

# RESPONSIBILITY OF URBAN LOCAL BODY IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT GOALS-A CASE STUDY OF BARIPADA MUNICIPALITY

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## ABSTRACT

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Population is ever increasing and urbanisation reflects the growing population. Growing urbanisation has negative impact on urban environment. Thus the towns and cities must be planned and managed well to make it a powerful tool for sustainable development. In India, urban local bodies (ULBs), which are in the process of preparing the statutory master plan or urban mission-linked city development plans, have the opportunity to synchronize their plans with SDGs. Furthermore, each of the 18 functions of the ULBs as mandated under the 74<sup>th</sup> Amendment Act, directly contributes to the fulfilment of India's commitment to the SDGs. An attempt is made here to highlight tangible action needs to be adopted by Baripada Municipality to ensure availability and sustainable management of water as mentioned in Goal 6 of SDGs, Target 1: By 2030, achieve universal and equitable access to safe and affordable drinking water for all. We have examined here the fund requirement vis-a-vis the fund flow to ULB.

**JEL Classification:** H54, H75, R51**KEY WORDS:** Decentralisation, Water Supply, Urbanisation

## INTRODUCTION

In the modern era with the rise in population, urbanisation is increasing all over the country. Urbanisation is the rise of population in urban areas when the people migrate from rural to urban and small cities to large ones in search of better opportunities and lifestyle. Historically, Jaysawal and Saha (2014) "consider it as the transformation of human social roots, whereby predominantly rural culture is being rapidly replaced by predominantly urban culture". According to Gooden "urbanization is the immigration of people in huge numbers from rural to urban areas and this process happen due to the concentration of resources and facilities in towns and cities". Other theorists like, Reynolds (1989) "characterized urbanization as the development of the population and cities, so that higher proportion of population lives in urban areas". However, urbanisation lead to pollution, overcrowded and congestion due to lack of proper urban management. As per the statistical report, 2001, the urban inhabitants of India were more than 285 million. It is estimated

that by 2030, more than 50 per cent of India's population is expected to live in urban areas.

With urbanisation the localities' need for basic public services such as health, water supply, sanitation, education, roads etc. and it is the prime responsibility of the local government to provide these basic services along with environmental management. Hence, urban administration plays a pivot role in providing public amenities along with environmental protection through, a proper urban planning and environmental management. After the passage of 74<sup>th</sup> Constitutional Amendment Act (CAA) the local government is given a statutory status and has been a starting of a new era of urban governance and urban city management in India. In fact most of the sustainable development goals (SDGs) are related to the functions of urban local bodies.

The Sustainable Development Goals (SDGs) are a global agenda, adopted by countries in 2015, with a vision of ending poverty, protecting the planet and ensuring that all people enjoy peace and prosperity. Sustainable Development Goals include 17 goals and 169 targets, what

is known as the 2030 Agenda, the goals and targets are universal, meaning they apply to all countries around the world, not just poor and isolated countries. Reaching the goals requires action on all fronts – governments, businesses, civil society and people everywhere, all have a role to play (International institute for sustainable development). Furthermore, each of the 18 functions in the Twelfth Schedule (Article 243 W) of the ULBs as mandated under the 74<sup>th</sup> Amendment, directly contribute to the fulfilment of India's commitment to the SDGs. In this context, the focus of this article is to highlight action- needed to be taken by urban local bodies (ULBs) to ensure availability and sustainable management of water and sanitation for all as mentioned in Goal 6 of SDGs.

## OBJECTIVE

The paper is an attempt at micro level study, i.e., based on a case study of Baripada Municipality. Here, we try to examine whether Baripada municipality is able to materialise the goal 6 target 1 of SDGs in reality.

## METHODOLOGY

The analysis is based on the method of projection for the future time period. A few attributes have taken into account for projection. The attributes are: population, number

of household, water requirement and fund requirement. In this article the bench mark year is taken as 2021 and target year is 2030 with an intervening year 2025. The projection is based on the data collected and analysed for last 5 years i.e., from 2015 to 2020.

## BACKGROUND OF BARIPADA MUNICIPALITY

Baripada, the headquarter town is the only Municipality of Mayurbhanj district, Odisha. Baripada municipality came into existence in 1905 under Regulation-2 of 1905 of the Mayurbhanj Regulation. The aims and objectives of this organization are to look after the health, sanitation, water supply, roads, safety and public convenience of the citizen of the urban inhabitants. Historically this Municipality was constituted under Mayurbhanj State Regulation-2 of 1905 with effect from 01.07.1905 and subsequently taken over by the Govt. on 01.01.1949 after merger of Ex-State Mayurbhanj. In 1950, the civic body had 10 wards. Over the years, with the rise of population, both naturally and due to urbanisation, the number of wards has swollen to 28. The residential profile of the town is given below.

**Table 1: Residential Profile of Baripada Municipality**

| Indicator            | 2001          | 2011          | Decadal Growth Rate |
|----------------------|---------------|---------------|---------------------|
| Number of Wards      | 25            | 28            | 12                  |
| Number of Households | 19314         | 24718         | 27.98               |
| Total Population     | 95004         | 116849        | 22.99               |
| SC Population        | 9563 (10.07)  | 12797 (10.95) | 8.8                 |
| ST Population        | 12995 (13.67) | 20603 (17.63) | 58.55               |
| General Population   | 72446 (76.26) | 83449 (71.42) | 15.18               |

Source: Population section of Baripada municipality

Note: Figure in the bracket shows percentage out of total population

## POPULATION PROJECTION

On the basis of data on number of household and population of the urban body in past years we have projected the same for the future, i.e., 2021, 2025 and 2030. For the purpose of projection we have adopted the following methodology.

A simple equation of population projection can be expressed as:

$$P_t = P_0 (1+g)^t \dots (1)$$

Where, P shows population; time period 0 and t represents beginning and terminal year and g is the growth rate of population.

Taking natural logarithm to both the sides of the equation we can write,

$$\ln P_t = \ln P_0 + t \ln(1+g) \dots (2)$$

we can simplify notation by defining  $Y = \ln P_t$ ,  $X = \ln P_0$ ,  $Z = t$ , and  $g = \ln(1+g)$

then adding an error term for each period to allow for random influence equation (2) takes the form as

$$Y = X + Zg + e_t \dots (3)$$

By taking past data from 2001 and 2011, we shall calculate g with the formula  $g = [\text{Antilogarithm of } -1] \times 100$  (and in the next step we shall estimate the  $P_t$  for 2021, 2025 and 2030 as projected population.

Table 2 details the projected figures of household and population in Baripada Municipality.

**Table 2: Population Projection**

| Year | Number of Household | Population |
|------|---------------------|------------|
| 2019 | 30111               | 123364     |
| 2020 | 30863               | 125067     |
| 2021 | 31513               | 134977     |
| 2025 | 34727               | 142993     |
| 2030 | 39211               | 153685     |

Source: Calculated by the researcher

The above table shows that the projected population of Baripada town shall be 1.34977 lakh in 2021, 1.42993 lakh in 2025 and 1.53685 lakh in 2030. This rise in population has elevated the number of household from 30111 in 2019 to 39211 in 2030. This hike in population is mainly due to urbanisation. With the rise of the population along with the

number of household, the need for public amenities in urban area increases, one important component of urban amenity is water supply. Hence an attempt has been made in this paper to predict the requirement and cost of water supply in the coming years, particularly, in the target year 2030.

## PROJECTION FOR WATER REQUIREMENT

In this section we try to project the water requirement vis-a-vis water availability. For the projection of water requirement, we adopted the physical standard of urban water requirement 157-202 litre per capita per day (lpcd) as suggested by Zakaria commission (1963), which has been updated in the Report on Indian Urban Infrastructure and Services (2011). As per the report Baripada Municipality is considered as Type IC City. Class IC cities are those cities whose population ranges from 1 lakh to 10 lakh. As population

of Baripada is only 1.23 lakhs, closer to the lower limit, so we have taken the water requirement of Baripada Municipality as 157 lpcd, the lower end of water requirement. This has been corroborated by average water need of the town as reported by 'Public Health Division Office, Baripada'. It is also reported by the 'Public Health Division Office, Baripada', there is a shortage of water supply in the town to the extent of 17 lpcd. In tune with the above mentioned facts regarding projected population, water need and water availability, we have projected total yearly water requirement of Baripada Municipality for 2030. The detail is described in Table 3.

**Table 3: Projection for Water Requirement**

| Time | Water Requirement (157 lpcd) | Water Availability (140 lpcd) | Shortfall (17 lpcd) | Total projected urban water requirement (per year in Lakh lpcd) |
|------|------------------------------|-------------------------------|---------------------|---|
| 2019 | 19368148                     | 17270960                      | 2097188             | 70693.7402  |
| 2020 | 19635519                     | 17509380                      | 2126139             | 71669.64435   |
| 2021 | 21191389                     | 18896780                      | 2294609             | 77348.56985   |
| 2025 | 22449901                     | 20019020                      | 2430881             | 81942.13865   |
| 2030 | 24128545                     | 21515900                      | 2612645             | 88069.18925   |

Source: Calculated by the researcher

The above table reflects that the present need (for the year 2020) of water supply is around 71670 lakh litres per year, which has projected to increase to the level of 81942 and 88069 lakh litres per year for the year 2025 and 2030 respectively. In percentage term the increase in water demand can be calculated as 14.3 and 22.9 per cent in 2025 and 2030 respectively.

## PROJECTION FOR COST OF WATER SUPPLY

After projecting the water requirements for the upcoming years i.e., 2021, 2025 and 2030, it is necessary to know the amount of cost that has to be incurred by the public authority for provision of water supply on a continual basis. Cost of water supply involves two types of cost: cost of provision

of water supply and cost of operation and maintenance (O&M). To calculate the projected cost of water supply in future we again take resort of Zakaria Commission Methodology. According to the norms of Zakaria Commission in type IC cities the cost of provision of water supply is Rs. 1064 to 1283 per capita per annum at 2007-08 prices and cost of O&M is Rs. 267 to 278 per capita per annum at 2007-08 prices. In the present analysis we have assumed the cost of provision and cost of O&M at the lower end, i.e., as Rs. 1064 and Rs. 267 respectively, on the basis of logic followed earlier. Finally costs are updated for the present (for the year 2019) at the prevailing price level as per the wholesale price index, and forecasted for 2025 and 2030 assuming that the price will increase at the present trend rate in future. The projected cost of water supply is shown in Table 4.

**Table 4: Projection for Cost of Water Supply**

| Time | Cost of WS (Rs) | O&M (Rs) | Total Cost at 2007-08 Price (Rs) | Cost at 2018-19 Price (Rs) | Projected cost of WS and O&M (Rs in Lakh) |
|------|-----------------|----------|----------------------------------|----------------------------|---|
| 2019 | 131259296       | 32938188 | 164197484                        | 263339924                  | 2633                                      |
| 2020 | 133071288       | 33392889 | 166464177                        | 266975247                  | 2669                                      |
| 2021 | 143615528       | 36038859 | 179654387                        | 288129705.9                | 2881                                      |
| 2025 | 152144552       | 38179131 | 190323683                        | 305241122.8                | 3052                                      |
| 2030 | 163520840       | 41033895 | 204554735                        | 328064884                  | 3281                                      |

Source: Calculated by the researcher

The projected cost of water supply in Baripada town in future years are estimated at Rs.2881 Lakh in 2021, Rs. 3052 Lakh at 2025 and Rs. 3281 Lakh in 2030.

## FUND ALLOCATION FOR WATER SUPPLY

In this sub-section we shall examine the fund allocation towards water supply in Baripada town. Major portion of expenditure was undertaken by 'Public Health and Engineering

Department' and a minor portion by Baripada Municipality. The following table (Table 5) shows the expenditure of PHED and Municipality on water supply and management during last four years, i.e., 2015-16 to 2018-19. This gives an idea about fund allocation pattern of different bodies on water supply in the town.

**Table 5: Fund Allocation for Water Supply in Baripada Town (figures in Rs. Lakh)**

| Year    | PHED, Baripada Division |          |               |        |        | Baripada Municipality | Grand Total |
|---------|-------------------------|----------|---------------|--------|--------|-----------------------|-------------|
|         | Energy                  | Chemical | Establishment | Repair | Total  |                       |             |
| 2015-16 | 173.87                  | 9.0      | 282.77        | 42.57  | 508.21 | 5.0                   | 513.21      |
| 2016-17 | 179.16                  | 9.0      | 299.16        | 99.95  | 587.27 | 20.0                  | 607.27      |
| 2017-18 | 213.68                  | 15.83    | 373.16        | 100.7  | 645.43 | 64.65                 | 710.08      |
| 2018-19 | 177.4                   | 12.0     | 313.16        | 105.67 | 608.23 | 40.0                  | 648.23      |
| Average |                         |          |               |        |        |                       | 619.70      |

Source: Office of the PHED, Baripada & Office of the Baripada Municipality

## WAY FORWARD

With the growth of urban population the size of the cities are increasing. This rise of inhabitants has a gigantic impact on the basic public services as a result the local authority undergoes with multifaceted challenges to manage a city. The paper focused on one public amenities i.e., water supply, where a projection has been made on future requirement of water and cost that has to be borne by the local authority to assure a safe and timely supply of water. In dawn of the analysis, from the table 2 (projection of population of Baripada), it is clear that the population of Baripada is increasing. The projection of water requirement of Baripada (table 3) discloses that in future there will be huge demand of water in Baripada. So here it is responsibility of the local authority to find solution and taking necessary step to overcome this shortage of water. Moving down to the next projection i.e., on the cost of water supply, it confirmed that there is a large need of funds to cover the expenditure on water supply, hence urban authorities should synchronize their actions so that they can incur the expenses and fulfil the rising demand for water in urban area.

If we take the fund allotment and need for fund, it may be considered a herculean task to materialise the Goal 6, *Target 1 of SDGs: 'By 2030, achieve universal and equitable access to safe and affordable drinking water for all'*. The fund allotment pattern for water supply in Baripada municipality shows that on an average Rs.620 Lakh per annum has been sanctioned during last five years (table 5). Further, in an interview with the Officials of the Public Health Department of Baripada Municipality it is quite clear the urban local body has no role to play in supply of water in Baripada, neither in fund allotment nor in fund raising (tax collection).

Therefore we feel that the mismatch between fund allotment and fund requirement can be bridged in three different ways: through awareness campaign on water scarcity and economic use of water; pre-paid water tax with the help of water metering on water supply; heavy punitive tax on extravagant and wasteful use of water.

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