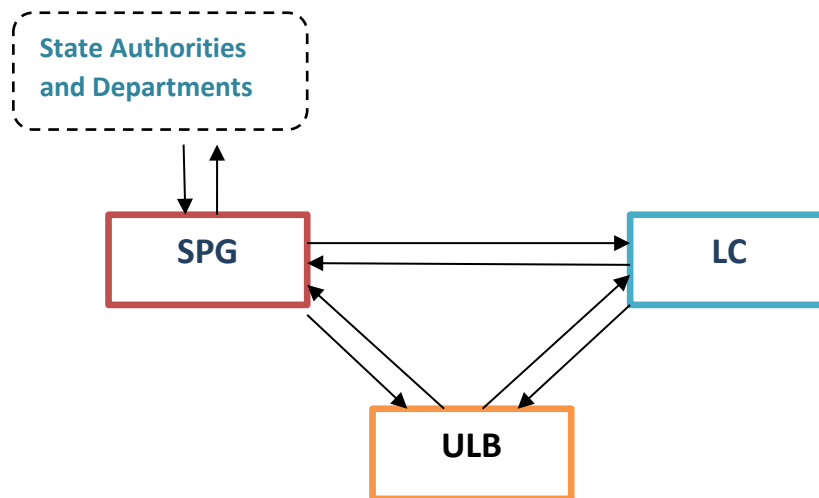


Figure 15: A Trio-Model of effective municipal operation.

Glimpses from the Field Survey







Annexures

Annexure 1

District Profiles

District Name: Kamrup Metropolitan

Census Profile of Urban Area

| | | | |
|----------------------------------|---------|---|----------|
| Number of Households | 247628 | Area (sq. km.) | 262.43 |
| Total Population | 1037011 | Sex Ratio (Census 1991) | 815.5 |
| Total Male population | 536523 | Sex Ratio (Census 2001) | 845.8494 |
| Total Female population | 500488 | Sex Ratio (Census 2011) | 956.651 |
| Total Literate Population | 856250 | Pucca Road Length (in kms.) | 618 |
| Total Male Literate Population | 457124 | Kutcha Road Length (in kms.) | 163 |
| Total Female Literate Population | 399126 | Electricity-Domestic Connection (Numbers) | 229005 |
| Total Workers | 403164 | Electricity-Industrial Connection (Numbers) | 7424 |
| Total Male Workers | 312697 | Electricity-Commercial Connection (Numbers) | 18231 |
| Total Female Workers | 90467 | Electricity-Road Lighting Connection (Numbers) | 3096 |
| Main Worker Population | 348836 | Hospital Allopathic (Numbers) | 15 |
| Marginal Worker Population | 29614 | Dispensary/Health Centre (Numbers) | 16 |
| Total Non-Worker Population | 633847 | Family Welfare Centre (Numbers) | 11 |
| | | Maternity and Child Welfare Centre (Numbers) | 11 |
| | | Nursing Home (Numbers) | 2 |
| | | Mobile Health Clinic (Numbers) | 8 |
| | | Non-Government Charitable-Hospital/Nursing Home (Numbers) | 12 |

| | | |
|--|---|------|
| | Non-Government Medicine Shop (Numbers) | 1255 |
| | Nationalised Bank (Numbers) | 123 |
| | Private Commercial Bank (Numbers) | 36 |
| | Co-operative Bank (Numbers) | 12 |
| | Agricultural Credit Society (Numbers) | 13 |
| | Non-Agricultural Credit Society (Numbers) | 8 |

| Sample Survey Profile | | | | | | |
|---|---------------------|--|---|------------|-----------|------------------|
| Sampling Technique | Multistage Sampling | | | | | |
| Sampling Area | Kamrup Metropolitan | | | | | |
| Sample | 100 Households | | | | | |
| <u>COVID Profile of the Sample</u> | | | Some significant questions asked on | | | |
| Number affected by COVID | 24 | | Water, Sanitation and Hygiene parameters | Yes | No | No answer |
| Number got tested | 88 | | Do you have piped water supply at home? | 43 | 57 | 0 |
| <u>Treatment Done</u> | | | Do you fetch water from outside? | 6 | 89 | 5 |
| Safe Home | 3 | | Do you use water purifier at home? | 85 | 15 | 0 |
| Hosp. Govt. | 2 | | Do you boil water before giving it to children? | 53 | 21 | 26 |
| Home | 1 | | Do you purchase water from the market for drinking? | 36 | 63 | 1 |
| Hosp. Pvt | 4 | | Do you have bathroom at home? | 99 | 1 | 0 |
| Other | 14 | | Does the bathroom have enclose and roof? | 97 | 3 | 0 |

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| | | | | | |
|--|----|--|----|----|----|
| Nursing Home | 0 | Does your bathroom have water connection? | 78 | 22 | 0 |
| <u>Amount Spent for Covid-19 Treatment</u> | | Does the children of your family use bathroom? | 77 | 2 | 21 |
| households spent nothing | 18 | Do you clean the bathroom regularly? | 91 | 8 | 1 |
| Households spent below 50,000/- (for own self and others) | 4 | Do you use disinfectant to clean the bathroom? | 85 | 14 | 1 |
| Households spent above 50,000/- (for own self and others) | 6 | Do you have latrine at home? | 98 | 1 | 1 |
| <u>Support during Pandemic</u> | | Does the latrine have enclose and roof? | 96 | 3 | 1 |
| Government/ Municipalities | 41 | Does your latrine have water connection? | 75 | 24 | 1 |
| Local Communities | 21 | Does your latrine have flush pour system? | 57 | 43 | 0 |
| | | Does the children of your family use latrine? | 80 | 3 | 17 |
| | | Do you clean the latrine regularly? | 90 | 9 | 1 |
| | | Do you use disinfectant to clean the latrine? | 91 | 8 | 1 |
| | | Do you wash your hands with soap regularly? | 99 | 0 | 1 |
| | | Do you wash your hands with soap before cooking food? | 98 | 0 | 2 |
| | | Do you wash your hands with soap after using toilet & latrine? | 99 | 0 | 1 |
| | | Does the children wash their hands with soap after using toilet & latrine? | 87 | 0 | 13 |

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| | | | | | |
|--|--|---|----|----|----|
| | | Does the children wash their hands before eating? | 86 | 1 | 13 |
| | | Do you use plastic bags at home? | 84 | 15 | 1 |
| | | Does your household have drain-outlet? | 76 | 24 | 0 |
| | | Is that drain covered? | 42 | 58 | 0 |
| | | Do you face water logging problems? | 26 | 73 | 1 |
| | | During water logging, does the dirty water come into your house? | 5 | 91 | 4 |
| | | Is there any waste collection system at your door-step? | 77 | 23 | 0 |
| | | Is there any awareness / knowledge dissemination program shown to you regarding waste disposal? | 21 | 79 | 0 |
| | | Are you aware of proper waste disposal technique? | 93 | 7 | 0 |

District Name: Nagaon

Census Profile of Urban Area

| | | | |
|----------------------------------|--------|---|----------|
| Number of Households | 78941 | Area (sq. km.) | 78.25 |
| Total Population | 369534 | Sex Ratio (Census 1991) | 896.6667 |
| Total Male population | 188127 | Sex Ratio (Census 2001) | 923.3469 |
| Total Female population | 181407 | Sex Ratio (Census 2011) | 960.1048 |
| Total Literate Population | 288216 | Pucca Road Length (in kms.) | 261 |
| Total Male Literate Population | 152333 | Kutcha Road Length (in kms.) | 102 |
| Total Female Literate Population | 135883 | Electricity-Domestic Connection (Numbers) | 64383 |
| Total Workers | 130593 | Electricity-Industrial Connection (Numbers) | 501 |
| Total Male Workers | 108559 | Electricity-Commercial Connection (Numbers) | 20712 |
| Total Female Workers | 22034 | Electricity-Road Lighting Connection (Numbers) | 4581 |
| Main Worker Population | 112791 | Hospital Allopathic (Numbers) | 10 |
| Marginal Worker Population | 17802 | Dispensary/Health Centre (Numbers) | 13 |
| Total Non-Worker Population | 238941 | Family Welfare Centre (Numbers) | 7 |
| | | Maternity and Child Welfare Centre (Numbers) | 6 |
| | | Nursing Home (Numbers) | 1 |
| | | Mobile Health Clinic (Numbers) | 6 |
| | | Non-Government Charitable-Hospital/Nursing Home (Numbers) | 2 |
| | | Non-Government Medicine Shop (Numbers) | 382 |
| | | Nationalised Bank (Numbers) | 89 |
| | | Private Commercial Bank (Numbers) | 31 |
| | | Co-operative Bank (Numbers) | 8 |

| | | | |
|--|--|---|---|
| | | Agricultural Credit Society (Numbers) | 8 |
| | | Non-Agricultural Credit Society (Numbers) | 5 |

| Sample Survey Profile | | | | | | |
|---|------------------------|--|---|------------|-----------|------------------|
| Sampling Technique | Multistage Sampling | | | | | |
| Sampling Area | Nagaon Municipal Board | | | | | |
| Sample | 100 Households | | | | | |
| <u>COVID Profile of the Sample</u> | | | <u>Some significant questions asked on</u> | | | |
| Number affected by COVID | 21 | | Water, Sanitation and Hygiene parameters | Yes | No | No answer |
| Number got tested | 97 | | Do you have piped water supply at home? | 23 | 77 | 0 |
| <u>Treatment Done</u> | | | Do you fetch water from outside? | 10 | 89 | 1 |
| Safe Home | 7 | | Do you use water purifier at home? | 77 | 21 | 2 |
| Hosp. Govt. | 0 | | Do you boil water before giving it to children? | 44 | 15 | 41 |
| Home | 0 | | Do you purchase water from the market for drinking? | 16 | 83 | 1 |
| Hosp. Pvt. | 3 | | Do you have bathroom at home? | 98 | 2 | 0 |
| Other | 7 | | Does the bathroom have enclose and roof? | 91 | 9 | 0 |
| Nursing Home | 0 | | Does your bathroom have water connection? | 70 | 29 | 1 |
| <u>Amount Spent for Covid-19 Treatment</u> | | | Does the children of your family use bathroom? | 77 | 53 | 5 |
| households spent nothing | 0 | | Do you clean the bathroom regularly? | 97 | 3 | 0 |

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| | | | | | | |
|--|----|--|--|-----|----|----|
| Households spent below 50,000/- (for own self and others) | 15 | | Do you use disinfectant to clean the bathroom? | 96 | 4 | 0 |
| Households spent above 50,000/- (for own self and others) | 1 | | Do you have latrine at home? | 100 | 0 | 0 |
| <u>Support during Pandemic</u> | | | Does the latrine have enclose and roof? | 91 | 9 | 0 |
| Government/ Municipalities | 37 | | Does your latrine have water connection? | 66 | 34 | 0 |
| Local Communities | 22 | | Does your latrine have flush pour system? | 39 | 60 | 1 |
| | | | Does the children of your family use latrine? | 53 | 5 | 42 |
| | | | Do you clean the latrine regularly? | 99 | 1 | 0 |
| | | | Do you use disinfectant to clean the latrine? | 96 | 3 | 1 |
| | | | Do you wash your hands with soap regularly? | 100 | 0 | 0 |
| | | | Do you wash your hands with soap before cooking food? | 98 | 2 | 0 |
| | | | Do you wash your hands with soap after using toilet & latrine? | 100 | 0 | 0 |
| | | | Does the children wash their hands with soap after using toilet & latrine? | 56 | 0 | 44 |
| | | | Does the children wash their hands before eating? | 55 | 0 | 45 |
| | | | Do you use plastic bags at home? | 83 | 17 | 0 |
| | | | Does your household have drain-outlet? | 78 | 22 | 0 |
| | | | Is that drain covered? | 55 | 39 | 6 |

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| | | | | | |
|--|--|---|-----|----|----|
| | | Do you face water logging problems? | 20 | 80 | 0 |
| | | During water logging, does the dirty water come into your house? | 9 | 58 | 33 |
| | | Is there any waste collection system at your door-step? | 83 | 17 | 0 |
| | | Is there any awareness / knowledge dissemination program shown to you regarding waste disposal? | 24 | 76 | 0 |
| | | Are you aware of proper waste disposal technique? | 100 | 0 | 0 |

District Name: Hailakandi

Census Profile of Urban Area

| | | | |
|----------------------------------|--------------|---|---------------|
| Number of Households | 10259 | Area (sq. km.) | 143.74 |
| Total Population | 48140 | Sex Ratio (Census 1991) | 910.0952 |
| Total Male population | 24143 | Sex Ratio (Census 2001) | 922.0901 |
| Total Female population | 23997 | Sex Ratio (Census 2011) | 959.9166 |
| Total Literate Population | 40404 | Pucca Road Length (in kms.) | 513 |
| Total Male Literate Population | 20747 | Kutcha Road Length (in kms.) | 214.69 |
| Total Female Literate Population | 19657 | Electricity-Domestic Connection (Numbers) | 102189 |
| Total Workers | 15947 | Electricity-Industrial Connection (Numbers) | 751 |
| Total Male Workers | 12600 | Electricity-Commercial Connection (Numbers) | 31684 |
| Total Female Workers | 3347 | Electricity-Road Lighting Connection (Numbers) | 12206 |
| Main Worker Population | 13351 | Hospital Allopathic (Numbers) | 18 |
| Marginal Worker Population | 2596 | Dispensary/Health Centre (Numbers) | 23 |
| Total Non-Worker Population | 32193 | Family Welfare Centre (Numbers) | 12 |
| | | Maternity and Child Welfare Centre (Numbers) | 11 |
| | | Nursing Home (Numbers) | 1 |
| | | Mobile Health Clinic (Numbers) | 7 |
| | | Non-Government Charitable-Hospital/Nursing Home (Numbers) | 120 |
| | | Non-Government Medicine Shop (Numbers) | 46 |
| | | Nationalized Bank (Numbers) | 15 |
| | | Private Commercial Bank (Numbers) | 12 |
| | | Co-operative Bank (Numbers) | 7 |

| | | | |
|--|--|---|----------|
| | | Agricultural Credit Society (Numbers) | 143.74 |
| | | Non-Agricultural Credit Society (Numbers) | 910.0952 |

| Sample Survey Profile | | | | | | |
|---|----------------------------|--|---|------------|-----------|------------------|
| Sampling Technique | Multistage Sampling | | | | | |
| Sampling Area | Hailakandi Municipal Board | | | | | |
| Sample | 100 Households | | | | | |
| <u>COVID Profile of the Sample</u> | | | <u>Some significant questions asked on</u> | | | |
| Number affected by COVID | 74 | | Water, Sanitation and Hygiene parameters | Yes | No | No answer |
| Number got tested | 100 | | Do you have piped water supply at home? | 23 | 77 | 0 |
| <u>Treatment Done</u> | | | Do you fetch water from outside? | 10 | 89 | 1 |
| Safe Home | 0 | | Do you use water purifier at home? | 77 | 21 | 2 |
| Hosp. Govt. | 37 | | Do you boil water before giving it to children? | 44 | 15 | 41 |
| Home | 4 | | Do you purchase water from the market for drinking? | 16 | 83 | 1 |
| Hosp. Pvt | 0 | | Do you have bathroom at home? | 98 | 2 | 0 |
| Other | 19 | | Does the bathroom have encloser and roof? | 91 | 9 | 0 |
| Nursing Home | 2 | | Does your bathroom have water connection? | 70 | 29 | 1 |
| <u>Amount Spent for Covid-19 Treatment</u> | | | Does the children of your family use bathroom? | 77 | 53 | 5 |
| households spent nothing | 1 | | Do you clean the bathroom regularly? | 97 | 3 | 0 |

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| | | | | | |
|---|----|--|-----|----|----|
| Households spent below 50,000/- (for oneself and others) | 69 | Do you use disinfectant to clean the bathroom? | 96 | 4 | 0 |
| Households spent above 50,000/- (for oneself and others) | 4 | Do you have latrine at home? | 100 | 0 | 0 |
| <u>Support during Pandemic</u> | | Does the latrine have encloser and roof? | 91 | 9 | 0 |
| Government/ Municipalities | 41 | Does your latrine have water connection? | 66 | 34 | 0 |
| Local Communities | 21 | Does your latrine have flush pour system? | 39 | 60 | 1 |
| | | Does the children of your family use latrine? | 53 | 5 | 42 |
| | | Do you clean the latrine regularly? | 99 | 1 | 0 |
| | | Do you use disinfectant to clean the latrine? | 96 | 3 | 1 |
| | | Do you wash your hands with soap regularly? | 100 | 0 | 0 |
| | | Do you wash your hands with soap before cooking food? | 98 | 2 | 0 |
| | | Do you wash your hands with soap after using toilet & latrine? | 100 | 0 | 0 |
| | | Does the children wash their hands with soap after using toilet & latrine? | 56 | 0 | 44 |
| | | Does the children wash their hands before eating? | 55 | 0 | 45 |
| | | Do you use plastic bags at home? | 83 | 17 | 0 |
| | | Does your household have drain-outlet? | 78 | 22 | 0 |
| | | Is that drain covered? | 55 | 39 | 6 |

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| | | | | | |
|--|--|---|-----|----|----|
| | | Do you face water logging problems? | 20 | 80 | 0 |
| | | During water logging, does the dirty water come into your house? | 9 | 58 | 33 |
| | | Is there any waste collection system at your door-step? | 83 | 17 | 0 |
| | | Is there any awareness / knowledge dissemination program shown to you regarding waste disposal? | 24 | 76 | 0 |
| | | Are you aware of proper waste disposal technique? | 100 | 0 | 0 |

Annexure 2

District-wise Response of the people on Hospital and other Medical Institution Parameters

| Parameters | Kamrup Metropolitan | | | | | Nagaon Municipal Board | | | | | Hailakandi Municipal Board | | | | |
|--|---------------------|-----------|------|----------------------------|------|------------------------|-----------|------|----------------------------|------|----------------------------|-----------|------|----------------------------|------|
| | response percentage | | | | | | | | | | | | | | |
| | excellent | very good | good | satisfactory/ but not good | poor | excellent | very good | good | satisfactory/ but not good | poor | excellent | very good | good | Satisfactory/ but not good | poor |
| Hospital Administration | 16 | 35 | 40 | 6 | 3 | 29 | 43 | 21 | 7 | 0 | 9 | 57 | 17 | 17 | 0 |
| Hospital Doctor's behavior | 19 | 45 | 33 | 3 | 0 | 33 | 44 | 19 | 4 | 0 | 63 | 31 | 6 | 0 | 0 |
| Hospital Doctor's medical expertise | 20 | 46 | 28 | 5 | 1 | 33 | 48 | 17 | 2 | 0 | 43 | 37 | 9 | 11 | 0 |
| Hospital Nurse's behavior | 21 | 42 | 33 | 3 | 1 | 19 | 53 | 22 | 5 | 0 | 44 | 26 | 21 | 9 | 0 |
| Hospital Nurse's medical expertise | 20 | 45 | 30 | 3 | 2 | 20 | 53 | 21 | 5 | 0 | 32 | 24 | 26 | 18 | 0 |
| Hospital caregiver's behavior | 20 | 42 | 34 | 4 | 0 | 10 | 48 | 37 | 5 | 0 | 38 | 32 | 21 | 9 | 0 |
| Hospital caregiver's medical expertise | 20 | 44 | 31 | 4 | 1 | 11 | 46 | 38 | 5 | 0 | 29 | 24 | 29 | 18 | 0 |
| Hospital infrastructure | 20 | 41 | 34 | 4 | 1 | 32 | 49 | 16 | 3 | 0 | 11 | 54 | 23 | 9 | 3 |
| Hospital cleanliness and hygiene | 11 | 38 | 32 | 17 | 2 | 10 | 44 | 36 | 9 | 0 | 6 | 51 | 26 | 14 | 3 |
| Hospital bathroom/ toilets | 10 | 35 | 31 | 19 | 5 | 7 | 39 | 42 | 9 | 3 | 9 | 31 | 26 | 23 | 11 |
| Hospital drinking water | 9 | 36 | 32 | 18 | 5 | 10 | 37 | 40 | 8 | 4 | 74 | 14 | 9 | 3 | 0 |

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| | | | | | | | | | | | | | | | |
|---|----|----|----|----|---|----|----|----|---|---|----|----|----|----|----|
| Hospital food | 10 | 31 | 35 | 18 | 6 | 10 | 37 | 43 | 7 | 3 | 11 | 20 | 54 | 14 | 0 |
| Hospital floor cleanliness | 12 | 33 | 34 | 16 | 5 | 10 | 44 | 36 | 9 | 1 | 9 | 47 | 29 | 15 | 0 |
| Hospital bed cleanliness/ bed hygiene | 12 | 33 | 35 | 18 | 2 | 13 | 46 | 32 | 8 | 1 | 3 | 14 | 46 | 23 | 14 |
| Hospital overall environment | 13 | 41 | 35 | 8 | 3 | 27 | 45 | 19 | 8 | 1 | 6 | 57 | 31 | 6 | 0 |
| Hospital medication bills | 27 | 45 | 21 | 4 | 3 | 32 | 54 | 10 | 3 | 1 | 60 | 26 | 14 | 0 | 0 |
| Hospital others bills | 26 | 46 | 21 | 4 | 3 | 33 | 54 | 9 | 2 | 2 | 71 | 17 | 11 | 0 | 0 |
| Hospital treatment cost | 23 | 47 | 21 | 5 | 3 | 32 | 56 | 9 | 1 | 2 | 60 | 29 | 6 | 6 | 0 |
| Hospital waiting time | 10 | 41 | 33 | 13 | 3 | 15 | 45 | 31 | 9 | 0 | 34 | 37 | 14 | 14 | 0 |
| Hospital management | 10 | 45 | 32 | 10 | 3 | 31 | 43 | 20 | 6 | 0 | 11 | 51 | 31 | 6 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Administration | 26 | 40 | 28 | 4 | 1 | 55 | 32 | 10 | 3 | 0 | 0 | 57 | 29 | 0 | 14 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Doctor's behavior | 27 | 44 | 23 | 3 | 2 | 63 | 26 | 10 | 1 | 0 | 57 | 43 | 0 | 0 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. Doctor's medical expertise | 26 | 42 | 25 | 4 | 2 | 62 | 26 | 11 | 1 | 0 | 43 | 29 | 29 | 0 | 0 |
| Medical Center/ Primary Health | 26 | 43 | 25 | 3 | 2 | 54 | 36 | 9 | 1 | 0 | 40 | 40 | 20 | 0 | 0 |

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| | | | | | | | | | | | | | | | | |
|---|----|----|----|---|---|----|----|----|---|---|----|----|----|----|----|--|
| center/ Nursing Home/etc. Nurse's behavior | | | | | | | | | | | | | | | | |
| Medical Center/ Primary Health center/ Nursing Home/etc. Nurses's medical expertise | 25 | 43 | 26 | 3 | 2 | 54 | 35 | 10 | 1 | 0 | 60 | 20 | 20 | 0 | 0 | |
| Medical Center/ Primary Health center/ Nursing Home/etc. care-giver's behavior | 26 | 44 | 24 | 3 | 2 | 44 | 45 | 9 | 2 | 0 | 50 | 33 | 0 | 0 | 17 | |
| Medical Center/ Primary Health center/ Nursing Home/etc. care-giver's medical expertise | 25 | 44 | 25 | 3 | 2 | 45 | 44 | 9 | 2 | 0 | 33 | 33 | 17 | 0 | 17 | |
| Medical Center/ Primary Health center/ Nursing Home/etc. infrastructure | 36 | 52 | 11 | 0 | 1 | 69 | 24 | 7 | 0 | 0 | 29 | 43 | 14 | 0 | 14 | |
| Medical Center/ Primary Health center/ Nursing Home/etc. cleanliness and hygiene | 36 | 48 | 12 | 3 | 0 | 70 | 25 | 4 | 0 | 0 | 14 | 57 | 14 | 0 | 14 | |
| Medical Center/ Primary Health center/ Nursing Home/etc. bathroom/ toilets | 35 | 49 | 13 | 2 | 0 | 69 | 25 | 4 | 1 | 0 | 14 | 57 | 14 | 14 | 0 | |

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| | | | | | | | | | | | | | | | |
|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Medical Center/ Primary Health center/ Nursing Home/etc. drinking water | 32 | 45 | 15 | 8 | 0 | 69 | 24 | 5 | 1 | 0 | 57 | 29 | 0 | 14 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. food | 27 | 44 | 16 | 12 | 0 | 69 | 26 | 4 | 1 | 0 | 43 | 29 | 14 | 0 | 14 |
| Medical Center/ Primary Health center/ Nursing Home/etc. floor cleanliness | 26 | 51 | 20 | 3 | 0 | 64 | 30 | 4 | 1 | 0 | 14 | 57 | 14 | 14 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. bed cleanliness/ bed hygiene | 26 | 47 | 21 | 5 | 0 | 64 | 30 | 4 | 1 | 0 | 0 | 57 | 29 | 0 | 14 |
| Medical Center/ Primary Health center/ Nursing Home/etc. overall environment | 24 | 46 | 25 | 2 | 2 | 57 | 36 | 7 | 0 | 0 | 29 | 57 | 0 | 14 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. medication bills | 3 | 5 | 27 | 37 | 26 | 2 | 21 | 39 | 24 | 13 | 86 | 0 | 14 | 0 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. others bills | 2 | 5 | 27 | 37 | 27 | 1 | 20 | 41 | 24 | 13 | 71 | 14 | 14 | 0 | 0 |

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| | | | | | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|----|----|----|----|----|----|---|----|
| Medical Center/ Primary Health center/ Nursing Home/etc. treatment cost | 2 | 4 | 29 | 37 | 28 | 1 | 20 | 40 | 24 | 14 | 86 | 0 | 14 | 0 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. waiting time | 10 | 42 | 26 | 19 | 3 | 42 | 46 | 9 | 3 | 0 | 43 | 57 | 0 | 0 | 0 |
| Medical Center/ Primary Health center/ Nursing Home/etc. management | 11 | 42 | 35 | 10 | 2 | 49 | 42 | 7 | 2 | 0 | 29 | 57 | 0 | 0 | 14 |

Annexure 3

Feedback of the People on the Importance of Selected Parameters Necessary for Improving Efficiency of Municipal Functioning.

| | Health Management and Service of Health Departments | Health Management of Health workers and staffs | Health Management and service of Primary Health Centers | Health Management and service of Community leaders | Health Management of Government | Health Management of Local Bodies/ municipalities | Activities of the Local Councilors | Activities of the Local Communities | Community Participation | Local Leadership | Personal Hygiene | Community Health and Hygiene | Proper Sanitation | Proper Latrine | Waste Disposal system |
|------------------|---|--|---|--|---------------------------------|---|------------------------------------|-------------------------------------|-------------------------|------------------|------------------|------------------------------|-------------------|----------------|-----------------------|
| Very Important | 285 | 288 | 280 | 243 | 275 | 251 | 229 | 229 | 236 | 213 | 295 | 292 | 296 | 295 | 296 |
| Important | 9 | 8 | 15 | 40 | 17 | 36 | 54 | 50 | 49 | 63 | 3 | 5 | 0 | 1 | 0 |
| Neutral | 5 | 2 | 3 | 12 | 6 | 10 | 11 | 15 | 9 | 17 | 1 | 1 | 2 | 3 | 2 |
| Not-so-important | 0 | 1 | 1 | 2 | 0 | 2 | 3 | 3 | 2 | 4 | 0 | 0 | 0 | 0 | 1 |
| Not important | 0 | 0 | 0 | 2 | 1 | 0 | 2 | 1 | 2 | 2 | 0 | 1 | 1 | 0 | 0 |

Survey Schedule

Questionnaire for the study of “Learnings from Covid-19: Local Governance perspective”

I. Household Profile

| | | | | | |
|-----|--|---|-----------------|---|-----------------------|
| 1. | Name: | | 2. | Gender (M/F): | |
| 3. | Address (wards/vill/town, district, pin code): | | 4. | Category/ caste (1=general, 2=SC, 3=ST, 4=Others): | |
| 5. | General Educational Level: not literate=1, literate without formal schooling=2, literate with formal schooling- below primary =3, primary =4, secondary=5, higher secondary=6, diploma/certificate course=7, graduate=8, postgraduate and above=9 | | 6. | Occupational Category: self-employed=1, regular wage/salary earner=2, casual labour (agriculture=3, non-agriculture=4); others=5 | |
| 7. | Religion: Hinduism-1, Islam-2, Christianity -3, Sikhism-4, Jainism-5, Buddhism-6, Zoroastrianism-7, others-9 | | 8. | Occupational Sector: (if not '1' in 6.) Govt. employment=1, NGO=2, Private formal=3, Private informal=4, others=5 | |
| 9. | No. of Family members | | 10. | No. of income earners | |
| 11. | | | 11. | No. of children (below 6 years) | |
| 12. | Average monthly expenditure (approx.in Rs) | | 13. | Average monthly savings (approx.in Rs) | |
| 14. | Average monthly income (approx.in Rs) | | 15. | Please tick which all schemes you are entitled with | Monthly ration |
| 16. | Do you children at home? If yes, then please indicate the number of children. | <input type="checkbox"/> Y <input type="checkbox"/> N | | | Covid specific ration |
| | | | | | Antodaya |
| | | | Monthly pension | | |

II. Effect of Covid-19

| | | | | | | | | | |
|-------|---|---|----------------------------|-----------------------|---|---|-----------------------------------|---------------------------------------|--------------------------|
| 1. | Were you infected with Covid-19? (tick) | <input type="checkbox"/> Y | <input type="checkbox"/> N | 2. | If yes, then how did you come to know? | a) diagnosed symptoms by you | <input type="checkbox"/> | | |
| 3. | Did you get tested? | <input type="checkbox"/> Y | <input type="checkbox"/> N | | | b) diagnosed symptoms by doctor | <input type="checkbox"/> | | |
| 4. | How many family members got infected by Covid-19? | <input style="width: 50px; height: 20px;" type="text"/> | | | | c) friends suggestion | <input type="checkbox"/> | | |
| 5. | Where did you get your treatment done? | a) Home | <input type="checkbox"/> | | | 6. | Where did you get your test done? | a) Pathology lab (collection at home) | <input type="checkbox"/> |
| | | b) Safe Home | <input type="checkbox"/> | | | | | b) Pathology lab | <input type="checkbox"/> |
| | | c) Nursing Home | <input type="checkbox"/> | c) PHC | <input type="checkbox"/> | | | | |
| | | d) Hospital (private) | <input type="checkbox"/> | d) Nursing home | <input type="checkbox"/> | | | | |
| | | e) Hospital (Govt.) | <input type="checkbox"/> | e) Hospital (Private) | <input type="checkbox"/> | | | | |
| | | f) Other | <input type="checkbox"/> | f) Hospital (Govt.) | <input type="checkbox"/> | | | | |
| 7.1. | Where did your family members get their treatment done? | a) Home | <input type="checkbox"/> | 8. | How much did you spent on Covid-19 treatment? (in Rs.) | <input style="width: 100px;" type="text"/> | | | |
| 7.2. | How long have you waited for admission and start of treatment after reaching the hospital? (write '0', if you received the treatment immediately) | b) Safe Home | <input type="checkbox"/> | 9. | Did you loose any loved ones of your family (family members) due to Covid-19? | <input type="checkbox"/> Y <input type="checkbox"/> N | | | |
| | | c) Nursing Home | <input type="checkbox"/> | | | | | | |
| | | d) Hospital (private) | <input type="checkbox"/> | | | | | | |
| | | e) Hospital (Govt.) | <input type="checkbox"/> | | | | | | |
| | | f) Other | <input type="checkbox"/> | | | | | | |
| 10. | If yes, then when did it happened? (mm/yyyy) enter multiple if needed | <input style="width: 100px;" type="text"/> | | | | | | | |
| 11. | If yes in '9.' then answer the following questions. | | | | | | | | |
| 11.1. | Where was he/ she treated? | a) Home | <input type="checkbox"/> | 11.2. | How long was he/she kept under treatment | Less than a week | <input type="checkbox"/> | | |
| | | b) Safe Home | <input type="checkbox"/> | | | 7-14 days | <input type="checkbox"/> | | |
| | | c) Nursing Home | <input type="checkbox"/> | | | 14-28 days | <input type="checkbox"/> | | |

Survey Schedule

Questionnaire for the study of “Learnings from Covid-19: Local Governance perspective”

| | | | | | | |
|-------|--|---|--------------------------|-------|---|---|
| | | d) Hospital (private) | <input type="checkbox"/> | | before he/she took her last breath? | More than 28 days <input type="checkbox"/> |
| | | e) Hospital (Govt.) | <input type="checkbox"/> | 11.3. | Was ventilation given? | <input type="checkbox"/> Y <input type="checkbox"/> N |
| | | f) Other | <input type="checkbox"/> | | | |
| 11.4. | Did you face any problem with oxygen? | <input type="checkbox"/> Y <input type="checkbox"/> N | | 11.5. | If yes in '11.4., then was the oxygen being provided? | <input type="checkbox"/> Y <input type="checkbox"/> N |
| 11.6. | If no in 11.5., then who provided it? Name organization or individual. | _____ | | 11.7. | Have you faced any problems with the transport while taking your patient to the hospital? | <input type="checkbox"/> Y <input type="checkbox"/> N |

III. Rate your Experience.

Being a responsible citizen, if you are asked to rate the performances of hospital/doctors and other care givers, then what marks will you give them out of 5(five) on the following activities.

5-point Likert Scale: 1=poor, 2=satisfactory/but not good, 3=good, 4=very good, 5=excellent

| Particulars | 1 | 2 | 3 | 4 | 5 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| - Hospital Administration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital Doctor’s behavior | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital Doctor’s medical expertise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital Nurse’s behavior | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital Nurse’s medical expertise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital care-giver’s behavior | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital care-giver’s medical expertise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital infrastructure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital cleanliness and hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital bathroom/ toilets | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital drinking water | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital food | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital floor cleanliness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital bed cleanliness/ bed hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital overall environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital medication bills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital others bills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital treatment cost | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital waiting time | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Hospital management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. Administration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. Doctor’s behavior | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. Doctor’s medical expertise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. Nurse’s behavior | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. Nurses’s medical expertise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. care-giver’s behavior | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. care-giver’s medical expertise | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. infrastructure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. cleanliness and hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. bathroom/ toilets | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. drinking water | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. food | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. floor cleanliness | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Survey Schedule

Questionnaire for the study of “Learnings from Covid-19: Local Governance perspective”

| | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| - Medical Center/ Primary Health center/ Nursing Home/etc. bed cleanliness/ bed hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. overall environment | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. medication bills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. others bills | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. treatment cost | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. waiting time | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Medical Center/ Primary Health center/ Nursing Home/etc. management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

IV. Experience with the Govt.

| | | | |
|-----|---|--------------------------|--------------------------|
| 12. | Did you get any support from Govt./ Municipalities/ Panchayats during Covid-19? | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. | Did you get any support from the Local communities? | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. | Any local communities and groups were formed to support Covid-19 victims? | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. | What kind of support did the govt. bodies provided? Financial Ration Covid-19 essentials Telephonic support (medical) Telephonic support (other) Making containment zones and management Imposition of rules Legislative (police) support Transport support Uninterrupted public service, such as - water supply - drain cleaning - road sweeping - waste/ garbage disposal | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. | What kind of support did your neighbors provided ? Nothing Transportation Medicine Shopping Food Accompaniment during hospitalization Arrangement for hospital bed Arrangement for finance Arrangement for oxygen Care-giving Arrangement for vaccine Friendly companionship during Covid-19 | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. | What kind of support did your local community groups provided ? Nothing Transportation Medicine Shopping Food Accompaniment during hospitalization Arrangement for hospital bed | <input type="checkbox"/> | <input type="checkbox"/> |

Survey Schedule

Questionnaire for the study of "Learnings from Covid-19: Local Governance perspective"

| | | |
|--|--|--------------------------|
| | Arrangement for finance | <input type="checkbox"/> |
| | Arrangement for oxygen | <input type="checkbox"/> |
| | Care-giving | <input type="checkbox"/> |
| | Arrangement for vaccine | <input type="checkbox"/> |
| | Friendly companionship during Covid-19 | <input type="checkbox"/> |

18. How far is the nearest hospital from your place? (in kms, write '0' for less than 1 km) _____
18. How far is the nearest govt. hospital from your place? (in kms, write '0' for less than 1 km) _____
19. How far is the nearest Primary Health Centre from your place? (in kms, write '0' for less than 1 km) _____
20. How far is the nearest Vaccination Centre from your place? (in kms, write '0' for less than 1 km) _____

V. Learning from pandemic.

According to you, how much importance will you accord to the following.

5-point Likert Scale Very Important=5, Important=4, Neutral=3, Not-so-important=2, not important=1

| Particulars | 1 | 2 | 3 | 4 | 5 |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| - Health Management and Service of Health Departments | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Health Management of Health workers and staffs | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Health Management and service of Primary Health Centers | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Health Management and service of Community leaders | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Health Management of Government | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Health Management of Local Bodies/municipalities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Activities of the Local Councilors | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Activities of the Local Communities | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Community Participation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Local Leadership | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Personal Hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| - Community Health and Hygiene | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Proper Sanitation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Proper Latrine | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Waste Disposal system | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

VI. Indicators of Health and Hygiene

Please indicate with a tick mark which of the following you use regularly at home.

| | | | |
|--|--|---|---------------|
| - Do you have piped water supply at home? | | Y | N |
| - Do you fetch water from outside? | | Y | N |
| - If yes, how far do you travel to fetch water? | 100 mtrs 100-500 mtrs 500 mtrs-1km | | More than 1km |
| - Do you use water purifier at home? | | Y | N |
| - Do you boil water before giving it to children? | | Y | N |
| - Do you purchase water from the market for drinking? | | Y | N |
| - If you have piped water supply at home, then is that water directly drinkable? | | Y | N |
| - If not, then do you purify the piped water before drinking? | | Y | N |
| - Do you have bathroom at home? | | Y | N |
| - Does the bathroom have encloser and roof? | | Y | N |
| - Does your bathroom have water connection? | | Y | N |
| - Does the children of your family use bathroom? | | Y | N |
| - Do you clean the bathroom regularly? | | Y | N |

Survey Schedule

Questionnaire for the study of “Learnings from Covid-19: Local Governance perspective”

| | | | | |
|---|---------|--------------|----------------|-----------------------|
| - Do you use disinfectant to clean the bathroom? | Y | N | | |
| - Do you have latrine at home? | Y | N | | |
| - Does the latrine have encloser and roof? | Y | N | | |
| - Does your latrine have water connection? | Y | N | | |
| - Does your latrine have flush pour system? | Y | N | | |
| - Is your latrine connected to piped sewer? | Y | N | | |
| - If no, then is your latrine connected to septic tank? | Y | N | | |
| - Does the children of your family use latrine? | Y | N | | |
| - Do you clean the latrine regularly? | Y | N | | |
| - Do you use disinfectant to clean the latrine? | Y | N | | |
| - Do you wash your hands with soap regularly? | Y | N | | |
| - Do you wash your hands with soap before cooking food? | Y | N | | |
| - Do you wash your hands with soap after using toilet & latrine? | Y | N | | |
| - Do you wash your hands before eating? | Y | N | | |
| - Does the children wash their hands with soap after using toilet & latrine? | Y | N | | |
| - Does the children wash their hands before eating? | Y | N | | |
| - Do you use plastic bags at home? | Y | N | | |
| - Do you throw plastic bags in the drains? | Y | N | | |
| - Does your household have drain-outlet? | Y | N | | |
| - Is that drain covered? | Y | N | | |
| - Do you face water logging problems? | Y | N | | |
| - During water logging, does the dirty water come into your house? | Y | N | | |
| - Where do you dispose the household waste? | dustbin | Outside home | Community Bins | Open fields and ponds |
| - Is there any waste collection system at your door-step? | Y | N | | |
| - Is there any awareness / knowledge dissemination program shown to you regarding waste disposal? | Y | N | | |
| - Are you aware of proper waste disposal technique? | Y | N | | |

VII. Respondent Profile

Age _____; How long have you been staying in Assam? _____;

Do you reside in rented house or owned house? _____

**Regional Centre for Urban & Environmental Studies
All India Institute of Local Self-Government, Mumbai**

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