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India: Poverty, Covid and Food Crisis in Mumbai's slums

I live with my parents in San Diego, California and my chitti (mother's sister) lives in Mumbai, Maharashtra. Every few summers we go to visit her. It was during one such trip when the aircraft circled around the busy Mumbai airport waiting for permission to land that I noticed the many skyscrapers of Mumbai, and along with them a sea of bright blue coverings in what appeared to be residential areas. I asked my mother what these were and she replied, "those are the blue tarpaulins covering the roof of slums where the poorest in the city live." I could not believe my eyes—the blue tarps were everywhere. One cannot help but watch with amazement the stark contrast that one sees from above between the rich and the poor with skyscrapers that house some of the world's richest industrialists on one side and the slums, with their distinct blue tarps on the other.

Upon landing and settling down, I started reading up more on the slums and even drove by a few. Asia's largest slum is in an area that is just 0.81 square miles (2.1 square kilometers) in Dharavi, a locality in the spiraling city of Mumbai, India. An estimated 1 million people live in Dharavi alone. It has a population density of 869,565 per square mile, the highest on Earth. Mumbai has the largest slum population of any city in the world (Kaushal and Mahajan, 2021).

City of Dreams
Mumbai is considered the commercial capital of India and is known as the "City of Dreams." It holds an estimated net wealth of $950 billion amongst all its residents combined and is ranked 12th richest city in the world as of 2022 (PTI, 2018). It is also home to 51 billionaires (McEnvoy, 2022). The Indian film industry based in Mumbai, known as Bollywood, is the highest exporter of films in the world and brings in annual revenues of around USD $2.83 billion (Santoreneos, 2019).
However, it is also a "City of Imbalance," between the rich and the poor since over 41% of the city's 21 million population live in the slums. This makes over 9 million of the population living in the poorest areas ("Mumbai Population", 2022). The population of Mumbai is rapidly growing due to migration from other parts of India and abroad. The city offers several opportunities of employment in the field of production, sales, cinema, administration, and business. Job seekers come from all across the country to work in sectors such as wholesale, entertainment, community and social services, and construction.

In a city where the housing rents cost anywhere between $400-$500 per month for a 1 bedroom 500 square foot apartment, the daily wage worker who earns $4 to $5 a day chooses to live in the slum where the rents are much lower, approximately $5-10 a month("Mumbai Rents", 2020).

Poverty, sanitation and homelessness
In addition to slum dwellers, Mumbai also has a large homeless population of approximately 54,000 people by the Census Survey in 2011, although housing rights activists say that this is a gross underestimation. The real figure, according to them, is well over 250,000 (Ganapatye, 2020).
 A 2010 Supreme Court order mandates that every state provide one shelter for every 100,000 people (Ganapatye, 2020). This works out to be 125 shelters in Mumbai per official figures and despite this, the city only has 19 substandard shelters.

In addition to the shelter shortage among the homeless population, the city has issues with proper infrastructure which affect slum dwellers as well. The slums are of 2 different types: "Notified" or recognized by the Indian government or "non-notified" or unrecognized by the Indian government. The

slums would have to be "notified " in order for the slum residents to be eligible for piped water, toilets, electricity or public transportation. A total of 33,510 slums were estimated to be present in the urban areas. The ministry of Statistics lists about 41% of these were "notified" and 59% "non-notified". This puts a majority of the slum residents not entitled to water, toilets or any public utilities mentioned above since they are not recognized by the government. (Key Indicators of Urban Slums in India, 2013). This allows the government to turn a blind eye to their needs and de-prioritize them in slum improvement schemes. This also makes them susceptible to the occasional slum demolition drives putting families out in the streets.

The Maharashtra government provides drinking water to residents through a chlorinated central water supply system that pumps water from different lakes in and around the outskirts of Mumbai (Express news service, 2021). Residents in non-notified slums are not allowed to legally connect to this water supply system. The lack of basic drinking water services and basic sanitation facilities leaves the slum population susceptible to illnesses and infection.

Water-borne diseases affect 30-60% of slum households annually, with 66% of them being children (Papadimitriou, 2019). The lack of practice of boiling water before consumption by residents makes illnesses continue to spread. In summer, water is often contaminated with E.coli bacteria, implying the presence of feces in water. The lack of access to clean water and basic sanitation facilities such as public toilets creates a result of infections, illnesses, and in some cases, death.

Compounding the problem - Covid 19
The 2020 coronavirus pandemic brought along lockdowns and travel bans that were imposed by the governments all over the world as a necessity to tackle the virus and to rein in its spread.

In all of India the coronavirus cases numbers stand at a staggering 43 million with over 524,000 deaths. Out of this, Maharashtra cases alone are at 7.88 million, the highest in the country. Maharashtra has been one of the worst hit states in all of India throughout the pandemic from 2019 until now (JHU, 2019).

The extreme population density in the slums makes it particularly vulnerable to the spread of the virus and results show in the Covid statistics. It is estimated that over half the people living in the slums of Mumbai have contracted the coronavirus.

The government imposed a complete shut down to combat the virus in 2020 and 2021. In the country where a lot of people work in informal sectors and are employed as daily wagers, construction workers, street vendors, and domestic helpers, this led to rapid loss of employment with no access to health benefits. Urban unemployment hovered around 14.71% in May 2021(Bhargava, 2021). At the same time, food prices rose due to low supply and lack of transportation. The high rates of infections, high prices of food, and high unemployment rate caused the lower income families living in slums to suffer a great deal.

This was not only a health crisis for the people in slums, but also a livelihood crisis. This also led to a hunger and malnutrition problem. The World Food Programme estimated that an additional 130 million people could fall into the category of "food insecure," over and above the 820 million who were classified as such by the 2019 State of Food Insecurity in the World Report (Bhargava, 2021).

Hunger Crisis
The pandemic and resulting unemployment has made India's hunger crisis worse. India has now slipped to 101st position in the Global Hunger Index (GHI) 2021 of 116 countries, from its 2020 position of 94th (GHI Rank , 2022).

The World Health Organization (WHO) defines 'severe acute malnutrition' (SAM) by very low weight-for-height or a mid-upper arm circumference less than 115 mm, or by the presence of nutritional edema. Due to their weakened immune systems, children who suffer from SAM are nine times more likely to die by contracting diseases.

India has over 1,776,902 severely acute malnourished children (SAM) and 1,546,420 (1.5 million) moderately acute malnourished (MAM) children as of October 2021 . While the number is very high, it is reported that this number represents a 91% increase within the span of a year.

Maharashtra has the highest number of malnourished children in the country at 616,772 with 157,984 MAM children and 458,788 SAM children. Based on a statement from Child Rights and You (CRY) India, this tends to undo the progress made to combat malnutrition over the last decade. Integrated Child Development services reported that in Mumbai, the maximum cases of malnutrition were reported from the slum areas of Dharavi, Malvani and others (PTI, 2021).

This increase in the number of malnourished children can be attributed in part to prolonged closure of schools during the pandemic, since the children from lower socio-economic backgrounds have been largely dependent on free lunch services provided to fulfill their dietary needs.

Solutions Pursued So Far

In order to combat the food crisis triggered by the pandemic, the government has taken several initiatives. To tackle the malnutrition problem persistent in most states of the country, the government launched the Poshan Abhiyan Programme in 2018 aimed at women and children for treating problems such as low birth weight, stunted growth and anemia. Nutrition rehabilitation centers were set up at some of the city's hospitals to provide medication to children with acute malnutrition ("Poshan Abhiyan", 2021). The campaigns are short-lived, however, only lasting for a few months.

Another initiative has been that the state and local government started distributing free food grains and kits through ration shops where a registered family could show ration cards to get food kits. However, the huge population of migrant workers in Mumbai were not in the official distribution system of the state since their ration cards were issued by their home states and hence were not eligible for the free food grains.

Even though the central and local governments are doing whatever they can, this still is not sufficient to eliminate hunger in the city's population.

How Can We Do More?

Community development programs run locally but funded by the government and other local and global organizations would be key to solving this crisis. A community kitchen in local areas can go a long way towards eliminating hunger in the area. Community kitchens work to provide quality meals, including fresh produce and a greater variety of food to the needy. It helps to support the malnourished population and grant them a healthier lifestyle. Localization of food kitchens is more effective because less people in the population are ignored. The distribution of cooked food to those who are not mobile can occur via local transport (bikes, autos, buses). One example of successful efforts similar to communal kitchens is the self-governing Kudumbashree kitchen of Kerala who has sold 3.3 million food packets daily in the beginnings of the coronavirus outbreak, demonstrating that the bright vision of implementing food kitchens can be a reality ("Kerala's community kitchens serve 2.8 lakh food packets a day," 2020).

In order for the community kitchen model to be sustainable, they need to be recognized and supported by the state or local governments. To ensure a successful kitchen, secure locations have to be investigated and lower cost raw material supply chains need to be established beforehand.

The Final Solution
Considering the aforementioned requirements, the solution can be broken up into the involvement of three different groups: the government, in-person volunteers and nonprofit organizations, and global citizens/individuals.

The first and most influential entity is the government. Having governmental support ensures long-term sustainability for the community kitchen model since it serves as a stable and continuous resource. For Mumbai primarily, an appeal should be made to the local and state governments to receive funding for setting up community kitchens. It is in the government's interest to pursue the community kitchen model to aid Mumbai slum-dwellers. In terms of structure, the role of decision-making and overseeing the project overall would be the responsibility of a food secretary employed by the government. They can divide the state and city into "food zones" based on population density, poverty index, per capita income, and the severity of malnutrition present and rank them based on need. With such zones, they can make administrative decisions on actions catered to each zone and which zones should be prioritized. The government can offer jobs within the community kitchens to the city's people, reducing poverty rates and boosting the overall economy. These governmentally-appointed employees can conduct daily operations, in both planning and physical work. Those involved in planning and organization can choose secure locations, negotiate the establishment of proper infrastructure, and initiate raw supply chains for the kitchens. To minimize the maintenance costs of running the kitchen, they can purchase supplies from local vendors. Once again, this helps improve local employment as well as ensure that materials being harvested locally are being used to their full potential. The officials can set up transportation services to reach remote areas using government-funded vehicles for delivery of raw material into community kitchens. For instance, they can collaborate with the Mumbai Dabbawala group, which is an organization of people who—having used eco-friendly methods like bicycling–to deliver home-cooked food to over 200,000 Mumbai residents ("Dabba Service", n.d.). They have the potential to be a key part towards delivering food from the kitchens to individuals who may not be able to easily access the kitchens on their own. Employees involved in the physical work can handle the actual processes of food provision, including: cooking and serving the food, ensuring food preparation follows dietary guidelines, handling food deliveries, infrastructure maintenance, etc. Overall, having major involvement from the local government helps ensure the sustainability of the plan and allows the bulk of the labor force to be accounted for in maintaining community kitchens.

In addition to setting up governmental working groups to run the kitchens, state and local governments can open a centralized portal calling out for nonprofit organizations, self-help groups, and volunteers for support. The government can conduct community outreach plans such as food drives and volunteering programs to increase participation from local residents interested in the cause. Volunteers can help by providing additional support in day-to-day operations of the community kitchens. Incorporation of training for volunteers can contribute to more efficiency in the food kitchens by virtue of forming a larger workforce. Volunteering opportunities also foster an increased connection between city residents and the needy; balance can start to be restored to the City of Imbalance. Nonprofit organizations can provide additional resources that the government might be lacking in, similar to how the Mumbai Dabbawalas deliver to areas without easy access to community kitchens. These organizations can also help in other methods of community involvement, such as spreading awareness about the circumstances of slum-dwellers. To make hygienic products accessible for slum-dwellers, items such as masks and sanitary products can be provided in community kitchens, minimizing health problems from the COVID pandemic. Reaching out to outside organizations and in-person volunteers can help community kitchens gather more support and resources for their functioning.

Lastly, setting up a foundation to help run the community kitchens whereby global citizens can donate goods or money to keep the kitchen running will be needed in addition to recognition by local governments. They allow for greater support to combat worldwide hunger and bring larger involvement

of the global population. Though global support is subject to fluctuations, they have shown to be extremely helpful in emergency situations, which can be applied to Mumbai. Foundations for worldwide involvement are important to maximize support from individuals who cannot give it directly and they help spread awareness of Mumbai's situation globally.

Going Further

If the solution is successful, then this effort to end malnutrition through community kitchens can branch out to the rest of India and involve bigger authorities like the central government. As the community kitchen model gets developed in an area, it can spread out to establish itself in more locations, reach larger populations, and help more people.

Conclusion

Overall, malnourishment and sanitation pose a large threat to the well being of those living in the slums of Mumbai. By establishing community kitchens, specific populations can be targeted to account for all individuals. With support from governments and other agencies, success of the kitchens can be ensured and a brighter future towards eliminating hunger and malnutrition will be one step closer. Together, we can conquer it and do our part to improve lives across the world and for future generations.

References

Bhargava, R. (2019). *Covid-19 is creating a hunger catastrophe in India – here's an opportunity to break the cycle*. World Economic Forum. Retrieved May 14, 2022, from https://www.weforum.org/agenda/2021/06/covid-19-pandemic-hunger-catastrophe-india-poverty-food-insecurity-relief/

Borgen. (2020, November 13). *How community kitchens in India are helping mitigate the spread of COVID-19*. Borgen Magazine. Retrieved May 14, 2022, from https://www.borgenmagazine.com/community-kitchens-in-india-covid-19/

Bureau, Our. "Kerala's Community Kitchens Serve 2.8 Lakh Food Packets a Day." *The Hindu BusinessLine*, The Hindu BusinessLine, 10 Apr. 2020, https://www.thehindubusinessline.com/news/national/keralas-community-kitchens-serve-28-lakh-food-packets-a-day/article31309814.ece.

The Economic Times. (2018, February 12). *Mumbai 12th richest city globally; total wealth at USD 950 Billion*. The Economic Times. Retrieved May 14, 2022, from https://economictimes.indiatimes.com/news/economy/indicators/mumbai-12th-richest-city-globally-total-wealth-at-usd-950-billion/articleshow/62870741.cms

Ganapatye, S. (2020, March 5). *Only 12,000 homeless in city, claims survey*. Mumbai Mirror. Retrieved May 14, 2022, from https://mumbaimirror.indiatimes.com/mumbai/civic/only-12k-homeless-in-city-claims-survey/articleshow/74484851.cms

GHI. (2021). *Global hunger index scores*. Global Hunger Index (GHI) - peer-reviewed annual publication designed to comprehensively measure and track hunger at the global, regional, and country levels. Retrieved May 14, 2022, from https://www.globalhungerindex.org/ranking.html

The Indian Express. (2021, September 21). *Mumbai: Lakes supplying water to city have over 99% water of total capacity*. The Indian Express. Retrieved May 14, 2022, from https://indianexpress.com/article/cities/mumbai/mumbai-lakes-supplying-water-to-city-have-over-99-water-of-total-capacity-7524606/

Johns Hopkins University. (2019). *CSSEGISANDDATA/covid-19: Novel coronavirus (COVID-19) cases*. GitHub. Retrieved May 14, 2022, from https://github.com/CSSEGISandData/COVID-19

Kaushal, J., & Mahajan, P. (2021, April). *Asia's largest urban slum-dharavi: A global model for management of COVID-19*. Cities (London, England). Retrieved May 14, 2022, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7832248/

Key Indicators of Urban Slums in India. Key indicators of urban slums in India. (2013). Retrieved May 14, 2022, from https://pib.gov.in/newsite/PrintRelease.aspx?relid=102108

Makaan. (2020). *Property Rent Rates and Price Trends in Mumbai*. Property Rent Rates in Mumbai - 2020 - Property Rent Price Trends in Mumbai. Retrieved May 14, 2022, from https://www.makaan.com/price-trends/property-rates-for-rent-in-mumbai

McEvoy, J. (2022, April 22). *Where the richest live: The cities with the most billionaires 2022*. Forbes. Retrieved May 14, 2022, from https://www.forbes.com/sites/jemimamcevoy/2022/04/05/where-the-richest-live-the-cities-with-th e-most-billionaires-2022/?sh=5d5df0f24e09

Mumbai population 2022. Mumbai Population 2022 (Demographics, Maps, Graphs). (2022). Retrieved May 14, 2022, from https://worldpopulationreview.com/world-cities/mumbai-population

"Mumbai Dabbawala." *MUMBAI DABBAWALA*, https://mumbaidabbawala.in/.

Papadimitriou, A. (2020, March 11). *Mumbai's slums: The positives and negatives*. The World Mind. Retrieved May 14, 2022, from https://www.theworldmind.org/home/2019/3/1/mumbais-slums-the-positives-and-negatives

Poshan Abhiyan. Poshan Abhiyan | Women and Child Development Department, Haryana | India. (2018). Retrieved May 14, 2022, from https://wcdhry.gov.in/schemes-for-children/poshan-abhiyan/

Project, B. (2019, December 11). *Mumbai slums*. The Borgen Project. Retrieved May 14, 2022, from https://borgenproject.org/tag/mumbai-slums/

PTI. (2021, November 7). *Over 33 lakh children in India malnourished, 17.7L of them severely malnourished, says data*. The Economic Times. Retrieved May 14, 2022, from https://economictimes.indiatimes.com/news/india/over-33-lakh-children-in-india-malnourished-1 7-7l-of-them-severely-malnourished-says-data/articleshow/87568902.cms?from=mdr

S, R. (2021, November 28). *Census pegs homeless at 18 lakh, but activists dispute it*. Retrieved May 14, 2022, from https://www.thehindu.com/news/national//article60408035.ece

Santoreneos, A. (2019, May 14). *Bollywood, Hollywood or Chinese cinema: Which film industry makes the most?* Yahoo! Finance. Retrieved May 14, 2022, from https://au.finance.yahoo.com/news/bollywood-hollywood-or-chinese-cinema-which-film-industry -makes-the-most-052802841.html?

United Nations. (2020, June). *The impact of covid-19 on food security and Nutrition*. United Nations. Retrieved May 14, 2022, from https://in.one.un.org/wp-content/uploads/2020/06/SG-Policy-Brief-on-COVID-Impact-on-Food-S ecurity.pdf