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A resilient system is **inclusive.** In other words, all systems work together. Are our **natural and human systems** working together or simply coexisting?

> What I do find fascinating is how quickly nature has reclaimed a "voice" soon after our human systems have been forced into "silence". This, I believe, is a sign of coexistence, not of collaboration.

While I find fascinating the fact that we are seeing Venice's wildlife return to its canals, animals freely roaming our city streets, and reduced air pollution since the COVID-19 lock-down, I am not too hopeful this phenomenon will have a long-lasting effect in the way we interact with our natural systems. What I do find fascinating is how quickly nature has reclaimed a "voice" soon after our human systems have been forced into "silence". This, I believe, is a sign of coexistence, not of collaboration. In a collaborative ecosystem, smaller systems feed each other constantly, and the strengthening of one does not threaten the existence of the other. In other words, adaptive strength – strength in flexibility rather than in might or mass. For our planet to be resilient, we need natural and human systems working together, not merely coexisting.

There is increasing research linking human activity with the destruction of biodiversity and the rise of epidemics. While I believe it is too soon to draw any conclusion of this type from COVID-19, we'd be remiss not to use data to study the correlation between our reduced human activity and the impact it has brought to our natural environment. It may reveal behavioral changes at the macro scale which can significantly strengthen our natural systems, and in turn, the entire ecosystem.
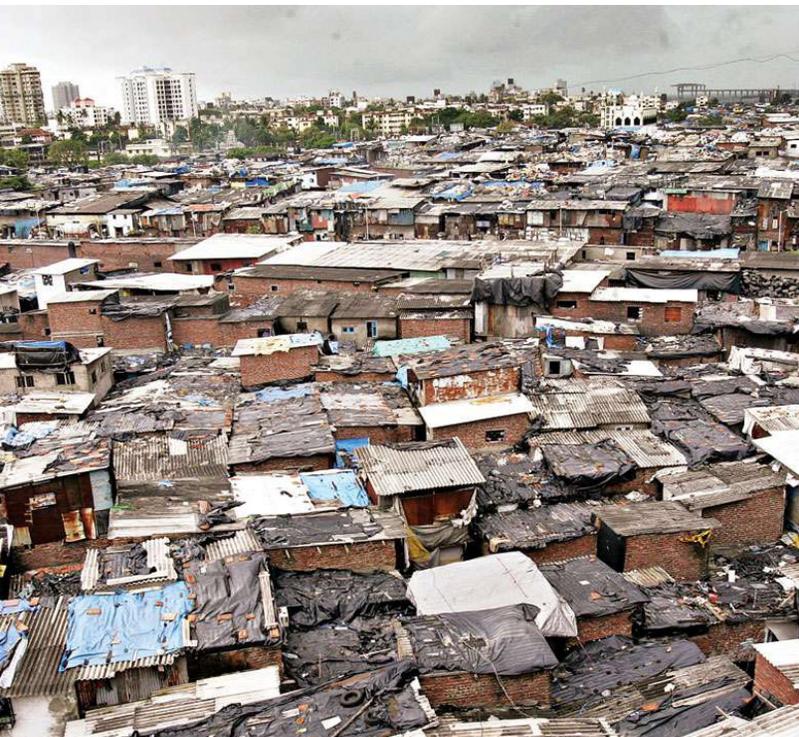
Dharvi Informal Settlement, India
Credit: www.dnaindia.com

Similarly, our human systems are also merely co-existing. Squatters, refugees, and homeless populations are an example of that. There are approximately 25.9 million refugees and close to 1 billion people living in slums around the world. In the US alone, we had approximately 553,000 homeless people in 2018. While these populations are affected by pandemics in different ways, they all share challenges of overcrowding, lack of proper sanitary conditions, underlying health conditions, and in the case of homeless people, the inability to "shelter-in-place." These challenges have health officials racing against the clock to control the virus in Dharavi, one of the largest slums in India, for example. An outbreak in a place where social distancing is impossible, could place Mumbai in a grave public health emergency. These challenges also have San Francisco city leaders grappling with how to enforce their "shelter-in-place" order for 8,000 homeless people, with time working against them. The list continues, but the bigger question is, will our future cities make a larger effort to integrate these marginalized groups into our urban systems? In resilient systems, but particularly in the case of a pandemic, if one sub-system is at risk, the entire system is at risk.