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Building **Inclusive** Urban Communities

CASE STUDY – FINAL REPORT

SPATIAL ACCESS AND INCLUSION OF LIVELIHOOD NEEDS OF INFORMAL SETTLEMENT COMMUNITIES IN OLD RAJARAJESHWARIPETA SLUM IN VIJAYAWADA

Dr. Abdul Razak Mohamed – 2019

Funded by the Erasmus+ Programme of the European Union

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योजना तथा वास्तुकला विद्यालय, विजयवाडा
School of Planning and Architecture, Vijayawada
An Institute of National Importance, MHRD, Govt. of INDIA.

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Contact: Dr. Abdul Razak Mohamed
Dept of Planning, School of Planning and Architecture (SPAV)
I T I College Road, Vijayawada 520008,
Krishna District, Andhra Pradesh, India.
Email: razak@spav.ac.in Website: www.spav.ac.in

The case study final report based on the secondary data and the base line survey conducted in the Old Rajarajeshwaripeta slum in Vijayawada) submitted (on 10-2-2018) by Dr. Abdul Razak Mohamed, Principle Researcher as well as a member of the BINUCOM project team belong to the Indian partner institute SPAV to the Coordinating Institute University of Danube Krems, Austria.

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ABSTRACT

The social patterns and the physical structure of slums vary as per the social and economic conditions. The commonly observed socio-spatial characters are as follows – (a) dilapidated and infirm housing structure, (b) poor and sometime no ventilation, (c) acute congestion and overcrowding, (d) faulty alignment and unequal width and length of streets, (e) inadequate lighting, (f) scarcity of safe potable drinking water, (g) water logging during rains and open waste water drains, (h) absence of toilet facilities and bathing areas, (i) lack of open spaces such as parks and play grounds, (j) absence of community halls and (k) absence of basic education and primary health facilities.

There is a growing concern by the local, national and international governments about providing housing, civic and social infrastructure facilities for the informal settlements in cities and towns in India. Social and spatial exclusion of informal settlements from mainstream households living in cities is evident from (a) their location, and (b) availability and accessibility of social and physical infrastructure in terms of quantity and quality.

The research attempts to explore the slum households' living conditions in terms of housing and infrastructure services available and accessible in their informal settlements, (b) to assess the spatial access to livelihood needs, (c) the strategies used to obtain the infrastructure needed by the households and community in the informal settlement, and (d) measures to gain spatial access and inclusion of livelihood needs to alleviate the poverty situation. The research centers on one informal settlement, the Old Rajarajeswaripeta slum in the Vijayawada city, whose heterogeneous population belongs to varying communities and lives in different types of housing. The urban planning, architecture and education professions play an important role in shaping the informal settlements. This research also examines the possibilities of including the concerns of informal settlements into urban planning education in India.

Key words: Access, Spatial Access, Livelihood needs, slums, social inclusion, urban poor, social and physical infrastructure, local government etc.

"This research attempts to explore the slum households' living conditions in terms of housing and infrastructure services available and accessible in their informal settlements."

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PART 1
INTRODUCTION

Background

The case study research is funded by the Erasmus+ program of the European Union. The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Social patterns and the physical structure of slums are based on social and economic conditions. The research attempts to explore the slum households' living conditions, the housing and infrastructure services available and accessible in order to assess spatial access to livelihood needs. Various strategies are used by the slum households to obtain spatial access to infrastructure needs. The study was conducted in the Old Rajarajeswaripeta slum in Vijayawada City. The scope of the study includes drawing lessons from the case study and integrating them into the urban planning education and profession to promote social inclusion of the informal settlement households in consideration of spatial access to livelihood needs.

Introduction

A **slum** is a densely populated urban informal settlement characterized by substandard housing. While slums differ in size and other characteristics, most lack reliable sanitation services, supply of clean water, reliable electricity, law enforcement and other basic services. Slum residences vary from shanty houses to professionally built dwellings that, because of poor-quality construction or provision of services, have deteriorated into slums. Slums were common in the 18th to early 20th centuries in the United States and Europe. More recently, slums are predominantly found in urban regions of developing and undeveloped parts of the world, but are also found in developed and developing economies.

According to UN-Habitat (2015), around 33% of the urban population in the developing world in 2012, or about 863 million people, lived in slums. Slums form and grow in many different parts of the world for many different reasons. Some causes include rapid rural-to-urban migration, economic stagnation and depression, high unemployment, poverty, informal economy, poor planning, politics, natural disasters and social conflicts. Strategies tried to reduce and transform slums in different countries, with varying degrees of success, including a combination of slum removal, slum relocation, slum upgrading, urban planning with citywide infrastructure development, and public housing.

However, the slums are defined by their poor infrastructural conditions. A slum is identified as a compact settlement with poorly built tenements, mostly of temporary nature, crowded together usually with inadequate and lack of spatial access to education, health services, sanitary and drinking water facilities, and households live in unhygienic conditions. Most slums lack clean water, electricity, sanitation and other basic livelihood services. The livelihood needs are considered potable drinking water, basic education, primary health service, recreation and socialization. The basic infrastructure that sustains an inhabitation is lacking in slums, and this is one major cause of social exclusion and economic backwardness.

In India under the 74th Constitution Amendment Act 1990, urban poverty alleviation has been entrusted to urban local bodies (ULBs), as per the XII Schedule. However, most of the ULBs lack financial resources for providing basic services or undertaking comprehensive poverty alleviation programs. Nevertheless, various state governments including Andhra Pradesh (MEPMA) Kerala (KUDUMBASHREE) and Gujarat (UMEED) etc. have evolved innovative solutions for creating choices for the urban poor through various approaches to urban poverty alleviation. In the course of a mission for the elimination of poverty in municipal areas, (MEPMA), government of Andhra Pradesh Urban Services for the Poor (APUSP), a flagship program (2000-08) of the government of Andhra Pradesh, addressed the challenges of municipal service delivery in 42 class 1 towns and resulted in improvements in livelihoods and access to basic services for about 3 million poor people in the slums of Andhra Pradesh. The mission adopted the following strategy to converge with various programs: : Building organizations of the poor as Community Based Organizations (CBOs), empowering the poor by building their capacities, creating highly trained social capital at grass roots level in health, education, livelihoods, vulnerability etc.; access to credit for the poor by facilitating interfaces between CBOs and bankers, Town Level Bankers committees with Self Help Groups (SHGs), taking up placement-linked livelihood programs on a continuous basis; and services under the 7-point Charter (security of land tenure, improved housing, sanitation, water supply, health, education & social security system), etc.

The town and country planning profession is very complex as the cities and towns try to keep their character and identity as well as providing a good quality of life to their inhabitants. But due to a poor governance system and politically-oriented government, this often fails to succeed in giving a good quality of life to the informal settlement households. The approach and priority of the local government towards planning and development requires a shift in education and practice in town and country planning. The local governments of the cities and towns offer luxurious and lavish life for some, and fail to provide basic quality of life to many. There is a need for change in town and country planning education and practice focusing on spatial planning, governance, socio-economic and environmental planning. The human population includes children, adults, seniors, rich, poor, men, women, people with different abilities and needs with regard to time and space. These factors could reflect in town and country planning education and practice. (Mohamed, Abdulrazak, 2016).

Evidence is available in the form of studies, plans, programs, schemes towards private and public intervention in the slums with regard to studying, upgrading and developing various aspects such as social, economic, environmental and political situations. But no or very little attempt has been made in urban planning education to incorporate informality, inclusion, planning and design towards understanding, assessing and finding solutions to develop informal housing communities in towns and cities.

Objectives

The researcher attempted to explore two basic principles essential for the improvement of the basic livelihood needs of the urban poor households living in informal settlements in towns and cities in India. These are: (a) lack of spatial access to livelihood needs in their settlement that leads to households exerting a lot of energy and human capital to obtain the facilities, and (b) social inclusion by means of households in informal settlement gaining spatial access to livelihood needs, which would improve living conditions. The above two aspects are the central focus of the research.

Methodology

The study is based on the primary and secondary data collected from literature and consists of research studies, government reports on policies, plans and schemes concerned with informal settlements and infrastructure deliveries. The primary data was collected from the field through household surveys, discussions with elderly people, elected representatives and social organizations from the selected slum in Vijayawada. The household survey was conducted in the slum using observation and conducting structured interviews with 100 households covering 5 clusters identified geographically. The households were chosen for the survey by simple random sampling method. The data analysed and prepared GIS base maps to identify the households' spatial distribution and access to available infrastructure facilities and mobility, work, health, education, recreation and socialization.

Report format

The report is organized into seven sub topics concerned with the objective of the study. The introduction is the first as stated above, followed by the second part, highlighting the conceptual and theoretical base, namely the spatial access and livelihood needs of urban poor in general, and specifically related to India. The third part attempts to give a brief note on the slum situation in Vijayawada followed by the fourth part, the case study area Old Rajarajeshwaripeta slum in Vijayawada. The fifth part depicts the spatial access to the social and physical infrastructure situation, and the sixth part gives baseline information on the spatial access to infrastructure facilities in terms of the household surveys conducted in the field. The seventh part of the report attempts to explore the slum household extent of affiliation with the local government and elected representatives concerned with the development of the local area. Finally, in the eighth part, the author explores the lessons learned on the subject of the report as well as the way out in terms of possible ways of social inclusion of informal households by (a) measures by the local government to create spatial access to livelihood needs and (b) the need for a paradigm shift in urban planning education in India. ◆

PART 2
SPATIAL ACCESS AND LIVELIHOOD NEEDS OF URBAN POOR - A THEORETICAL BASE

The everyday reality for a large proportion of India's urban population is lack of access as well as spatial access to even the most basic services such as supply of piped water, drainage, sewerage, electricity, education, and public health care. Although concerned about economic development, the Indian government has done very little about providing basic services to the urban poor (Kundu, 1991). The rapid growth of urban population and low investment in urban infrastructure, in particular to meet people's basic needs, created serious deficiencies in the availability of infrastructure (Kundu, Moitra, 1999).

The household sector is the largest segment of the Indian economy. In 2015-16, it accounted for 43.6% of gross value added (GVA) in the economy, while the private non-financial corporate sector, the second largest segment, accounted for 34.9%. The health of the household sector, therefore, is key to economic health. The livelihood prospects facing the poor – whether for coping or thriving – are located in economic, political and social structures and processes, at both macro and micro levels. What lessons can we draw from existing theories and concepts that might help to interpret these complexities? (Start Daniel and Johnson Craig, 2004).

Ensuring that citizens in general and vulnerable groups in particular have access to services irrespective of where they live, is of crucial importance to modern welfare states and to their ambition of upholding social rights. So far, however, existing studies on access to local social services have often concentrated on one target group (e.g. elderly, children) or on one type of services (e.g. care services), and do not provide a comprehensive picture of access to locally offered social services that municipalities are obliged or expected to provide. Furthermore, most studies concerned with access begin with the provision of existing services, ignoring the question of which services are provided at all (and which are not). (Kersti Kriisk Kersti & Minas Renate, 2017). Greater proximity to social service providers is thought to increase the likelihood that individuals in need will receive or apply for support, as shorter distances reduce the burden of commuting (Allard, 2004).

Provision of local social services is an important measure to alleviate poverty, as it supports vulnerable groups and promotes citizens' independent living. Access to such services is inevitably the outcome of a complex interplay among actors with different expectations, obligations and rights, and can be impeded by various obstacles. These include shortage of resources and legislative and implementable fragmentation (Daly, 2002; Rauch, 2005).

Understanding the social and spatial aspects of urban low income neighbourhoods are the pre-requisite for the study on spatial access. Researchers and policy makers often assume that the definition of neighbourhood is close enough to the definitions of neighbourhood residents to make sense of the data gathered and base important decisions on these data. Yet neighbourhood is both a social and spatial concept. A spatial definition would simply be the assessment of needs and the allocation and delivery of services, these create statistical neighbourhoods (Tienda, 1991). The social definition of true neighbourhoods depends on social interaction effects with neighbours, and it is these that create

functional neighbourhoods (Gans 1967). Slum and squatter households are sometimes built by the people themselves. But religion, region, occupation, income and language cut across the social organization of these communities. According to Briggs (1997) it is important to study the spatial organization of opportunity for the urban poor and the meaning of neighbourhood to residents, researchers and policy makers.

Since the Copenhagen Declaration (1995) and the First UN Decade for Eradication of Poverty (1997) and the Millennium Declaration (2000), global and national calls for creating a just and inclusive world that addresses the concerns of the weak and vulnerable have grown louder, and planning for the goal has taken shape in national multi-year plans. (Syed Zahir Sadeque, 2008). Tackling urban poverty and attending to its spatial manifestations is vitally important to national economic and social development. From a low of an estimated 28 percent of the population in Latin America to a high of 76 percent in South Asia, the urban poor constitute both an enormous challenge and an opportunity.

In India, the slum dwellers living on lands owned by the Central Government are considered illegal residents. The slum dwellers who live on the Indian Railway lands spend their lives in the most insanitary conditions. The railway authorities and government agencies despise these poor settlers as encroachers, who often struggle just to make a living. (Das C, 2015). The households living in the Old Rajarajeshwaripeta slum are also confined between railway lines and main roads.

"Spatial Access" to livelihood requires potable drinking water, basic education, primary health and sanitation, energy and fuel, and socialization for the low-income informal settlement households, which leads to considerable f "spatial access costs" in terms time and money spent towards gaining access to livelihood needs (Mohamed, Abdul Razak, 2011).

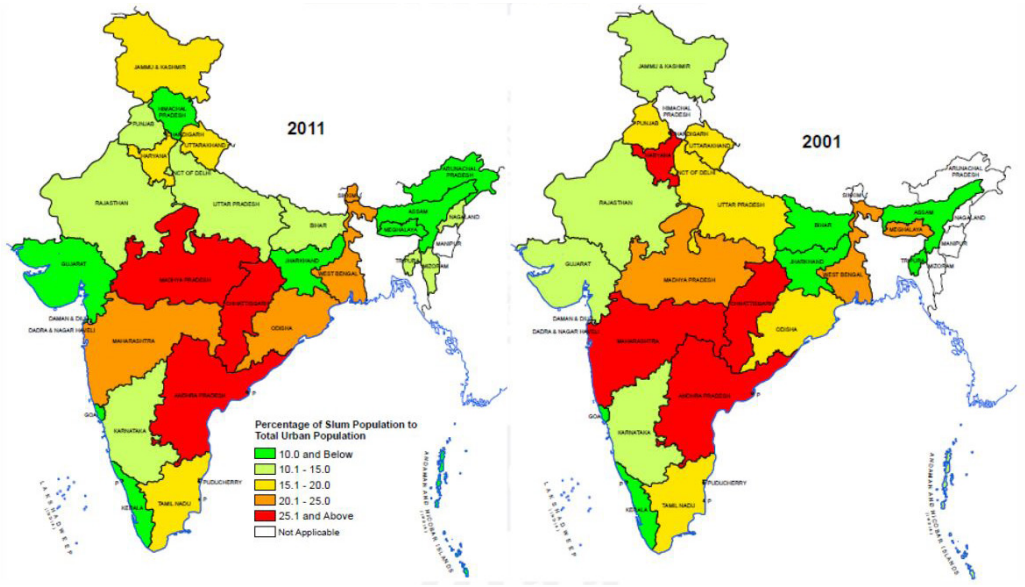
The availability and accessibility of and spatial access to livelihood needs of the urban poor households are very important in terms of the actual living conditions of the households. Due to unavailability and lack of access to social and infrastructure facilities essential to satisfying the day to day needs of the urban poor, households are forced to spend lot of energy and human capital on gaining access to those needs. This report is based on the case study in Vijayawada which aims to highlight the importance of spatial access to livelihood needs and inclusion into mainstream urban development. ◆

PART 3
SLUMS IN VIJAYAWADA

Andhra Pradesh State has one of the biggest slum populations in India. According to the census 2001 and 2011, the slum population in this state constitutes more than 25 per cent (Figure No.1). For this reason the state government and civic authorities in Vijayawada face a big challenge. . According to Vijayawada Municipal Corporation, (VMC) the city has 111 slums, i.e. 3 lakh populationsout of 11 lakh (1 Lakh is One Hundred Thousand) living in it. More interestingly, the towns located in the Vijayawada, Guntur, Tenali and Mangalagiri Region (VGTM Region), are the epicentre of the proposed capital region of Andhra Pradesh State. In this town, around 51 per cent of the population livies in 35 slums. Around 20 of them are notified as hazardous slums as they are situated along rivers and canals.

Figure 1

State wise slum population in India as per 2001 & 2011 Census



It is a challenge for the Municipal Commissioner to develop slums while keeping dislocating the slum-dwellers as low as possible. Pointing out that the concept is for inclusive growth, the Municipal Commissioner is of the opinion that relocating dwellers would be done only where absolutely unavoidable. The Corporation planned to construct houses for the slum-dwellers, as well as providing infrastructure and other facilities. The Vijayawada Municipal Corporation (VMC) would follow and choose models such as Public Private Partnership (PPP), prescribed in the guidelines of the Govt of India sponsored slum development scheme Rajiv Awas Yojana (RAY).

Source: Primary Census Abstrct for Slum, 2011, Office of the Registrar General & Census Commissioner, India

To make Vijayawada a slum-free city, the VMC has commenced a pilot project to study the features of a slum – Bestavaripeta near Punnamighat. The VMC officials engaged in preparing a "base map" for the slum with the help of a field study as well as GIS maps. The VMC is in possession of maps prepared manually by the officials. But the Corporation used GIS maps for better precision. The VMC took up "in situ development" at Bestavaripeta under RAY, a scheme that the Central government launched. The spatial distribution of slums in Vijayawada is shown in the Fig No.2.

Figure 2

The spatial distribution of slums in Vijayawada 2011

The NGOs working in the slums of Vijayawada concentrate on health care, literacy care and share, milk programs, and economic self-sufficiency as the major initiatives. The lack of hygiene, sanitation, and medical facilities exposes slum dwellers to diseases, often contagious. Over the years, NGOs have intervened to treat and vaccinate children and adults. They regularly conduct medical camps, organize immunization programs, offer free dental care, and operate on hundreds of patients. Details on the three services are as follows: (a) Literacy: Care & Share has built a school in the slum to ensure that the children - who are otherwise deprived of any educational opportunity - at least acquire basic literacy skills.

In some of these slums, the schools built are the only buildings that are standing, providing shelter to the people in times of emergency. (b) Milk Program: For years now, NGOs have been running a milk program, whose chief goal is to provide every small child attending our school with at least a glass of milk per day. This helps them offset some of the disastrous effects of malnutrition. (c) Economic Self-Sufficiency: the NGOs also assist the slum's many parents and attempt to provide them with the means to feed their families. NGOs have provided slum dwellers with rickshaws - one of the main modes of transportation in the city.

Despite these attempts by the local government and NGOs to provide livelihood support services, they are temporary and not sustainable. The households in the slums of Vijayawada continue to access livelihood needs more from the neighbouring and far off locations rather than from within the settlement. The prevailing situation in slums in terms of spatial access to livelihood remains lacking or non-existent.. The next part of the report is devoted to exploring the above mentioned aspects based on the case study Old Rajarajeshwaripeta Slum. ◆

PART 4
CASE STUDY OF OLD RAJARAJESWARIPETA SLUM

Old Rajaraeshwaripeta slum is located in Ward No. 52 of Vijayawada Municipal Corporation, which has a total of 59 electoral wards. The 52nd ward of VMC has a total population of 16,175 and occupies a total area of 4.21 km2 and the Old Rajarajeshwaripeta slum has a total population of 4137 (Table No. 1). Old Rajarajeshwaripeta slum is located between Vijayawada railway station and Vijayawada bypass. It is a kind of urban village. The spatial growth is along the railway line. Spatial pattern is basically based on road network, mainly grid iron pattern. The slum is surrounded by dense urbanized commercial areas and public spaces such as railway station, hotels etc. The New Rajarajeshwaripeta, a further extension of Old Rajarajeshwaripeta, is a resettlement colony in Vijayawada. Old Rajarajeswaripeta slum is situated on the northern outskirts of Vijayawada (Figure No. 3).

Table 1

Population composition of Old Rajarajeshwaripeta Slum (2011)

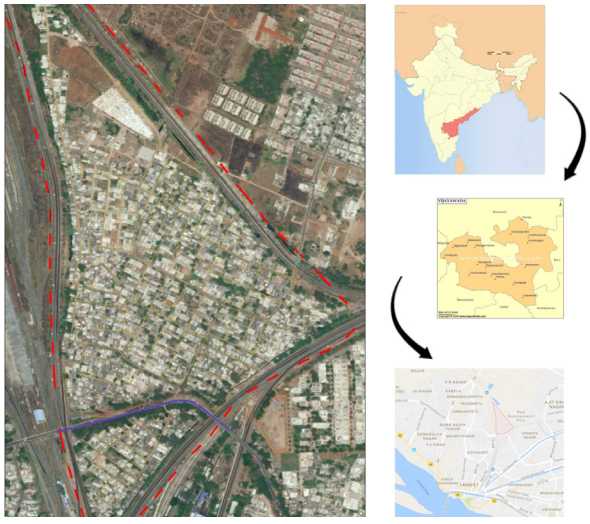
S.No	Ward No.	Households	Area (sq.km)	Population				
				SC	ST	BC	Others	Total
1	52	989	0.38	920	174	1151	1482	4137

Note: SC-Scheduled Caste, ST-Scheduled Tribe, BC-Backward Class Source: Census of India 2011

There are about 200 to 300 families living in the slum spread across 5 to 6 acres, lacking infrastructure facilities and the services are delivered by various agencies. Hence it is a challenge to create a good livelihood for the slum population. The researcher observed during the field visit that the Old Rajarajeshwaripeta slum lacks in infrastructure services, good quality water and drainage facilities. Solid waste is managed well in the slum with door to door collection of waste on a daily basis. M most of the houses are electrified. The major problems faced by the households include clogged open drains, poorly constructed metal roads, a shabby structure serving as a temple and the only source of social interactions, overcrowded houses, bad quality roads in most parts of the slum, lack of employment opportunities inside the slum.

Figure 3

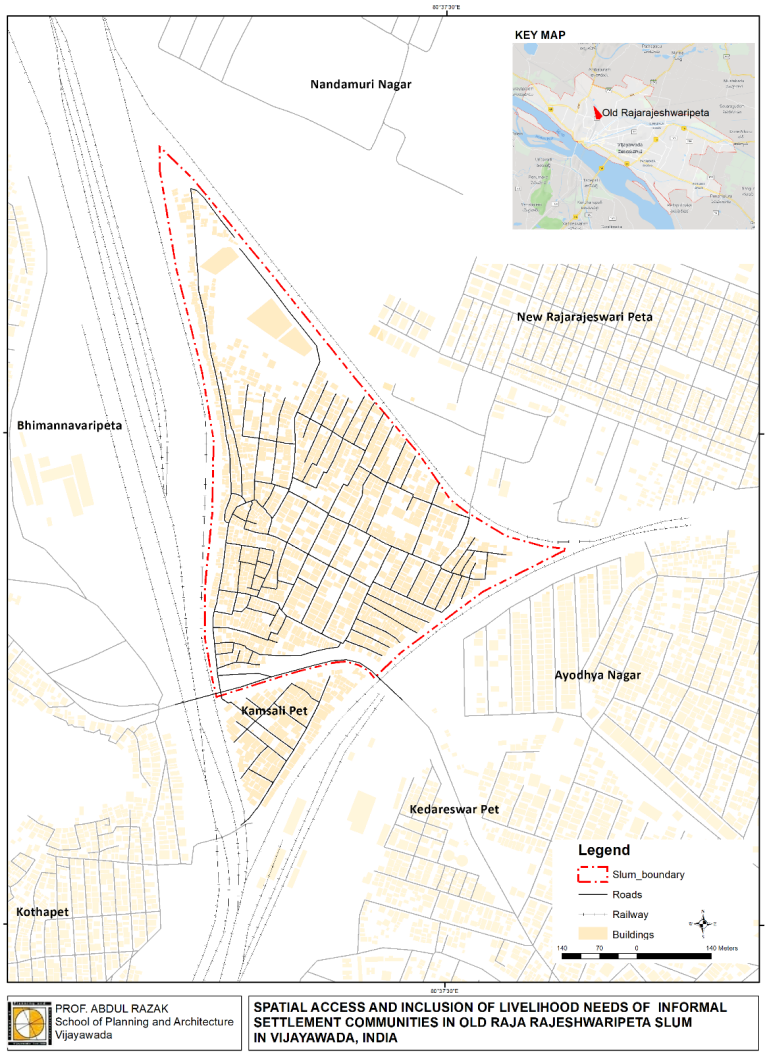
Aerial view and location of Old Rajarajeshwaripeta Slum



In 2001, the Municipal Corporation's attempted to move about 1,200 families away from the roadside slums, where they occupied government land, to to Old Rajarjeshwaripeta. This number has grown to 5,000 within 18 years (2019) as per the discussion with the local community leader. The spatial growth of the slum is shown in the Figure No.4.

Figure 4

The spatial form of the slum



The local government, however, has only shifted families from one slum to another, without providing any of the basic infrastructure services. Each family has been allotted a plot of land of about 44 sq. yds. The Municipal Authorities dug 50 bore wells to provide water for daily usage. But, these wells are shallow; the little water they provide is salty. The water from the wells is not potable and is used only for washing and bathing. Hand pumps have been provided, but many are already broken and the ones in use are difficult to operate.

The main access roads are narrower, and the internal streets providing access to houses are even narrower. The access roads are in good condition, but the internal streets are in poor condition. Garbage is dumped on the side of the roads, making the slum unhygienic. Most of the houses are 2 storey. There is no buffer space between roads and houses, and people park their cycles and two wheeler vehicles on the road, making the road more congested. There are few trees lining the streets on and the periphery of the slum area.

The growth of the slum fabric is maintained but shoulder space for the buildings and the road is not provided. The slum lacks infrastructure facilities. The road which leads to the railway station is used for solid waste disposal and the space between the railway track and the spatial growth of the slum is limited to the bypass area. Overall, the slum is located in a disadvantageous location where households lack basic livelihood needs. ◆

PART 5
SOCIAL AND SPATIAL INFRASTRUCTURE IN OLD RAJARAJESWARIPETA SLUM

The quality of life in any urban centre depends upon the availability of and more specifically, spatial access to quality and quantity of social and physical infrastructure. The spatial form of the slum depicts the circulation pattern and the settlement structure as a triangular shape trapped between the busy railway and road corridors (Figure No.4). The slum settlement pattern highlights the dense and crowded homes with unplanned streets. Social infrastructure includes facilities pertaining to health, education, recreation, socio-cultural activities, communication, security and safety, and community facilities such as religious activities, social congregations and community events, cremation/ burial grounds etc. **Physical infrastructure consists of water supply, sewerage, sanitation, drainage, solid waste management, electricity and street lights etc. The infrastructure facilities available, and their spatial access, are highlighted in the following session. This part covers some of the selected infrastructure facilities considered for the study. It includes water supply, sewerage, drainage, solid waste management, electricity, street lights, recreation, community facilities, health, education etc.**

5.1 Social Infrastructure

Social infrastructure facilities include education, health, community facilities and social security for the households. The availability of social infrastructure facilities and their spatial distribution are shown in Figure No. 5.

Education

There are 5 schools (2 secondary and 3 primary) and an Anganwadi located within the slum, of which two schools and Anganwadi are government owned and maintained, which are preferred by the majority of these residents. Three higher education institutes are located within 2 km, including an engineering college.

Health

The residents of the slum are dependent on the government hospitals which are outside the study area. They have access to health clinics and private medical stores located within the slum. The hospitals accessible to the slum residents are E.S.I. Hospital, Government Hospital (near Mahanadu Road), and Government Hospital (near bus-stand).

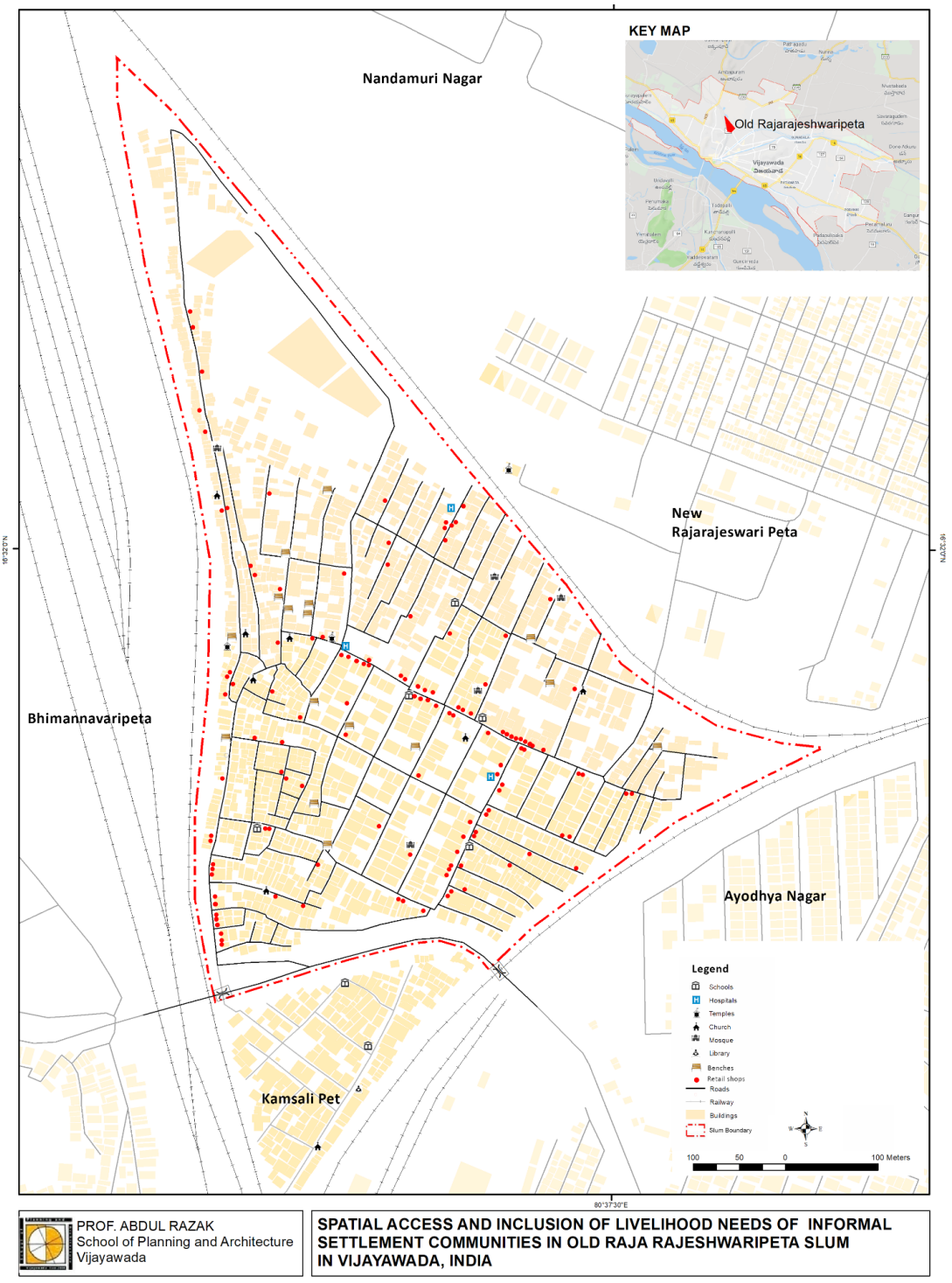
Recreation and Community facilities

People of all religious beliefs reside in the area. There are 3 temples, 2 churches and a mosque in the area. One of the famous temples in the area is the Mahankali temple which devotees from the city visit.

An ATM service and civil supply store (ration shop run by the VMC) are available within the study area. A park is located within a proximity of 2 km and the post office at a distance of half a kilometre.
There are no designated parks or play areas within the slum.

Figure 5

Location of Social Infrastructure in slum



5.2 Physical infrastructure

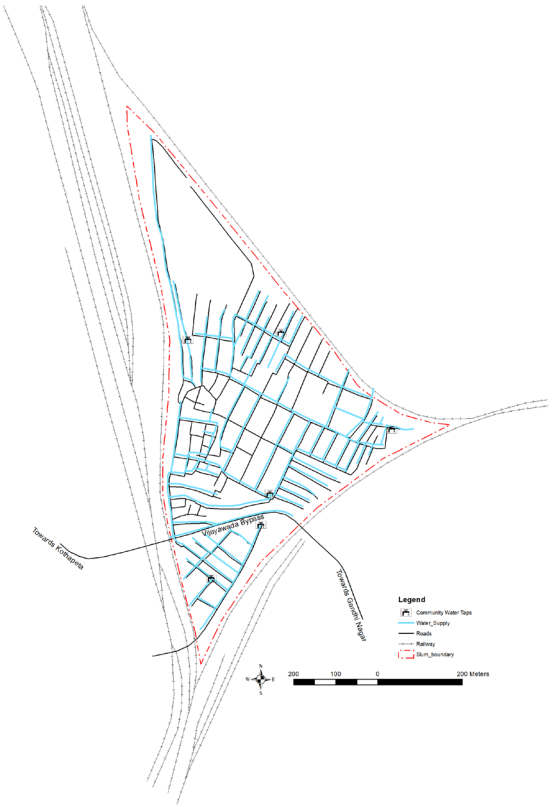
The physical infrastructure such as the water supply, sewerage, sanitation, drainage, solid waste management, electricity and street lights situation in the Old Rajarajeshwaripeta slum are highlighted below

Water supply

In terms of water supply (Figure No. 6), the majority of the roads are laid with water supply pipelines and water is supplied from overhead water tanks in New Rajarajeshwaripeta.

Figure 6

Water supply network



In the slum it was observed that 82% of the total households have individual water connections and only 18% of them are not connected to the municipal water network;, they depend on bore wells and public stand posts.

Though many households have individual connections, the quantity received is many times inadequate due to low pressure. Some of the households (about 5 to 7%) have alternate sources of water supply such as own tube/bore wells. About 85% of the households buy water for drinking purposes due to the bad quality supplied by the local government. Around 26% of the households have bore wells inside the house to cater to other domestic requirements other than drinking water (Figure No 7). The water supply sources outside the house are highest with tube well/ bore and well/hand pump, and 48% of the households are using bore wells as a source outside the house with 52% using public taps located in the slum.

Figure 7

Sources of water supply in the slum

Sewerage and Drainage

The area has a combined sewerage and drainage network. About 76% have pucca toilets and are connected to septic tanks. About 10% are connected to the drainage network. All the household grey water is discharged into the open drains along the road. The waste along the road sometimes moves into the open drains, causing the drains to clog (Figure No. 8).

Figure 8

Street side waste disposal and open drain at the edge of the slum

Budameru Drain is towards the north (about 1km.) of the slum, and floods the area up to 2-3 ft during monsoon through railway land. Major water logging is a problem to the residents residing near the railway track. About 50% of the people lose their livelihoods due to immobility during the monsoon.

Sanitation

The VMC had laid an underground sewerage network under the national scheme Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in this slum; however, some of the areas near the railway track are yet to be covered. All the households have access to sanitation facilities and have individual toilets connected to septic tanks. Though Under Ground Drainage (UGD) is not yet operational in this area, around 40 percent of the households have already applied for the connection and an additional 36 percent have indicated willingness to get connected to this system. The majority of the roads have open drains systems.

Solid Waste Management

Household waste is collected from door to door on a daily basis and is transported to the treatment plant (Figure No. 9). The slum generates about 4500 kg/day. Current per capita waste generation per day is about 0.6kg.

Figure 9

Waste collection area provided by VMC in the slum

About 65% of the households are provided with door to door collection and 19% of the households have access to public dustbins and the rest dump along the roads.

Electricity

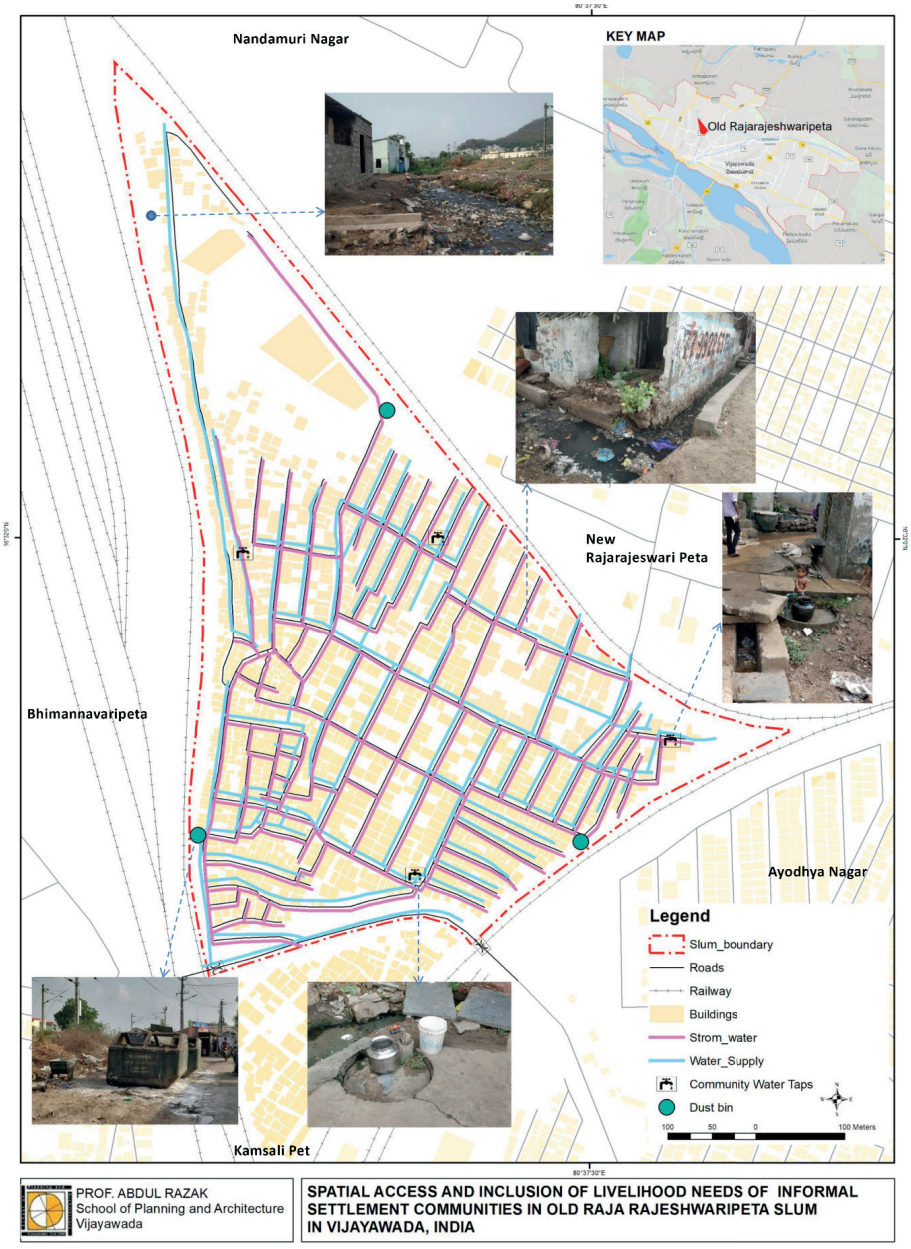
About 92% of the households are provided with metered connections, about 5% are non-metered and the remaining 3% of the households are dependent on kerosene, firewood or other facilities. In summary, 71% use kerosene, 16% use firewood and the remaining 13% depend on other, alternate facilities available.

Street lights

About 77% of the slum is equipped with street lighting, 3% with bulb and 2% with mercury and sodium while the remaining 18% of the slum have no street lighting. The overall physical infrastructure facilities are shown in the map below (Figure No. 10). ◆

Figure 10

Physical Infrastructure in slum



PART 6
STAGES OF INFRASTRUCTURE DEVELOPMENT

In the approximately 30 years of existence of the Old Rajarajeshwaripeta slum, infrastructure developed very slowly inside the slum. The households received their basic facilities only after the JNNURM scheme was implemented. Access to sanitation is also a recent activity. The stages of infrastructure development in the slum is shown in the Table No.2. The spatial access to livelihood needs are still lacking in the houses and communities of the slum. ◆

Table 2

Stages of infrastructure development

YEAR	INFRASTRUCTURE DEVELOPMENTS
1970 – 1980	Formation of Settlement. People migrated from Maharashtra and Andhra Pradesh
1980 – 2005	Up-grade of houses started during this period with assistance from various schemes.
2000 – 2005	Notified as slum
2005 – 2014	Implementation of JNNURM **BSUP- Basic service to Urban Poor** Water supply, toilet waste, drainage, SWM, power, roads, transport, access to legal and affordable housing for Urban Poor. **IHSDP-Integrated housing and slum development programme** Urban planning and city management is an inclusive approach. It ensured that land was available for the poor at an affordable price.
2015- 2018	Construction of IHHL (Individual Household Latrines) and up-grade of roads

Source: Primary survey 2018

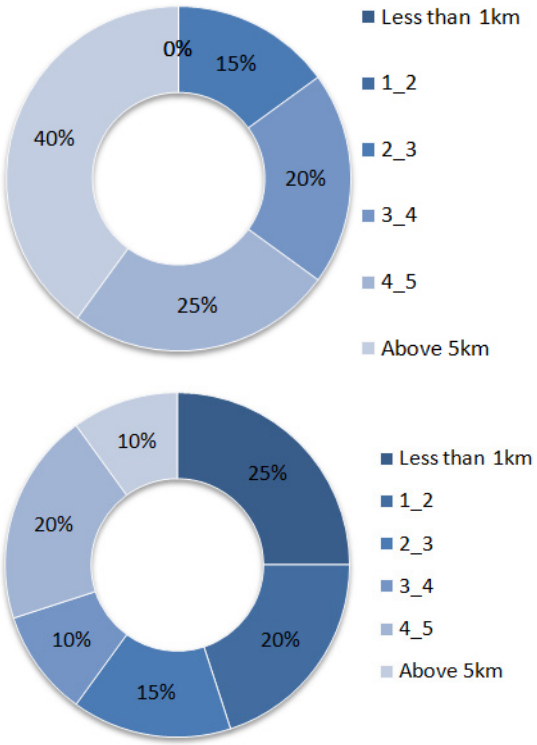
PART 7
MOBILITY PATTERN WOWARDS SPATIAL ACCESS TO INFRASTRUCTURE

Mobility map is a method used to explore the movement patterns of an individual, a group, or a community. It aims to understand the mobility patterns of local people: where do they go and for what? As per the sample household survey it becomes clear that the mobility patterns of people residing in Old RajaRajeshwaripeta slum are owards gaining spatial access to livelihood needs. Since the slum dwellers are not provided with their basic livelihood needs, they move towards various places in the city for work, health, education, recreation and socialization purposes.

The spatial access to health and education is such that households have to travel less than 5 km towards education and more than 5 km towards heath facilities.

Figures 11 & 12

Distance travelled for Health and Education Facilities



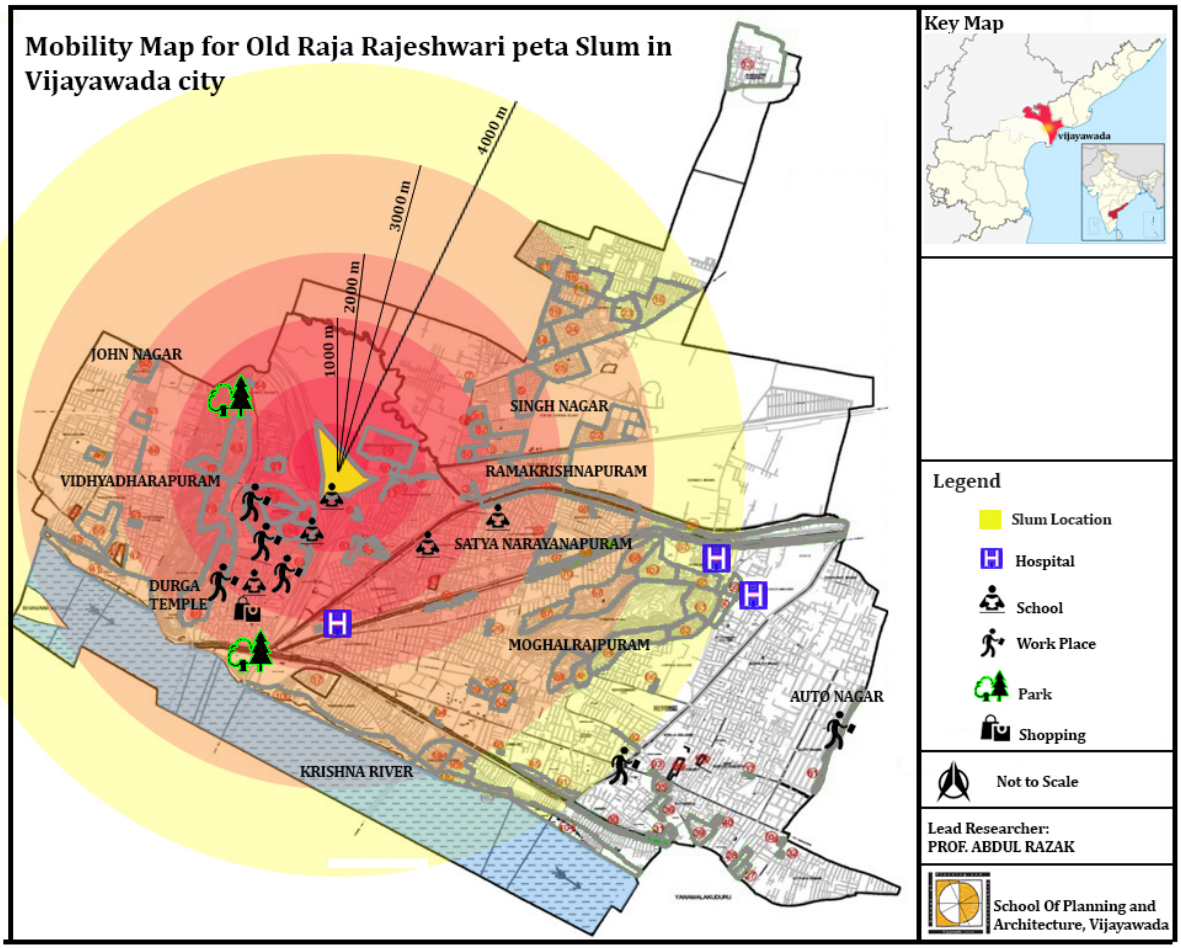
Most of the hospitals and health facilities are located more than 5km away, with 25 % of the people travelling between 4 and 5 km to health facilities. The rest of the households, 40%, travel more than 5 km to use the health facilities (Figure No. 11).

Most of the educational institutes are situated at a distance above 5km. About 20 % of the households use the education facilities at distances of about 4 to 5 km. The maximum travel distance to education facilities is observed to be within a1 km radius, where the government primary school is located. But higher education children travel between 4 to 5 km (Figure No. 12).

For work, the residents mostly rely on the nearby markets located in the city core area called 1 town and 2 town, or the railway station and bus stand for daily wage labourers. Sanitation workers, beggars, etc. also work in the industrial area (Auto Nagar) as daily wage labourers. Very few go out of the city in search of work, to places in West Godavari, Krishna and Guntur districts, and come back once a week. The mobility patterns towards work, health, education, shopping and recreation for the sample households is shown in the Figure No. 13. ◆

Figure 13

Mobility pattern of residents of Old Rajarajeshwaripeta slum



PART 8
SLUM GOVERNANCE AND THE LOCAL GOVERNMENT

The Municipal Corporation Vijayawada and other state gov. departments are responsible for the delivery of a variety of services like water supply, sewerage, sanitation, drainage, solid waste management, roads and transportation to the citizens and have taken long strides in this regard as shown in the table below (Table No. 3). They have also been dealing with medical relief, preventive medicine, sanitation and conservancy, maternity and child welfare, control of food adulteration and some other functions under the public health regulations. ◆

Table 3

Concerned departments provide physical and social infrastructure in the city

INFRASTRUCTURE			CONCERNED DEPARTMENT
PHYSICAL INFRASTRUCTURE	Water Supply	New Individual connections	Engineering Department, Vijayawada Municipal Corporation (VMC)
		New Public stand post	
		Water Tankers	
		Supply & Maintenance	
		Complaint Redressal	
	Sewerage	Construction of open drains	
		Maintenance of open drains	Public Health Department, VMC
	Sanitation	Community toilets (O& M)	
		Construction of new toilets under SBM	Engineering Department, VMC
	Solid Waste Management	Collection & maintenance of community dustbins	Public Health Department, VMC
	Electricity	New connections	Andhra Pradesh Power Generation Corporation Limited
		Transformer Maintenance	
		Complaint Redressal	
	Roads	Construction of nNew roads & maintenance	Engineering Department, VMC
	Streetlights	New requirements	Engineering Department, VMC
		Operation & Maintenance	
SOCIAL INFRASTRUCTURE	Education	Anganwadi	Department for Women, Children, Disabled and Senior Citizens
		Primary School	Sarva Shiksha Abhiyan
		Secondary School	
		Senior Secondary School	
	Socio-Cultural	Community halls	Town planning department, VMC
		Religious building	
		Burial ground	
	Recreational	Parks	Town planning department, VMC

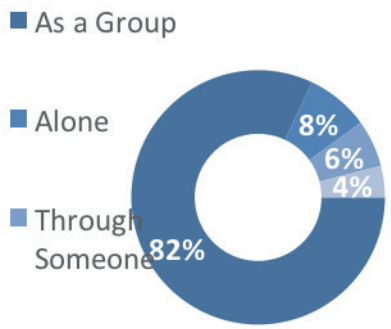
Source: VMC

PART 9
SPATIAL ACCESS TO INFRASTRUCTURE AND LOCAL GOVERNMENT

The household survey conducted with 100 households in the slum, which asked 4 questions pertaining to the people and local government interface, aimed to understand the governance system of slum households towards gaining spatial access to livelihood needs. The questions were about their interaction with the local political representatives in terms of whom?, how?, and why?. The responses given by the households are given below as per the questions asked.

Q1. In the past year did you meet any MLA or your ward's councillor?
Approx. 62% of the households said that they prefer going to the ward councillor to have their problems solved, but 38% clearly denied meeting anyone regarding anything.

Figure 14



Among the 38%, comprised of slum households, the poverty-stricken people do not go to any authority due to their distrust in the efficiency of the government (Figure No. 14).

Q2. If Yes, Whome did u meet?
The female ward councillor and her volunteer take care of the planning and development of the slum. However, 30% of the households also visit the local MLA in crucial situations like political interference, slum demolition notices, etc (Figure No.14). Approx. 2% preferred to never approach anyone in the government, either due to ignorance of their rights or doubt about the government's efficiency.

Q3. How did u meet them?
As illustrated in the percentages in the diagram above, most people choose to never contact their representative government for help (Figure No 15). Just as in villages, the slum population unites in crisis and approaches the senior governing authority as a group i.e., 82%. Only 8% of the households go alone too, when urgently in need or due to some previous influence. But 6% still rely on someone else (like their neighbours) to approach anyone whilst 2% don't visit the government officials at all.

Q4. Why did you meet them?
52% of households met the government concerning eviction issues and to request for annulling the notice. The delay requested is mainly to buy some time for a space to occupy. The next major issue was civic concerns, because of which 25% approach the local government. These issues were mainly about infrastructure shortcomings, community fights and other social matters (Figure No.16). About 12% of the households visited to get personal issues resolved, mainly about access to health and social facilities, to solve family disputes, etc.

Table 4

Households contact pattern with local government and elected representatives

S. No	TASK	ACTION
1	Did you consult any NGO or self-help group in the last one year?	Most households did not consult any NGO or social group.
2	Who did you contact?	About 20 % of the households contact social activists and NGOs, which is very little.
3	How did you contact?	Mostly the households contact alone or through social activists
4	Why did you contact?	Many of the households contact NGOs or social activists for solutions to civic issues.
5	Did they listen to your problem?	Very few households were approached by NGOs, so very little communication with slum and dwellers took place
6	Did they help you?	Only those households who contacted NGO s benefited. This is a very small number.
7	When you experience problems with electricity, water, children's education, etc., who will you want to approach?	These household problems are mainly solved by local area councillors rather than NGOs.
8	Do you take interest in politics?	There was a mixed reply by slum households. Most households are less interested in active politics, because of their nature of work to fulfil their basic needs.

The slum households' experience with local governments with regard to spatial access to livelihood needs in Old Rajarajeshwaripeta slum is given in the table below (Table No. 4). In general, the households get things done towards their livelihood needs through the elected representative, the ward councillor, and also to some extent enlist the support of social activists and NGOs.

In terms of the sources which the slum dwellers depend on to avail the social and physical infrastructure facilities, these are not fully supported by the local govt and do not cover all the livelihood needs. ◆

Source: Field survey 2018

PART 10
CONCLUSIONS

The urbanization trend is expected to lead to a housing shortage in Indian cities of about 30 million by 2022, which will worsen the living conditions of the urban poor. The government of India has addressed this problem by defining "Housing for All" by 2022 as its goal. This situation demands urban planners and architects to deal with the complex issue of providing affordable social housing and to consider the concept of inclusive urban communities.

The 2011 Census of India reports 377 million urban residents. Effectively managing this massive urban transformation will, in fact, be critical to ensuring social and economic stability and inclusiveness in the country. In India, about 80 per cent of the country's urban workers are in the informal economy; of these, about 25 per cent live in slums and around 25 per cent are poor or vulnerable even though the urban poverty ratio has declined over the last 30-year period. In spite of strong economic growth, the bottom half of the urban population faces acute deficiencies with regard to access to housing and basic services (Govt. of India 2013).

During the past decade, inclusive growth has become an integral objective of policymaking in India. The *State of the Urban Poor Report* 2013 is one of the most important documents of the Ministry of Housing and Urban Poverty Alleviation, Government of India. The report covers areas such as spatial development for inclusive settlements; institutional, regulatory, and legislative frameworks for urban planning; economic contribution of the urban poor; maintenance of tenements for slum rehabilitation; and sustainable transport.

The Delhi Declaration 2013 emphasizes two aspects related to future urban planning concerns in India. These aspects are (a) urban planning needs to respond dynamically to the changing realities of urbanization, economic processes and demand-driven development challenges, and (b) urban planning, and its related processes, regulations, institutions and funding must recognize the needs of the poor in terms of their spaces for livelihood, living and working as valid and crucial planning concerns. . It should include women, children, the disabled, the aged and other socially disadvantaged groups to ensure that they have equal access to opportunities, infrastructure and services that urban areas offer (Govt. of India 2013)

It is essential to state that the broad vision of the Eleventh Plan of India, that (a) reduces poverty and creates employment opportunities, (b) provides access to essential services in health and education especially for the poor, (c) ensures equal opportunity, (d) empowers through education and skill development, and (e) provides employment opportunities is underpinned by the National Rural Employment Guarantee, Environmental Sustainability, Recognition of Women's Rights and Good Governance.

The state government in India's initiative is towards creating an urbanization policy while including welfare measures to improve the life of urban poor. A draft Urban Development Policy 2009 has been prepared by the state government of Karnataka, providing a holistic view and suggesting the appropriate steps for the urban future. It emphasizes programs by which the welfare of the urban poor is protected with main concerns being to provide adequate housing for the poor, sanitary conditions, and opportunities for education and jobs in the state (Govt. of Karnataka, 2009).

Slum formation is attributed to a variety of reasons, and failure of governance is one of them. Slums are usually a result of failed policies, poor governance, inappropriate regulations, unresponsive financial systems and dysfunctional land markets. Apart from all these reasons, lack of political will to recognize the problem and incorporate appropriate schemes into the action plans is responsible for the mushrooming of the slums in major cities.

The local authorities responsible for city governance fail to recognize the consequences of rapid and unplanned urbanization, and hence do not incorporate strategies for slum development and prevention into the developmental and urban planning activities. Many of the municipal governments have not even identified the localities in their cities and towns which are deprived of basic facilities.

Even though the urban development initiatives of ULBs focus on the urban poor, both in terms of housing and infrastructure services, the poor households are still forced to find their own land for housing through encroachments leading to creation of slums. They also have to spend considerable time and expense on gaining access to livelihood needs.

Most slum residents are migrants who have moved to urban areas in search of livelihood and work. Though the authorities focus on the infrastructure, it may not be a solution for arresting the future growth of slums. Empowerment of the slum dwellers should also be part of the planning activities.

The challenge is to achieve equitable opportunities for decent living and livelihoods for the urban poor. Cities and towns in India still suffer from lack of basic infrastructure; the location of the settlement, being close to railway lines, and the lack of livelihood becomes a nightmare for household mobility towards satisfying infrastructure requirements.

For this reason, access to resources in terms of spatial inclusion becomes important to improve the standard of living of the poor households. Government initiatives, along with professional and educational input, is essential for the social inclusion of urban slum households and spatial access to livelihood in particular.

The research result is a tool to integrate field experience; the social reality becomes the lesson for knowledge building that could pave the way for learners to practice and implement. In the light of the above points, it is suited for integrating into the theoretical subjects for M.Plan Urban and Regional Planning student subjects on "Urban and Regional Governance" and could also be included in the B.Plan student subject on "Urban Governance and Management". In both streams it may be appropriate to include "Spatial Access and Inclusion of Livelihood Needs of Informal Settlement Communities-Case study Vijayawada". ◆

Figures 18 – 25

Physical fabric of the Old Rajarajeswaripeta slum depicts the social reality







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Author Bio

Abdul Razak Mohamed
lore ipsum