

Feeding the Metropolis: Sustainable solutions for combating new pandemics

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Diseases aren't just their viruses or bacteria. Nor just their clinical course. What gets an individual sick and how they get sick.

The causes of diseases extend out into the field of relationships we share with each other and with the livestock we raise and the wildlife we displace by deforestation, mining, logging, and real estate speculation.

That is, diseases are ecological in origin. But they're more than that. As humanity transforms itself into a geological force on this planet, diseases are also *social* in origin.

The ways and means by which we decide to live together on this planet creates the combinations of barriers and opportunities for the pathogens that circulate among us.

How *do* we live? Presently we live largely under a system of neoliberal capitalism. States work very hard to support capital in imposing its dictates upon landscapes and peoples far and wide. This particular passing imperium has a profound impact on how people and nonhuman nature are treated.

Capitalism alienates out humanity into labor and capital. It turns nature into alienated nature. It switchers our industry—our capacity to appropriate nature—into alienated industry. As a matter of first principle, our systems are abstracted out of the ecological bases upon which the existence of our very species depends.

At this point, our globe is encircled by a series of *circuits of production* that typically run from the forest edge through the periurban landscape to a local regional capital and back again. Some diseases emerge upon forest encroachment.

The Ebola outbreak in West Africa starting 2013 is a good example. With neoliberalism imposing itself upon the region by way of structural adjustment programs and multinationals' forced entry, Indigenous and smallholder agroforestry was forced out by enclosure, capitalization, and proletarianization. That led to the encroachment of monoculture plantations grown for export. Under such devastation many wild species die out.

On the other hand, other species quite well, especially those that display behavioral plasticity. Many of the bat species that serve as Ebola reservoirs prove *attracted* to these plantations. What's not to like? No competitors, no predators, and plenty of space to fly between roosting sites and foraging sites. And that way the interface between these bats and the humans working on the plantations or living nearby is expanded. Leading to increasing rates of transmission and an increasing diversity of pathogens spilling over.

With the structural adjustment programs, reduced funding for public health and animal health surveillance leads to a declining capacity for identifying an outbreak suddenly in motion.

At the other end of the circuit of production, near cities, large megafarms are built, concentrating thousands if not millions of livestock and poultry. For those pathogens that circulate there—like the avian and swine influenzas—the deadliest strains are selected for. With these huge herds and flocks—bred as genetic monocultures, with one susceptible animal pressed against another—there’s no limit on how deadly a strain can evolve. It’s the deadliest strains that burn through the herds and flocks fastest, beating out milder strains.

Other pathogens use the entirety of the circuit of production—from forest to city—to evolve toward being pandemics or regional outbreaks. Zika comes to mind, but also all those SARS-like strains that are now in circulation. Not just SARS-1, MERS, or SARS-2 (which causes COVID-19). *Many* coronaviruses appear to be taking aim at humanity. So we should expect something like COVID-21, -22, or -23 to be already on its way.

What powers these circuits of production? They are driven by *circuits of capital*, stretching from one side of the world to the other. It’s why our group considers cities like London, New York, and Hong Kong the world’s worst disease hotspots. These centers of capital supply the financing for the deforestation and development that drives the emergence of these new pathogens to begin with.

So, to summarize, the wide variety of pathogens, representing different taxa, source hosts, modes of transmission, clinical courses, and epidemiological outcomes only mark different parts and pathways of the same kinds of circuits of land use and value accumulation.



Are there solutions to this terrible trap? Yes. We must move food production off this awful globalized treadmill.

On-farm, we need to reintroduce the livestock and crop diversities—and reintegrate animal and crop farming—at scales that keep pathogens from ramping up in deadliness and geographic extent. We need to allow food animals to reproduce on-site so that they pass on their tested immunities in ways industrial animals are not allowed to. That will permit the livestock the immune evolution they need to track pathogens in real time.

Such interventions extend to mitigating other agricultural problems. Regenerative agricultures build in wildlife corridors, buffer strips to control runoff, and habitat for pollinators and natural pest control. That increases regional biodiversity, enriches soils, improves watersheds, and enhances ecosystem services, including drought and flood control. Regenerative practices are documented to improve carbon and nitrogen sequestration in soil and aboveground biomass. They also promote landscape resilience to climatic instability.

But interventions must extend far beyond the farm gate. Food systems—stretching from rural to urban—must be re-socialized. This will require reintegrating food production into the needs of communities that are often treated as sacrifice zones for multinational profit. Rural communities are typically sacrificed on the supply side. Urban communities on the demand side. Although rural communities *also* can’t eat what they grow. And urban communities are *also* often kept from growing their own food.

We must stop agribusiness and their state allies from treating nature and community, so full of all we need to survive, as just another competitor to be run off by the market. We need to connect *just* production with *just* circulation. We need to subsidize price supports and consumer purchasing programs supporting agroecological production and cutting out usurious integrators. We need to defend these experiments from both the traumatic bonding that neoliberal economics impose *and* the threat of State repression.

Agroecologies aim to reconnect population health and well-being to the land. They promote farmer autonomy, community socioeconomic resilience, circular economies, community land trusts, and integrated cooperative supply networks. Their approaches embody *food justice*, intervening into the structural relations of power that maintain historical race, class, and gender trauma. Agroecologies aim to institutionalize democratic participatory processes across the board.

Together, these new inputs – extending far beyond seed and shovel – protect the interdependent health and welfare of farmers, farmworkers, consumers, local communities, livestock and poultry, wildlife, and by extension, the greater world. Re-establishing interwoven regional food systems that can supply produce that is rich in the diversity and micronutrients lost to industrial production also removes farmers off the price treadmill; provides seasonal, healthy food options; and mends the disconnect between rural and urban communities.

Big picture, we must heal what are the *metabolic rifts* separating our ecologies from our economies. We must reintegrate how we feed ourselves with how we treat the environments without which we cannot exist. To do so we must imprint a different political philosophy upon the landscape, out from underneath suburbanist export capital and into integrated regional food landscapes running rural to urban and back again.

Now, is this about just a few community gardens in Barcelona? Can we scale up such systems? Some places already have. Political ecologist Jahi Chappell, among others, has shown that when Belo Horizonte, a city of 2.5 million in Brazil, provided outlying farmers both a market and a price guaranteed in town, cutting out usurious middle men, the farmers were more likely to engage in agroecological and organic practices back on their farms. They also were more likely to protect primary and secondary forest and plant a variety of crops conducive to biodiversity.

Those very interventions have their epidemiological impact. For in the course of protecting the forest complexity that keeps deadly pathogens from lining up hosts for a straight shot onto the world's travel network, the deadliest pathogens can be kept from emerging in the first place.

In other words, Belo Horizonte and other places around the globe show that not only is another world possible, it's already under way. Now it's Barcelona's turn. Thank you.

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