

Community Report: Sustainability of Slums

Whilst in India, slums were a frequent sighting. People, especially in the western world, assume that all slums can offer the world is unsafe and unsanitary homes to their residents. From what I had learnt in class, it appears that the western world only views slums as a negative place to live. I started to research slums after repeated sighting of them spiked my interest. As well as finding out about slums in my local area, I visited slums, such as Dharavi, whilst travelling in the holidays. Although, slums are very far from the ideal living environment, I observed many positive aspects, in particular many sustainable practises that the rest of the world could learn from or adopt. Therefore, I chose this topic as I wanted to explore the benefits of slums, in particular what they can teach us about urban sustainability, as it has interested me for a long time. A more sustainable world will be able to deal with the challenges that climate change brings more effectively, which is arguably one of the biggest problems humanity currently faces.

Before conducting my research, I looked up the key definitions for my community report topic. Sustainable is defined as the ability 'to be maintained at a certain rate or level' (English Oxford Living Dictionaries, 2017), in other words meeting the needs of the current generation without compromising the resources available for future generations. Urban sustainability means 'improving the quality of life in a city, including ecological, cultural, political, institutional, social and economic components without leaving a burden on the future generations. A burden, which is the result of a reduced natural capital and an excessive local debt' (Sustainable City, 2017). The definition for urban sustainability comes from the Urban 21 conference in Berlin in 2000, which had the principal aim of discussing the future of urban areas. A slum is an 'overcrowded and squalid back street, district, etc., of city, inhabited by very poor people' (English Oxford Living Dictionaries, 2017). These definitions gave me a clear idea of what urban sustainability and slums are, meaning I was able to conduct my research knowing exactly the kind of examples and theories I was looking for.

Slums: failure of public policy

Slums lack the basic infrastructure that the rest of the world is reliant upon, including underground sewage pipes, tarmacked roads, public spaces, a supply of electricity and water and health care. There were slums in Ahmedabad (my nearest major city), which just consisted of people living under plastic sheeting. The people living there did not have access to electricity or sewage systems. These gaps in basic services have led to higher rates of disease as water pipes often run through raw sewage, and diseases go untreated due to the lack of available health care. This has resulted in lower life expectancies in slums than that of the rest of the world. In Indian slums, the life expectancy for males is 47 years and 51 for females (Raghav Bansal, 2011), which is considerably lower than 68 years for the rest of India (World Bank, 2014). Therefore, arguably slums are unhealthy places to live.

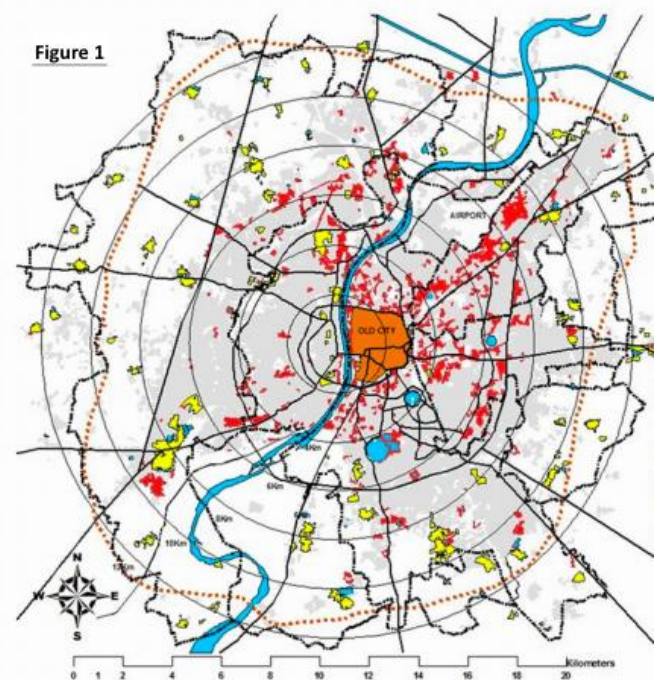
One of the main reasons for rapid urbanisation, and consequently the increase in global slum population is due to under investment in rural areas (Davis, M, 2007), a failure of government policy. Therefore mass migration from rural areas results in cities growing at an unsustainable rate meaning there is not enough time for houses to be built. Additionally, the quality of public services and infrastructure suffers from having to support denser and larger populations. People are then forced to live in slums, as they do not have any other choice. Drèze and Sen argue that Indian public policy is not aimed at the poor. This 'pervasive disregard for the interests of the underprivileged in public policy. The neglect of school, education, health care [and] social security' (Drèze, J, Sen, A, 2014) of people in (Indian) slums is a clear failure of policy.

Slums are frequently the targets of development aid, so receive aid from other countries. However, 'The aid regime has been in place (in one form or another) for sixty years and demonstrably failed to generate economic growth and eliminate poverty' (Moyo, D, 2009). Showing, at least in the view of Moyo an eminent economist, the challenges of dealing with the policy failure.

However, slums are also vibrant places. They can be home to entrepreneurship and creative solutions that the rest of the world could learn from. People migrate to slums because they are ambitious and want to better themselves and their family. While researching, I have found examples of sustainable practises in slums, including consuming fewer resources, recycling, community strength and space utilisation.

Slums are more environmentally friendly as they use fewer resources

One of the main reasons for the existence of slums is rural to urban migration, as people move to the city and then settle on the outskirts. These people end up without anywhere to live due to a lack of available housing or the house prices being too expensive, leading to the creation of slums. Lots of slums are centrally located, as many slums are decades old, so the city has continued to grow and surround the slum that used to be on the fringes of the city. Figure 1 is a map of Ahmedabad created by the World bank. The red areas show the locations of slums. Some of the slums are right in the centre of the city, showing that they must have existed as the city has expanded. Due to the central location of slums, residents are able to meet their day-to-day requirements close to their homes. The central location of the slum within the city and the fact that local people often run shops from their homes means slum dwellers are able to meet their daily needs within walking distance of their homes. If slum residents need to travel further they tend to use 'person-power', such as bicycles and rickshaws, rather than taxis and cars primarily because they cannot afford to use them. As a result, slum residents emit significantly less CO₂ per capita. This is an important lesson from slums about urban sustainability because the current level of greenhouse gases being emitted is contributing to climate change. Climate change could threaten the availability of resources and therefore affect the needs of future generations, the opposite of sustainability. We could follow the example of slums and plan to integrate the facilities that people need on a daily basis into local communities, so they are accessible with lower greenhouse gas emissions and encourage the increased usage of person-powered transport.



Slum dwellers use renewable solar energy. Residents of Sardhav village in Gandhinagar (capital of Gujarat) are using solar panels to power their homes. As well as investing in renewable energy, people who live in slums are being trained to sell solar products in their communities. Pollinate Energy is a business based in India (and Australia), which enables local people from urban slum communities to sell solar powered lamps in their local area. This enterprise has wide ranging benefits for the planet and the people of the local community. Local people in the 140 slum

communities in Bangalore are able to supplement their wages by selling the solar lamps which enable residents to see safely after dark. The alternative to solar energy is the use of kerosene lamps, which have dangerous health risks and contribute to climate change as they release carbon emissions (Jeffrey Stumpf, 2013). Furthermore, inhabitants do not have to spend a significant proportion of their income on kerosene to power their lamps, as solar lamps are charged for free by the sun. More than 10,000 people living in Bangalore's slum communities have bought solar lamp systems. This has already saved more than 40,000 litres of kerosene and 100,000 kilograms of carbon emissions (United Nations Framework Convention on Climate Change, 2014). The solar lighting system was chosen specifically for urban slum dwellers, as it is portable and extremely robust. If renewable energy is being used by residents of slums, who are by definition 'very poor people' (English Oxford Living Dictionaries, 2017), then renewable energy should definitely be affordable and available for everyone else. The things to take away from this example are that solutions are being created that solve more than one problem and we need to increase invest in renewable energy.

Recycling

Dharavi recycles 80% of Mumbai's waste (Victoria Moore, 2012). The rubbish is sorted in one of 400 recycling units and organised by 30,000 rag pickers who go through a staggering 6,000 tons of rubbish produced by Mumbai everyday (Economist, 2007). These figures show that Dharavi knows exactly what it is doing when it comes to recycling. However, rag pickers have little choice as sorting through the rubbish is a job that pays money, therefore recycling is seen as a necessity of life, as without it they might not be able to feed themselves and their families. This is a very different mindset to the rest of the world, particularly from the West who view recycling as a possible way of conserving the planet's resources, but not a necessity of life. In England and Wales, fewer than 10% of councils have a compulsory recycling policy (Sky News, 2017), so people do not have to recycle. Therefore, we need to change the public opinion on recycling so that everyone sees recycling as not quite as crucial for their survival as the rag pickers, but as an integral and innate part of their everyday life, enabling recycling rates to increase. The UK's recycling rate in 2015 was 44% (Adam Vaughan, 2016), which is almost half of current recycling rates in Dharavi. The UK's range of infrastructure to help in the process of recycling, such as recycling bins and sorting machines is a considerable contrast to the manual sorting of rubbish in Dharavi, yet applied more rigorously could yield a similar result.

In Ahmedabad, recycled materials are being used to make better roofs for housing in slums. The roofs in slums are normally either made of tin or concrete. This leaves the houses hot in summer, cold in winter and at risk of leaks during monsoon season. Modroofs can help fix these problems. These roofs are made of waste, pulped cardboard and natural fibres. This makes them both sturdy and waterproof. The roofs made out of recycled materials not only help to conserve the planet's resources, but also help to improve the quality of life of the slum dwellers by helping to protect them from the elements. The rest of the world could learn about urban sustainability from this example by incorporating recycled waste into building materials.

Strong sense of community within slums

Dharavi Food Project 2014 was a pop-up kitchen where 8 women presented live cooking demonstrations (Dharavi Biennale, 2017). One of the demonstrations had as a guest a nutritional expert who explained the implications to different food choices. Another session involved passing on old recipes, keeping their culture alive. These demonstrations were entirely self-organised and again show the strengths of communities in slums. This event, along with other events, show that there is

a strong support network in place in slums, where residents willingly help each other to better themselves and the wider settlement.

Slum clearance highlights the strong sense of community within slums; this is true for both London slums cleared in the 1950s and slums being cleared more recently in Mumbai. 'When young families were rehoused away from Bethnal Green they were cut off from their relatives, and from the mutual aid thus provided. Contrary to the stereotype, they had not been socially isolated where they lived in the city. But they certainly were after the move' (Young and Willmott, 1986). This study in the 1950s shows that putting slum residents into high-rise blocks after their homes have been destroyed is unsustainable as it destroys the community. To ensure that the world develops in a sustainable manner, we need to come up with a different way to rehouse people than high-rise blocks of flats. Planners are trying to do the same thing to slums around the world, such as in Dharavi so that they can build on the land, as Dharavi is in the middle of Mumbai's business district.

It has been suggested by (Jane Jacobs, 1961) an influential urban planner that the key to 'un-slumming a slum' is not by breakdown of the community or re-location of the settlement, but rather to stop people from leaving the slum too fast. Whilst in Ahmedabad I noticed that as soon as a family gained wealth they moved out of the slum into more permanent dwellings and therefore only poor residents remained in the slum. If a sense of community is strong enough, residents will more likely stay and overtime develop their homes and neighbourhood rather than leave. Thus, creating higher quality housing, building roads, and eventually constructing infrastructure such as sewage pipes and running water, so that the slum will become a fully integrated region of the wider city. Therefore, having and retaining a strong sense of community is fundamental to the eventual betterment of the quality of life of the slum dwellers.

More efficient use of space

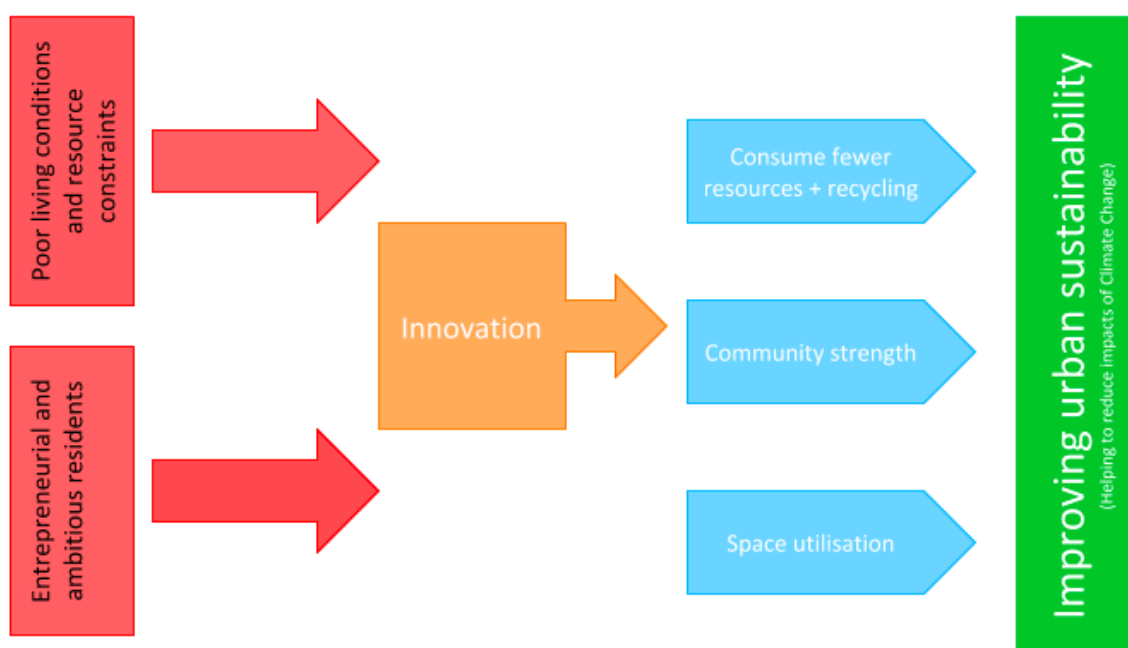
As a whole urban areas are more populated than rural areas, but slums are even more densely packed than the rest of the city. Dharavi's population density is 10 times higher than the rest of Mumbai (Benita Fernando, 2014), even though Mumbai is one of the most densely populated cities in the cities in world. Mumbai has a population density of 83,900 people per square mile (Shane Croucher, 2015) whereas in London, Islington has the highest population density of 14,517 people per square mile (UK Population Density, 2017). This shows that Dharavi is more compact than the rest of Mumbai, which is already a highly compacted city. Slums can teach us that in order to be sustainable in the future urban areas could be built more densely. This not only takes up less space, so that there is more room to house more people in cities due to the ever-increasing population, but it also means that city residents will not use as many resources to meet their daily needs. A 2006 report on the State of the World's Cities by UN-Habitat stated that 'the concentration of population and enterprises in urban areas greatly reduces the unit cost of piped water, sewers, drains, roads, electricity, garbage collection, transport, health care, and schools'. We should possibly encourage development in urban areas, as this is more sustainable than supplying resources to people in rural areas, but with new buildings being built in a sustainable way, such as the sourcing of the materials and energy consumption of the building.

Even though slums are unpleasant places to live, lacking sanitation and basic infrastructure, there are many practises from them that could be applied to other cities in order to improve the general level of urban sustainability. A key driver for many sustainable solutions in slums is lack of resources. Slum residents cannot afford to waste any of the limited materials that they have available to them, so they are more conscientious and are less likely to threaten the resources available to future generations. Slums can teach us how to improve our urban sustainability in areas such as consuming

fewer resources recycling, community strength and space utilisation. The key findings of my community report have been displayed in figure 2.

I have enjoyed researching this community report as it enabled me to find out specific information about my local area and focus it into a written report. As well as finding out about my local area, I also got to research sustainability, which is a topic that really interests me.

Figure 2: Summary of findings



Bibliography

Mark Jacobson. 2007. Mumbai's Shadow City. [ONLINE] Available at:
<http://ngm.nationalgeographic.com/2007/05/dharavi-mumbai-slum/jacobson-text>.
[Accessed 22 August 2018].

United Nations Framework Convention on Climate Change. 2014. Pollinate Energy: Clean Energy for India's Urban Communities. [ONLINE] Available at:
http://unfccc.int/secretariat/momentum_for_change/items/7856.php. [Accessed 22 August 2018].

Stewart Brand. 2010. How slums can save the planet. [ONLINE] Available at:
<http://www.prospectmagazine.co.uk/features/how-slums-can-save-the-planet>. [Accessed 22 August 2018].

Michael Young, Peter Willmot, 1986. Family And Kinship In East London (Peregrine Books). Reprint Edition. Penguin UK. P15

Moyo, D, 2009, Dead Aid: Dead Aid: Why aid is not working and how there is another way for Africa, Allen Lane, London.

Central Intelligence Agency. 2016. The World Factbook. [ONLINE] Available at:
<https://www.cia.gov/library/publications/the-world-factbook/geos/nu.html>. [Accessed 22 August 2018].

The Life in the Slum. 2016. Slum. [ONLINE] Available at:
<http://thelifeintheslum.weebly.com/>. [Accessed 22 August 2018].

Cynthia E. Smith, 2011. Design with the Other 90%: Cities. Edition. Cooper Hewitt, Smithsonian Design Museum.

Bella Chaffey. 2016. Life Inside One of the World's Largest Slums. [ONLINE] Available at: <http://borgenproject.org/category/slums>. [Accessed 22 August 2018].

Jeffrey Stumpf. 2013. Climate impacts of kerosene lamps used in developing countries. [ONLINE] Available at: <https://www.niehs.nih.gov/news/newsletter/2013/1/science-kerosene/>. [Accessed 22 August 2018].

English Oxford Living Dictionaries. 2017. Sustainable. [ONLINE] Available at: <https://en.oxforddictionaries.com/definition/sustainable>. [Accessed 22 August 2018].

English Oxford Living Dictionaries. 2017. Slum. [ONLINE] Available at: <https://en.oxforddictionaries.com/definition/slum>. [Accessed 22 August 2018].

Sustainable Cities. 2017. What is a sustainable city?. [ONLINE] Available at: <http://archive.rec.org/REC/Programs/SustainableCities/What.html>. [Accessed 22 August 2018].

Rudi.net. 2017. Berlin Conference. [ONLINE] Available at: <http://www.rudi.net/books/12062>. [Accessed 22 August 2018].

Pollinate Energy. 2015. About Us. [ONLINE] Available at: <https://pollinateenergy.org/about/>. [Accessed 22 August 2018].

Victoria Moore. 2012. India's Dharavi recycling slumdog entrepreneurs. [ONLINE] Available at: <https://www.sustainablebusinesstoolkit.com/dharavi-indias-recycling-slumdog-entrepreneurs/>. [Accessed 22 August 2018].

Economist. 2007. A soul-searching business. [ONLINE] Available at: <http://www.economist.com/node/10311257>. [Accessed 22 August 2018].

Adam Vaughan. 2016. Recycling rates in England drop for first time. [ONLINE] Available at: <https://www.theguardian.com/environment/2016/dec/15/recycling-rates-england-drop-first-time>. [Accessed 22 August 2018].

UN-Habitat. 2006. Urbanization: Cities as Centres of Growth. [ONLINE] Available at: http://mirror.unhabitat.org/documents/media_centre/sowcr2006/SOWCR%203.pdf. [Accessed 22 August 2018].

Davis, M, 2007. Planet of Slums. 2nd ed. London: Verso.

Jones, C, 1979. Introduction to Urban Deprivation and the Inner City. London: Croom Helm Ltd.

Drèze, J, Sen, A, 2014. An Uncertain Glory: India and its Contradictions. 1st ed. London: Penguin.

Sky News. 2017. Councils wasting opportunity to adopt compulsory recycling. [ONLINE] Available at: <http://news.sky.com/story/councils-wasting-opportunity-to-adopt-compulsory-recycling-10766178>. [Accessed 22 August 2018].

Dharavi Biennale. 2017. Dharavi Food Project — Dharavi Biennale. [ONLINE] Available at: <http://www.dharavibiennale.com/food-project/>. [Accessed 22 August 2018].

Benita Fernando. 2014. An urbanist's guide to the Mumbai slum of Dharavi. [ONLINE] Available at: <https://www.theguardian.com/cities/2014/apr/01/urbanist-guide-to-dharavi-mumbai>. [Accessed 22 August 2018].

Shane Croucher. 2015. UN World Population Day 2015: These are the 10 most densely populated cities on the planet. [ONLINE] Available at: <http://www.ibtimes.co.uk/un-world-population-day-2015-these-are-10-most-densely-populated-cities-planet-1510315>. [Accessed 22 August 2018].

UK Population Density. 2014. UK Population Density. [ONLINE] Available at: http://www.neighbourhood.statistics.gov.uk/HTMLDocs/dvc134_c/index.html. [Accessed 22 August 2018].

The Academy of Urbanism. 2015. The future of cities lies in the slums. [ONLINE] Available at: <https://www.academyofurbanism.org.uk/the-future-of-cities-lies-in-the-slums/>. [Accessed 22 August 2018].

Raghav Bansal. 2011. Slums: The Dark Side Of India [And Our Ignorance]. [ONLINE] Available at: <https://www.youthkiawaaz.com/2011/01/slums-in-india/>. [Accessed 17 February 2017].

World Bank. 2014. Life expectancy at birth, total (years) | Data. [ONLINE] Available at: <http://data.worldbank.org/indicator/SP.DYN.LE00.IN>. [Accessed 22 August 2018].

Ankur Tewari. 2015. *Slum man lights up his village* | Ahmedabad News - Times of India . [ONLINE] Available at: <https://timesofindia.indiatimes.com/city/ahmedabad/Slum-man-lights-up-his-village/articleshow/47783763.cms>. [Accessed 22 August 2018].

Carolyn Rice. 2017. *How recycled roofs are transforming homes in slums* - BBC News. [ONLINE] Available at: <https://www.bbc.co.uk/news/business-41722794>. [Accessed 22 August 2018].

The World Bank. 2001. *Ahmedabad More but Different Government for "Slum Free" and Livable Cities*. [ONLINE] Available at: <https://openknowledge.worldbank.org/bitstream/handle/10986/16384/wps6267.pdf?sequence=1>. [Accessed 22 August 2018].

Jacobs, Jane. *The death and life of Great American cities*. New York: Random house, 1961