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## **GRT** MAPPING SATISFACTION IN SERVICE DELIVERY OF URBAN SERVICES ON GEOINFORMATICS PLATFORM FOR A SLUM OF JALGAON CITY

**Kanchan Wani and Suresh Alizad**

Research Scholar, Post Graduate Department of Geography, Moolji Jaitha College, Jalgaon, Maharashtra, India  
Ex. Principal, Arts, Science & Commerce College, Jamner, Dist. Jalgaon, Maharashtra, India

**Abstract:**-In developing country like India, the right to safe and sustainable access to urban water supply and sanitation services & efficiency of the Urban Local Bodies (ULBs) in service delivery of these basic services to meet the growing demands and aspirations of their citizens is a very crucial issue. The issues of access to basic services to all, including the urban poor including those living below poverty line, slums and un-served, are complex and cannot be seen in isolation. For very obvious reasons, the concept of inclusive development has been in the limelight recently and addressing equity service delivery issues is among topmost priorities of Government of India amply reflected through 'Inclusive Growth' as the core theme for the Five Year Plan (2007-2012).

Many urban development initiatives by Government of India like JnNURM (Jawaharlal Nehru National Urban Renewal Mission), NUSP (National Urban Sanitation Policy), RAY (Rajiv Awas Yojana) etc., emphasize to improve access of the excluded and urban poor to the basic services of UWSS (Urban Water Supply and Sanitation). Handbook on Service Level Benchmarking, developed by The Ministry of Urban Development emphasizes on safe access of all citizens (including poor and slum dwellers) to safe and sustainable:- Water Supply, Sewerage, Solid Waste Management and Storm Water Drainage and has also developed benchmark in the four service sector.

Geoinformatics can prove to be an effective tool in database designing, mapping, decision-making and a planning tool in the area of equity & urban poverty management contributing to inclusive growth.

Present research attempts for a comparative study on Service Level Benchmarking values of Jalgaon (generated after data collection, analysis & calculations) between city wide & slum level. The study conducted highlights the inefficiency of ULB in unequal distribution of UWSS amongst the slums of city.

Considering the inclusion of equity in service delivery of urban services and even distribution of UWSS services among the slums, an attempt to map the satisfaction in service delivery of urban services for Shahu Nagar A-90 slum on Geoinformatics platform was undertaken. It focuses on fact that despite of JCMC's (Jalgaon City Municipal Corporation) provision of urban services to slums, satisfaction from the services through slum dwellers perception is a completely different part.

**Keywords:**Basic Services, Equity, Geoinformatics, Service Delivery, Service Level Benchmarking, Urban Poor, Urban Water Supply and Sanitation, Slums, Urban Local Body.

### **INTRODUCTION :-**

An Urban Local Body (ULB) is bind to provide basic services i.e. water supply, sewerage (sewage & drainage), solid waste management & storm water drainage in its jurisdiction to all its citizens including urban poor and slum dwellers. Many people lack affordable and sustainable access to safe water and hygienic sanitation facilities in urban areas. Majority of them are residing in slums and other unserved areas.

The comparative analysis of Service Level Benchmarking values between city and slum level gives a clear picture of this scenario. It also raises concern over spatial inequality in service delivery of basic services between various service zones &

slums. Thus it emphasizes on the slums forming integral part of inclusive urban growth of city.

As per 2001 Census, about 62,696 Jalgaon population lives in slums, it constitutes about 17% of the total population of the city. Considering the fact that inclusive growth is the key for urban development, it becomes essential to analyze the satisfaction in service delivery of urban services in slums of Jalgaon city provided by Jalgaon City Municipal Corporation (JCMC).

On the same lines, a slum namely- Shahu Nagar A-90 is chosen for the research purpose & the satisfaction of slums dwellers regarding access to the basic services is analyzed. For the same 30% sampling of the total number of household was done & randomly selected households were surveyed by door to door basis. The factors considered are water supply, sanitation, drainage & SWM services provided by JCMC. The result of the analysis are mapped on Geoinformatics platform, as it offer broad view of the current situation which is visually more appealing, giving decision makers more choices in straightforward understanding of slum specific issues and helps urban planners to develop, implement and monitor the progress of their plans. Also the usage of Geoinformatics help in creation of slum database, which can be updated quickly reducing redundant dataset.

**Problem Statement:**

Issues of slums dwellers with respect to quality access to basic services as compared to city level. Poor and un-served living in out growths is not considered along with whole city despite of vulnerability & different living conditions.

**Lack of Geoinformatics mapping of slums in Jalgaon City**

Aiming this, a research was demeanor to map satisfaction in service delivery of urban services of Shahu Nagar A-90 slum of Jalgaon city on Geoinformatics platform. This will aid in prioritizing the issues & implementation of development plan in slum.

**Aims & objectives:**

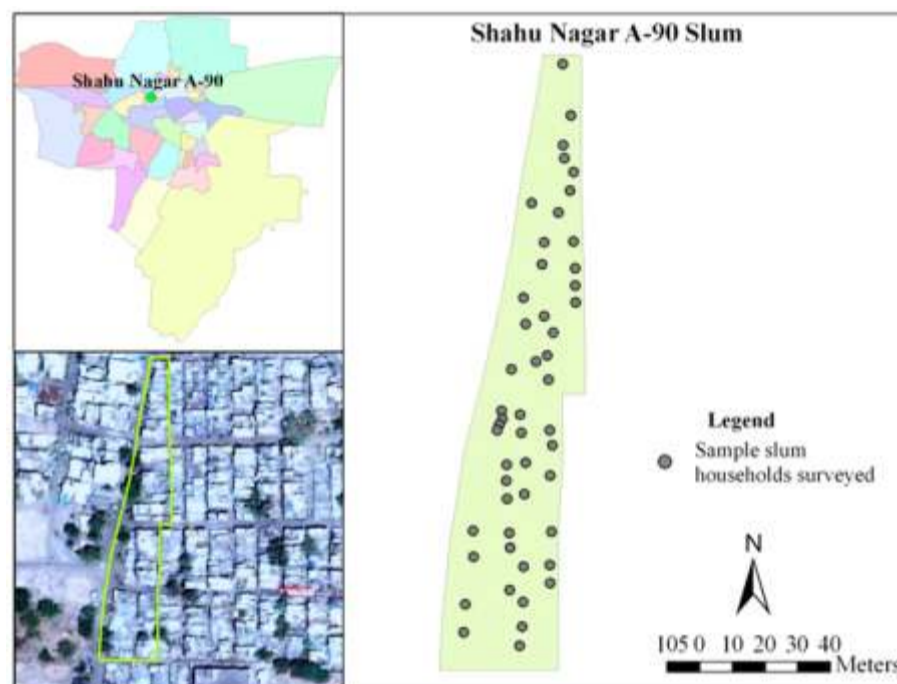
Aim: Mapping Satisfaction in Service Delivery of Urban Services on Geoinformatics Platform for a Slum of Jalgaon City

**OBJECTIVES:**

To study the importance of access to basic services (water supply, sewerage and solid waste management) in slums  
Measure the Service Level Benchmarks for the Jalgaon city as well as for the slums of city & compare them  
To collect the satisfaction status of slum household regarding the access to basic services & map it on Geoinformatics platform

**MATERIALS & METHODOLOGY:**

Study Area: Located in Jalgaon shiwar, near the railway line, Shahu Nagar A-90 is a notified slum & lies in 9th prabhag of Jalgaon City Municipal Corporation. The slum is located in core city area, surrounded by residential & commercial area. The slum appeared in gazette on 25-12-97. As per census 2011, population of Shahu Nagar A-90 is 900 with 149 hutments. Shahu Nagar A-90 slum is located on private land with status of land tenure as illegal encroachment.



Map 1: Location Map of Shahu Nagar A-90 slum



Photo Plate 1: Glimpse of Shahu Nagar A-90 Slum

Methodology: To access and highlight the inequity in the UWSS, a questionnaire was tailored to collected SLB data on city wide and slum level and comparative analysis was done further. The SLB data was collected for four consecutive years namely 2008-09, 2009-10, 2010-11 and 2011-12. For collection of SLB data, series of meeting were held with respective ULB officials & sessions of data collection were carried out.

For preparing slum profile for Shahu Nagar A-90 slum secondary data was analyzed. The satisfaction status of slums dwellers regarding access to UWSS services provided by the JCMC in the area was mapped on Geoinformatics platform. For the same 30% sampling of the total number of slum household was done & randomly 50 slum households were selected & surveyed on door to door basis. Factors considered for satisfaction mapping were water supply, sanitation facilities, drainage system & door to door coverage of SWM services. The output was shown on Geoinformatics platform which gives visually better understanding of the output. Extensions like ArcCatalog & ArcMap of Arc GIS Desktop 9.3 were used for Geoinformatics data creation, mapping, analysis & display.

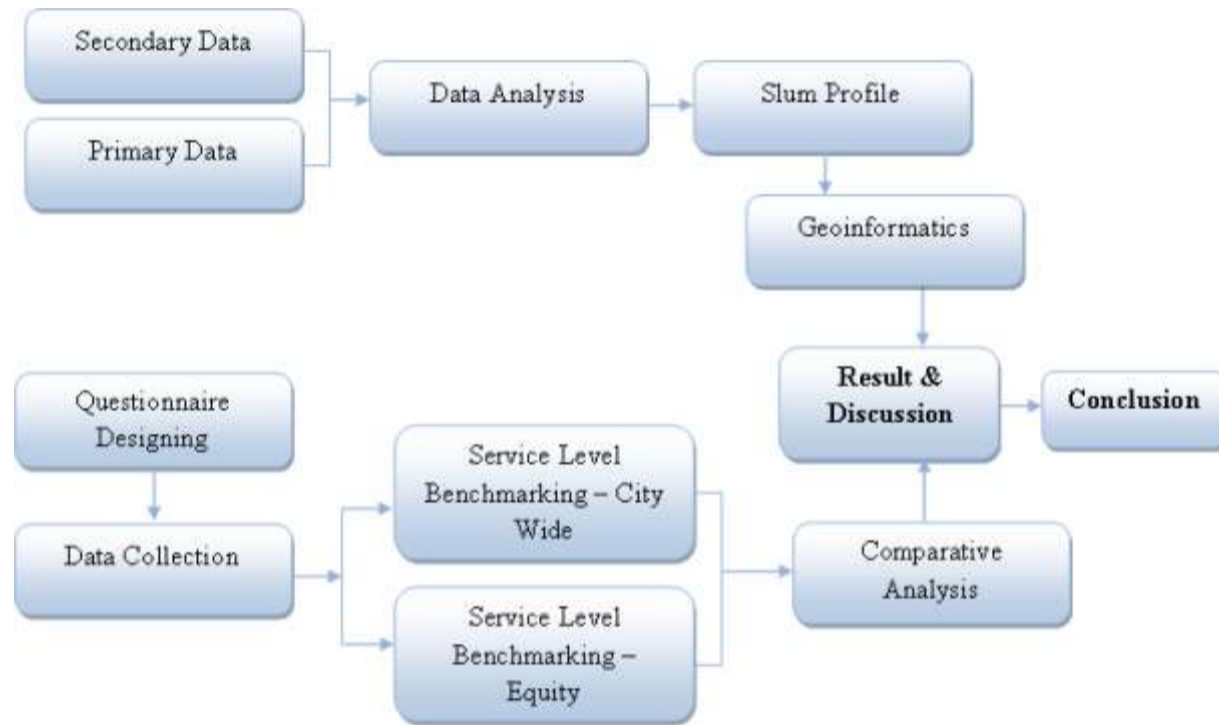
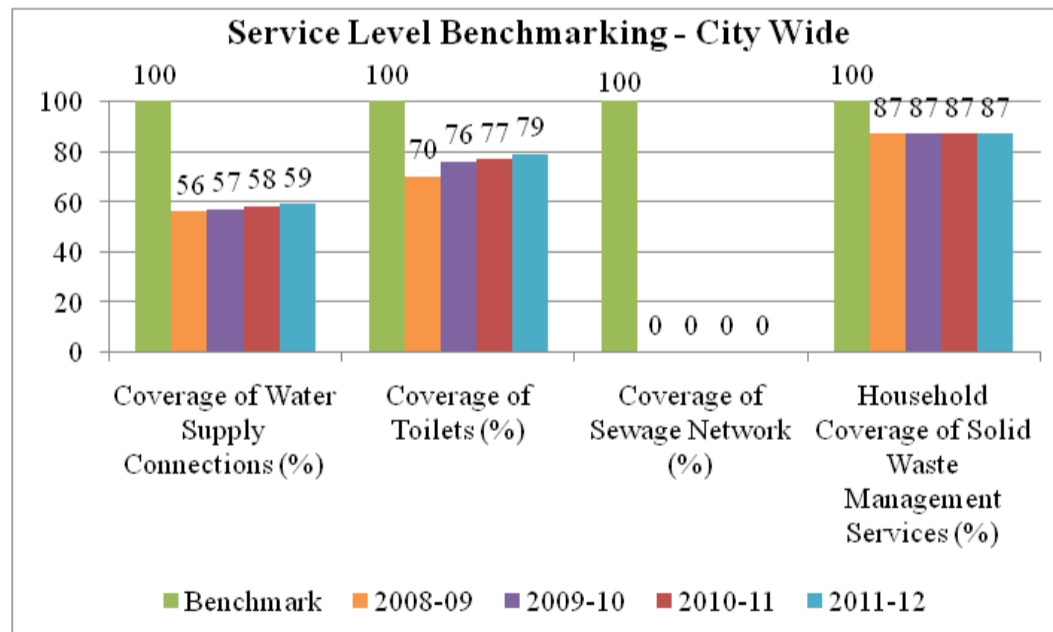


Figure 1: Flow chart for methodology

**RESULT AND DISCUSSION:**

**City Wide Service Level Benchmarking:**

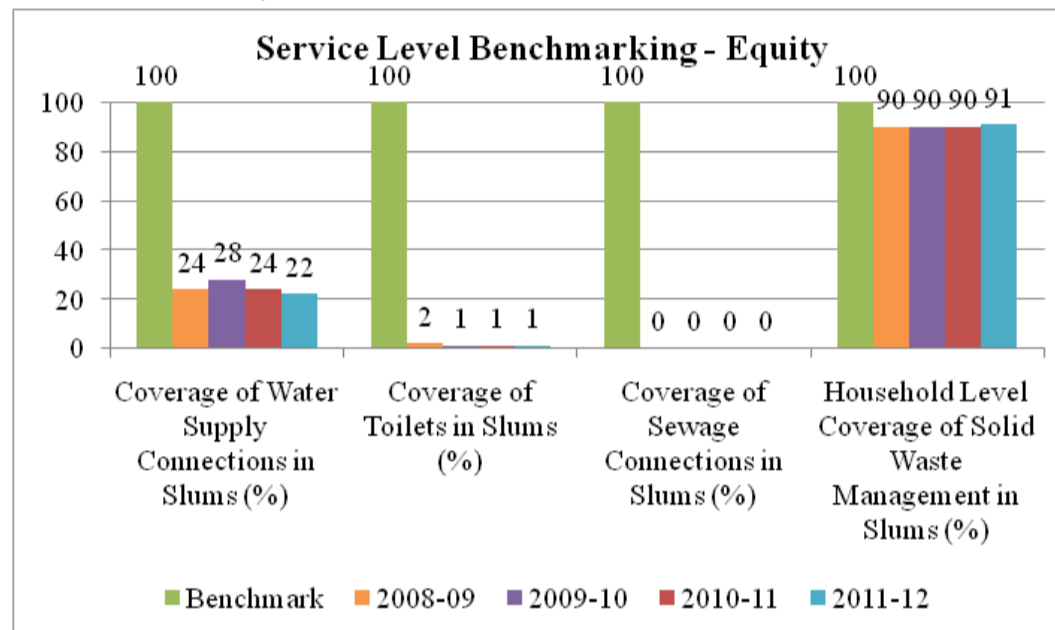
Plotted below is graph showing the SLB values for Jalgaon city level for FY 2008-09, 2009-10, 2010-11 & 2011-12. Coverage's of water supply, toilets, sewerage network & door to door solid waste management services is taken into consideration for 4 years & compared with the benchmark values.



Graph 1: SLB city wide

**Service Level Benchmarking for Slums:**

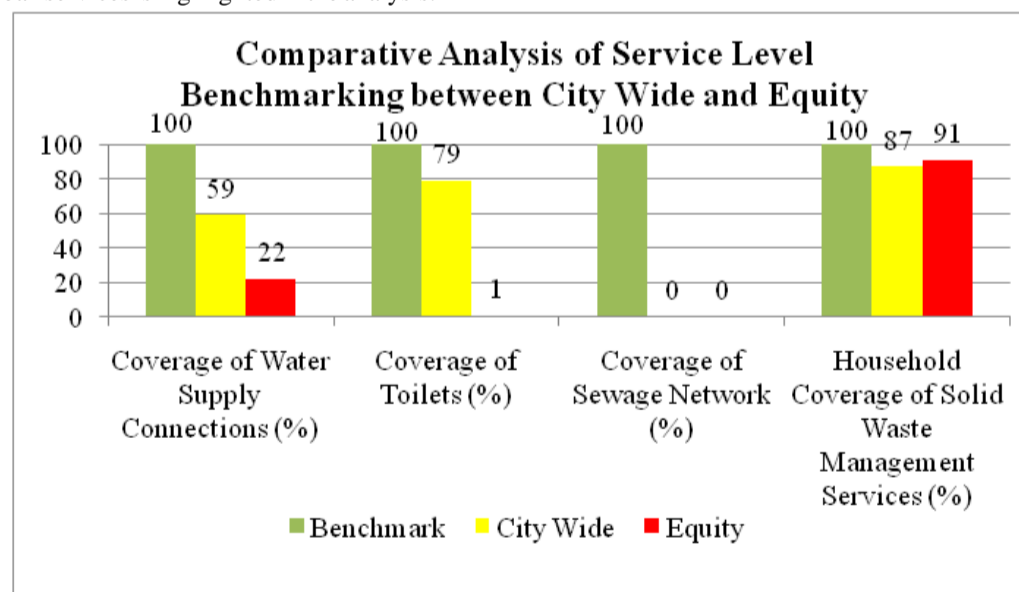
Plotted below is graph showing the slum level SLB values for FY 2008-09, 2009-10, 2010-11 & 2011-12. Here also coverage's of water supply, toilets, sewerage network & door to door solid waste management services is taken into consideration for 4 years & compared with the benchmark values. As slums forms integral part of city, the benchmark of equity are considered same as that of city wide.



Graph 2: Slum level SLB

**Comparative Analysis of SLB values between City Wide & Equity:**

When comparison of generated SLB values for city wide level & slum level is done, it is observed that the majority of SLB values for slums are far behind then that of city wide. This highlights inequity of ULB in distribution of UWSS services to poor slum dwellers. The comparative analysis above showed urgent need of inclusion of equity in service delivery of urban services and even distribution of UWSS services among the slums. Also an important issue of lacunas of ULB in equity service delivery of urban services is highlighted in the analysis.



Graph 3: Comparative analysis of SLB values between city wide & equity

**Mapping Satisfaction in Service Delivery of Urban Services for Shahu Nagar A-90 Slum:**

The GIS (Geographical Information System) mapping of the satisfaction in service delivery of urban services for Shahu Nagar A-90 slum is done below.

**Satisfaction from Water Supply Services:**

Map 1 shows the distribution of 50 surveyed slum households of Shahu Nagar A-90 slum commenting on basic service of water supply provided by JCMC.

58 % of surveyed slum households are satisfied by water supply service provided by JCMC, while 26% slum households are unsatisfied & 16% of surveyed slum households lack individual water connection.

**Satisfaction from Sanitation Services:**

Map 2 shows the distribution of 50 surveyed slum households of Shahu Nagar A-90 slum commenting on basic service of sanitation provided by JCMC.

30 % of surveyed slum households are satisfied by sanitation service provided by JCMC, while 34% slum households are unsatisfied & 36% of surveyed slum households have connectivity to individual toilet.

**Satisfaction from Drainage Services:**

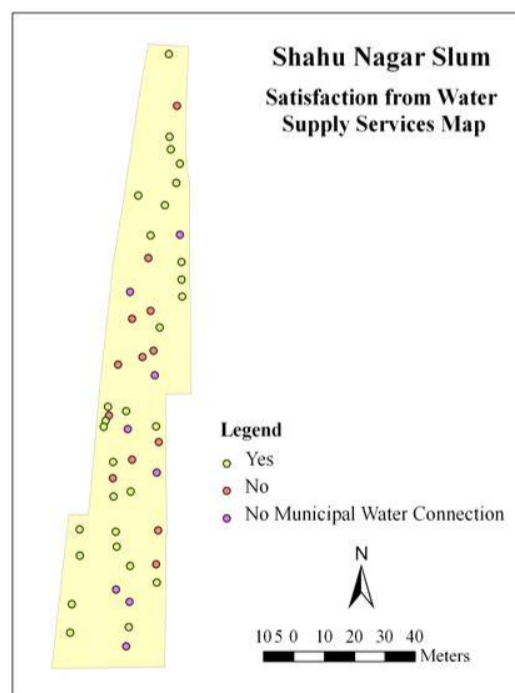
Map 3 shows the distribution of 50 surveyed slum households of Shahu Nagar A-90 slum commenting on basic service of drainage provided by JCMC.

22 % of surveyed slum households are satisfied by drainage service provided by JCMC, while 78% slum households are unsatisfied from drainage network.

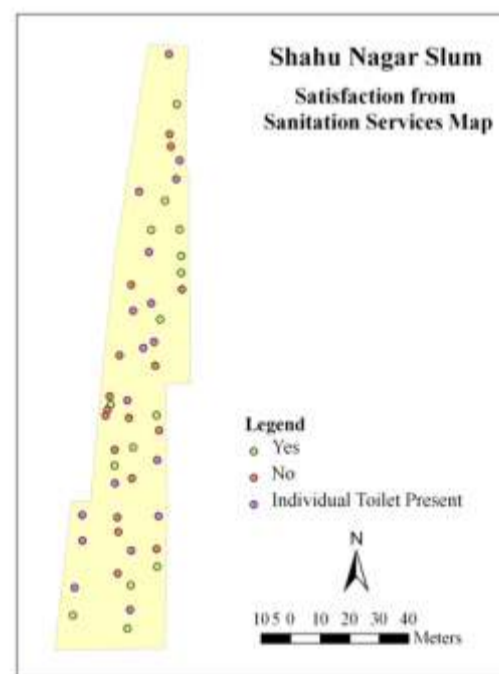
**Satisfaction from Solid Waste Management Services:**

Map 4 shows the distribution of 50 surveyed slum households of Shahu Nagar A-90 slum commenting on basic service of SWM provided by JCMC.

42 % of surveyed slum households are satisfied by SWM service provided by JCMC, while 58% slum households are unsatisfied.

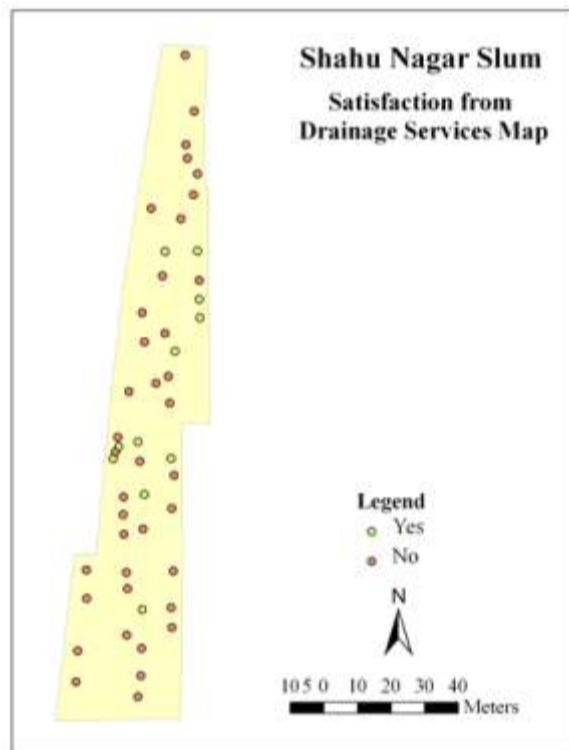


**Map 1: Satisfaction from water supply services**

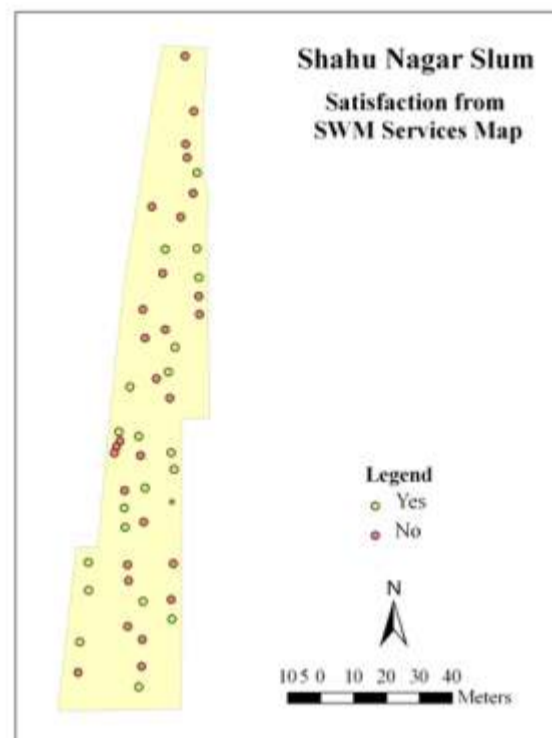


**Map 2: Satisfaction from sanitation services**





Map 1: Satisfaction from drainage services



Map 1: Satisfaction from SWM services

#### CONCLUSION:

The comparative analysis of SLB values for the Jalgaon city wide & slum level highlights the inequity in UWSS service provided by the ULB. The research puts thrust on using SLB as a tool for efficient investment in the service delivery of UWSS especially to the poor and un-served.

The other facet of the research aiming to map satisfaction in service delivery of urban services for Shahu Nagar A-90 slum utilizes Geoinformatics as an efficient tool in creating slum Geodatabase. Geoinformatics aids in data collection, analysis & display of results in visually more appealing way as compared to conventional way of tables, charts etc. The mapping also brings forward the slum dwellers perception of basic urban service provided by ULB.

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**Kanchan Wani**

Research Scholar, Post Graduate Department of Geography, Moolji Jaitha College, Jalgaon, Maharashtra, India

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