

NPTEL ONLINE CERTIFICATION COURSE

ECOLOGY AND ENVIRONMENT

Promoting Policies for Eco-Productive Cities in the Global South – Part 1

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This lecture is on urban sustainability, particularly as it relates to cities in the Global South.

Contemporary cities

- In many industrialised countries, cities have been shaped and built to become "automobile-sized", allowing for little or no pedestrian access to certain parts – sprawl
- Sprawl is self-reinforcing – residences, shops, schools, jobs and recreation are all distant from one another, requiring cars and a built environment to support them


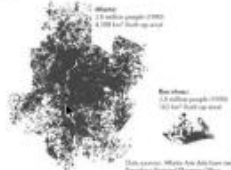


Figure 2: The Built-Up Area of Atlanta and Surrounding Region at the Same Scale




Source : Bertaud, Alain. (2003)

So, when we look at contemporary cities, what do we see? In industrialized countries, cities have largely become shaped to built to become automobile-sized that is to say they are designed and built in order to accommodate automobiles and allow little or no access to pedestrians in many parts of the city, so you see landscapes like this where you only see cars, vehicles on the road and no pedestrians, no bicycles and so on, and even for people to get across these areas it becomes very complicated because of highways coming in between and so on.


What this generates is a kind of land-use pattern that is known as sprawl, sprawl is the relentless growth of cities well beyond their limits, just because it becomes easier to live far

away from the centers of these cities, and in turn what ends up happening is you have jobs and other amenities away from cities. If you look at two cities having the same population the city of Atlanta and the city of Barcelona, roughly the same population because Barcelona was largely built around public transport around buses and trains, its retained its compact shape, in contrast, Atlanta in the United States has encountered a lot of sprawl, it is spread out, it has become automobile-sized, so sprawl is self-reinforcing in the sense that residences, shops, schools, jobs, and recreation are all distant from one another, and they require cars and a built environment to support them. So that is what you see in many cities in the Global North, but certainly not all as I showed you this example of Barcelona being quite different from Atlanta.



“Third World” cities

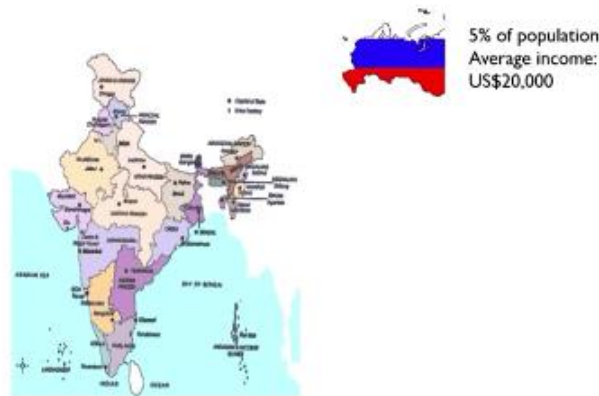
- In the developing world, urbanization has taken place in a mixed mode: an attempt by the state to shape the city along the design strategies developed in wealthy countries, but plagued by the realities of poverty → highways over slums, pedestrians and slow-moving vehicles forced to compete for space with fast cars
- Alongside sprawl we also have slums, poor access to infrastructure -- both physical concentration and dispersion, associated with different labour modes (formal and informal)
- But most developing country cities are characterised by high density and mixed use (houses and commercial establishments in close proximity)



What happens in the Global South or conventionally known as a third world is several other factors. So, in the developing world urbanization has taken place largely in a mixed mode there is lots of legacies over time, lots of different things shaping those cities, so one of them is the state of the government attempts to shape the city along design strategies developed in wealthy countries, so that is a push towards more auto mobilization, more cars, more highways, less access for pedestrians even though the bulk of the users of roads tend to be pedestrians, people without access to cars they tend to be a bicyclists and so on.

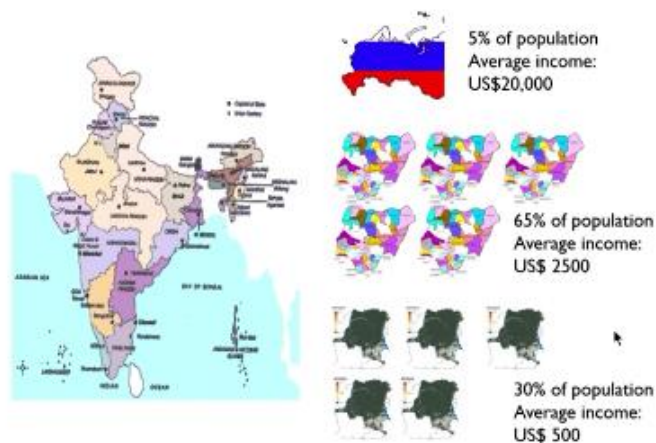
Other challenges of course, in third-world cities, is that there is very dense mixed-use housing, lots of slums, we will go over what slums imply in third-world cities and many modes of vehicles, different types of vehicles leading to an overall slowdown on the streets. Slums imply poor access to infrastructure there is both in terms of the physical concentration and dispersion, and there is both formal and informal modes of labour associated with slums, but the good news about many developing country cities is that if you know transport modes were to be, transport planning were to be well designed, it is actually helpful to have this mixed high-density and mixed use, meaning residences and shops and schools and so on tend to be in close proximity, so it is possible to make developing country cities less prone to sprawl.

India is 10.5 countries in one



Now if we looked at a country like India. We see that India has really a very large diversity and that is one of the challenges that produces difficulties for planning and cities, you have a small fraction of the population that actually tends to be very influential.

India is 10.5 countries in one



Five percent of the population has an average income of around \$20,000 US dollars they are roughly the size of half of Russia, and then you have 65% of the population having a much lower average income roughly the same per capita GDP as Ghana, and a 5 times the size of Ghana there is 65% of the population, and about 30% of the population roughly those below the poverty line have the same average income as Ivory Coast or Côte d'Ivoire, so you see this vast

diversity also affecting the way in which city Planning is sort of compromised in many developing countries, particularly country like India.


	Slum % urban pop.	Number (millions)
China	37.8	193.8
India	55.5	158.4
Brazil	36.6	51.7
Nigeria	79.2	41.6
Pakistan	73.6	35.6
Bangladesh	84.7	30.4
Indonesia	23.1	20.9
Iran	44.2	20.4
Philippines	44.1	20.1
Turkey	42.6	19.1
Mexico	19.6	14.7
South Korea	37.0	14.2
Peru	68.1	13.0
USA	5.8	12.8
Egypt	39.9	11.8
Argentina	33.1	11.0
Tanzania	92.1	11.0
Ethiopia	99.4	10.2
Sudan	85.7	10.1
Vietnam	47.4	9.2

Davis 2006

Now when we come to this question of slums, there is a the slums are ubiquitous across the developing world, they also find slums even in some rich countries like the US, and what really happens in slums is that these are either formal or informal settlements of very poor people living in very difficult conditions, conditions where the infrastructure is poor, the access to particularly water sanitation tends to be very poor.



Now this is what a typical slum looks like, you have as you can tell there is a very poor quality housing, the housing is also alongside riverbanks or a canal usually because that is also the sort of the, it epitomizes the sort of the informality of these settlements, the illegality of these settlements if you like and so, and conditions are pretty pathetic because there is a lot of pollution that people are exposed to, and very crowded conditions leading to disease and other challenges.



Squatter features

- Crowding – very high density
- Land squatted is not well-developed, no services
- Squatting on both public and private property (including speculative land-holding or because of regulatory requirements or rent controls that make investing on that land unprofitable)
- Squatters do not pay formal rent but incur costs, including fees to community leaders

Now, another word for slums is squatter settlements, reason for that is that these are essentially settlements where people have decided to live in conditions in proximity to their jobs, and squatters are considered illegal settlers, and so they are always living in precarious conditions. As I already mentioned crowding is a big challenge in these quarter settlements, the land that is squatted upon is not well developed, so there is very little access to services and squatting sometimes takes place either on public property or on private property. And sometimes speculative land holding is responsible, is a site where squatter settlements can be found, sometimes regulatory requirements or rent controls make investing on such land unprofitable, squatters do not pay formal rent, but they do incur costs usually they are paying some kind of rent or some kind of money, some kind of fee to people who control the land.

Urbanization

Centripetal forces

- Natural advantages of particular sites
- Harbors, rivers, and the like
- Central locations
- Market-size external economies
- Access to markets (backward linkages)
- Access to products (forward linkages)
- Thick labor markets
- Knowledge spillovers

Centrifugal forces

- Market-mediated forces
- Commuting costs, urban land rent
- Pull of dispersed resources, such as farmland
- Nonmarket forces
- Congestion
- Pollution

Krugman 1996

Now, what are the forces of urbanization in general, what causes cities to form and how do these take shape? Paul Krugman well-known economist has divided these into centripetal and centrifugal forces. So, the centripetal forces are forces that actually cause cities to form concentrated settlements to form has to do with a variety of factors. So, one of them, of course, is that there are natural advantages of particular size usually, you know, a valley or the mouth of a river, near a port and so on. Sometimes fact that place is the central location at the confluence of roads of major highways can also be a reason for a city to form, for cities to, cities are really used to be many cities and these kinds of centers of highways or mouths of rivers near harbors used to be trading posts, trading towns, market towns. And so market conditions also create urbanization or sort of pull cities together, access to markets what are known as backward linkages when there is a hinterland that is a reason for a city to grow to form and grow access to products again for trade and labour markets, so the fact that you have large concentrations of especially young people available for work, that is also a reason for cities to form. And cities can also grow because of what are known as knowledge spillovers you might have a university or a set of training institutes nearby, and that causes, and because they are people, well-educated people, trained people coming out of these universities, you have cities growing in these areas.

Now some of the centrifugal forces, forces that work against concentrated urban settlements could be again related to markets, so questions of you know the prices, land prices and so on becoming too high, commuting costs becoming high and the full of dispersed resources such as farmland mainly as a result of advantages being outside, and then there could be non-market forces as well, for instance, people might feel that the aesthetic qualities of a city are no longer attractive, some other place is more attractive or technologies might also lead to the growth of you know telecommuting and so on. So, that might also leave cities less crowded or you might have a natural disaster as in the case of New Orleans which lost a lot of its population because people were afraid of the kinds of conditions that might recur over there, and so congestion and pollution are also forces that cause people to stay away from cities.



Addressing Slums

- Slum demolition programmes have been promoted by and large by elites in residential welfare associations that want to 'clean up' and 'reduce crime'.
- Often, professional knowledge is used to supplant local knowledge, resulting in the erosion of the informal economy, which itself forms the base of the formal sector
- But in successful cases of rehabilitation rather than resettlement, patronage and exploitation of the urban poor is bypassed by providing public infrastructure services (water, sanitation, *pukka* housing) and rights to community-led organisations to manage and operate public spaces and make informal economies self-sustaining.

Now coming back to this question of slums, slums are seen as a blight in cities, they are unattractive, and so there is been a lot of emphasis on trying to remove or eradicate slums in many parts of the developing world. So, slum demolition programs have been promoted especially by the wealthier communities in cities, largely to make the cities look more attractive, and so residential welfare associations may want to clean up and reduce crime and so on.

The other set of questions has to do with the fact that professional knowledge or planning knowledge deployed to supplant local knowledge and this results in the erosion of the informal economy. So, many slums are actually sites of lots of production may be the informal production but also they contribute to the formal economy in many ways, and this has been proven time and again. Slums are also places which house a bulk of a city's working classes, and this is true particularly in cities like Mumbai, Mexico City and so on, and that is usually ignored so when slum clean-up takes place people are displaced, they are usually sent to housing that is far away from the cities, and that changes the nature of the labour market in cities.

Now successful cases of rehabilitation are also found, and so successful cases of rehabilitation would mean that people are given better conditions, living conditions and safer conditions to live in that largely improves their lives but also ensures that the labour forces within the this urban settlement are not eroded as a result. But at the same time, you also have to make sure that you overcome other patronage and exploitation conditions that are prevalent in many slums. And providing infrastructure, water sanitation and what is known as *pukka* housing or a well-built housing and rights to the community led organizations, these become very important to make this informal economy self-sustaining.



Addressing Slums

- The Dharavi slum in Mumbai has 400 recycling units and 30,000 ragpickers. Six thousand tons of rubbish are sorted every day. In 2007, the Economist reported that in Vietnam and Mozambique, "Waves of gleaners sift the sweepings of Hanoi's streets, just as Mozambiquan children pick over the rubbish of Maputo's main tip. Every city in Asia and Latin America has an industry based on gathering up old cardboard boxes." There's even a book on the subject: *The World's Scavengers* (2007) by Martin Medina. Lagos, Nigeria, widely considered the world's most chaotic city, has an environment day on the last Saturday of every month. From 7am to 10am nobody drives, and the city tidies itself up.

In the case of Dharavi in Mumbai, there are over 400 recycling units 30,000 ragpickers, these individuals, these people you know really sustain much of the city of Mumbai. The 6,000 tons of rubbish are sorted every day. In 2007, the Economist magazine reported that in Vietnam in Mozambique, waves of gleaners sift through the sweepings of Hanoi's streets, just as Mozambiquan children pick over the rubbish of Maputo's main tip. So, this is something is very, very common, this people living in slums end up being those, being essential to the cities services, there is a book on the subject called the world's scavengers by Martin Medina. And in Lagos in Nigeria which is widely considered the world's most chaotic city, there is an environment day on the last Saturday of every month, and from 7:00 to 10:00 AM nobody drives and the city tries to tidy itself up, so there are multiple ways in which slum dwellers are revitalizing, themselves revitalizing cities in the Global South.



In-situ rehabilitation

- The Mumbai case used the innovative method of using the land on which slums are located to build tenement housing, part of which was provided free to residents, and part of which was sold at market rates to finance the construction. While there is scope for misappropriation of low cost housing, this approach has been used in Mumbai for several years, and has buy-in from urban local bodies and slum dwellers.
- Another in-situ case in Ahmedabad, widely cited in the housing policy literature, illustrates the promise of a partnership between government bodies, non-governmental organizations, a microfinance provider, and slum residents in carrying out slum upgrading. Residents contributed partially to the cost of individual toilets and sanitation services and were in turn connected to the city sewage and drainage system, and guaranteed tenure for 10 years in the same area.

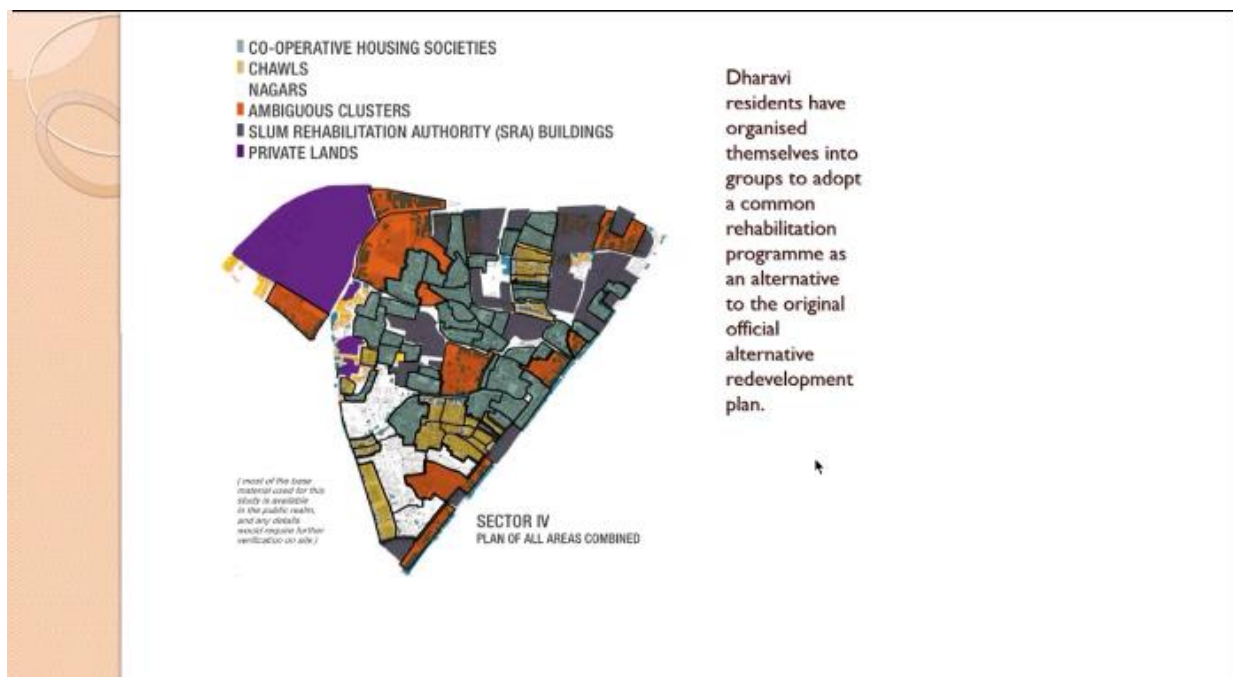
The question of In-situ rehabilitation is very important because it is a way of revitalizing people living in these slums, and it also helps ensure that the city's economy does not decline as a result of the large part of the labor market disappearing. So, in Mumbai's case that they have used an innovative method of using the land on which slums are located to build tenement housing, part of which was provided free to residents, and part of which was sold at market rates to finance the construction, so these kinds of innovative methods to actually raise money for in-situ rehabilitation have been tried, and there is, of course, the scope for some kind of misappropriation these conditions, these circumstances but there is also been a lot of success stories.

In Ahmedabad, which is another in-situ case where there was in-situ rehabilitation, there was a partnership between government bodies, non-governmental organizations, microfinance bank and slum residence, in carrying out slum upgrading. And you have seen this also in the developed world, Philadelphia had a very successful case, in Pakistan in Karachi the Orangie case has also been widely cited as very successful form of in-situ rehabilitation of slum dwellers.

Dharavi - Mumbai

- Occupying over 525 acres, Dharavi is Asia's largest slum containing tens of thousands of small businesses and hundreds of thousands of residents of different religions, castes, languages, provinces, and ethnicities. Its enterprises include food, garments, leather products, pottery, printing, jewellery and recycling, with a rough turnover estimated at over Rs. 2000 crores a year.

Dharavi is really Asia's largest slum, and it contains tens of thousands of small businesses, so vital to the city's economy as I had mentioned earlier, and hundreds of thousands of residents of different religions, caste, languages, provinces, and ethnicities, so its enterprises include food, garments, leather products, pottery, printing, jewellery, recycling and the turnover of the slum alone is about 2000 crores a year, so very vibrant economic powerhouse in many ways.



So, these are some of the, this is a map of Dharavi and Dharavi residents have themselves organized or rather organized themselves into groups to adopt a common rehabilitation program, and this is seen as an alternative to the official alternative redevelopment plan. So,

bringing in the participation of the stakeholders seems to be very important in these slum rehabilitation experiments, and this is not something that can be, slums are not something that should be wished away rather they need to be rehabilitated, they need better infrastructure because it turns out that they are usually at the center of a cities people.



Dharavi - Mumbai

- The Dharavi Redevelopment Project was initiated by the government through a partnership with the Society for the Promotion of Area Resource Centres (SPARC, 2003) to rehabilitate housing for over 50,000 slum-dwelling families.
- The policy is confronted by a number of challenges - insufficient supply of land, insufficient data, lack of co-ordination among agencies, lack of resources and rigid planning norms, to name a few.
- A focused attempt at improving land supply, infrastructure, information systems, management and repair of existing house stock, public awareness and participation would help overcome these obstacles. The policy has been proved useful in cases where rehabilitation is necessitated by vital infrastructure projects. Under the current policy, around 100,000 houses have been constructed so far, and an equal number are under construction

The Dharavi redevelopment project was initiated through very large NGO called spark. The society for the promotion of area resource centers and they played a significant role with the government for providing housing for 50,000 families, and the policy was confronted by a number of challenges there was insufficient supply of land it was Mumbai after all, insufficient data, lack of coordination among agencies, lack of resources and rigid planning norms. So, all of these had to be overcome in order for this redevelopment project to have this sort of success it has had. There was a focused attempt at improving land supply infrastructure, information systems, management and repair of existing house stock, and public awareness was a big part of this, and participation of course. The policy has been useful has been proven useful in cases where rehabilitation is necessitated by vital infrastructure projects. Under the current policy, around hundred thousand houses have been constructed, and an equal number are under construction. So, the Dharavi case is something that was a very difficult environment in Asia's largest slum, and the fact that attempts even in a place like that have been successful, suggests that hope is not lost in terms of how to deal with slums in developing countries.

Thank you