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TERRITORIAL, URBAN AND LANDSCAPE-ENVIRONMENTAL

"Global slums in global cities: the case of Dharavi,
Mumbai"



Tutor: Luigi Buzzacchi

Candidate: Maroun Merheb

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Abstract

During the history, some cities were considered as gates of commerce, culture and information. They were the reasons and the focal points where the people from different regions used to leave their homes, in the aim of a better education, work, food and adequate quality of life. While the time was passing, the world's population expanded quickly, the lands started to be fully occupied and the competition to find jobs increased. Also, the type of work, skills, sectors and services changed from an agricultural and mostly physical jobs to skilled, specified, complex services based on financial flows, technological systems and international companies instead of local workshops, accompanied by a fast production system accomplished by smart machines without relying on the complete human physical and even mental help.

The development in those cities, created a gap. A gap between the people who own those industries, the skilled labors that can run complex jobs. On the other hand, the people who work in much simpler jobs on agricultural, industrial and commercial levels. A gap between rich and poor people, in the same city, creating a two urban forms. The first is where the international firms and big financial corporations exist, shaping their urban pattern from areas built by skyscrapers, modern houses and high-quality services provided by the government. While on the other part, the global cities played a role in shaping urban forms of poor-quality housing, inadequate services, populated spaces and polluted environment. This urban pattern is more known as slums.

In my thesis, I chose Mumbai as a global city that contains one of the biggest slums in the world, which is Dharavi. I will talk about the global cities and slums with their historical background, then I will focus on Mumbai and how it was shaped with time, and how the slum was formed and talk about its characteristics and the quality of life of Dharavi's dwellers. In the end I will highlight the role of government and the NGOs in the trials of developing the slum, and on the other hand pointing on the failure of the interventions and policies taken by the government.

Based on the analysis, I will discuss some strategies that were adopted in different countries worldwide in slums or in any urban fabric that can be used in Dharavi to develop and ameliorate the quality of life of the slum's dwellers while shaping their areas into a more functional way to change the slum's identity for more integration with the rest of the city.

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"Global slums in global cities: the case of Dharavi, Mumbai"

I. INTRODUCTION

A. A global problematic

In 1950 the developing countries used to have 18% of the inhabitants living in cities. It is true that everything, including human population and density in the cities are changing really fast that in 2000, the percentage of people living in cities almost doubled and it is estimated that it will be increasing until it reaches 56% in 2030 referring to (UN, 2015). UN studies shows that in 2030, the number of people in the world living in urban spaces will grow by two billion, while the number of people living in rural areas will decrease around 20 million.

There is a kind of new world order, population increased in a fast way, people needed to find jobs and cities were their target, so cities got bigger and larger, and a surplus of workers who are not skilled was created and it kept increasing until the reality was confronted with a huge problematic, described as a gap, between two different social and economic level of people of the city.

“Inside countries, the leading financial centers today concentrate a greater share of national financial activity than even then years ago, and internationally, cities in the global North concentrate well over half of the global capital market” (Sassen, 2005). Cities are the engine of the world and they include the biggest capital, the largest multi-national companies and consumption sites. Global cities are the new mechanism that runs the world, some scholars see those cities as a positive move towards the future and global reform, while others see that the global cities are in the service of a very limited number of people that benefit from their financial activities, “the price of the new urban order, however, will be increasing inequality within and between cities of different sizes and economic specializations” (Davis, 2007). The neo-liberal logic promotes the importance and the role of globalization in increasing social and economic justice. Instead, we notice that the gap between the rich and poor people expanded in a fast way. Referring to (World Bank, 2018), it is shown that the extreme poverty rate that used to be 11% in 2013 dropped 1% in 2018. Different scholars and experts saw that this study is not realistic and far from the real numbers and analysis. India and China are the main two countries where the extreme poverty exists and for now it is still abstract if they will success in decreasing the poverty line or not. That means if we remove China and India from the study, the people that they are not in poverty anymore and who live in developing countries are only 150 million people, compared the number of poor people in the sub-saharan Africa where the population of poor increased by 120 million in 2015 more than from it was in the beginning of 90’s. The extreme poverty rate selected by WB is 1.25\$ per day, which has been criticized from economists, scholars and even politicians. For now what we know is that the number of poor people in the world is not small and that a big percentage lives in global cities where the rich people occupy the centers of commerce, the financial and services nodes too. So where the

poor population lives? How do they live? And in which condition concerning housing, hygiene and infrastructure? In the upcoming research we will have an overlook on all those questions.

In the course of 1990's, new technologies were presented, logistics became more developed, productivity increased in a noticeable way. The process of transport and communication became cheaper and the capital flows were not restricted by national controls. Those conditions were obviously a ground of support for the neo-liberal economic beliefs, people were putting their trust in a society with a better social justice, equalities on social and economic situations and revenues. In the final years of the 20th century, there was a feeling that the time was going backward, the opposite of what people thought. The gap between social classes is translated in the shape of their houses and surrounding.



Figure 1-Aerial picture showing the gap between rich and poor in Ixtapalapa, Mexico City



Figure 2-Rio de Janeiro comprises both favelas and high-rise areas

The globalization of cities that were considered as a salvation and the solution of the people was turned to be the a problem causing: high degree of inequality, a very challenging competition which is not fair to the majority of the people, cities and even the peripheries of certain global cities. Referring to (Davis, 2007), there is a focus of the state on certain nodes in the city, searching to ameliorate their centers, with almost a total absence of policies and interventions on the peripheral parts of the city.

It is war but what is noticeable that it is an inside war in cities between two social classes, between rich and poor, while the governments are standing with the rich people side and leaving the poor people struggling with their problems alone with no an actual support and help.

We find that the capitals are flowing inside the global cities. On the other hand, outside the borders of the economical nodes of a city, the poverty is increasing with a lack of affordable housing, the density of people is rising in parallel and no real income is being earned.

All those actions and situations form an informal settlement knows as “slums”. Based on (UN-Habitat, 2006), a slum is a house but overcrowded by a group of people that occupies it with lack of basic needs, like clean water, sanitation, hygiene, safe social life, sufficient economic income and a poor quality concerning the housing structure and envelope.

Despite a nice progress between the years 2000 and 2014, which represents a drop in urban population living in slums, from 39% to 30%, a fear that the urbanization took another meaning expressed by urbanization of poverty, where cities are becoming the home the poor people of the world, living there but mainly as ghosts as they are not considered a part of those cities. The global cities created a new challenge which is the global slums or more specific regarding

the point of view of governments, those slums can be expressed by the global slums of passive people.

In my thesis I will be introducing global cities and slums briefly and focusing on a one global city with mentioning a specific slum inside of it, then talking about the solutions that were taking into consideration to ameliorate the quality of life of those slums and in the end after the analysis I will conclude if those policies and strategies were enough and if they really achieved the goal that they were created to fix, and if not I will propose few strategies that they were used in different slums that they can be more useful.

B. Global cities

Today, the global urban population is increasing by 1 million people are added every week and there must be a center of attraction. In the economical flow worldwide with nodes that work in accumulating capitals, the spatial keys identified by urban experts caused by the globalization are the global cities (Brenner, 1998).

A global city is an urban center, that is considered as a competition field for multi-national and multi-dimensional companies participating in the globalized market or economic system leading the global economy of exchange. We are the witnesses on a mass urbanization, that is unique considering scale and speed. Global cities are now where all is united from commerce, transportation, communication and the flows of finance which are driving the economic and social process and development.



Figure 3-Tokyo a "megacity"



Figure 4-Aerial View Of Empire State Building In New York

Until the end of the 20th century, there was a flow of goods and services inside one nation from a city to another and few operations from cities located in different national borders. The stability shifted after the business performed by firms in multiple regions and cities in the globe took a further perspective and started to perform their economic activities in different global cities within different nations. That economic relation, following political, social and cultural exchange, became a link between the nations.

Many big corporations relocated their business establishment from production facilities, machines and equipment from cities in England, USA, and Germany and many other countries to some which are known as industrial countries for a reason that labor costs decrease in a noticeable way (Abrahamson, 2004).

How the cities are shaped, their functionalities and their scale are being transformed to be in the service of the growth of global networks, consisting of overlapping ideas, economical flows, goods and services, ideas and people. Basically, networks of economic, politic, cultural and social organizations generating new tools, ways, perspectives, new geography of connectivity and even a new motif of governance.

In global cities, firms are performing globalized and digitized operations. Global companies are working not necessary together but on a parallel line too, sometimes they need to intersect (Sassen, 2005). The system that was created needs the participation of all global firms even in small details, going global means to enter a mix of complex of unique services that no firm alone can have the access to those services because each service is characterized by a different data and information than the other. About this idea, a concept can be represented which is intermediation, where knowledge, experiences, skills and cultures meet but do not merge, the multi-national firms share knowledge and platforms for example in need to promote their products or ideas or whatever...

Based on how the relation is between global cities with the other part of the world they are classified as Alpha, Beta and Gamma. This classification comes after an analysis and a study that contains economic factors as first, then cultural and political impact on each one of those cities. The two global cities that are on the peak after a study in 2018 made by Globalization and World Cities Research Network (GaWC) are London and New York.

Dutch American sociologist Saskia Sassen, discovered that the headquarters with the most complicated functions and industries that are circulating around the globe, are collaborating as each one of them plays a concentrated role. For example, starting from Tokyo where the capital is being exported, then to London where the capital is being computed and finally to New York where the profitability can be enlarged because the city plays a big role in innovation and investment decisions. Economic globalization is how to harmonize, manage and service the capital flows, so for her the economics of globalization is not only a capital rush or flow (Sassen, 2005).

The faster the industrial cities made the step to be integrated in the new system as postindustrial cities, the more they played an important role in leading the global economy (Abrahamson, 2004). With the technology and development in communication, digitized transmission of ideas and data, the postindustrial system in global cities allows the separation of the employee from his work location and offers him the chance to work from his home, while a lot consider that a win-win situation when the company does not pay any additional money for the work sites and the employee feels comfortable in his own private space or home. Referring to (Abrahamson, 2004), some franchises in US furnish offices for almost 40 million people who execute their jobs and roles from their homes.

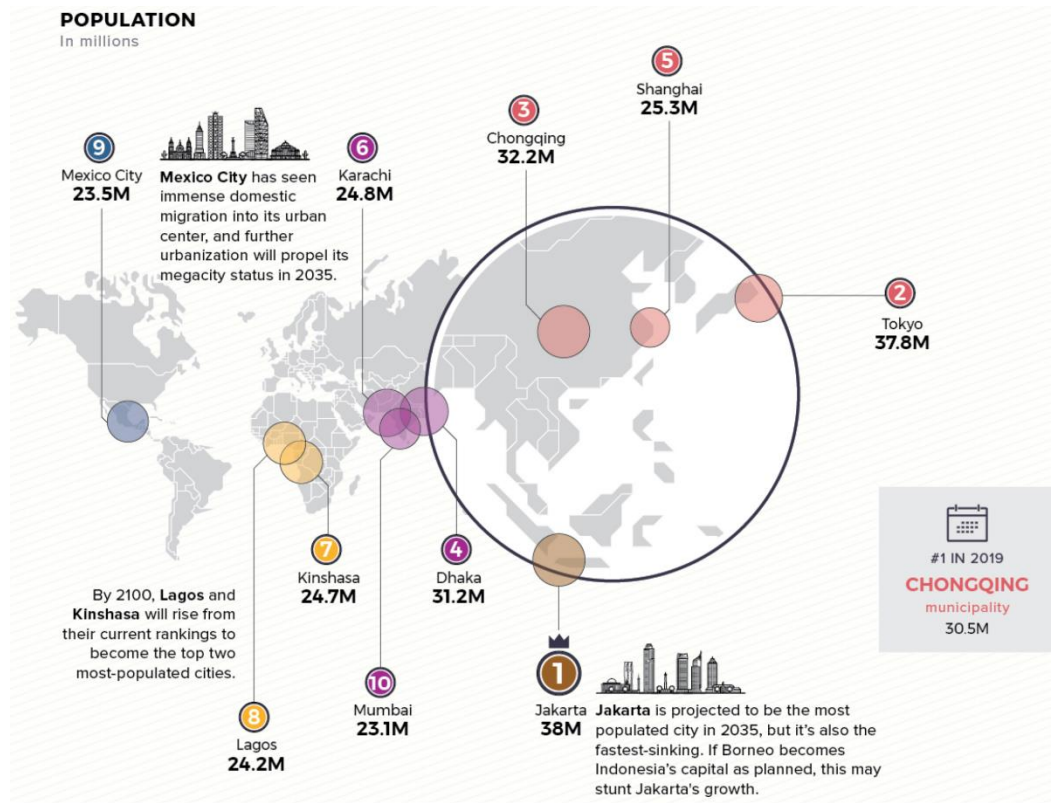


Figure 5-one of the most important cities in the world by 2035

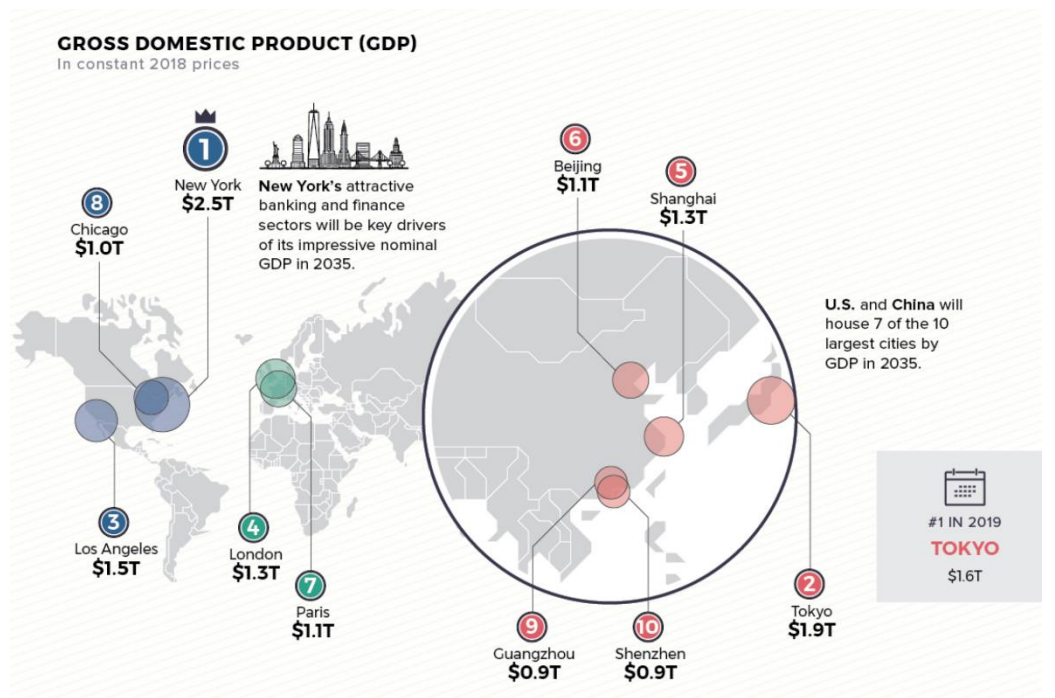


Figure 6-cities with the highest GDP in the world by 2035

multiple identities and forms and functionalities, a studied long cycle of processing is needed to shape the last form that the buyer is going to exanimate, for the buyer it is an entity, for the firm it is so much complex (Foulkes, 2008). Noting that this extended process cost a lot on the level of infrastructure, but still worth it. Backed by (Sassen, 2005), we have more reasons mentioning that those firms with their different branches are generating projects into all the world, it means a centralized power with a faster and a better cooperation increase the productivity of the global firm. The large size of a firm is helpful too, it is more attractive to people and more trusted from people and the government. When a firm gets bigger, the trust goes bigger too, and more chances to get a certification from the government appears (Abrahamson, 2004). To understand more, those firms are not selling a physical assets, they are selling the symbols of those assets by diverse tools, that is the main reason why trust is important, because simply the transactions are happening between people that do not know each other's and with no visible assets. Adding a point, her that when the government gives certifications to few firms only, it places levels and borders for the market too, which will increase the demand on the big complex certified firms. The government plays a role here in making a firm more wanted and more competitive (World Bank, Competitive Cities for Jobs and Growth, 2015)

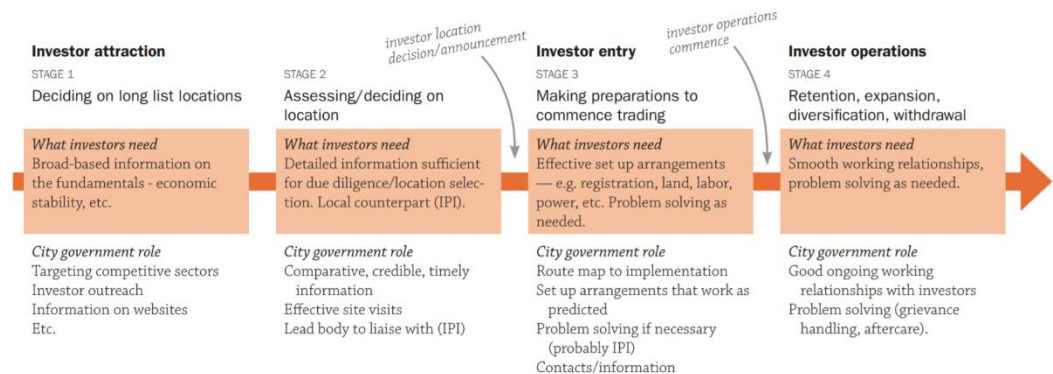


Figure 9-Investor's needs and the role of government

Host cities of the global firms tend to improve their centers on infrastructure level, global telecommunication, and reduction on taxes to encourage those firms to invest in the center. The reasons are simple that on a long term the government will make more profits from taxes, those companies will provide jobs for a big number of its citizens and in the same time it is ameliorating the highways, airports and infrastructure. As a short conclusion it is a win-win situation for all.

The global economy is moving from an industrial of mass production located on the nation-state and its boundary into a new shape of services and economy formed around the global networks (Timothy, 2013).

Being a global network is not about the scale or size, it is about how many functions and activities the city is able to perform within the global network of exchange. Each one is playing its role in a completed organized chain. For example, Taipei is an important node in supplying high tech electronics, in global civil society networks Genève is considered as an important node, Dubai for air transport networks and for international political network Washington is considered as an important node (Abrahamson, Global cities, 2004). The leaders of the global connectivity are the ones who play a major role in all these

networks, London, New York, Tokyo and Paris (Sassen, The global City. New York, London, Tokyo, 2001).

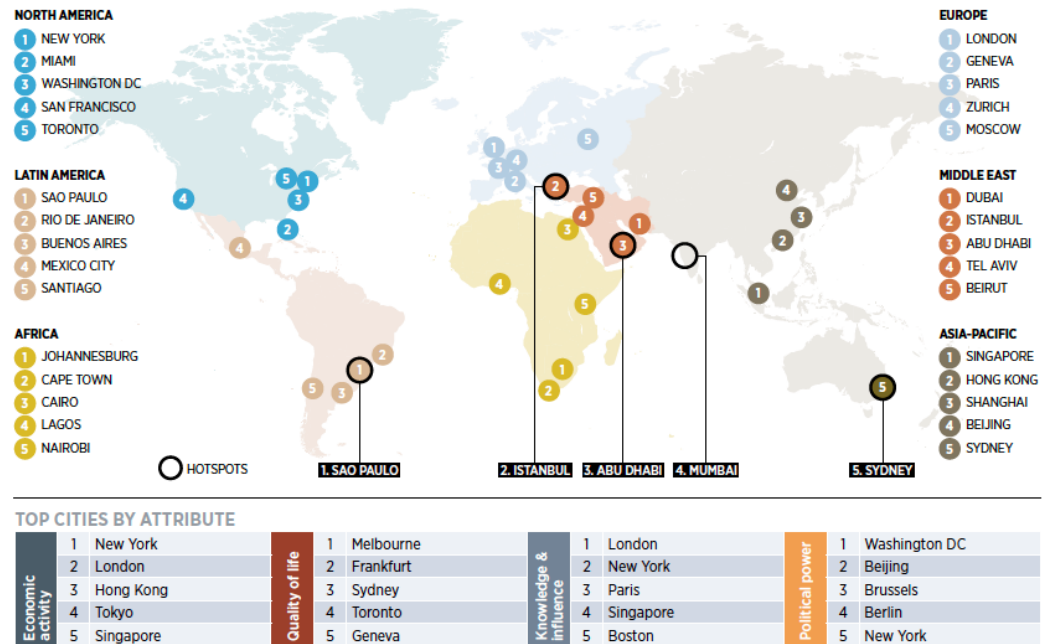


Figure 10-Top five cities by region and top five future hotspots

Urban networks evolved by time, supporting shelters constructed around the individuals and local groups to support the complexity of urban patterns that support billions of people. They are the physical tools of connectivity, system of technology which enable us to control physical borders, they can be represented as roads, powerlines, communications, logistics, air transportation and shipping consist the physical shape of the connectivity from a global city to another.

A new local and national space existing in the urban centers is created by networks of information and services which are passing the national boundaries. Global cities are the base point of the flowing of capital and goods. When the networks grow, the firms that developed and invested in those networks expand too. With the growth of the economic globalization, the multinational companies and the financial organizations that deal, organize and manage those global networks, became the most powerful actors and somehow the dominant players on a field from their creation and participation and all this power were translated and inserted in the global cities, that those powerful actors are participating in shaping it too. The financialization of real estate and urban centers created a big disconnection between the local needs of societies and those private dominant actors, as the global cities are defined now as investment media rather a shared living areas or spaces (Aalbers, 2017). The urban development used to be in the service of the community and local needs, now the global firms are participating in putting the urban development for their benefits and needs, in transforming cities into private spaces of investment as a response and process for the logic of flows of finance.

Landscape in Malesia, are transformed into palm plantation for biofuels to keep urban transport systems running, cement in iron are extracted from the ground in Russia, to

provide the concrete of 20 million Chinese moving into the cities every year, in Africa, rare-earth metals are removed from the ground for the use of millions of smartphones that keeps Paris connected. That shows that the global cities are expanding but in return that are taking too much from the nature, lands, resources, terrestrial biodiversity, ecosystem and people who live in rural areas or outside those cities in general.

C. Historical background on global cities

The label or name of global city appeared while doing a survey on the characteristics that intersect in many different cities in course the 1980's. The cities were started to be a part within the global networks of telecommunication and finance.

An important point is that even before the term was released, many major cities played not a global role but it can be described as semi-global or partial global depends on the countries and lands that were discovered and shaped on their boundaries and possible to be reached. London is a good example, in the 1500's many farmers used to come to the city from a very long distance to deliver their products and sell it in the market of London. Those goods sold in London market to retailers from different nationalities, Germans, French and so on. Those retailers used to export those goods to sell it back into their homes. Also, Rome was a major city before 2000 years ago, London was just an army camp for the roman empire, Rome was a the most important node and center of commerce, art and economy. It was a city of attraction for all the people because it had it all (Abrahamson, Global cities, 2004).

For WST(World System Theory), cities are composed from cores and peripheries from a very long time, and always the core was the part working on exploiting the peripheral one searching for resources and materials to build a strong centralized base in the core of the city where the activities and flows of goods that are owned by the dominant rich actors of the community from kings, leaders, merchants and so on.

The jump up of global cities was attached to two main reasons associated the globalization movement. The growth of the value and role of transnational firms and the decrease of mass production while the malleable production was increasing in urban centers of the major cities.



Figure 11-Assembly line workers inside the Ford Motor Company factory at Dearborn, in 1928



Figure 12-Manufacturing in automotive industry in our time

A new system of economy was developed in the beginning of the half of the twentieth century, recognized as Fordism. This system relying on big industries in major cities, with

an important element which is the manufacturing of products using the labor work and machines (Abrahamson, Global cities, 2004).

Things changed when firms that got bigger with capital and scale, started to accomplish their operations from a nation to another. The business between firms from different nations increased, for a reason that the urban networks evolved, and they were expanding from a country to another, which made the international tourism and cross-border investment increase with an exportation of art, culture, movies and fashion from a city to another and a nation to another with a unique speed that played a very important role in sharing the goods and services.

II. TOPIC AND CASE STUDY

A. Slums

Facing the technology, development and the high quality of life in the centers of global cities comes the ugly face, and this face is well known by the term Slums.

Almost 6 billion people exist in the world right now, and this number is expected to jump to 8 billion in the upcoming years (UN, 2019). There are 924 million people recognized as slum dwellers, 1 out of 8 people lives in a slum (UN, Guide to Monitoring Target 11 , 2004). Considering that the rise of that number will happen in cities of developing countries where there is a huge space between the gated population and here we are talking about the rich people, and the poor ones that they are having problems concerning food, sanitary, housing, security, social and economic concerning the unemployment or the low income.

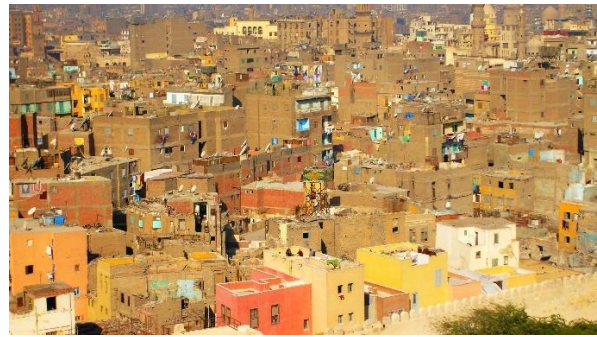


Figure 13- Urban hell, a slum in Ankara, Turkey Figure 14-Ezbet El Haggana slum in Cairo, Egypt

The definition of a slum can be interpreted by a group of people who share the same roof with the absence of a durable house with structure and envelope that can barely protect them from climate or social problems, with rooms that are shared with less than 4 people, not obtaining a clean water with an adequate amount with an expensive price or I can say not an affordable one, absence of accessibility to a suitable sanitation in public and private toilettes with no rational number of users, and no security of tenure (Habitat, 2006). The number of slums increase with the lack of organization of the urban patterns which is happening in fast chaotic way. For example, every year in the sub-Saharan Africa the slum dwellers numbers increase in 4.5% (Marx, 2013).

The main characteristics of slums are the big number of people living with a very low housing quality where the law almost does not exist which leads to several problems concerning the social life and the security of the dwellers.

Slums can be located in a different context even in one country, and each context can have his own condition. For example, there are the slums on the edge of the water, in the hill, in flow-lying, slum housing in areas prone to landslides, slum housing on water and so on (UN Habitat, The challenge of slums, 2003). So, on a specific scale slums and their nature, agriculture, situation, architecture and their urbanistic form can vary from a location to another.

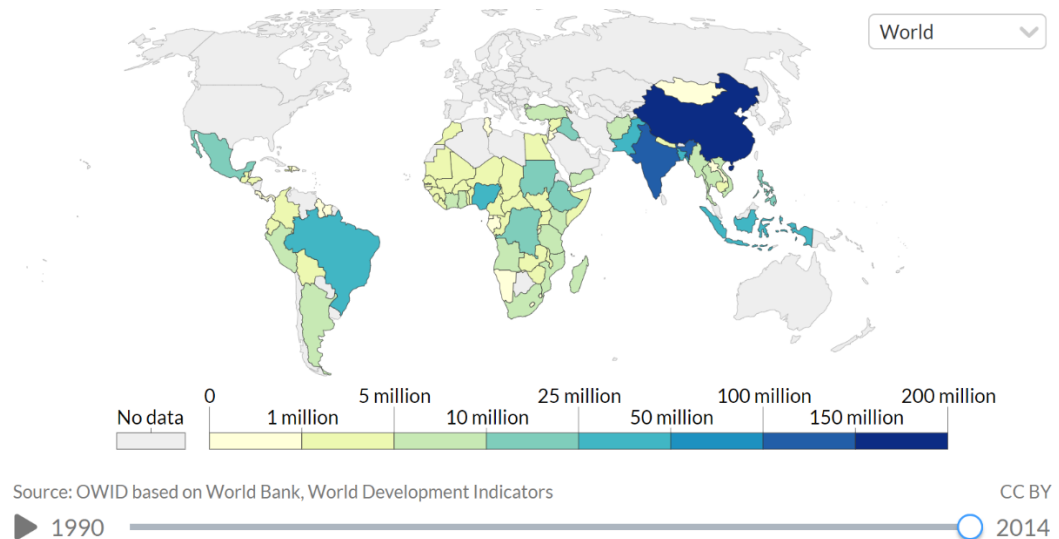


Figure 15-Urban population living in slums, 2014

The typologies of slums can be divided in two categories, the metro core and periphery (Davis, 2007). The metro core is composed by formal and informal settlements. On the formal part, we can mention tenements, large buildings with multiple apartments shared by many dwellers, public housing provided by the government as a solution for the people earning a low income and flophouses that take the concept of a very cheap hotel, for the poor people with the minimal facilities and services. On the other part, we have the informal settlements containing squatters, groups who occupy an unused land or uninhabited house which against the law and there is always a danger that they will be evacuated and left to struggle in the streets, and this is the case of pavements dwellers who build from minimal materials such wood, plastic and clothes their informal settlements on the pavements.

The second category is the periphery. On formal part, it is composed by public housing that we already mentioned it and the private rental housing for houses which are considered not adequate to the housing quality conditions given by the government, and the price of the rent can be maximized because in a lot of cases there is a slumlord who wants to take benefits from the dwellers. On the informal part, pirate subdivisions when the families or individuals with a low income rent or buy a small part of a land from a land owner on the peripheric side of the city, and divide it without taking the building code regulations as a reference, so basically the settlements are against the law. We mention here authorized

squatters, where mainly public lands are given by the government for a defined period of time, the opposite are the non-authorized squatters which are considered against the law. On the peripheral context we can add a third part consisted of refugee camps built for people coming from the outside of the country for many reasons that can be war, flood or economic crisis. Camps can be made for people who had to shift from an area to another in the same country too and not necessary from a country to another.

In the past, the way the policies taken to solve the slum's problem were harsh and radical an example of that, was Haussman who was a French official that decided in 1865 to create a sewage system with new infrastructures in service of rich and middle class in the place of the slum's housing. On the other hand, policies were developed later in some countries. Singapore for example, they built public housing in the 60's for the slum dwellers giving them a chance to buy formal houses in a minimized price (Marx, 2013).

Various reasons were related to the slum's existence. It started with the colonization, where weak and poor tribes were in service of the rulers or leaders, those people were living in areas considered as an extension for the ethnicity. Another factors that are considered by many researchers and scholars as an extension for the regime of colonization is the involvement of the World Bank and IMF with their policies and plans that for a lot of scholars were considered more neo-liberalism searching for the benefits of the powerful actors in the society and shifting the goods and resources for example from small farming firms to larger farming firms with a new machines and methods. Countries that borrowed money from IMF or World Bank have to spend less on their domestic economy which effects the agricultural sector (Davis, 2007). The modernization in farming method effected a lot the countries that used to have a lot of workers in the farming sector, the competition with machine and modernization was not fair and from those countries, the African ones were the most damaged.

Rural-urban migration is considered to be the main reason creating slum. Many people of the migrants seek the urban areas for a better education system for their children and to search for a better income but on the opposite it led to economic problems because of their lack of skills in the new developed market which contains a big range of competitiveness. Some of those migrants find jobs but they face the housing problems when they can't find a low price which oblige them to find a slum with an acceptable amount of payment. Those slums do not have the basic needs from sanitation, water, security and housing with an average quality.

On the other hand, many other houses were stuck inside their nucleus were slums are increasing which lead to a transformation in their household identity to the worst (Marx, 2013). Urban productivity increase because the economic productivity in rural areas is decreasing year after year and because the concentration of services and financial activities are in the urban centers. Urban poor population are happier and lives in a better condition than the rural poor population referring to (Glaeser, 2011).

A slum in a philosophical way is a trap (Grant, 2010). The low quality of life makes the investments in housing, markets, business, healthcare and infrastructure almost null. Many factors to the poverty trap in slums.

First, human capital that is considered poor from the healthcare, educational institutions, lack of infrastructure and the minimized space to live. For example after the (US Census

Bureau 2013), in 2010, almost 27 000 inhabitants per square kilometer were living in Manhattan, On the other hand we had 34 000 per square kilometer in a slum in Abidjan (UN Habitat, The global situation of young people, 2003). In Delhi's slum, (Abhijit, 2012), almost 83% of toilet places were damaged by bacteria from feces. Second, the low investment and the disadvantages from informal tiles and settlements that will not encourage investors to realize projects. In a slum, the risk of eviction will decrease the chances of investment (De Soto, 2000). Transforming the informal tiling to a formal one can encourage the investors and increase the investments in the slum (Galiani, Schargrotsky, 2010). Another reason is the overcrowding spaces that only allow the small investments with a low-income. More development projects should be executed in slums even if it is not in big capitals it will still encourage people or small firms to invest as a first step. One thousand dollar of investment in developing a household in Uruguay or Mexico can provide a better and more secure quality of life (Galiani, 2013). In slums, not only private investments are rare, even funding and payment for the public good is not sufficient referring to (Mobarak, Galiani, Duflo, 2012). In urban areas where slums exist, the rent payment is low considered almost the 10% of a household consumption. In rural areas even with the low rent value, in Kenya for example almost 89% of the slum dwellers do not pay the rent. Third, the failure of the government in finding solutions for the problems. In slums private actors control some of the markets and even housing rents, duration and construction. (Davis, 2006) referred to Mumbai as an example where only about 90 individuals control all unoccupied land. In areas where individuals can't control the land and impose their authorities, gangs replace them to impose taxes on people, choose the investors and where they want to invest (Marx, Stoker, Suri 2013). In different there is a total absence for the government's authorities, for example in Rio de Janeiro, the famous slum Favelas is controlled by drug leaders and gangs. India's survey in 2001 was the first trial to estimate the number of slum's dwellers. The big number of dwellers were not convenient to some states did not want to accept this survey because they will need to take critical actions socially and economic level, so they just denied it which led a bigger chaotic concentration of slum's dwellers. Some slums were never studied by their governments, and one example is Lagos which was never been estimated even until the year it was demolished.

A hypothesis that economic growth and urban population are in relation with ameliorating slums.

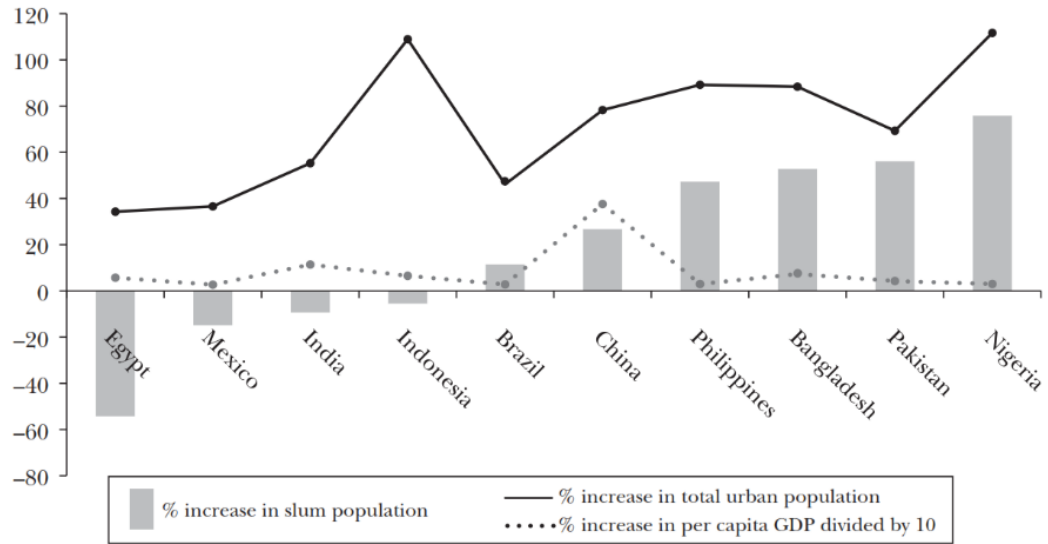


Figure 16-Patterns in Urban and Slums Growth, 1990-2007

It was noticed referring to (Arimah, 2010) that debt stock, GDP and debt service are all related to the prevalence of a slum in certain country. However, still there are many conditions for a country and this relation is not always true. Some of the countries who are not developed witnessed an increase in urbanization with no improvement in economic growth and usually it is because of poverty in rural areas, wars and chaotic disasters caused from a natural reason. For example the population number of Kinshasa in Congo tripled with no economy growth between the mid of 60's and 2002. On another hand in India the population increased but the number of dwellers in slums decreased 26% from the beginning of the 90's till 2009. Referring to (UN Habitat, 2003) in Kalkota, 70% of dwellers lived in slum for over than 15 years and in Bangkok almost sixty percent were born in slums.

Policies targetting slums are hard to define as productivity and durability. In india, RAY plan was introduced in 2009 and it had a goal to make the nation with zero slums and a duration of 5 years to achieve the goal was setted. After 3 months from the initiative of the scheme, the duration was prnlonged to 7 years, but the indian slum statistics organization estimated that from 2011 to 2017 the population of slum dwellers will increase by almost 12%. After 3 years from when it started the scheme was still almost in its first trials or steps (Kundu 2012).

From decades and the problems and solutions concerning the slums are always rigid. Recently in 2005, almost 700 thousand people lost their homes due to the plan adopted by Zimbabwe that destroyed the households of slum's dwellers and for sure it was not a good plan to be adopted worldwide. In the 60's the services in details were not adressed, on other hand working in a large scale and providing public housing with low cost for the slum's dwellers was not a bad idea to prepare them to move to a formal housing. In the 70's, it was seen as an important step to work on slums from within. Focusing on a good sanitation, clean water, better housing quality and encouing the dwellers by public investing in the slum's areas seemed to be the best reform in slums. In the 80's, the number of population

started to rise and the infrastructure was not enough to maintain this huge number of people in slums which led to a step backward concerning the reforms that were done in the 70's.

Almost 20% of the global population live in a poor condition, the people living in poor zones have a limited access to the developed areas and markets of the cities. Governments and private large companies do not consider them as the same value of the rest of inhabitants who live in a developed zone. On the opposite they are seen as an obstacle in the pass of their progress. A poor area without any planning is close to a social prison specially with all the focus from the governments on their center urban pattern only.



Figure 17-Population by degree of urbanization, 2015

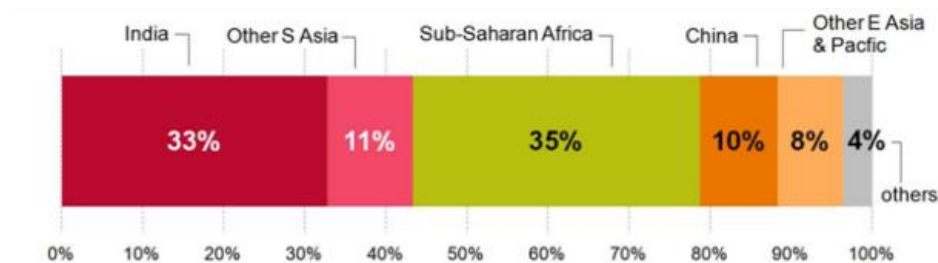


Figure 18-the countries where 20% of the people live

Considering the planning context, it is important to mention after referring to (Habitat, The challenge of slums, 2003) that there is a difference between “slums of hope” where governments and NGOs and sometimes with the help of the inhabitants work to improve taking different interventions, the housing quality and the economic and social levels. On the other hand, there are the “slums of despair” , where the rent is high, the income is low mixed with environmental problem and where the inhabitants are left alone with no planning from the governments or the NGOs to give them a help in planning their future life and without taking any interventions. I note that with the absence of involvement of the government and NGOs, there is a very big chance that the slums of hope shift to slums of despair during the time.

Based on (Davis, 2006), climate change from floods to earthquakes, is being a reason to damage the agricultural resources and destroying the low-quality housing. In case of wars too where migrants seek their safety under poor conditions in a different country. Also, the globalization is a big factor in transforming the financial flows to the center of the global city, plus the exchange of goods from a nation to another increase the competitiveness for the

small firms. We can add lack of regulations and law implementation in the poor areas, the social exclusion that targets the poor from the middle class and the rich one, urbanization and the high prices of housing maintenance and so on.

A survey from (World Bank, 2020) shows that approximately 1.2 billion people in the world earn less than 1 dollar a day and half of the earth population less than 2 dollars a day. One third the population of the urban globe today lives in unsuitable housing, with lack of sanitary services, clean water and with untreated waste that causes different kind of diseases. The informal world is the new home of the poor people where the majority of them do not pay taxes and in the same time, they do not get any services because they are considered by the government as semi-outlaws. Officially, they are not taken into consideration as a part of the government. Those dwellers, with nearly the total absence of the law inside of their settlements, slumlord or mafia can act as their local leaders that rule by power. Rather than giving them a push to have a better quality of life, access to schools and universities or health care, the government restrict their ability to move or develop for the reason that the support they need affords a big budget and they can have negative effect if they were involved inside the cities, on a social and economic level they are unwanted and they are considered dangerous for the middle class and the gated communities based on (Habitat, The challenge of slums, 2003). On a financial level, for example there is almost no presence at all for banks in slums and that's because slums dwellers won't have big capitals and in case, they wanted to take loans they won't be able to return the money.

The demand of big firms for high revenues and incomes in the capitalist system, produced an inequality concerning the built areas and the shape of the city, which kept a lot of people who can't afford living in the areas where services, opportunities and good housing quality exists to be dispersed in the abandoned zones of the cities where the government and the powerful corporates do not give it any attention. On the other part, based on (Habitat, The challenge of slums, 2003), in the developing countries slums dwellers are dispersed out of the formal type of markets which are more specialized and developed and it is usually controlled by the government, working in the remaining products in an older market.

Slums can be found not only in global cities, but in small cities too. The infrastructure is more developed in larger cities than medium and small cities. It is shown that the population growth of the average or medium cities is between one to five million people and under five hundred thousand in the smaller cities based on (United Nations, 2019). A combination of bad infrastructure, large number of people, poor services and lack of facilities can be creating sometimes more slums that it exists in the larger cities. A note concerning the poverty in slums, the dwellers are not always from the same religion, or culture or even social and economic level. Some people with an understandable income choose to live in a slum or the majority on its borders because it is cheaper than living in other parts of the city.

Most of the people living in slums work in an informal sector. Informal sector is when the labors are self-employed or used as workers for the benefits of the self-employed, those people work under dangerous circumstances and they are not protected. (International labour office, 2002) indicates that from the urban population, 60% of the employments are recognized a part of the informal sector. The most vulnerable people in the slums are the people who can't work from children and disabled people to women who have a family but without their husbands. For example, referring to (Habitat, The challenge of slums, 2003),

in Africa, women-headed households form 30% of the total houses of urban poor settlements with modest income.

Countries which offer high incomes are not always fair to all their people. When people with lower income work to the people with higher income, they are being the ones doing all the hard and in most cases it is a physical job for a long period of time, in the end the “boss” or the person with the highest income will make a big profit while the other will stay the same and this is related to lack of education. In a world of finance and knowledge and technology, the educated person has a big advantage compared to the person who did not had a chance to go to the school for different reasons from poverty and a unfair policies concerning the education from the government itself, which will lead to downgrade in his income leaving him to work as a delivery guy, security or a work which is considered against the law.

Slums with all the negative points starting from crimes, waste, diseases, and excluded lands by people and government, they have positive point too from the mix cultural identity, shelters to immigrants and poor people, producing goods and services on a local level which the formal sector can't or have no interest in handling it. Those services and products offered by the informal sector are considered important to make the operations of the employees of the formal sector and big firms easier. The nanny who waits for the kids when their parents are in their offices, the informal builder who is participating in the construction of a huge building for the municipality or the security guy standing in front of a fancy restaurant.

The media obviously clearly backed by the rich people and strong firms, focus only on the ugly face of the slums and they even make it worse, for a simple reason to make them look more and more unsafe for the middle class and gated community, this will lead them to fear them and to not feel compassion with them so they do not push on the government to spend more money on the slums.

(Habitat, The challenge of slums, 2003), In slums the problems and crimes are related to the youth because of economic reasons, and a lot of rich people who handle works considered as crimes, like drugs for example, use those poor people to achieve and sell their products, and women in slums are targeted too because of the low status of the girls living there and the fact that the nature of slums are dominant specially for men in general.

On political level, in democratic or semi democratic systems, slums can play a big role in voting and giving a push for their desired local or governmental ally, on the other hand they can be opponents to their government with its policies that treats them like they do not exist based on (Shami, Majid, 2015).

In 2016 the World Economic Forum declared that the biggest 5 slums are, Orangi Town in Pakistan with almost 2.400.000 people, then Ciudad Neza in Mexico with 1.200.000 people, after that comes Dharavi located in Mumbai, India with 1.000.000, then Kibera in Kenya with a total of 700.000 and in the end comes Khayelitsha, South Africa with 400.000 people.

B. Historical Background of slums

Relying on (Davis, 2006), In 1812, The first definition emerged by James Hardy Vaux in the “Vocabulary of the flash language”, equivalent to the word “racket” or “criminal trade”. A change from a street slang to an expression used by Americans and international fact, and the credits of this change go to Cardinal Wiseman.

Charles Booth declared that the slums are characterized by a mixture of a state of disrepair housing, chaos, crimes, poverty and overloaded by people. For the liberals of the 19th century, the slums were an issue that can't be solved where there are no morals and people can't be reformed. In 1854, Reverend Chapin mentioned in “humanity in the city” the word “Savage” describing this phenomenon, and after forty years later the US department of labor, in a scientific research described the slums as a crime zone, with a dirty surrounding.

For England, based on (Britannica, 2012) they made their building code for low income housing in 1851, and in 1868 they declared an urban strategy known as “slum clearance” to ameliorate and develop those chaotic and poor settlements. In US, some laws concerning sanitation and ventilation were announced in the end of 1800s, the need to ameliorate those slums emerged when an enormous number of immigrants arrived in the end of nineteenth century and beginning of twentieth century.

In the 21 century, slums are defined by (UN, state of the world's cities 2006/7, 2006) with the low quality of informal housing, overcrowded population and the absence of security, clean water and sanitation. Slums are considered now as a global problematic that needs solutions, strategies and a teamwork from all the nations to improve the life of the slum's dwellers.

In the middle to late of 20 century, slums in Asia increased in a noticeable way due to a lot of problems from industrialization, rural-urban migration and natural increasing of the population referring to (Habitat, The challenge of slums, 2003). Example of that is Dharavi slum in Mumbai, India which is one of the largest slums in the world and Asia's largest slum.



Figure 19-The gap between the poor and rich, Dharavi slum, Mumbai



Figure 20-The poor hygiene in Dharavi's slum

C. Slum in India

The percentage of urbanization increased in 4% from 30.5% to 34.5% in 10 years starting from 2009 to 2019 based on a survey from (Statista, 2020). By 2030, the urban population in India will duplicate and hits 600 million people with more than 88 metropolitan areas.

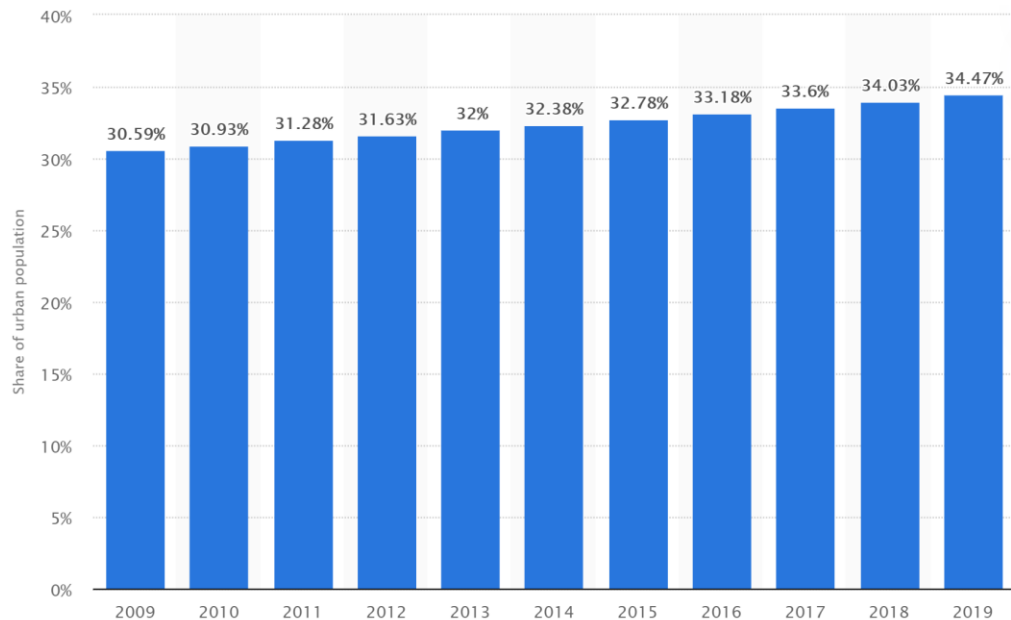


Figure 21-India, degree of urbanization from 2009 to 2019

The survey of (UN-Habitat, 2007) classified India as the 3rd country that suffers from nutrition problems, diseases, very poor people and a polluted environment, while the majority of the problems are within the slums of India. India alone contains 25% of the total deaths worldwide every year based on (Tabrez, Goswami, Hassan, 2018).

An increase in the urban population happened for 3 reasons. The first is related to the natural growth of population and the differential of this growth between rural and urban areas, from 1991 to 2011 the population in rural areas increased by 18% and in urban areas by 31%. The second reason is rural-urban migration and the third reason was changing the villages and classify them as towns.

After the survey of the office of the registrar general & census Commissioner in 2011, we notice that there is a huge increase in metropolitans, cities and towns. This census shows that almost 32% of India's population, estimated as 380 million people live in the urban areas. From 2001 census to 2011 census, 18 million-plus cities have increased to reach 53% with 22% of the urban population living in slums mainly with a polluted environment and lack of sanitation and facilities. The majority of slums are overcrowded that one room can be occupied with more than five people.

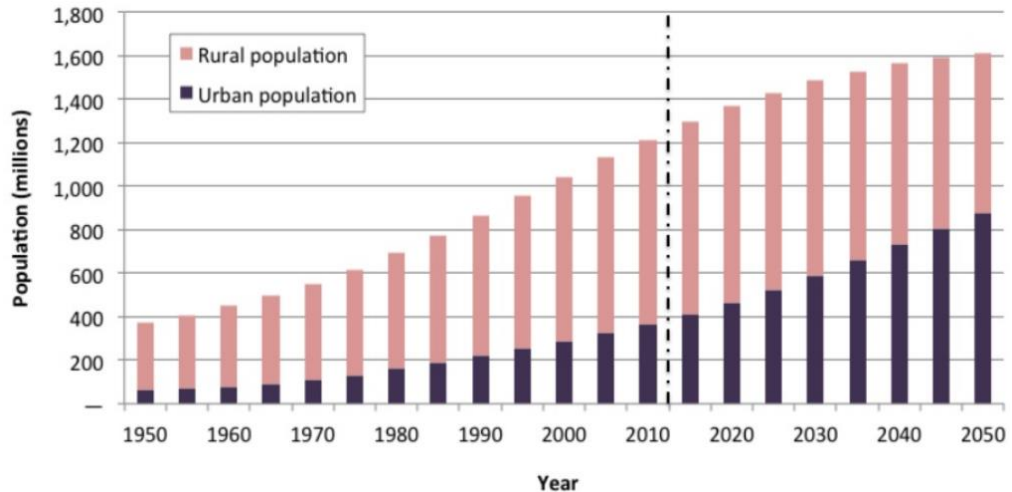


Figure 22-Urban/Rural population in India, 1950-2050

Poverty and more precisely, unemployment or low-income are in most cases the direct reasons causing slums. Legal and social exclusion accompanied with the physical borders are the conditions created by slums. Migration from rural to urban areas in India, was a big factor in increasing the number of slums, especially in metropolitans like Delhi, Mumbai and Chennai referring to (Viyakam, 2012).

Based on (Tabrez, Goswami, Hassan Y, 2018) an official survey in 2011, slums in India were divided into 3 parts. The first type is the identified slum, it holds the biggest number of dwellers and it is not recognized by the governmental actors and authorities. It contains 37.25% of the total number of dwellers, which accommodate three hundred person or seventy family of full and overcrowded residences, filthy streets and polluted environment, bad infrastructure and lack of usable water. The second type, notified slums that form 34.3% of the total, identified as a slum by the state, UT administration and municipality beneath the “slum act”, is a dense zone located in a town or a city. The third type with 28.5%, recognized slums, identified by the actors of the notified slums plus the housing and slum boards, but not officially noted as slums under any act.

From 1947, the number of slums was rising quickly for two main reasons. The first reason was after the independence when the industrial revolution happened. The second, was the division of India into two states, India and Pakistan. In the fifties and sixties, the population increased very fast until the 50% of the population in 1980 were living in slums.

A survey from (Ministry of housing and urban poverty, 2013), accompanied with the NBO which is a trusted data center in India that studies the housing, urbanization, sanitation, electricity, health in India and specifically in the slum areas and sends the data with GIS maps to the authorities to study it and try to find solutions.

It showed that the majority of non-notified slums are made with mud plus different materials and tools, only 37% of the non-notified slums have cement roads in their borders. The electricity is not a big problem because 16 percent of non-notified slums do not have electricity and only 1 percent for the notified slums. Their biggest problems

are in the sanitation, for drinking water and house usage. The right of education and the existence of schools vary between state and another, less than the half of slums have a close hospital with the distance estimated as 1 kilometer and no drainage availability for almost thirty percent of the slums.

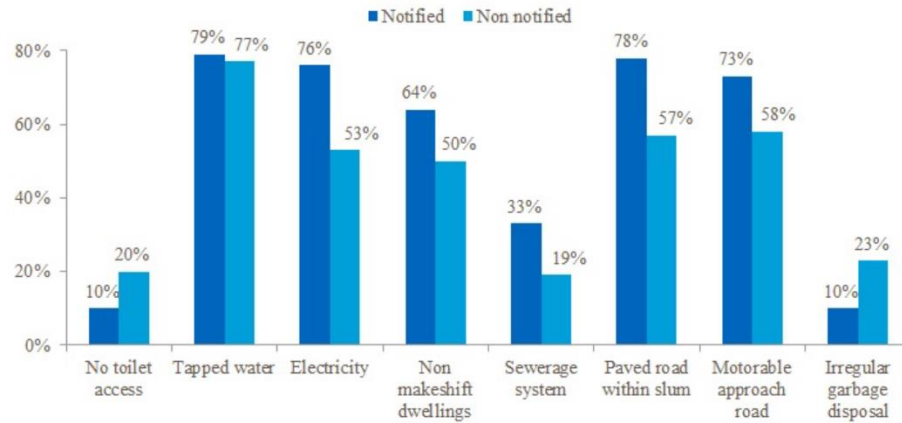


Figure 23-Basic services availability in Notified and Non-notified slums



Figure 24-Dirty environment in Dharavi's slum



Figure 25-Poor quality housing in Dharavi

The poor people living in India can't afford buying a land, so usually they build their low-quality houses next to the railways, inside large parks, lands on the hills or along a river belt. Based on (Digambar, 2016) the majority of these slums have a surrounding of residential areas, by slums and within or surrounded by an industrial area. The ownership of the land varies between public land occupied by 12 percent of the total population of slum dwellers, private land with 44 percent, 37 percent for land owned by municipalities and railways land 6 percent.

(Digambar, 2016), the water in India is really polluted and it is provided by tube well, which some are protected, and some are not, and water tap which 72% of slums use it and other sources. Plus, there is a problem of garbage, 62% of slums have their trash arranged by the local authorities, 27% do not have a trash disposal and the rest are the residents in the slums who arrange their own garbage disposal.

Authorities and specially local ones, sometimes are not able to manage the rapid growth in the urban areas of people coming from rural places searching for jobs and take it in a positive way because the economic growth will increase too, but they do

not succeed in providing a good infrastructure or houses with good quality to the migrants with the minimal services which lead to more slums with a bad shape and environment.

With the growth of population in urban areas, a lot of agricultural lands were modified to suit the need of the market from urban projects and zones. So, there is a change on the level of the land use. The period between this transformation is a dead period which means it can't be invested in any way, so the income of the people who use or own that land will decrease too. Whenever an agricultural land is transformed to an urban land more people will come from the rural area which will result also to a surplus in the workers number in those areas leading to non-employment to more poverty and more informal settlements for the needs of the migrants.

The growth of informal economy which is not identified, listed or licensed creates more slums since the demand for work will increase. The employments of the informal market do not pay taxes and this sector is not supported nor organized by the government or local authorities. If the state bureaucracy was corrupted and slow or the work regulations were rigid the informal sector can increase more than the formal one. For example, based on (Fox, Gaal, 2008), 89% of the labor sector in Ethiopia Burkina Faso are occupied by informal work. Countries who counts on informal work sector are the ones where it is hard to start and develop a formal work.

The diseases in slums are diverse, strong, easy to be transmitted by animals, food, water, filthy floor and air. The insanitary condition in these slums make the diseases faster. Example of those diseases, Malaria, Fever, blood infection, respiratory problems, lack of vitamins and AIDS from the sexual relations without taking any protection. The chaos and social problems can cause also depression, anxiety, stress and psychological critical problems. Cancer is a noticeable disease in slums too where the pollution has the highest rate.

The health care in India does not have bad reputation, on the opposite it is known that government pays attention about the slums dwellers as for the non-slum's dwellers too. The government provided mini health centers, specialized dispersed infirmaries , large hospitals with a very cheap entrance's payment and those facilities provide for the government number and statistics of birth rate, death rates, causes of death and so on to help the government to find more solutions and policies to reduce the disease in the slums. One million beds, 17000 hospitals and 25500 public clinics were provided in 2002 in India. The number of hospitals in urban areas is much bigger than the number in rural areas.

For the people who cannot pay for private hospitals, the public facilities supported by the government can provide low cost medical services. Many doctors who work in the public health sector manage also a work in the private sector for a better salary and can ask more money from patients because there are not many limits or observations from the government considering the private sector. (Census, 2001) the medical and health infrastructure created by the state are 75% while 35% of the Indian population use them, 65% of the population use health centers and hospitals of the private sector considered as 25%. The low quality of medications, non-organized services and the long waiting list in case of a normal condition drive the people to seek the private sector

which has a better quality. A problem concerning the health sector in India too is the small number of nurses, doctors and pharmacies. For example, the global average of doctors is 1,25 doctors per thousand populations, in India the number is below the half of the average with 0.6 doctors. The lack of awareness for not having the needs for checkups and doing tests is a reason for the big number of diseases specially with people that used to live in a bad environment condition from garbage all around to polluted air and water.

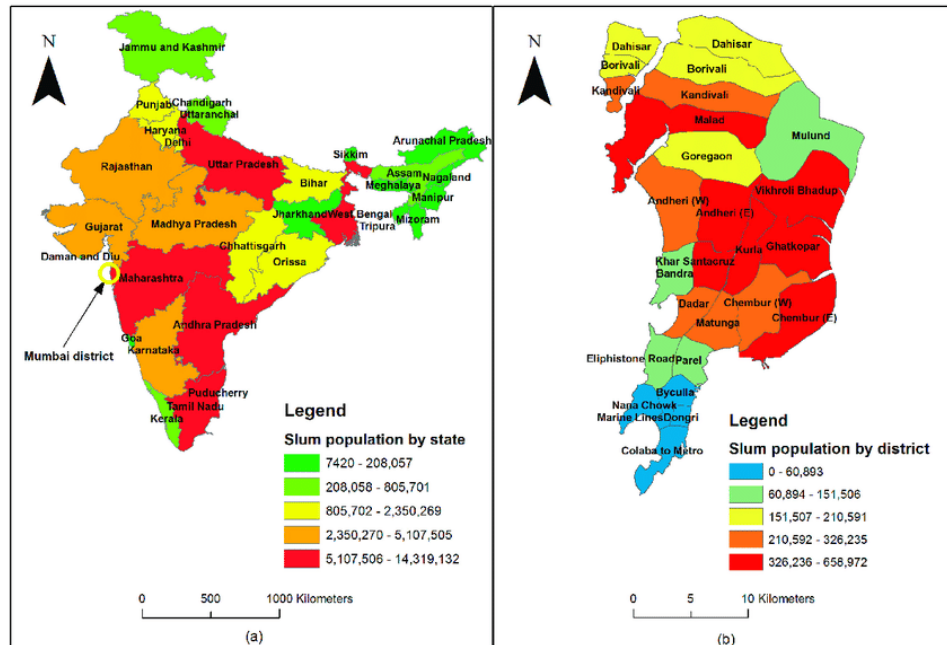


Figure 26-Geographic distribution of slums population in India (a) and Mumbai (b)

D. Mumbai, a global city with an impressive history

Referring to (Indorwela, Wagh, Ramakrishnan, Nandlaskar, 2017) Mumbai called once Bombay, was the most developed Indian city starting from the 1940's with the emerging system of capitalism inside India and later on, it started to experience new technologies, variation on the social level and a rise in the economic situation with modern different tools relying on modern art and today it has the biggest film industry, supporting the services sector, financial and commerce also, even manufacturing.

Mumbai used to be a colonial city in the hands of imperial power, from a port city to the manufacturing field to services and finance ending as an important player in the globalization process which promotes national markets. Historically, it was known as the island city, then Bombay metropolitan region and now Mumbai metropolitan region. Mumbai has a population of 18.4 million and an area of 4.355 km², it is the capital city of the state of Maharashtra.

The Mumbai Port is responsible for 71% of the trades in the ocean, 26% of the industrial production, contains the richest people in India, it was classed as an alpha world city in 2008. 3 UNESCO sites concerning world heritage are located inside of it

based on (JGI Volume 13, 2018). Mumbai has 7 municipal corporations, 13 councils in municipalities and some villages.

Referring to (Greg, Tim, 2004) in south Asia, Mumbai is the most significant and globalized city with the most powerful headquarters worldwide, a focal point of international investment with a powerful role in taking decisions on institutional level. It contains the most popular and busiest airport and port. City of design, fashion and creativity with a high income which generate a lot of taxes for the government. The city is the first in the field of television, media and movies which allows a cultural export, for example Bollywood is internationally broadcasted. It is the center of knowledge and IT links, it is evolving and developing the connections with Delhi and Bangalore, it will be a reference for inland industrialization.

In 2000, the city was the 20th concerning interconnected economy, now it is classed as the 12th which shows that the city is making huge steps forward. With the big contest with Delhi and Chennai, Mumbai is still the central economic node of India with the state and reserve banks of India. The top 55 largest international companies in India have 22 of their headquarters in Mumbai.

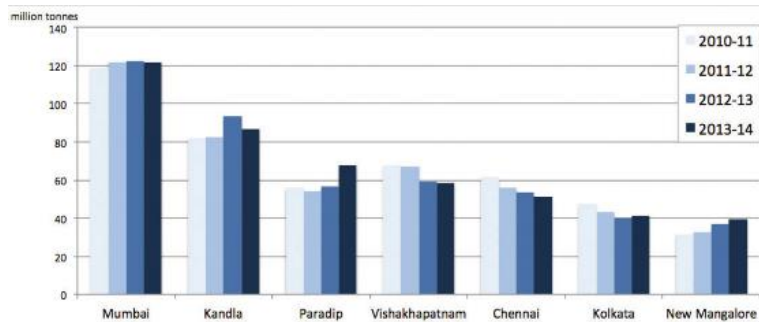


Figure 27-Mumbai's combined port traffic compared to other Indian ports

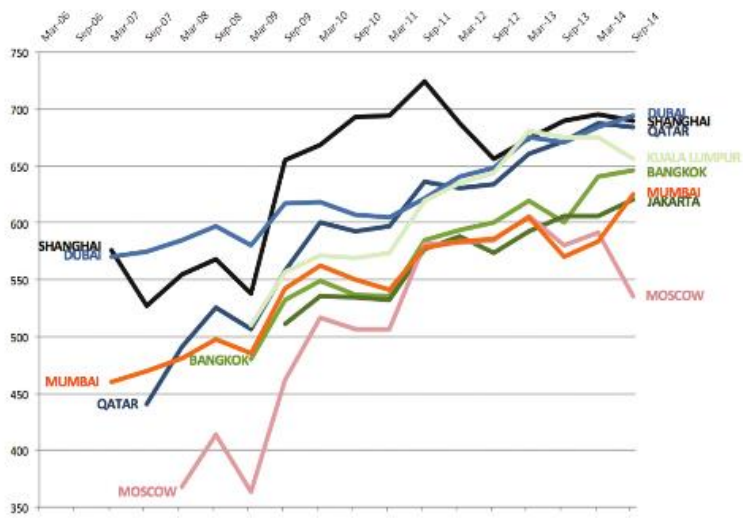


Figure 28-Mumbai's performance as an international financial center since 2007, compared to regional rivals

Mumbai is a center of trust, the most important actor in exchanging the biggest stocks for the internal market of India, also with the foreign market. It is a home for Indian banks, commercial banks, foreign banks and all kind of financial operations.

Mumbai is considered as a very important international city for the number of the arrivals and departures travels, one fifth of the tourists coming from outside India use Mumbai's ports and airports, the biggest number of Indians use it too as an exit node. But for the airport it still needs a lot of work internationally because it has almost 48 direct flights to international stations while Dubai for example has more than 200.

Mahatma Ghandi, a lawyer with political influence all around India and the world also used to say to enhance the power of small industries instead of the big firms and encourage the local market instead of the foreigner one. In the past decades the opposite happened, the market moved from private to public one, from small scale to a global one and from local to a national one. Third of the Indian foreign exchanges or trades are commuted in the two ports of Mumbai and brings 40% of the income taxes to the national treasury based on (JGI Volume 13, 2018).

The regional plan 1960-2011 enhanced the role of Mumbai internationally in the finance, business and services sectors. The plan focused on the private sector in giving it a bigger role on the infrastructure part and reducing some regulations on the lands. The international consultancy company McKinsey drew a plan in 2003 to give Mumbai a new label as a "world-class city". A part of the plan was about making the land more available in 65% to create more commercial, modern and vertical residential buildings and in 2004 the government of Maharashtra demolished 95.000 homes to make a space of 289 acres of land for new modern projects. The deconstruction was labeled in the newspapers as Shanghai operation.

In 1661, the Portuguese gave up on Bombay for the British, the city was a node for ships support specially during wars. In 19th its role as international city expanded when the British were searching for a port near Europe in time, the east Indian company lost her role over the external trades referring to (Greg, Tim, 2004).

Network System	Period	Global Orientation	Punctuations/Blockages
Commercial Maritime System		External	
Pre-colonial Maritime Trade	3rd century BCE-16th century CE	Magadha empire, Silharas, Delhi Sultanate, Mughals	European powers in the subcontinent
Early European Maritime Expansion	1550s-1750s	Portuguese, Dutch, British	Decline of Surat-reconfiguration of western India trade
Export of Opium and Cotton	1750s-1880s	British	Opium Wars
Industrial Production System	1857-1984	External and Internal	
Cotton Textiles	1850s-1947	British/External	Indian Independence, Import-substitution
Post-colonial	1947-1984	Indian/Internal	De-industrialization
Digital/Global Commercial System	1990-	External	

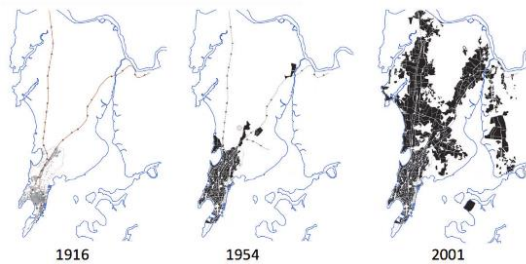


Table 2-Historical evolution of Bombay/Mumbai Figure 29-Greater Mumbai's spatial development over the past century

The rising price of cottons and the new railway were an entrance for Bombay to play a big role in the trade pattern of South Asia and in 1870 the Suez Canal was a huge advantage for Bombay in parallel with the increase in the production of textile guided

by the Europeans. Bombay was the second largest between the British colonial regions, the biggest city in India in 1872. All those industries made Bombay a city of immigrants with different skills and nationalities. The city was the first in India to adopt the capitalism reflected in the economic, industrial, architectural diversity and trade system. British leading actors made a lot of international agreement for trades, more industrial and financial companies invested in Bombay and in 1870's the stock trade of the city was settled.

In 1900, it was the most powerful node of commerce and industry in all India because of the big industry of cotton and of the port that made the exchange easier and wider. Before a short period from WW2 the employment rate was extremely high, and after the independence of the country the internal market faced a rapid growth. By 1908, based on (Indorwela, Wagh, Ramakrishnan, Nandlaskar, 2017) almost the half of the workers in the mills were in debt, while the period of labor were increasing until it hits almost 15 hours per day and all that with the bad housing conditions and lack of facilities from water, sanitation led to increase the number of deaths between children and adults from the hard work condition or from diseases. All that led to a political wave formed by the workers who joined a large strike between 1920 and 1940.

In 1937, with the trials to locate the bank of India in Delhi, it was transferred to Mumbai which drove the firms to gather in the city. During the 90's a critical financial amelioration made the city a center of financial foreign activities. In the beginning of the 21 century, the Indian government was taking decisions and creating policies to make Mumbai the financial center, on the other part the ambition faced difficulties and challenges concerning the infrastructure, transportation and business climate strategies. The city in the right moment is not ready to make huge steps concerning its position in the financial sector but at least the central government can take some actions and address some policies like the income taxation of the residents, reduce the banking restrictions and decrease the value of stamp duties which will give the domestic companies the ability to resist without ending up leaving the market.

After the independence the revenue from the textile production were invested in construction, different types of economy, medicines, chemicals and machinery production. Transport corridors and rails were developed, an increase of the middle class specially for people who are involved in public sector. Based on (Greg, Tim, 2004), in the west and the east, big production passages were constructed after the 1948 plan in promoting the city. The periphery of Mumbai was needed to be integrated as a functional metropolitan area and the administrative power worked on that when the population was about to hit 2 000 000 people.

The traffic congestion increased rapidly and specially in the 1950's when the city was extended and started to reach its limits, the wide public spaces started to shrink in the point of view of the people, the public transports were overcrowded and houses too, which led to many problems and creating slums. A regional plan and developments policies were proposed in 1964 and 1973 to make Mumbai a reference city for the technology and data through decentralization and creating smaller municipalities that intersect in the center of the city creating a powerful core.



Figure 30-satellite city structure

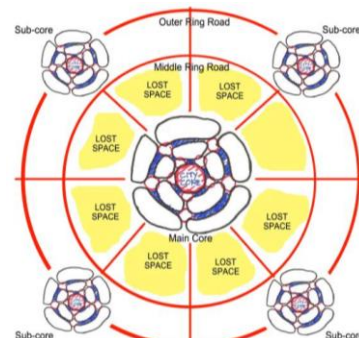


Figure 31-The concept of satellite town in modern city planning

The production of textile decreased in the 1970s, the industrial capacity or activity in Mumbai declined in parallel. There was a trial to relocate the industry to the periphery, but the plan failed because some disadvantages from electricity, water, high costs of lands and long distances which need a big transport supply. On economic level the activities in the port were damaged too, the textile factories located in the center stopped working and big protests and strikes were hitting the city in 1983 referring to (Indorwela, Wagh, Ramakrishnan, Nandlaskar, 2017). The rest of chemical and construction factories were distributed among the region, while the government kept giving the financial aid for the biggest firms, so they do not close while the formal manufacturing jobs were also declining in the big cities in the west.

With the defeat of the manufacturing sector, a new system was built contains the global contents of today from data, knowledge, banks, IT, technology, communication, logistics, transportation and oil. This replacement changed the system into a more contemporary one focusing on the services and work commuted on a global stage but sadly, it was not enough to recompense the big number of those who lost their jobs because the modern sectors need skilled employees.

(Greg, Tim, 2004), in the 80's Bollywood was the winning card to make Mumbai an international actor through the film industry. In the 50's this sector reached the peak in production too with no help from the government. In the late of 80's when the government started to make a surplus of profits, it started to fund the film industry. In 1998, big companies started to invest in Bollywood movies, from production, actors and tools that used to broadcast and share the culture locally and internationally from media firms like B4U and satellite television. When the industry grew, more jobs were admired and there was a need to promote and develop this industry from designers, software programmers and animators. Now the industry value is 4 billion dollars with almost 25% of the revenue from Northern part of America. Compared to Hollywood it is a small business, but it still provides jobs for two hundred thousand people with advantages and capabilities of participating in other markets and fields. In the present, if the regime enabled more policies, the industry is going towards gaming and a screen that mix between information and entertainment.

In the 1990s the globalization in the city got more powerful with liberalism and national structural adjustments provided and guided by the IMF, that gave a push for

the private sectors to start their business with less restrictions and forbidding licenses. The international investment was embraced in the market and infrastructure system of the city after the new regulations. The lack of work in the rural areas and the liberalization of the system in the city drove the people in the rural areas to migrate, which led to a growth in the population of the metropolitan.

In the 90's the government helped the city to grow internationally specially in the financial sector by transforming the framework for a macro-economic system with the support of the reserve bank in many projects. The state also worked on reorganizing the film industry in 1998 by making a reform in the accounting and financial system of the industry to facilitate its global vision. However, on a big scale the national government does not give the sufficient attention concerning planning and organizing regional planning and development.

The informal sector with jobs as security guard, taxi driver, street vendors and food market started to expand after the unskilled workers did not find any places for them in the formal one, under a bad condition with no a noticeable support from their government and with a lack of tools to enter an international trade. Mentioned in (Greg, Tim, 2004), the development plan approved in 1981 after twelve years from when it was created, did not help specially from the point of view of the increasing number of population and the regulations that did not allow any urban progress. Navi Mumbai, a satellite town in the city was expanding from within, creating for itself a core of information and technology and it became a center of economic and financial activities while the city kept dealing with old infrastructure, lack of roads and rails problems.

Bombay became known as Mumbai in 1996, (Greg, Tim, 2004). Because of the new regional plan, the city took more international progress and became the center of economy and investment for many foreign large firms. The leaders of the private and public sectors were the captains leading the new economic system of the city with the plans commuted by McKinsey and the initiative of Bombay first, to create a world class city as Singapore with modern skyscrapers, efficiency in transport and with an absence of poverty signs. In 2008, the World Bank backed up the city with a business scheme to help in increasing the international investments and flows, with urban transport projects later on.

The liberal principles adopted in India to enhance the international investment and the private roles did not follow the exact vision that was planned for Mumbai because of the lack of facilities from water, electricity, health and transport. (Greg, Tim, 2004), the world Bank identified the policies taken from the municipalities and metropolitan as a rigid, limited and old-fashioned plans which caused a decrease in the economic execution from mid-1990's to 2005, that helped Bangalore and Chennai to expand their centers. The rent control law executed in the end of the 1990's in Maharashtra inspired by the Mumbai rental law of 1948 was discouraging and did not give any initiatives for people to make new investments and businesses. The system of the governmental institutions was not that strong, it was slow accompanied with a high price in case of transactions.

The infrastructure cycle went into ups and downs in the city. The world bank with the new urban plan of Jawaharlal Nehru fund the urban transport vision of Mumbai which

encouraged the investment and business in infrastructure progress concerning highways, metro, skywalks and sea links. The projects faced a delay period but some of them were completed, like the freeway in the east, the metro line realized by the partnership between private-public sectors and new terminal, in addition to the airport which finished all in 2014 based on (Greg, Tim, 2004). Many active actors played a role in the urban regeneration plan of the metropolitan from the aid of the US, international companies and NGOs, international monetary fund and the world bank. The private public partnership and agreements were leading the capital of the investments on the infrastructure part in the city. With all these steps forward, it is important to point that the infrastructure system still needs a lot of improvement and more links, bridges and metro lines to start being competitive with different cities with a modern and multiple unit of infrastructure. For example, there are sixteen bridges in Manhattan compared with only six for Mumbai which is a small number adding to the problem, the delay the second metro line is facing.

The municipalities and the planning offices are somehow blamed for the failure, slow execution and lack of planning concerning the projects. Many plans and regulations are being imposed to solve the congestion traffic and still there is not a noticeable improvement. Environmental restrictions, noise regulations and the long period needed to obtain a land create a delay and problems for the logistics used in developing these infrastructures. The corruption with the low revenue estimated from the infrastructure point that the money spent on the projects were not close to the demand.

The financial expansion of Mumbai is more oriented to the northern part. The collections of financial support of the city are small but provide a huge economical flow to the city with a lot of activities concerning the informal sector too. Those activities help the city to provide an income for the middle class and part of the poor one too, but it is not enough for the real economic growth, goals and ambitions demanded by the city and state.

(Greg, Tim, 2004), by 2050, the urban area of the city is estimated to multiply from 30% to 60%. Each ten years, 3 million people will be added to the population and the economic growth will increase in parallel with the demand of the middle class for more facilities, infrastructure units, work and homes. It is estimated that Mumbai will risk many floods too, so it will need plans to ameliorate and adapt the city and its infrastructure to block the flooding in the coast.

Mumbai Metropolitan Region Development Authority started to think for the future because it is estimated to reach more than 40 000 000 inhabitants, so they ordered a concept plan from a specialized team from Singapore till year 2052. The goals of that plan are to make the residents able to reach southern part of Mumbai in the shortest time possible, making the polycentric idea the reference for the region and guiding the sectors for a better results and planned strategies. 42% of the people living in great Mumbai live in slums that's why the public sector needs to make more efforts to find solutions to the roads, infrastructure, garbage, waste and inadequate housing. The rate concerning the poor people is higher than Moscow and San Paulo. Mumbai provides 24% of the value of the different sectors in services, agriculture and manufacturing, also 42% of the GDP of Maharashtra. The biggest employment rate is in greater

Mumbai with 75% of the total employees and give almost 66% of Mumbai metropolitan region GDP.

	Population/m	Annual growth/%p.a., 2001-2011
Mumbai city and suburban district	12.4	0.4
Thane	1.8	3.9
Kalyan-Dombivali	1.2	1.5
Vasai Virar City	1.2	5.8
Navi Mumbai	1.1	5.3
Mira-Bhayandar	0.8	4.5
Bhiwandi-Nizampur	0.7	1.7
Ulhasnagar	0.5	0.7

Table 3-Population size and growth of the eight municipal corporations in Mumbai metropolitan region, 2001 to 2011

GDP (2012) ¹	Share National GDP	GDP/Capita ²	Population/m (2011)	Share of National Pop.	GaWC Global City Ranking	# Global 2000 HQs	Avg GDP growth 1993-2012
\$124bn	7%	\$5,900	23	2%	12	21	6.2%

Table 4-Key statistics for Mumbai metropolitan region

In 2014, for boosting India's economy, new corridors from modern cities and industrial areas are being executed between Mumbai and Delhi to enhance the export activities supported by the Japanese funds too. Also, an economic corridor connects the industrial nodes from Bangalore to Mumbai mentioned in (Greg, Tim, 2004).

With the historical and commercial international activities for over two centuries, Mumbai has global characteristics and facilities that emerge under many names and subtitles. Starting from the heritage of global direction, Mumbai was a city of trade at first just like London, because of the British colonial, they adopted the lingua franca for the commercial activities and trading. The geographical location of Mumbai helped a lot in engaging the city globally specially with the big role that the port played. On other another hand, the shape of the city with the wetlands did not help too much to ameliorate the transport system which led to expand the economic and social activities in parallel with the population in the periphery of the urban zone.

With all the challenges that did not allow the city to make huge steps from the level concerning the quality of life, the city still a reference point for ambitious Indians, educational institutions with a good quality, modern life, diversity and meritocracy. The city experienced a big cultural and religious diversity, for example in the 20th century almost 80% of the inhabitants were migrants from Maharashtra with different backgrounds, ideologies and identities. The concentration of housing patterns in Great Mumbai drove the migrants coming from Uttar Pradesh to locate in the periphery of the area. In South Asia, Mumbai is always the center of night life, shopping, commerce, education and finance.

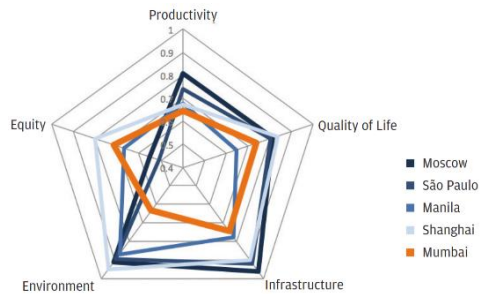


Figure 32-Mumbai's evolution in the UN-Habitat City Prosperity Index, compared to other emerging world cities

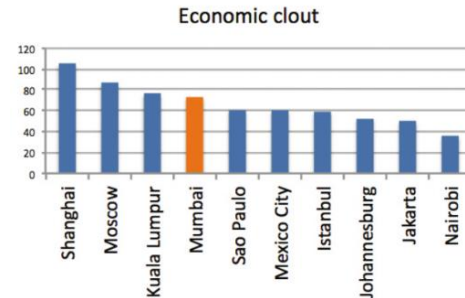


Figure 33-The competition of Mumbai in Economic cloud with other world cities

With the existing power and the ability of Mumbai to take decisions and lead the general opinion, there are challenges concerning the urban function, form and design because of the failure of buying large areas to build mixed-functional buildings and the lack of infrastructure that relates low density and suburban areas. The problems concerning pollution and design in the city, increased the visitors and investments in the coast of the city with an encouragement from the government to develop the coastal part in reducing the restrictions. (Greg, Tim, 2004), in Mumbai it takes from two to three years to register a small business by the local authority, one of the challenges is to find a market or opportunities for those small firms while they wait for the registration procedure to be done by the individual civic department.

Mumbai has made large steps into globalization, but its own governmental framework plays a role in shrinking the potential of the city which stops it to expand wider. Organization related to government and municipalities are now finding some common goals and visions to work on it for the benefit of the city. The authorities in Mumbai are not completely united, there are many problems in taking crucial decisions, some are political issues that divide the state and infrastructure agencies, planning administration, central government and urban structures in municipalities. The lack of organization does not cause problems only for the projects that are being executed but for the whole vision of growth and development adapted by the government. A split between rural and urban voters, political leaders and the disrespect of the hierarchical authorities process with a rivalry between the bodies make the situation harder for a noticeable evolution.

The railway and the port are the engines of the Mumbai that enabled the development process from the past till now. The railway constructed in 1858 made the city an exporting center for the cotton and the port was the bridge that connects Mumbai to the west. The rail scheme is the most efficient in south Asia and carries daily 6 million people and has a passage by Maharashtra and along the coast. Unaffordable public transport in the city and lack of coordination with the firms that construct road, rails and metros is considered as a problem too which leads to slower the process and make it more expensive to achieve a certain goal.

With all those problems concerning public transports, the citizens are using more cars which creates more difficulties, dealing with the existing urban areas and the traffic

congestion. Mumbai in general, is a dynamic city concerning exports specially from textile to cotton and imports too. The rise of the population and the failure of the government to find a solution for this problem create many problems from congestion, lack of green spaces because of the dominance of residential units, costly rental houses related to the high demand from the Indians to live in the city. In addition, the different cultures and identities made the city chaotic with different visions concerning the groups and communities that live in it.

The lack of interaction between the state and local bodies caused a lack of planning and of a non-developed infrastructure. On the other hand, culture, knowledge, innovation and high level of education in the universities led the city to some good results too from the big number of skilled labor from medicines, IT engineers, designers, artists, fashion designers, film producers and economists that participates in domestic firms and international global companies too.

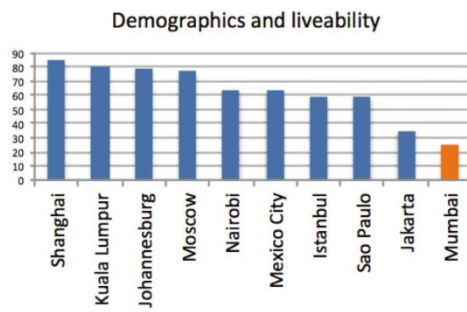


Figure 34-Mumbai below average in demographics and liveability among emerging world cities

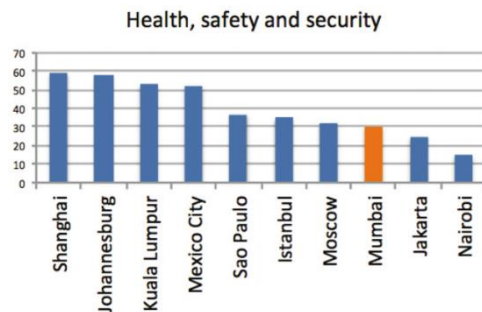


Figure 35-Mumbai below average in Health, Safety and Security and liveability among emerging world cities

E. Mumbai, city of slums

Almost 18% of India’s population live in slums and two-third of India’s slums are compacted in 2 hectares. Referencing to the (Office of the Registrar General & Census Commissioner, 2011), the population of Mumbai is around 18.41 million with 42% who live in slums. Almost half of population in Mumbai who live in slums occupy only between 6% to 8% of the land.



Figure 36-Slums in Dharavi

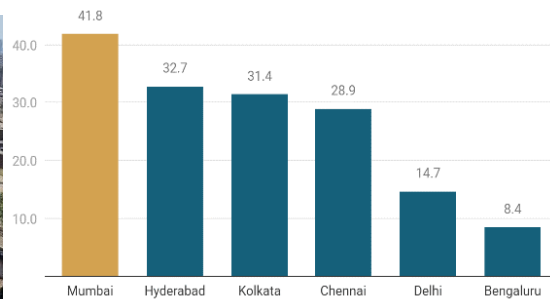


Figure 37-Slum population as percent of total population

Based on (Jain, Chennuri, Karamchandani, 2016), in the state of Maharashtra, 60 percent of the slum units are without a toilet in their homes, with 36 percent that are obliged to search for water and collect it from public taps and tubes. Most of the dwellers are recognized as squatters with no legal frame for their lands. Many names are used to describe the slums in Mumbai, pavement dwellers that they use the footpaths as a location to build their informal settlements, squatter units known as “zopadpattis” with poor quality of construction built with a very low cost, permanent structure known as “chawls” and semi-permanent construction known as “Patra chawls”.

In the city there are not enough formal affordable housing, mainly because the cost of land is unaffordable because of the high demand on it, so it is not easy to invest in it specially with construction projects. Before the independence India was a socialist republic with a total responsibility in organizing resources and promoting projects for the benefits of the inhabitants including social housing. After the liberalization in the beginning of the 90's, the government dumped that responsibility and encourages the privatization as a manner of development according to (Mukhija, 2003).

According to a report by the national institute of urban affairs, that the surplus of inhabitants, the rise of concentration for the commercial and financial activities made the number of slums increase. Almost 96% of households in the city can't afford to buy a house in the formal sector. In Mumbai the slums do not exist because of the lack of houses, actually the city is the first in India with the highest number vacant houses, almost 500 000. The prices are not decreasing for the reason that Mumbai is not only a housing market, but it is known as an investment market that focuses on commercial, services and financial activities specially on global and international firms' level.

The infrastructure in Mumbai are inadequate and causes problems related to sanitation, lack of clean water and the difficulty of transportation. In the city there are two types of slum, one which is accepted and recognized by the government, it means there is no risk that the dwellers who live in those slums will be excluded or thrown out by the authorities and they are called notified slums. The second type is the one with people who have no rights on the land that they occupy, they are rejected by the government and they do not get any services or facilities from electricity to clean water and so on, those slums consist 50% of the total number of slums and are known as non-notified slums. The state can change their label to notified slums only if the dwellers can prove that they lived in a land owned by the city before the year 2 000, but there is a lack of transparency because for example Kuala Bandar is a slum that exists for more than 50 years on a governmental land but it is still considered as non-notified slum. Non-notified slums have no right or capability to use water from the water supply controlled by the government, so the only option is to tap in the water tunnels of the city in an illegal way which causes many diseases from the bacteria and microbes.

More than half of the population in those slums are affected by diseases related to the dirty water, and 2/3 of them are children. The situation is so bad that during summertime, the water is mixed with excrement so the dwellers are forced to buy water from the vendors who roam the streets and it costs 40 times more than the water provided from the state and government to the notified slums.

The infant mortality in Kaula Bandar is double than the rate in notified slums and 32% more than the rest of the population in the city. In the year 2014, human organizations put pressure on the government to share the access of water supply to non-notified slums, specially that the high court of Mumbai announced that every human has the right of sanitation and clean water. Practically, in Mumbai this is not what happened and still there are many units with no clean water and a clean entourage. The government said that even with the right of drinking safe water, it is not its responsibility to provide tap water connections into the slum's settlements, obliging the dwellers to walk for long distances to have access to clean water. With the statement of the government in the right of safe water, we notice that there are black holes in the exercise of the reform plans which leave the poor people in a bad condition.

Referring to (Sunil, 2003), the drains spill over usually after it is blocked by wet and thick materials and the narrow gutter along the dwelling that serves to treat water from waste does not work properly. Another reason is that taking care of the reform in those settlements needs a lot of money for serious practices and policies which is not in the benefits of the government in the present time.

From the British colonial and India still face the housing difficulties. Based on (Young, 2016), India did not talk about slum or housing facilities in relation with the social reform that is mentioned in the Five-Year Plan in the mid of 80's. The most recent two "Five years Plan" were better, the first between mid of 80's till 1990 and the second that indicated that the problem of affordable houses has a huge demand which leaves the majority of poor people with no formal housing. Referencing to (Mukhija, 2003), it is mentioned that trials to promote the rise of intensity of buildings were not supported for the reason that a change like that would increase number of people in the city, more demand on using infrastructures while reducing the green spaces and increasing waste and garbage which will lead to negative aspects concerning the environment.

Besides being a global city with an advanced financial nodes and international firms, Mumbai also is a home of one of the biggest slums too. Dharavi, a city inside a city, is a slum that always been considered as a problematic to Mumbai's economy, social perspective and identity.

F. Dharavi slum

Referred to (Taneja, 2019), Dharavi is the most known slum in India, it is spread along 530 acres with not an accurate population number, that varies between 700 000 and 1 million while some studies say even more (Manoj, 2018). In Dharavi, the population is almost 278 000/km² people. FSI is the area of a building in relation with the size of the land where this building was built on. The slum's population is so large that on FSI index from a range 5 to 15, the slum is considered 13.4.

Located between the financial center of city Bandra-Kurla axis and Nariman point which is considered as the business zone in the north of Mumbai. The 3 train stations, Sion, Mahim and Matunga, shape the borders of the slum with a triangle, and the slum is in a relation with the Harbor train line, the central and the western. The slum is described as the golden triangle because of all those characteristics plus its closeness to the Mumbai's airport.

Dharavi, the chaotic, complex and heterogenous slum, plays a role in providing labors with a cheap income to the city. It is a slum with a life inside, even economic activities from selling goods, manufacturing and providing services (Baweja, 2019). Dharavi did its evolution all alone without interventions from the city or the government with a lack of planning, landscape and zoning. Plus, above all there is a lack considering the services provided by the city from clean water, sanitation, trash disposals and a modern infrastructure. The slum contains people from different cultures, religious, ethnicity and languages and most of the people do not have a land right which makes their land fragile in front of the abusers who want to make profits and even in front of their own government.

The process that the city went through step after a step, was always a social, economic, architectural and political attraction for the media to understand how the slum changed during the process of globalization. The slum is a famous, common subject that is considered a primary problematic between urbanists, politicians, journals and films too (Kolokotroni, 2012).

Dharavi for some of its inhabitants is a valuable area with low rent values, interaction space, gaining low incomes from selling goods and providing services that do not need a skilled labor. But for the authorities, it is always just a slum that is considered as an obstacle in front of transforming Mumbai into a “class city”. Some architects as urban developers as Keya Kunte, agreed that Dharavi is a slum but irregular and that is a slum that has its self sustenance. The site or location of Dharavi, with its unique scale made the slum unique too for the architect Neera Adarkar (Kolokotroni, The Politics of Dharavi, 2015). For Rahul Mehrota who is a famous architect and an urbanist, the slum is a territory inside of a larger one which is always expanding with a non-stop economic flows but in a small value and structures built as shelters with a low quality materials.

“Nagars”, this how the residents call the eighty five communities distributed in a 6 essential zones and those nagars are divided and separated with tiny roads, blocks and walls known as nallahs. Those 6 zones are not considered only as a residential fabric but also as an attraction areas for commercial activities, schools and government’s institutions.

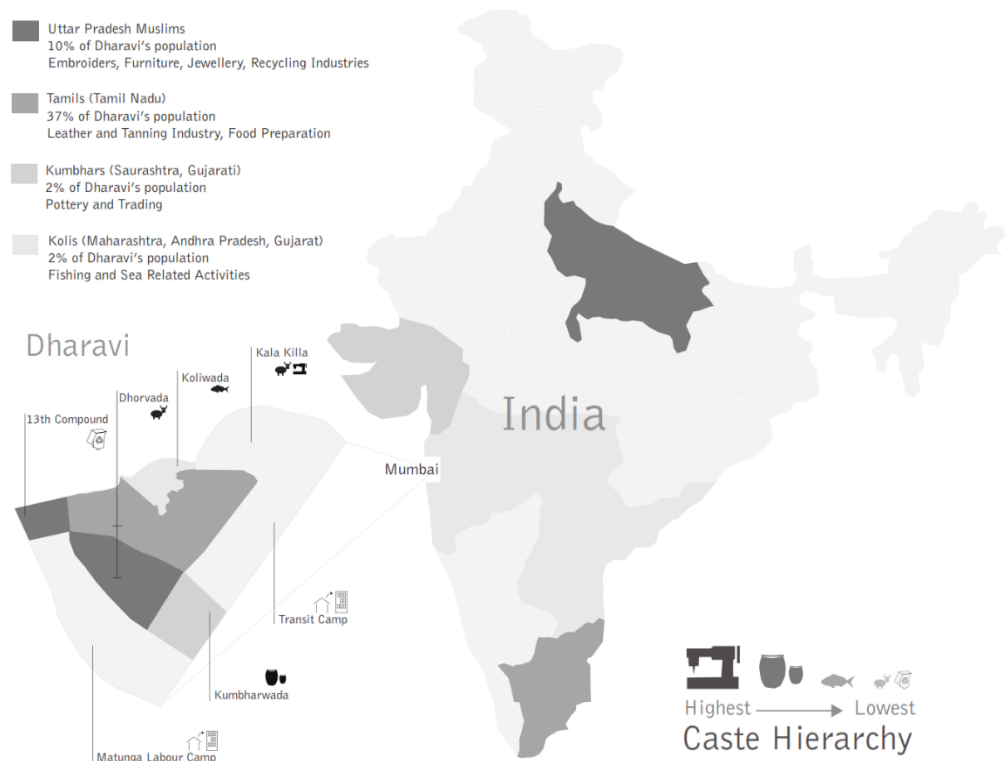


Figure 38-Dharavi's migration influx, distributed throughout Dharavi's different areas

The first area that we will talk about is Kela Killa, situated on the side of Mithi river and first constructed by a british governor in 1837 close to the borders of Dharavi, and it was built as a new piece for the castle of Bombay. In 1940, migrants who came from the state of Maharashtra settled in the area and later they worked on making the area well known as a commercial node in Dharavi specially in selling leather.

Dhorvada is the second and it is located in the middle of Dharavi. It is so old, dense and well known in commerce, specially in the tanning activities even before 1947 which means before India got its independence.

Kumbharwada is the third area, it is known as the potters community that they left their main homes in the region saurashtra located in the west of India because of a natural disaster in 1877. In the beginning the Kumbhars established their community between the two major roads and they used to work in producing ceramic pots to contain water. In 1930's, also a fire was a reason in the destruction of their settlements that was built again in the same site after a short duration. After the fire, the British authoritis built more than 350 permanant housing for the potters based on the essay written by Aditya Kundalkar. The area known as Kumbharwada now is the house for migrants from different places in Maharashtra's state. It is estimated to contains more than 1500 families with a majority that concetrates on the pottery industry. The typology of houses in Kumbharwada, consist two parts that function as habitat and workshope with a small area inside, and a narrowed space that leads to two directions. The first is the market where the ceramic pots are disposed before selling them, the second one leads to the production area. The houses are known as "pakka houses" which means

persistent houses with cement that is used as a cover (Kolokotroni, The Politics of Dharavi, 2015).

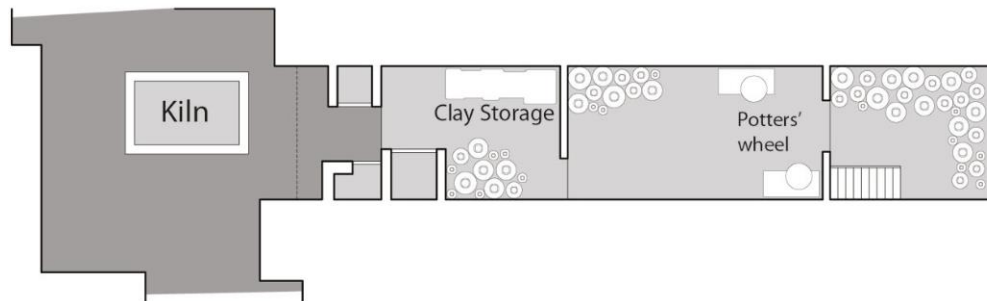


Figure 39- The Kumbhar's house is both a site of production and a warehouse for products going to market

The fourth area is Koliwada, which is one of the most ancient districts in Mumbai, and the oldest in Dharavi. The area is famous by its fishing industry and markets. The houses in this zone are not made from Bricks and are not only Bungalows, but they are accommodations placed in fishing boats where families live and work. The inhabitants known as kolis or seths were not only fishers, in the 70's and 80's they were considered as the best producers of liquor during the era that alcohol was prohibited. In the 90's the police took over the alcoholic market and till now it is hard to find alcohol in Dharavi.

The fifth and the sixth are the Transit Camp and Matunga Labor Camp which were created and developed by the government. The project in Matunga started in the 40's as an accommodation for the workers in construction projects and municipal work. The roads are well organized and made from cement, it is the most conserved settlement in Dharavi. After the independence of India, the transit camp was built as a habitat for the dwellers who lost their homes after the redevelopment plans.

The 85 communities in those 6 areas have different types of settlements, a housing cooperative built on a land owned by a cooperation, SRA scheme, high-rise buildings and built by the government to reduce the density and area where the slum dwellers are dispersed with a cheap price as an initiative to free the slum, small condense residential units known by "chawls" occupied by groups of people from different religions, languages and cultures and in the end the last type is the private land.

The word chawls emerged when the city started to be involved in economic trade and specially in cotton industry in 1873, when Mumbai was under the British colonial. The architectural typology of a chawl is simply a small house with a long corridor, and it was basically built for the workers who are in majority migrants who left their villages and families to work in the mill industry. The corridor in the chawl was actually the balcony and the units were composed from two to three levels and each one is divided to multiple rooms. Each room had a space of 7 sq.mt occupied by almost 10 persons with a small space used as a water storage. All the inhabitants share one toilet which is located in the ground floor, the building is covered by cement and most of the time with brick and wooden doors.

After the workers started to import their siblings and families, a surplus in the population density happened and the areas became overpopulated. For each chawl, there are representatives, elected by inhabitants themselves to represent them and discuss in the situation of the area with the government bodies and local authorities. All those typologies and settlements made from Dharavi a unique mosaic that units multiple architectural typologies, different religions, professions and markets (Kolokotroni, The Politics of Dharavi, 2015).

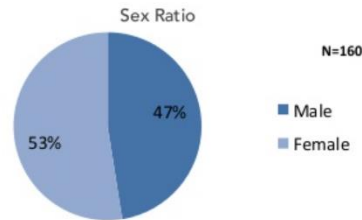


Figure 40-The percentage of females and males

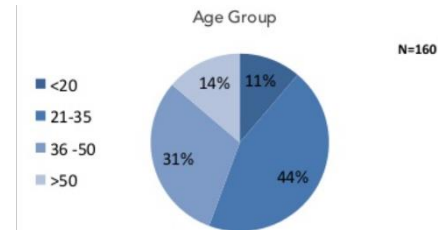


Figure 41-Distribution of age groups in Dharavi in Dharavi

As industrial and commercial activities, Dharavi’s residents are not only involved into the leather production. A big number of the people work as tailors and in fabricating textile, a business that produces almost 550 shirts every day and women specially in this area are skilled in needlework. Sakinabai unit in Dharavi is famous in selling and designing jewels too.

More than 10 thousand people work in the recycling field in Dharavi and it is very known in India. The women and men who work in this field, earn per day an income of only 0.72\$ per day and all the field brings as profit a number estimated of 150 thousand dollars a year. In the slum they profit nearly from everything that can be recycled like plastic bags and bottles, oil, even materials and products thrown from hospitals and all those products are used again and distributed all over the world (Kolokotroni, The Politics of Dharavi, 2015). The kite is an example of recycled material that is reused locally in Dharavi for festivals.

In Dharavi a secondhand market exists for the materials that can’t be used in recycling, so they clean it and sell it again. Mahim Creek is the place where the recycling industry exists and on a bigger scale, the land belongs to the municipality. Dharavi is treated in a bad way by the authorities, considering that 10 thousand tons of waste derive from Mumbai every day and the biggest percentage of the waste ends up in Dharavi. More than 720 recycling industries exist in the 13th compound which recycles the plastic and produces everyday more than 3 thousand bags. From all those industries, more than the half are not official and their work is not observed by the authorities.

Concerning the food, in the middle of the 90’s the first bakery was established and now more than 20 bakeries exist on the borders of the slum in relation with the rest of the city, and also they provide food for workers inside and outside Dharavi by the delivery method.

Dharavi is a home for multiple economic activities, from food and vegetables shops, restaurants, shoes industry. A common industry in the slum is Printing Industry which

focuses on producing posters for the film industry in Bollywood, and for the big commercial companies and markets along the roadside in Mumbai, commuted by designers and skilled workers. There are more than fifty local printing companies that exist inside of the residential units, in that way the owners do not pay rent for a shop. Besides that, the slum contains 5 soap factories.

Referring to the survey accomplished by SPARC, the national slum report executed in the middle of the 80's and the architecture institution, the industries and their numbers are more than 240 mini-scale industries, almost 723 recycling sites, approximately 24 bakeries, more than 110 restaurants, almost 40 large businesses and 150 place that prepare food in its different types (Kolokotroni, The Politics of Dharavi, 2015).

The housing in Dharavi is classified under different categories and typologies. First, the pakka house, which is considered as the best housing structure and quality in the slum. The material that surrounds the structure and covers the floor is cement and the house is composed usually from two levels connected by a ladder. Kacha house is the second typology built from a non-permeant material for fresh residents until they can find a pakka house to live in. The third one is the hut, a small shelter built from the existent materials in the area from bamboo and wood. In 2007, a survey from KRVI showed that almost 32% of the units are made by residential structures, almost 15% for the mixed used system with industrial production and residential units in the same time, and almost 6% for the mixed use structure building that commutes and develops activities that provide commercial products with being a housing unit in the same time.

The crime rate in Dharavi increased during the 90's, but in the present it decreased in comparison to the past (Numbeo, 2019). Dharavi unlike the other slums, it is not only noticeable for Indians, but it is known all over the world by its diversity in cultures, religions and professions which make it a "slum of attraction" for many tourists who want to live a new experience away from the luxury, for companies searching for small scale and specific handmade products fabricated only in specialized cultural business, for scholars to study the unique morphology and mosaic of Dharavi. The slum is considered always in danger specially from landlords who can control the land by authority and force and specially from strong rich people who dream in building international firms and skyscrapers in place of the poor quality housing without caring about thousands of inhabitants (Boano, Hunter, Newton, 2013).

The slum became an example of an informal urbanism, where its residents produce goods and services from low cost materials and activities, where people build their own housing districts and develop their life and transform their future by their hand. Dharavi is not simple, yet unique. It is obvious for the people who watch that from far and even for the actors who live inside and participate in the slum's activities, that the slum is not balanced, not pure, not clean and observed as a chaotic space. It is still helpful to understand the phenomena created by informality that shapes the culture, religion, lifestyle and practices. In the same the role of informality in shaping the architectural context from shape, materials and scale.

While Mumbai exclude Dharavi and considers it as a sort of parasite that presents the city in an ugly face globally and does not allow the city to be classified as a "class city", the slum was left alone with no planning, zoning, authorities, security, economic

The island city was created and that's after uniting all the islands together for the reason that the population was increasing enormously that it hits more than 160 thousand people in 1827. In 1836, the reclamation company named Ephistone was the first company founded by the British and in that period where the procedure of assembling the island started. Even if the Portuguese people who first thought of this plan, it was not executed until the British took the lead. The head of the hills were exploded by dynamite to fill the voids between the islands (Granbom, Ljunghusen, 2011).

“Hornby Vellard” was the new harbor commuted in Colaba, in the south of the region and that happened after the union of the islands in 1838. A rise in the value of the properties and lands accrued with the increase of almost 400 000 new people to the town in only 20 years. The cotton industry forced the authority to create more infrastructures and roads with the big income the cotton textile mills used to bring for the city and that located the city on the map of the most important industrial areas.

Mumbai started to be known as “Manchester of the east” after the economic boom and the rise of industrial activities performed within (Shannon, 2009). In 1854, the city established the first spinning mill and it started to export the textile products all over the world and specially to Europe and America. After 20 years the number of textile factories increased to reach almost 30, with 13 thousand workers. After another 20 years, more 40 mills were added to the previous 30 and the number of workers jumped to reach more than 75 thousand. With time more migrants came to Mumbai and the end of the civil war in America increased the demand on the houses, lands and specially the commercial and economic activities in searching for a good income. The population kept increasing until it reached more than 816 000 people inside the city in 1864. All that played a role in creating “wadis” which is a large-scale rental housing that was constructed in Mumbai to supply the needs of the big population and specially workers.

The transportation of goods between Europe and Asia began in a more practical and stronger way after the aperture of the Suez Canal and Mumbai improved in trading and commercial activities. The city stopped to depend only on the cultivation of the land, and it started to be known as the industrial port urban city. In 1870, the city witnessed a lot of development in infrastructure, from roads, railways and specially promenade lines with different commercial shops along the seaside after 3 million sq.km were added to the area of the city. When the cotton trade emerged, a lot of workers came to the city to find jobs and in that year of 1873, the “chawls” building typology appeared with two to three levels, with small separated rooms.

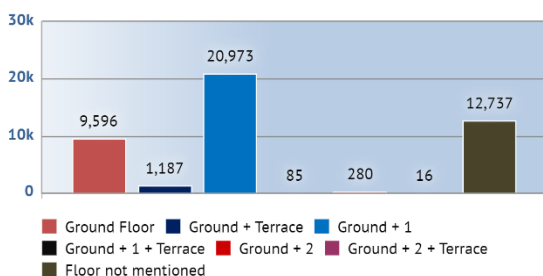


Figure 44-Number of people in relation with the floor level

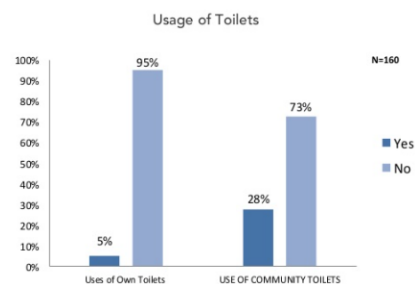


Figure 45-Percentage of people that use their own toilet and the community toilets

The leather production started in Dharavi with the Parsi vendors because of the availability of the land and the distance from the city center, and that's when the pollution started. After the establishment of the first leather industry in Dharavi in 1887, many migrants started to come from different areas like Tamil Nadu searching for a daily job. The tannery used to produce bags, shoes and belts and the majority of the products were exported to Africa and mainly Europe, while its ownership belonged to Europeans too (Kolokotroni, The Politics of Dharavi, 2015). The labor's cost and resources were cheap considered to the Europeans standards, so it was a profitable business for European capitalists and companies.

Badra, was the home of a slaughterhouse in 1890, and it was chosen for sanitary drives, mainly because back then it was outside the borders of the city. When the city started to execute many activities that were not organized, some activates started to influence badly on other ones. For example, the tanning process polluted the rivers of Kolis and Mithi and it resulted in decreasing the fishing activity in Dharavi and lower the fish market quality and value. When the migrants came to Dharavi, other food production emerged, and diverse food markets replaced the fishing market.

The southern area of the city was a home for a lot of new migrants that started to come from different places like Maharashtra, when the city was expanding most of those migrants changed their locations to Dharavi and Sion. Slowly, with the increase of the population density, the city started to take another urban shape. In the beginning of the 20th century, the northern part of the city was developed from the authority and public actors of Mumbai to create a better accommodation sites and services for the middle class of the city after the urban changes that happened in the end of the 19th century. During that time the city kept expanding, the number of workers in the textile industry was more than 73 thousand people. Transactions is the main structure of what Bombay was created on. It is a city of trades and all the commercial firms were welcomed in commuting their trading activities in it (Suketu, 2004).

The city was expanding from the suburbs part, what changed the location of Dharavi in reference of the city and made it the center of the city. The southern part of the city was modified, and the Ballard Estate scheme was introduced in this part after the evolution of commercial and trade activities. The Ballard Estate is a commercial business area where the European architecture and culture and art from the renaissance emerged.

In Colaba, big projects were commuted by important private firms, and a new housing concept was created to contain the big population density, which is the apartment complex. The governor of Bombay Improvement Trust planned to relocate the tanneries locations from the middle part of the city to the northern east part, and to convert the southern area of Mahim Cove into a mixed-use unit for commercial and residential intentions for the middle-class people and the rich one. However, the project was rejected because there was a lack of funding (Kolokotroni, The Politics of Dharavi, 2015).

Approximately in 1930, the long famous promenade of 3.6 kilometer was constructed in Fort Area and was named Marine Drive. This project was built after the government

took a loan to improve infrastructure and landscapes of the city. The industrial and commercial leaders were thinking in expanding the suburbs of the city, for the reason that in 1940 the population exceeded 1.8 million residents and after only 10 years, the number increased in almost 75%.

In the 40's, tanneries were the most active and profitable between the economic activities. Almost 17 000 people used to live in the city to work in tanneries, and the most famous tanning sites were located in the center of Dharavi. Economically, tanning was a profitable activity but concerning the health of the workers it was so harmful with all the contacts with chemicals, which caused a high rate of mortality. After noticing this problem, the (TISS) a scientific institution made a research operation in 1944 and after 4 years news laws emerged to protect the health of the workers. On the other hand, it led to the closing of many tanneries in that time and influencing the economic situation of many workers too.

After negotiations between the British government, the congress and political parties in India, the British decided to give the Indians their independence on March 1946. After that, the cabinet of post war made several meetings to indicate the challenges that face the city and how to improve the infrastructure. Nilkanth Modak was elected as the head engineer of the cabinet to organize a Master plan of the city, and to study each part of it and comes up with results of how the city is going to function in some spots. The center of the plan was Dharavi, the aim was to build almost 7 600 houses by changing the place of tanneries and you use the land in Kala Kila to construct buildings of lux to the rich people. The plan made Dharavi the center with multifunctional activities and units from commercial shops, the library of the municipality, green areas, sport centers, cinemas and hospitals. Even an underground train was supposed to connect the suburb part of Mumbai, Dharavi to Matunga. The lack of money and the froze of rents all played a role in not initiating with the project even with the acceptance of the Municipal corporation.

Mumbai witnessed a lot of changes from glorious phases where the city was the engine of the production of cotton and textile to other phases where the city with all the industrial and financial activities gained a bad reputation for being located on of the biggest slum in Asia. The overpopulated areas, the lack of organization, the pollution, the low quality of housing and lack of opportunities made the slum even worse and specially for Mumbai which had to accept it, as a part of its own identity.

For some scholars, the bad reputation and ugly image of Dharavi in India and worldwide is not what the government and people should focus about. It is the reason that made Dharavi looks like this, is what they should focus on. The government should hold a mirror and look to its own actions, policies and the economic decisions that were adopted, and that were in benefits of capitalists and economic leaders (Prakash, 2010). A slum in the present accompanies the urban progress and skyscrapers and specially in neo-liberal countries and India precisely. The housing pattern in Dharavi does not respect the building laws and codes. The slum does not receive the basic services like the other part of the city, from electricity, security and even water that has a specific time to serve the dwellers, so even illegal methods to bring water from the underground is being performed daily. The situation is not fair for the dwellers, especially when 1440 person have access to one toilet.

The slum dwellers won their ability to vote and decide a very tiny part in the development projects that will happen among their housing units and infrastructure. To be officially residents in Mumbai, the dwellers have to pay fee to get certificate with proving their identity with a picture and birth documents. From the end of 70's, many trials happened to improve the life in slums and specially Dharavi. Even if the slum of Dharavi is considered as a negative phenomenon in Mumbai, but it brings annually an economic income for the city estimated as 550 million dollars from informal work, illegal activities and non-licensed firms.

Dharavi had a progress without any push from the government and any important or noticeable master plan to recover the slum. It was always changing and providing its needs, all by itself (Yatzimirsky, 2013). After a survey done by the (NSDF) in the end of 80's, it was noticed that almost 1045 mills from different sizes operate within the slum and almost 80% of the population work within, and all around the limits of Dharavi. The benefit for the workers of the slum that their work usually is unregistered, so they do not pay taxes to their government. A lot of their jobs usually are not legal, or it is related to markets, recycling or even exporting products and goods to the global market and specially after the 80's when India was involved officially in the international market.



Figure 46-The poor housing quality in Dharavi



Figure 47-Dharavi, a slum of insanitary

Dharavi is a slum that never stopped searching for a glimpse of light, without any important public and governmental aid. On the economic side, each area produced from its own tradition and culture, products that evolved the economic situation for the dwellers. Starting from the cotton and textile mills to the leather and jewelry production, second hand market and the recycling field. Informality, on the economic level improved the life of some dwellers in the slum, on the other hand concerning the housing and services it caused problems. The government in Dharavi takes a big responsibility for the lack of interaction, policies, plans and specially services, from lack of clean water, sanitation, electricity, hygiene, social security and housing quality and renovation. In the next chapter, I will dig more into the trials that the government started, and the reaction and results of the inhabitants and the NGOs that also provided few guidelines and maps to increase the quality of life of the residents of Dharavi.

III. A NEED FOR A CHANGE

A. Introduction

Many trials and interventions were executed and adopted by the government aiming to provide solutions and strategies that can ameliorate the life of Dharavi's dwellers. Some of those plans helped at a certain point, and others did not succeed in achieving their goals for many reasons that I will discuss. NGOs also participated in ameliorating the slum and suggesting plans and collecting data in the purpose of developing the slum and providing a better quality of life for the dwellers of Dharavi's slum.

B. The First Trial

A worldwide crisis concerning the slum took a place starting from the 21th century, with the increasing number of slums and poor people within. The global and international organizations like the World Bank and the UN, were the biggest actors in analyzing the situation and delivering documents as a solution for the problem. The slums are considered globally, as a dangerous illegal areas and the governments are determined to fix that complicated problem or at least reduce it, seeking for ameliorating their socio-economic situation and to get a higher classification for their countries internationally. Governments already started to take some actions and mostly under a neo-liberal form, dreaming in cities free of slums. Many strategies, policies and actions were taken into consideration (Kolokotroni, *The Politics of Dharavi*, 2015).

First the SIP, the slum improvement program adopted by the government in the beginning of the 70's for the improvement of the Maharashtra slums and specially Dharavi, according to redevelopment and a clearance plans. Based on the legitimate slum act which promises the dwellers to protect them and take actions with their assistance by making them actors and decision makers. The act takes into consideration the areas of the slums where there is a lack of services, water, electricity, infrastructure with a poor housing quality. It also mentions the areas with no ventilation, sanitation, social security and no clean environment. The SIP considered the slum as a solution for houses serving the migrants, with an improvement concerning the services and infrastructure. For example, providing water taps, sewers, better roads, parks, police stations, clinics, hospitals, schools and many other facilities and public institutions.

The Slum Rehabilitation Authority, was responsible in executing the reform plan. The SRA job was to make surveys about the slum, analyze them and provide redevelopment plans. National funds were cancelled and the local authorities had to keep working in the scheme all by themselves. The scheme focused mostly on infrastructures (Jha, 1986). The SIP lasted for 20 years and a value of 13 million dollars were in the service of ameliorating the slum, where Dharavi was provided by new water supplies, infrastructure, roads, electricity and sanitation. The scheme did not succeed in the way that it was meant to be, specially that it is created for the settlements located on public lands while almost the half of the lands were private. In addition, based on a report in the 90's by BMC, there was a lack of financial support.

There was a lack of organization as the water taps and toilets were placed along the pavements Pratima Panwalker. Plus the people had several conflicts concerning the

maintenance part of the utilities, toilets and services. In Dharavi, the scheme of the scholars Mehta and Chatterji created more problems, conflicts and chaos. That's why the plan was not adopted in other cities. The scheme failure for the reason of wrong estimations and studies too about the population. On the other hand, the failure motivated the government to start the survey of 1976 concerning the slum. In 1977, MHADA was formed which focus on constructing and selling housing units to the people from the middle-class and specially the poor. In the present, it plays a big role in Dharavi as a governmental actor.

A new program was created, the SUP and it focuses more on providing shelters for slums with a low rent's value. This program provided for a number of Dharavi's dwellers a leasehold for their properties that can be renewed each 3 decades.

Later on a new program PMGP was introduced in 1985, and it focused totally on Dharavi. The first aim of this scheme was to reconstruct new houses and relocate some. Almost 5.2 million dollars were offered for this program, 5 hundred thousand dollar from this amount went for cleaning the river of Mithi that divides the northern part of Mumbai from the slum, and the biggest amount was left for reconstructing the very poor quality units that belong to the dwellers. After a negotiation with the slum's dwellers, a decision was taken and it indicates that the reform will include the community's needs starting from the inner of the slum, instead working on beautifying the slum from the outside. The slum's dwellers were demanding to formalize officially their informal settlements, plus the leasehold for their properties so they can ask for funds from the housing public actors (Kolokotroni, *The Politics of Dharavi*, 2015).

Charles Correa was chosen to lead the project of Dharavi, he sent a notice that there is an absence of socio-geographical map of the slum and asked for aerial survey. In 1986 after the survey, it was noticed that for 55 thousand families, only 840 toilets existed. The redevelopment scheme for Dharavi plan to relocate 35 thousand dwellers to new buildings, between four and five levels and each level is divided to apartments with multiple sizes. The plan also considers relocating almost 20 000 families outside the slum but in the same time close to its borders, willing to create more green spaces and schools. Plus, relocation of the tanneries from the north-east of of the city with the families who live in a dangerous zones placed near the railways for example. 12 areas from the periphery of the slum where selected to play a role in accomodating the dwellers. But the Chief minister, before the plan starts, changed his mind and declared that he has a new vision in constructing high-rise buildings, which had a big opposition from NGOs, SPARC and NSDF.

SPARC and NSDF developed a new scheme in the end of the 80's, which involve a plan derived from the people who live in Dharavi. This plan works on keeping the levels up to two, while creating big apartments with almost 270 sq.ft for each family. The residents did not agree to relocate their markets and shops to other areas claiming that the space in Dharavi is enough, and they were strict concerning the rejection of the private actors involvement in the project, because in their perspective they will think how to profit from the construction plan instead of helping them to ameliorate their homes and services.

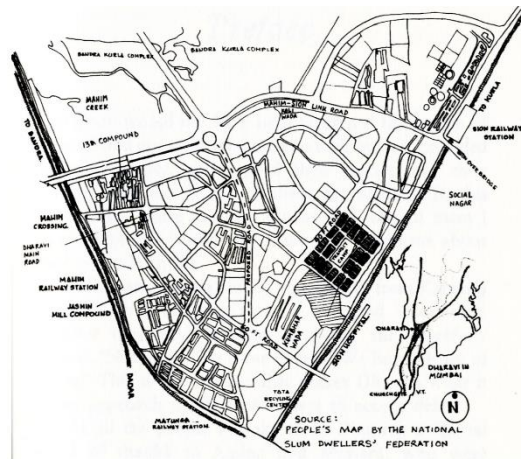


Figure 48-Dharavi map, produced by the National Slum Dwellers Federation (NSDF) and Dharavi's residents in 1986

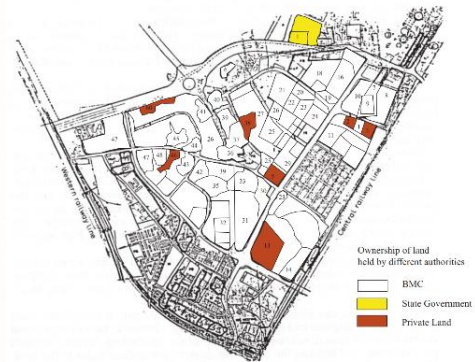


Figure 49-Ownership of Dharavi's land, held by different authorities

The government did not agree with the NGOs and a debate occurred between them. The PMGP actors responded with some arguments, like how to build apartments of 270 sq. ft with only 2 levels, there is no space that can handle the number of houses in addition to the infrastructure, parks and institutions. Another remark was about the idea of letting the residents work as builders for their own houses and here the PMGP representatives gave questionnaires for the dwellers asking them about their technical knowledge in the construction field and the answers were not satisfying. The plan was revised and was not commuted for funding problems, lack of planning and technical skills. For (Mukhija, 2003), there was another reason, that if the government relocated the place of 20 thousand dwellers outside the slum, many votes could change and be lost.

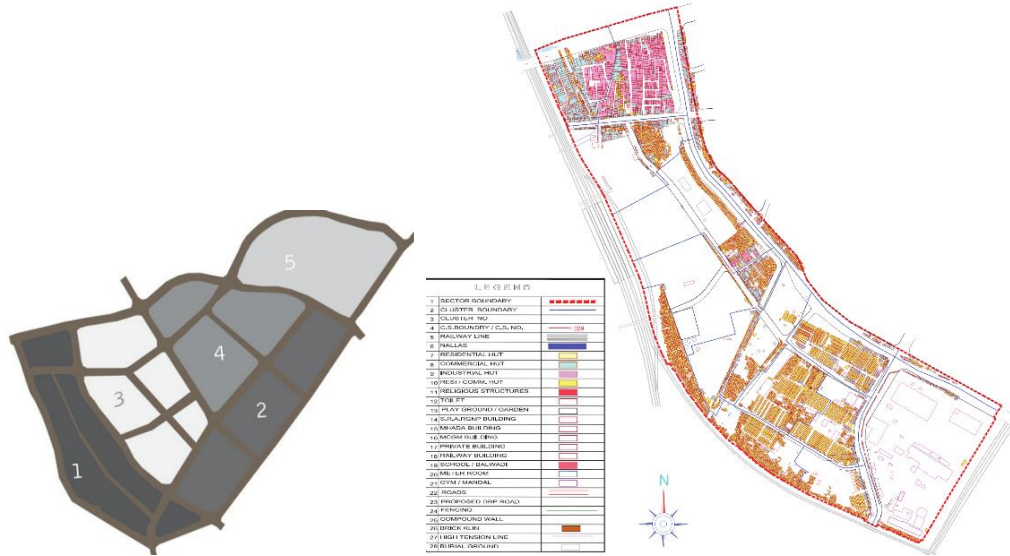
C. The second Trial “Dharavi Redevelopment Plan”

The Dharavi redevelopment plan was introduced by an Indian famous architect called Mukesh Mehta. He dreamt of turning Dharavi from a slum to one of the most beautiful cities in Asia and at first he imagined Dharavi as a one entity, not in separated pieces. He searched for a concept close to the SRS that was created in the middle of the 90's. Mehta realized that in the end Dharavi had a political importance, the political parties used to refuse any scheme that they can't take any political benefits from it (Kolokotroni, The Politics of Dharavi, 2015).

Mehta tried to find a political party's agreement on his plans and many of them promised him to help, but they were only promises. In the end, Suresh Joshi, a political actor arranged a meeting for Mehta with McKinsey in India. In this meeting “Vision Mumbai” was announced, after a long description, statistics and analysis of the slum and the housing condition. Suresh advised Mehta in the end to involve the government as a partner in the vision, to consider it more than a customer. The vision was approved and adopted in 2004 by the state government, the plan attracted many actors and the

central government too, which offered 100 million dollar to the plan. The slum rehabilitation authority (SRA) was handling the plan to study and check the process. Again, politic was the reason of a big conflict between the state government and the central one.

In 2004, Mehta started with 5 sectoral areas in the plan. They were shapd and divided by large spaces and roads and they contained different public services from schools, hospitals, green areas and markets. The plan was given 7 years to be achieved, and each zone was self-sufficient from its services to public institutions and infrastructure.



For zone (1) that it is located on the south east of Dharavi, after a survey in 2007, it included 10 800 housing pixels. The majority of the areas of the sector is residential, plus there were many services included like a municipal hospital which is the Sion hospital, a big plastic workshop, schools along the railway in the center and a place to cultivate vegetables.

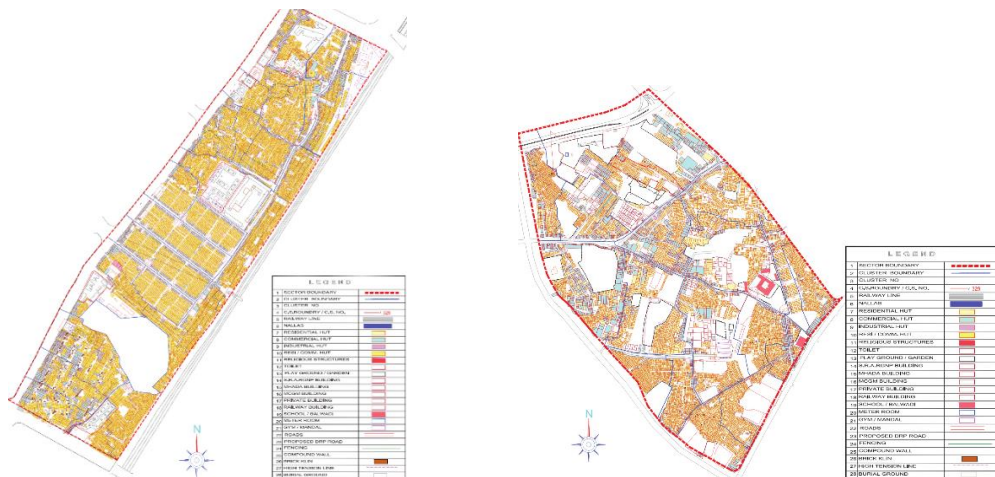


Figure 52-Dharavi's sector 2. Land use plan

Figure 53-Dharavi's sector 3. Land use plan

In zone (2) which is in the south east part of Dharavi, almost 15 700 slum housing units existed, and it was located on the peripheral area. In this area, there are many small magazines and workshops and usually involve the pottery labor, which is really a productive and famous in that area. This zone is more famous for the religious buildings, from mosques, temples and few churches. On the other hand, it is poor from the number of institutional buildings with only one school and no clinics or hospitals.

For zone (3), it is placed in the midpoint of Dharavi and contains 12 700 pixels from the slum and mostly they are from the chawls typology. This zone is rich by public services and retailing shops, it has many small factories, plus the tanneries production in addition to the largest hospital, bakeries and primary schools and a private one. This area on the negative side is also known as a polluted zone, especially the roads located in the peripheral borders, mostly in the southern west part.

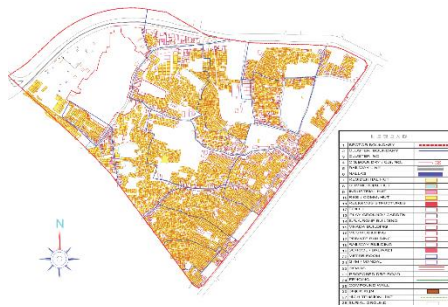


Figure 54-Dharavi's sector 4. Land use plan

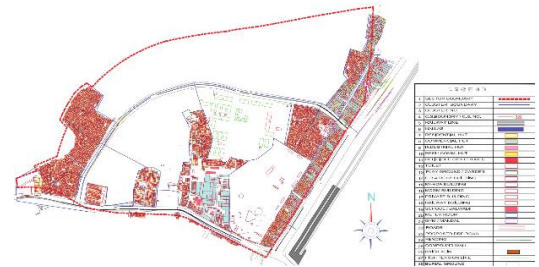


Figure 55-Dharavi's sector 4. Land use plan

Zone (4) close to the Banda Kurla compound, with 10 800 slum units inside. It contains medical clinic, markets and especially for selling leather, manufactures and jewelry stores. This zone does not contain any educational institution, so the residents will have to take their kids to zone (3).

Zone (5), where ONGC is located, an oil and natural gas firm, on the northern part from the eastern limits of Dharavi. Only 4 500 slum units exist in this zone with nature friendly manufactories, adding a school, a college and some leather shops.

Some parts of the land, approximately 240 hectares were already redeveloped under previous plan and the developed lands were not involved in this scheme. Plus, the lands that belonged to the central government with some railways that were under reconstruction and redevelopment from older plans were not considered too. The new plan included the reconstruction of almost 57 500 slum housing, and it covers 145 hectares.

Two billion dollars is the value of the DRP, 65% of the land that was given is for the residential redevelopment for the benefits of the dwellers. On the other hand, 35% for the private sector to build markets on it and makes profits. "HIKES" was the name of the approach for the plan and each letter stand for a vision (Kolokotroni, The Politics of Dharavi, 2015).



Provide Higher Quality of Life



Figure 56-Mukesh Mehta's HIKES approach for Dharavi Redevelopment Project

To share the knowledge between the workers in Dharavi, the scheme created several institutions to enhance the skills of the residents, like a leather institution, national organization to create designs and concepts which focused on ceramic designs and international organization of art. It is also planned to insert libraries inside schools, theatres and on economic level, jewelry shops and shoes manufactories, plus public spaces with parks for the kids. The scheme focused also on the eco-housing to improve the quality and reduce the pollution in the area. From the prevention of the soil surface, finishing materials that work as an acoustic solution, natural lighting inside the house, studied ventilation, LED lighting across the roads, dividing the waste to recycle it and facilities for handicaps (Kolokotroni, The Politics of Dharavi, 2015).

The scheme focused on the slum's dwellers rights and their social-cultural activities, it created a museum, gym and a concert hall. With the new plan, the floor area ratio will increase from 2.5 to 4, which won't let the developers sell the surplus space. Before, the developers used to confirm the settlements of 70% of the residents, in this plan it is not like that. The plan consisted a certain regulation for construction, like the distance between the pavements and buildings, pathways with a length of 5 meters and a green passage.



Figure 57-Existing roads in 2003 and suggested road system under the Dharavi Redevelopment Project

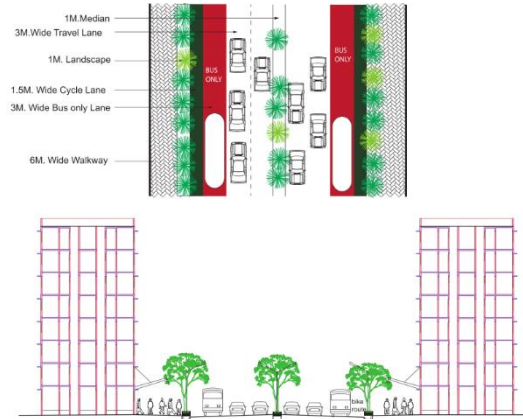


Figure 58- Schematic Street Section – 36m wide Arterial Roads

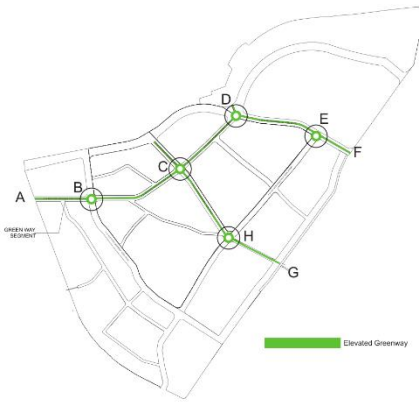


Figure 59-Proposed Elevated Greenway Layout Plan for the DRP



Figure 60- Design for section of roads in DRP with elevated greenways

Mehta thought of a different repartition for the land of Dharavi to make it more organized and attractive. The residential part will consist the biggest part of redevelopment plan, almost 78% while the commercial 17%. In this plan, the developer’s role was important, starting from providing places to stay for the dwellers until their homes are finished and the transportation between their settlements to their temporary camps.

The economic problem was the new debate, Dharavi as a slum used to provide 500 million dollars to the Indian economy, and almost all from the informal jobs. The new project started to look as a threat for the government and for the residents too who are facing a risk of losing their jobs.

In 2004, ministers started to show the plan of Dharavi for the people, with high green buildings, parks and different facilities. The media started to share this image around India and worldwide, taking into consideration that Dharavi is the first slum that can make this transformation into a civilized town inside of Mumbai. In the same year the state announced that 1 billion dollars was given for Dharavi to accomplish the project (Boano C, Hunter W, Newton C, 2013).

After many debates with the scholars and the fear of residents, driven by economic reasons. The lack of commitment of the authorities that was something repetitive in all the governmental plans, forced the plan to be delayed. A delay after another increased the expenses of the project from 1 billion dollars to 1.7 billion.

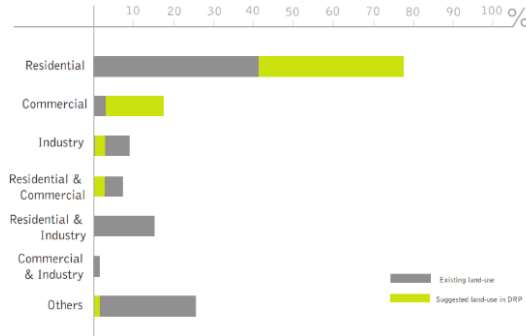


Figure 61- Existing and Suggested land-use in Dharavi

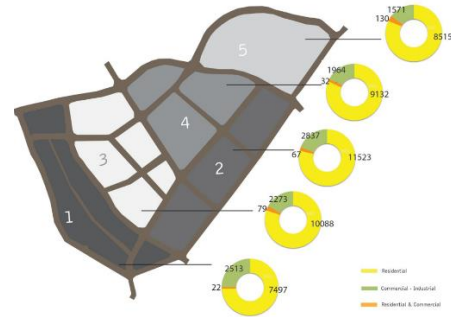


Figure 62-Number of Structures as found in MASHAL Survey

Many developers thought of the project as a chance of investing from the markets inside of the redevelopment plan, and especially international firms. Following those steps, Dharavi was going to be an investment surface for the rich people and international companies. Almost 79 firms applied to enter the project in the late of 2007, and 25 of them were international. Again, the project was delayed, and the date of initiation was set on the beginning of 2018.

From 27 associations, 19 were chosen to be involved in the project in January 2018. After the architectural, infrastructure, social and economic survey that they made, the private sector noticed that it was important to add 17 thousand more tenements for the residents of the slum, which made them wonder if the project will stay profitable for them. In addition, in 2008 the increase of real estate value changed the cost of the scheme from 1.7 to 2.2 billion dollar. The developers asked the government to increase the availability ratio of the project from 4 to 4.5. After the conflict between the government and private sector, and the reduction on the profits that were estimated. The plan was delayed again to the end of 2008.

In the same year, an international crisis hits the globe which led to less investments and to increase the price of materials, and the cost of project was risen. The new value of the project was estimated by 2.8 billion dollars. The 19 companies asked the government for an exception from paying 10% fee for the project, the government accepted, and they had to deliver their schemes in the end of the year.

In March, a big protest took a place against the DRP for many reasons. First, the free apartments given for the residents that they lived before year 2000 in the slum, were smaller than what they expected to be. Second, Kumbharwada and Koliwada, those two zones were considered as an important local node that should be developed by the residents themselves. The third, was providing services for the factories, workshops and industries in Dharavi and specially the traditional ones, like pottery production and leather. The fourth was that the residents wanted to see the religious buildings getting more attention and they wanted them to be included in the redevelopment plan.

The year 2009 was named as the year of housing by the government, the project was considered again as a focal point and a plan that should be back on the road again. But as usual, challenges faced that vision, like the political reasons and new elections, the report of Dharavi that showed some wrong estimations in the plan facing the reality, letters and remarks sent by scholars and experts questioning if the project really can be realized and if the architect Mehta, is in a right position to decide that for Dharavi.

In March, when the companies were asked to present their drawings, only 14 presented after 5 of them did not want to be involved anymore. From the companies that stood involved, only 5 were chosen to develop the zones.

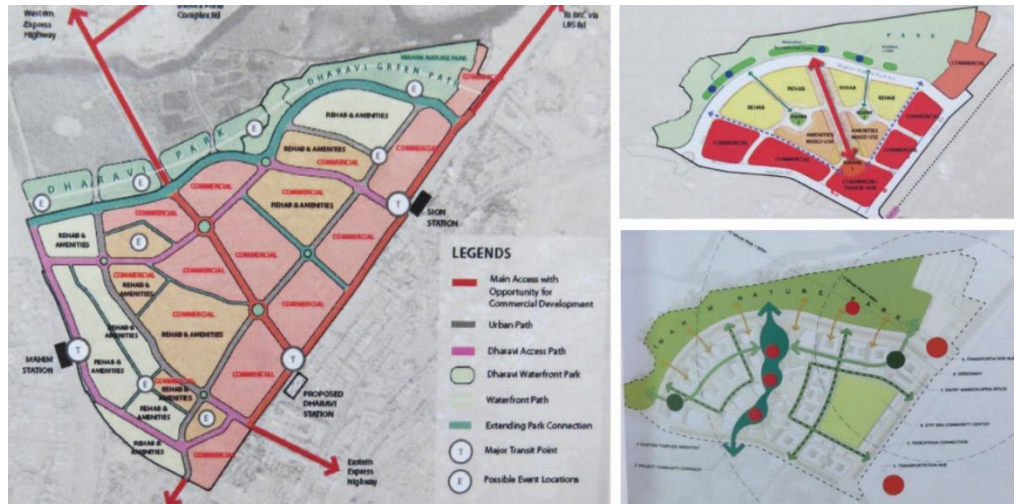


Figure 63-Dharavi Redevelopment Project. Design Proposal for Sector 5



Figure 64-Dharavi Redevelopment Project. Design Proposal for Sector 5

In July, the government had to present officially the proposals to the newspapers, and again a delay happened because of some reasons. Starting from that the government was worried from the limited number of developers which was reduced because of the economic depression worldwide, and the decrease of competitiveness. Then, the modification of the area of the apartments and make them bigger was not profitable for the private sector. Finally, many foreign developers did not get along with Indian companies, so they decided to leave the plan and not to be involved anymore. The developers felt that their investments were not in good hands with the politics exercised by the government, and in return none of the investors had knowledge and experience in improving slums.

SMP, was a master plan with guidelines for the participant developers created by Mehta, the godfather of the project. In this plan the guidelines mentioned the major points, from how important and tools to integrate the residents into the project, the interaction and harmony between all the sectors, the trade system and how to enhance it, using mixed functions in spaces for more efficiency and a walkable town to let the big number of people circulate in a more relaxing way (Boano C, Lamarca M, Hunter W, 2011).

The proposed plan considered to set a space between each 2 buildings estimated as nearly 12 meters to make the ventilation and lighting more efficient. New bus-stops, specially near the Sion hospital for a better access to the hospital and inserting elevated green passages between the mixed-use areas. Podiums of 2 levels, with 7-meter-high each one, and inside of them the commercial shops, fire department, police station and libraries. On the third level, the parking exists, and its roof is conserved for green public spaces.



Figure 65- The suggested design strategy for the Dharavi Redevelopment Project in 2009

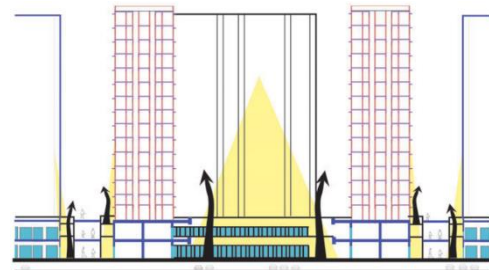


Figure 66- Provision of cut-outs.

The pedestrian patterns were really important in the project with the elevated passage to keep the pedestrians connected.

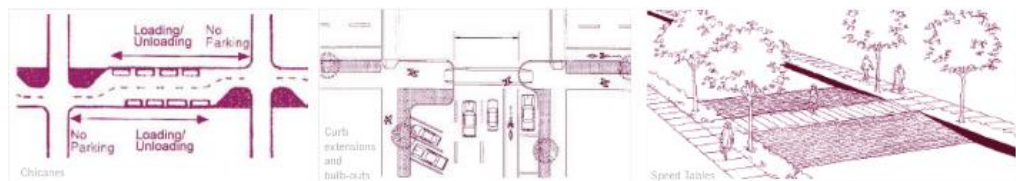


Figure 67-The pedestrian system



Figure 68-The Standardized Master Plan

The committee of the slum were also concerned and they doubted the intentions of the architect Mehta and they sent letters saying that the nature of project does not suits them and it is built on ambitions to increase profits for the private sector instead of taking care about the social-cultural and economic needs of the residents. Mehta had another opinion, that there is a political movement arranged against him.

In Dharavi, 7 thousand tenements were sold for private companies and capitalists who thought that the plan is close to be realized, but that was not the truth. Another debate started between the residents and the government and it was about the land, when the authorities declared that residents can have the land property only in case they can provide documents that they live in the same area for a duration of 100 years. The committee also said that the money invested on the private sector, should be payed to provide services for the residents, from a good sanitation system, clean water and an organized plan for the waste.

The residents discovered that most of them were not included in the DRP, because they did not live in the slum before the year 2000. It means that almost 63% of the residents won't have the chance to take a free house. With the lack of survey and the housing problem, a new solution or a plan was introduced.

Instead of the 5 sectors, they divided Dharavi into 32 sectors, each sector's residents had the chance to choose the developers who they want to work with and even to follow up the design's process. In this case, the role of government was limited only in funding the project. This plan was not that detailed, which means the lack of knowledge and skills of the residents won't help, plus the developers fear of participating made the competition so shy.

In 2009, changes occurred, and they were inspired from different suggestions from the CoE. For example, the levels of the building dropped down from 30 to 14 levels in the new guidelines. The old plan gave 80% for the developers as investments in the constructed buildings, while the new one created a new zone for developers located in

the periphery for their commercial activities. A transportation map was developed too in 2009, from new bus stations to pedestrian lines.

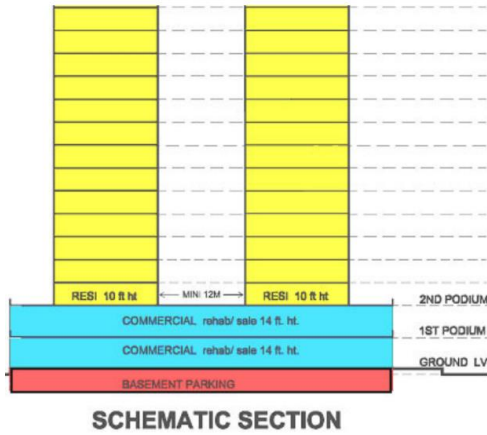


Figure 69-A schematic section of the conceived two-tier podium



Figure 70-The mass transit plan integrated in the Standardized Master Plan



Figure 71-The pedestrian and traffic-calmed plan integrated into the Standardized Master Plan

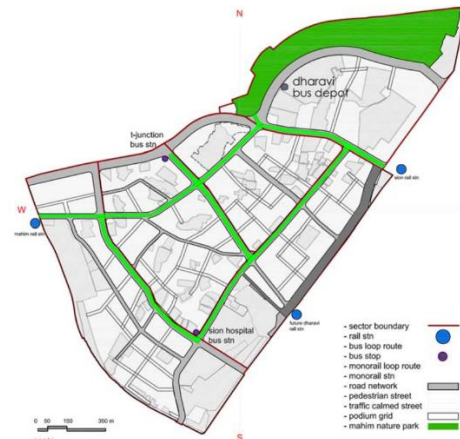


Figure 72-The suggested elevated greenway

After many discussions, it was noted that the new plan was not practical as the “five sectors plan”, so the government decided to continue with the previous plan of having only five sectors (Kolokotroni, The Politics of Dharavi, 2015).

The change that occurred, is that the developers are invited to participate in one sector at a time. Starting from sector 5, where the majority of the land belonged to the private sector, only 23 hectares from 63 were used for redevelopment. The 7 developers that they were still interested, were asked to present their work in 2010. RAY, a policy introduced by the ministry of housing and urban poverty. This policy offers to pay 50% of the value of the housing rehabilitation. The project was delayed again and this time, because the World Bank showed an interest in funding the project. In 2012, The CEO of MHADA, proposed building 14 levels for the residential units, but only two firms

participated and there were a lack of competition and some people saw that as a lack of transparency too.

Instead of focusing on the sector 5, MHADA with the government was concentrating on sector 3 that contained 12 600 slum units. The biggest part of this sector belonged to the private actors, only a small portion was dedicated to rehabilitation. A new idea of dividing the 4 sectors that remain in 13 clusters was introduced, that means that each cluster or more than one can have only one developer or two.

In 2013, the construction in sector 5 started with an experimental building of 18 levels, containing 355 apartments. The land's property belonged to MHADA and It was an empty one.



Figure 73- The process of construction of the experimental building

Figure 74-The first DRP experimental building – Construction Information

Strikes started again because the dwellers were worried, they asked apartments of 400 sq. Ft instead of 300, plus they do not have a precise agenda about how the project will affect their future life.

D. The Resistance's Allies

Many challenges faced the project starting from 2014, slow bureaucracy accompanied with ups and downs from the authorities and political conflict between the state, local and national levels. The fear of the residents from a neo-liberal project that provides profits for the private-public sector without taking the residents into consideration. The elections and the political parties that came to the governments had always different opinions which made the project goes from a phase to another, without an organized step. The notion of “slum destruction” used by the government instead of upgrading and developing the existing slum focusing on the services from water, electricity, sanitation and healthcare, instead of the shape of the buildings and the commercial centers that interest the private sector (Boano C, Lamarca M, Hunter W, 2011).

. Three foundations showed an act of resistance in front of the Dharavi's development plan, because above all, they considered it as a neo liberal project that focus on the profits more than the people's benefit. Those movements are, The Mumbai Alliance, URZ group and the organization of ACORN in India.

In the mid of 80's, the Mumbai alliance was formed from NGOs (SPARC, NSDF, MM), that built a good relationship with the slum's dwellers with time. The URZ

was known as a creative organization that worked on surveys and studies, it even brought data and images about how the residents see their slums in the future. ACORN, which is an organization that works in parallel with the government to find alternative plans for the slum, founded by Vinod Chetty and created a center for the Dharavi's community with a school in the zone used for recycling. It focused the most on the media as a tool to show the resistance against the project of DRP.

A plan in sector 4 was being cooked by SPARC and KRVIA, which was founded as an architectural school in the 90'. While MHADA the governmental planning tool was working on the DRP in sector 5. The selected the most complex sector, thinking that it will be easier to work in the rest of the sectors later.

As a first step, the project introduced by KRVIA (the school of architecture) to the students in 2007 focused on some objectives. Starting from understanding the context and the problems inside of the slum, choosing the targets, researching new guidelines and regulations to organize the area, create new designs about the housing system, modifying the existing regulations and policies and finally to implement the project. All that after studying the infrastructure, housing system and thinking of the slum as a place to live and work in the same time.

After a survey between SPARC and KRVIA, a total of 10 500 tenements existed in sector 4 and the residential ones were the majority with 8 500. In their plan, it is proposed to modify the boundaries of sector 4. The survey indicated that 4 communities in the sector 4 existed, almost 18 chawls and very few reconstructed and rehabilitated units.



Figure 75-An alternative strategy. Suggestions to revise the sector boundaries

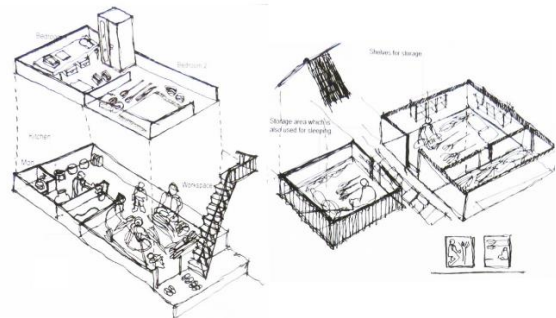


Figure 76-Two examples of different housing typologies in Dharavi

All the data were important to introduce the new master plan with all its new goals and objectives. Starting with the trust between the people and the organizations working on the alternative plan, while making sure than no resident will get evicted from the slum. Then, dividing the 5 sectors of Dharavi into many parts based on social, cultural and economic boundaries, keeping the lifestyle and the activities of the people safe and secure. Creating a transportation plan, from roads and pedestrians with an improvement in the infrastructure financed by the public sector. Finally, making the project and the density lighter with more free space and limiting the density.

The group working suggested 2 scenarios concerning the design. It is based on instructions from slum rehabilitation authority. In this case, the sector was organized under 23 groups in 6 areas. Each cluster has a different social, economic and cultural specification. The residents can choose which cluster is more similar and appropriate for their economic activities and lifestyle.

The second scenario was about making the government funds a part of the project after involving only the residents who live in homes with an area less than 300 sq. Ft. Plans and the data about the project were published in the report “REDHARAVI”, which did not get the acceptance to start with, even with the encouragement of the experts in the committee. It was taken a mitigation form to make the government improve their vision and plans, referred to the architect Neera Adarkar. The local organizations work and the collaboration between them and the residents led to modifications on the level of the DRP’s recommendations.

The URBZ group did a research for Dharavi concerning 2 ideas and main concepts, on an architectural level, the “tool house” and the “organic city”.

The first concept is about having multifunctional building, where the residents can live and work in the same time. It is more about a house accompanied with commercial spots, to enhance the productivity. The concept emerged at first when the workers lost their jobs after the industries and mills closed their doors. The advantage of this concept lay on the facility of transport between the residential and commercial areas and reducing the density of people. The drawings represented by the URBZ; this type of building can host almost 17 persons.

The organic city or the “user-generated city”, is about an impulsive development that derives from the needs of the residents. It is considered an informal urban organization which the government or the housing actors do not participate in developing it. Dharavi as a slum, is a combination between the tool houses that were modified to form an organic city, after it was transformed based on the actions and needs of its own residents. In this type of areas, exist little dispersed vendors on the pedestrian streets, accompanied with the low-quality high houses (Kolokotroni, The Politics of Dharavi, 2015).

The resistance again Dharavi’s plan, shaped new creative strategic plans from non-profitable organizations, that involved the slum’s dwellers in many experiences and projects. The social movement executed by the people who live in Dharavi, guided by their committee’s leaders and the NGOs, played a big role in changing the Slum’s construction plans with time. The resistance that was shown, did not only faced the government’s plans but also changed the boundaries of the slum and improved the territories. The NGOs, with the local power and resistance proved that they can stand in front of governmental projects and modify them, involving the people of the slum in their activities to participate with their authorities to shape their own homes.

IV. Conclusion

After what I had discussed in the thesis, from definition concerning the global cities, cities with slums, targeting Mumbai and one of the biggest slums in the world that exists inside of the city with its historical progress, which is Dharavi. Focusing on daily life problems and on the solutions projected by the Government and the NGOs to improve the services and quality of life in Dharavi.

During the history, Dharavi changed geographically, socially and economically. All that were due to different factors like the colonization, poverty, migration, natural disasters, new economic sectors, local markets, ports, trading and the emergence of the economy of data and financial services.

While the government had intentions in developing Dharavi and joins it to the rest of Mumbai as an entity to transform it into a “world class city”, by applying at first the SIP, which is a plan derived from the government and it lasted almost two decades. This plan targeted the settlements that are located on public lands in providing sanitation, electricity and infrastructure. On the other hand, the majority of settlements are based on a private area, so the biggest percentage of people were not involved into the plan, and the services of the government were not enough to realize an adequate reform because of the lack of funds and the bad organization and placement of services.

After that, the SUP, which was considered as non-complete plan, because it did not focus on the services in general. This plan was more concerned into the housing system for Dharavi, by providing shelters for the slum’s dwellers and leaseholds for their settlements that can be renewed every 30 years. But of course, those actions are not enough, and they targeted a small number of inhabitants.

The PMG program was introduced later in the mid of 80’s. the main goal of this program was to reconstruct units with very bad quality and relocate inhabitants to new homes with better condition. It helped in cleaning the river of Mithi that comes on the border Dharavi from the northern part of Mumbai. The slum’s dwellers did not trust this program and they claimed that its role is to beautify the borders of the slum and leave the inner part without development and without concentrating on the services, which are the main request from the slum’s community.

The last governmental plan was DRP, which went into a long process of confirmation and rejection from the government, developers, slum’s dwellers and NGOs. The plan delivered the idea of transforming the slum into the economic hub of Mumbai, and a vision of a city free of slum. On the other hand, the plan was not practical for many reasons. The architect of the project had to merge the public sector intentions of developing the slum with the private sector intentions of making profits in transforming the slum into a modern town inside of Mumbai, with new modern economic services, skyscrapers, financial and international firms.

The slum’s dwellers were afraid because there are not a direct or a clear plan, they watched the developers working government for their own interests seeking profits, while the political parties were using them as a winning card for their own elections. The architect Mukesh Mehta was in between trying to find a solution where everyone

can gather and agree about it, but not a remarkable result was noticed. On the opposite, some of the trial to build experimental buildings in sector 5, were not completed and they were added as a vertical addition to the slum. The bureaucracy, the empty promises of the government and the decrease of competition between the firms were main reasons.

On the other hand, the resistance created by NGOs and organizations like URBZ and ACORN were facing the DRP and working with people on the ground. Those groups gained the trust of the people and made surveys, maps and small plans to deliver them to the government, and to integrate the dwellers in their own environment and think how to modify their settlements without destroying their identity, lifestyle and local economic activities. Dharavi was an important subject outside its own borders. It was mentioned in documentaries, famous movies and international journals, what it needed was not only external events, but internal one in parallel with the external publicity which can generate a platform of interaction between the government, people and NGOs in a physical and a digital way.

The government providing data and spaces for realizing activities and projects concerning Art, renovation, films and tourism executed by the NGOs and foreigners could be a nice teamwork to work on Dharavi from the inside with the involvement of the residents. The DRP was a project that will bring profits to the private firms' sectors while the government was the one who will lose money on developing the area for the benefits of the developers. So, it would be a good idea to have a collaboration from the government with the NGOs on creating a spaces that allows the residents to work and in the same time that brings revenues to the government like art spaces, theatres, cinemas, tour companies and sport centers or a stadium.

The government has to play the biggest role in improving the life of slum's dwellers, from the redistribution of wealth and real estate too from the very rich people to the very poor people. Concentrating on creating agricultural lands in the area can be a benefit for the slum's dwellers, on the level of work and social implementation. On the other hand, strategies that focus on the services concerning clean water, sanitation and social security should be on the top of the list for the government. The previous plans concentrated more on providing those services but after the construction of new buildings from the private sector willing to relocate the dwellers to new good quality homes and in the same time opening new commercial centers and international financial firms that generate profits to the developers. So, the focus as a first step should be on proving the services as water, sanitation hygiene, electricity and infrastructure without involving the private actors.

After the experiences that the slum's inhabitants had with the government's failure, slow bureaucracy, lack of funding and planning. Especially the government's goal in making profits from the projects accompanying the economic intentions of the private sectors, dwellers have no trust in their government. The best solution for the government is to work on small scale areas with NGOs like URBZ and ACORN that already the people trust them to achieve urban goals on changing and defining new zones as public, commercial and cultural spaces. Empty spaces, parking lots, pavements, storefronts, side of the roads and architectural façade, all can be a place to achieve this work. Some strategies focus on small scale spaces in involving the

community and the government in one work that can be easy but yet creative to achieve and that can target bigger and more projects in the future.

One of the strategies is the “eventualisation”, which is the procedure of creating an impulsive informal event on a land for the government in a certain place with the intervention of multiple NGOs, to form a spontaneous event based on a cultural, social and economic concepts. This strategy is used to create a certain identity for a certain place or a space where the event is executed to give the space an identity based on the type of the event.

This type of strategies can have a lot of advantages on the slum as a whole, on the people concerning their economic activities and the way their spaces and identity are observed by the outsiders, and it can bring profits to the government in the same time. These spaces after or in the same time of the events will be transformed to a platform of communication, integration, participation and cultural exchange. The positivity of this strategy is important in creating an urban space with a new identity for a forgotten square or area and in enhancing the different activities inside the slum with a governmental and organizational control.

On the other hand, the spontaneous event can be abstract with a dangerous intervention and it depends mostly on the areas. In slums, this kind of events can be accompanied by a sudden or organized criminal action which can cause more crucial judgments on the slum, especially from the outsiders who won’t dare to come again to the slum and will always perceive this type of spaces as a dangerous space with a suspicious insecure environment.

Another strategy that can change an identity of a slum starting from a small scale can be the “Tactical Urbanism”.

Tactical Urbanism is an act of velocity to interfere and change a situation in a creative way, with a low-cost material. It is a work executed by some groups, NGOs or government. It is a non-profitable work that focus on creating new identities to certain spaces in a creative easy way. It can serve the economic, social, cultural and environmental benefits.

An example of that is a project in Miami, that transformed an old road to a park or a place for activities concerning families and kids with bike lines. Or like Burlington, a collaboration of the local actors to create bike lines in front of the local stores, with seated spaces adding vegetation along the side of the road.



Figure 77-Transforming abandoned railroad into



Figure 78-PlanBTV Walk Bike Demonstration

In Montreal, a project of pink balls covering 1km of a street with a touristic and commercial identity with shops and restaurants all along. This project provides more shadowing and make the street more compatible with the pedestrian concept and in the time it attracts a lot of tourists and inhabitants from different areas. This project was a result of a cooperation between landscape architect who is Claude Cormier, the commercial development association of the town and the commercial corporation of Montreal. On the other hand, a project in Portland a vacant pace given by the village for the community to share their art and involve the kids and families in collective work in purpose of creating a community where all the people work and share their interests together while focusing on the important benefits of making kids grow up together in one community. This type of projects that can create a collective sociable community in the present and in the future.



Figure 79-Pink Balls Project in Montreal



Figure 80-Collective Art's work in Portland 2013

URBZ delivered a drawing of a concept of the “tool house”, where the residents are allowed to perform multifunctional activities in one element. That concept was not integrated because the government said the high of the houses is not compatible with the code of building. On the other side, this plan can't make profits for the rich people and private sector willing to make profits from big centers, commercial stores and international firms with the involvement of the government. The same problem always faces the residents of Dharavi, and it is that the government wants to help but also to take much more in return and to focus on architectural and urban shapes and commercial functions instead of services and facilities for the residents. The government and the authorities with their big plans were not taken seriously by the Dharavi's community.



Figure 81-A rendering of Future Mumbai, with ultra-light growth and supra growth

As a conclusion, there was a lack of cooperation between the public authorities, the private sector, the local NGOs and the community of the slum. The plan of the government backed up by the World Bank funding and guiding did not intend only to improve the life of the slum's dwellers, but most of all to increase the profits of the private sector and government from their proposed plans without focusing on providing facilities to Dharavi's slum. The government was not even successful in keeping its promises to the private sector because of the opposition that faced from the NGOs and the slum's community which reduced the competitiveness between the private actors that should be charged in developing the plan. The lack of trust between the inhabitants of the slum and the government was the first obstacle in front of the development plan.

The NGOs even if their studies and projects were on smaller scales, they were somehow more successful with the slum's communities. Which leads us to conclude that the most important factor in starting a project between two actors or more is trust and honesty concerning the aims and goals of their plan. When the government's large-scale plan failed, the NGOs with their small-scale plans were simple, yet effective in providing some of the facilities for the inhabitants. The collaboration between Dharavi's dwellers and the NGOs played a big role in precisising the highlights and the main problems.

Dharavi's slum is like many other slums in the world right now. They exist in the global cities where the biggest firms, capitals, industries and public bodies are located. After the study on Mumbai and Dharavi's slum, I noticed a relation between the developed part of the city and the part where the slum and poverty exist, where the developed part takes profits from an international financial connected net, but not only that. The developed side of the city profits from the poor one by involving some of the slum's dwellers in a low-salary jobs that do not provide an adequate life which oblige the dwellers towards an informal work. On the other hand, the slum does not bring any profits to the governments while the big financial firms, industries and international companies provide a huge profit for the government from taxes, business and tourism.

The government works on providing infrastructures, facilities and services for the developed part of the city. On the other hand, it leaves the slum's dwellers struggling with bad service, lack of hygiene, poor housing quality, insecure life and low-income.

There is a strange and a provocative relation between governments and capitalists or the private sector which focus on making profits without taking into consideration people's lives and condition. The government needs to be fair with all its inhabitants and think in the future of its citizens no matter if poor or rich. The adequate housing quality, sanitary, clean water, secure social life, sufficient income, electricity, infrastructure and hygiene are from the rights that every human being should get from the government in purpose of social equity and making a better societies where all the people do their duties and get their rights.

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