

Local Food System and Resilience During COVID-19:

Agriculture in the Time of Pandemic and Thereafter

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Abstract

Amid the unprecedented crisis created by Covid-19, there has emerged a fresh perspective on food and farming, reaffirming our faith in the resilience of the local food production system. The vagaries of pandemic has led us to rethink the idea of food security and patterns of food production, distribution and consumption. The new scenario marked with highly restricted mobility, highlighted the fragility and limitations of the centralised industrial agriculture heavily dependent on capital and external resources. On the other hand, small holders with diverse cropping patterns and local supply appeared resilient vis-à-vis medium and large farmers. Actually, it does not come as a surprise to see how time and again the monolithic model of development has been rejected, its futility has also been exposed and an awareness arrives through this pandemic. It would make many countries rethink their overall development trajectories in the light of new facts and figures vulnerability. Revisiting our understanding of agriculture during the ongoing lockdown would provide crucial insight into the future vision of agrarian developments. The impending Covid-19 crisis also provides an

opportunity to mend our food and farming to make it local, diverse, resilient and sustainable.

Keywords: *COVID-19, local food system, food security, agroecology, post-COVID 19 India*

Introduction

By highlighting the fragility of contemporary food and farming systems in regard to the outbreak of COVID-19 pandemic, this article aims to highlight the need of reconceptualization of all the matrices of agriculture including the issue of food security. It also aims to show how the future of farming lies in integrated and agro-ecological farming which is local, diverse, resilient and sustainable. This pandemic has exposed the fragility of contemporary food and farming systems. It is essential to reflect on whether the contemporary framework of the agricultural system can ensure food security during such a calamity and if it is capable enough to sustain us in future as well?

Centralised Agricultural Production, COVID-19 and Food Security

Apparently, from time to time, nature keeps on showing her capability to rearrange the entire ecosystem, reminding humans how helpless they can be in front of its formidable power. Though, the approach of human beings has been that of trying to compete with nature rather than collaborating with it. This propensity of humans emanates from the overconfidence in modern science and the modernist development, that measures progress only in economic terms and believes in centralized, homogeneous production for mass consumption as the solution to all problems of the society. This idea of development has guided all mainstream narratives on

development. In fact, this idea has also shaped the vision of agriculture in India and across the world. The idea of agricultural research and development is driven by the aggressive push for productivism made possible by extensive mechanisation and employment of interventions in seed through High Yielding technologies and Genetically Modified Foods.¹ Under this notion, success of agriculture is evaluated in terms of how much cereals are produced per hectare of the land, without any consideration for their nutritional value, palatability and the environmental trade-offs that happen in the centralised monocultures. Following the agricultural development regime of advanced industrial societies India also adopted this path of agricultural modernization since the 1960s. As the Indian state has been imbued this particular conception of developmentalism², agricultural modernization in India followed the course of West, particularly, North America.³

The use of modern varieties of fertilizer-responsive seeds in the 1960s which resulted in the green revolution gave bountiful harvest in states like Punjab, Haryana, Uttar Pradesh immediately raising the grain yield. It is important to remember that those were the days of food-insufficiency, when India remained dependent on the PL480 wheat imports of the U.S. The surge in the food production by new technological interventions, unequivocally, enabled the country to become self-reliant. However, the idea of productivism and green revolution caught up with agricultural scientists and policymakers;

¹Rajeswari S. Raina. "Questioning Temperaments in Agricultural Science", *Seminar* 597, (2009):50-54. Accessed October 27, 2019.

https://www.india-seminar.com/2009/597/597_rajeswari_s_raina.htm

²Developmentalism indicates an obsession of the modern states to indulge in mass production; which is seen as the remedy of all problems of the society. Invariably, this understanding has a strong material dimension to its meaning, as development in this sense is equated with economic development.

³Debal Deb. *Beyond Developmentality: Constructing Inclusive Freedom and Sustainability*. London and New York: Routledge, 2009.

so much, so that other ways of farming were declared redundant and side-tracked.⁴ As a result of that, monocultures of some cereal crops started occupying the enormous acreage, devastating the rich agrobiodiversity of the tropics. The sustenance crops were forgotten and written off, though these were much superior in their nutritional components and palatability compared to the hybrids. More and more lands were cleared for extension of agriculture. The intensification of agriculture by 1980s and 90s served the interests of private agribusiness rather than the poor farmers.

Aggressive expansion of farming also resulted in encroachment on those areas which earlier belonged to different flora and fauna, causing rapid loss of wildlife. Rapidly increasing deforestation has led to decreasing distance between the physical spaces of human living and wildlife resulting in transfer of the pathogens from one species to another, making the world prone to diseases arising from other species. Deforestation and loss of biodiversity have resulted in many infectious diseases since the 1940s like HIV/AIDS, SARS, Ebola, Nipah including COVID-19.⁵ The closer contact between humans and wildlife is endangering the life of both species. Irrespective of this fact, forests are being taken over for industrial farming at an alarming rate all over the world. The entire framework of agricultural political economy is anchored in increased food production, not aiming eradication of global food poverty, but to devising cheaper ways of mass production of cereals catering to the food supply chains of agribusiness.

⁴Rajeswari S. Raina. "Public Patronage and Political Neutrality in Agricultural Research: Lessons From British Experience", *Economic and Political Weekly* 32, no.39 (1997): 2480.

⁵It has been established by the scientists that the Ebola outbreak in West Africa was the result of deforestation. Similarly, intensive poultry farming is believed to have resulted in avian flu. The intensification of pig farming in Malaysia was seen as responsible for the Nipah virus. COVID-19 is assumed to have originated from Bat, and its transmission to humans is also due to decreasing inter-species proximity and from loss of bat habitat.

As there is enormous paraphernalia of business opportunities with an excellent profit margin around the technologies such as green revolution and GMOs, it has been in the interest of the industry to fuel this obsession with centralised mass production through monocultures. The critical question is who is befitted from all these corporate-led development paradigms in agriculture. It is not the small and marginal farmers who reap the rewards. Instead, mass production enables the agribusiness companies to collect vast stockpiles of grains that they use for supplying the food industry, run by a cartel of agribusinesses. The surplus produced is siphoned to profitable trade destinations. In this way, this agricultural system is pro-agribusiness, not pro-poor. This arrangement defines the contemporary food regime which was seen as the successful model of agricultural production and distribution.

However, COVID-19 has raised many questions about the viability of this model of farming for the coming times. With restrictions on movements of people and vehicular traffic brought immense hardship on human kind all across the globe. However, the severity of the lockdown were felt more in developing countries of Global South. With extremely restricted mobility, the centralised chains of distribution went for a toss. As the food, commodities and other essential utility goods could not reach many people, the world realised the futility of over dependence on the globally integrated markets. With the sealed country and state borders and prohibited transportation, grains and vegetables could not move from the urban hubs of agribusiness to distant places. Similarly, these supplies from the rural hinterland to the urban areas got disrupted. The entire supply chain got paralyzed in this unforeseen situation.

The present vision is focused on the production part, but less thinking and effort is put on the distribution side. The pandemic offers a great lesson; that unless there is unhindered access to food, the overproduction of food is not going to be helpful at all. Our food

system has been already ridden with many issues with distribution but COVID-19 has made it worse. It is estimated that possibly more than 132 million people will further slide down to impoverishment due to lack of access and economic recession triggered by the pandemic.⁶ The food and nutritional security further deteriorated in COVID-19 times globally. In India alone, more than 400 million workers in the informal economy are likely to be pushed into poverty (ILO, 2020). Not only people went hungry, but even those who could access enough food for survival, suffered from hidden hunger affording nutritious food became a problem causing many health issues.⁷

The Food and Agriculture Organisation of the United Nations has outlined four frameworks of food security, namely: availability, access, utilisation and stability (FAO, 2003). COVID-19 impacted all these, emphasizing the necessity of exigency of transformation. With the sealed borders and prohibited transportation, food commodities could not move across countries or even within the countries. In the wake of the trade restrictions on food commodities like rice and wheat by the producing countries, the food importers are scrambling to build their food stocks, creating increased demand and hoarding. Within the country also, grains, vegetable milk could not move from the urban hubs of agribusiness to distant places. Likewise, these supplies from the rural hinterland to the urban areas got disrupted. As the entire supply chain got paralysed, farmers lost their perishable produce like fruits and vegetables which were wasted in the field in the face of a shutdown. In the market-led farming system, peasants

⁶ "State of Food Security and Nutrition in the World", 2020. Accessed 25.09.20.
<http://www.fao.org/3/ca9692en/online/ca9692en.html>.

⁷ "As more go hungry and malnutrition persists, achieving Zero Hunger by 2030 in doubt, UN report warns". Accessed 25.06.20.
<http://www.fao.org/news/story/en/item/1297810/icode/>.

cultivate specified crops for selling in distant locales. As their products could not reach the destined markets, they incurred considerable losses. All these hindrances created lack of availability and access.

The lockdown also triggered a panic buying by the people, denying other access to these goods and also wasting them due to non-consumption. Due to prolonged closure of the shops, it became impossible for the people with low income to access objects of essential utilities as they tend to buy in smaller quantities. Unavailability of fresh fruits and vegetables prompted a shift to processed packaged products and poor diet. The central question is whether this framework of the agricultural system can ensure food security during such calamity and is capable enough to sustain us in future as well? Most of the problems of the agrarian production got aggravated for being anchored in a highly centralised framework. Had the focus been on the local supply chain, these losses would have been greatly minimised. This pandemic and the accompanying lockdown offers a great opportunity to test the validity of food system resilience and hints towards wide-ranging shifts in food systems. This highlights that many problems of the agrarian production worsened due to being anchored in a centralized production system. On the other hand, the local production and supply system have been the saviour in these trying times. Had the focus been on the local supply chain, the losses would have been greatly minimized. This lockdown has taught a great lesson in agricultural production and distribution by proving that the local food system works the best.

Any vision of agriculture which pushes for centralized overproduction of few commercial crop varieties is entirely unsustainable. In the times when sustainability is the key goal as proclaimed under Agenda 2030 or the “Sustainable Development Goals” of the UN adopted in 2015, there is need of urgent revision of

course of agricultural development. The idea of sustainability has been famous since publication the report by the World Commission on Environment and Development chaired by Gro Harlem Brundtland: *Our Common Future* (1987). Countries must be more mindful of the soaring global human population that has already reached 7.7 billion in 2019 and is expected to reach 9.8 billion by 2050. The solutions require more creative ways of engaging with the fast depleting finite and non-renewable resources. Therefore, the need to scale up food production must be reconciled with the necessity of improving and restoring the environment. Agriculture is most crucial for the survival of the planet.

Rethinking Food System, Local Production and Resilience

The world is increasingly realising the requirement of radical transformation of our food systems. The lockdown has made us closely experience the limitations of over dependence on the globally integrated food production systems and markets that has further threatened our food security. The novel coronavirus deeply impacted the food systems in terms of supply chain interruptions, food insecurity, massive wastage of milk and eggs, rise in consumption of highly-processed foods, the collapse of markets ceasing livelihoods of millions of producers worldwide (Richardson, 2020). Garry Paul Nabhan highlights that the health care and food supply chain are failing because of their over-reliance on international sourcing of items, movements of food and medicine in extended supply chains, depletion of bio-filters like wetlands, pastures that slowed movement of zoonotic pathogens (Nabhan, 2020).

Even though it is early to reflect on the overall impact of the pandemic on agriculture, in India there have been several newspaper reports on farmers assessing the effect. These reports state that though COVID-19 impacted the large and medium farmers far worse

than small and marginal ones.⁸ Most of the big farmers practice mono cropping on large land holdings. Their produce mainly caters to the super markets of the urban locales. As big farmers employ large machines and external labours along with other capital investment, they suffered more losses as they could not sell their huge produce in the designated markets due to mobility issues. The perishable produce like vegetables of many farmers rotted in the field as these could not be transported to the distantly located urban hubs. Generally, big farmers cultivate selected crops for selling in specific markets, mostly in cities. As they could not commute to their markets, they had to incur huge losses. On the other hand, the small and marginal farmers engaged in diversified farming catering to self-sustenance did not incur such losses. As they usually practice family farming and do not require external inputs or supply of labour, the pandemic did not impact them much compared to big farmers. Even when the food supply and mobility were severely restricted, small farmers were able to sustain their family comfortably as diversified farming enabled them to have stocks of different grains and vegetables in their households. As small farmers use farm saved seeds and farm prepared manures, the interrupted supply of agricultural inputs like seeds, agrochemicals and farm machineries did not impact them. On the contrary, big farmers who generally farm with hybrids and fertilizers had to face several hurdles as all supply chains were disrupted due to COVID-19.

The above analysis highlights an important dimension of relationship between farming systems and resilience. It can be clearly seen that small farms and local production systems are relatively

⁸Big farmers usually own large plots of lands and employ paid labour and machinery for agricultural work. It is capital and input intensive farming. On the other hand, small farmers have small land holdings which usually engage in sustenance agriculture and involve the labour of the whole family. Their interests differ as the big farmers farm usually for commercial benefits whereas small farmers do it for their sustenance.

independent of external control which makes them better adaptable to adversaries arising from uncertainties like this pandemic. Additionally, use of native seeds, organic manures and pesticides have multiple benefits: it sustains biodiversity, minimises environmental harm and farmer's dependence on the market. Because of these reasons native seeds constituted the core of indigenous food systems and also have been part of our biological and cultural heritage. However, the green revolution along with providing food sufficiency to the nation, also led to the loss of native seeds due to their replacement by hybrids. Though, there have been initiatives from several civil society organisations to revive the local seeds and farming systems in the recent times. To create awareness and interest, they have been hosting cultural seed festivals, establishing and maintaining community-based seed banks, and facilitating inter-community seed exchanges. The government has also come forward in support to small scale farming as in case of Chhattisgarh, Odisha, Karnataka and so on to empower the local production system. These efforts would possibly script new stories of success of small scale farming along with cultivating rural resilience.

A variety of alternative farming practices exist that can boost the local production in organic ways, like conservation agriculture, regenerative agriculture, Zero Budget farming and so on. The cost of growing and harvesting plants is negligible. A recent study by Center for Study of Science, Technology and Policy (CSTEP), Bangalore (2020) on Zero Budget Natural Farming has corroborated significant gains in farmers' income due to reduction in the cost of energy and water use and improved yield.⁹ Unlike industrial agriculture which is structured to cater to the global market, these alternatives create robust linkages between people and food sovereignty. However,

⁹"Zero Budget Natural Farming Cuts Water, Energy Use by Half". <https://sustainabilitynext.in/new-top-report/may-2020/zero-budget-natural-farming-cuts-water-energy-use-by-half>. Accessed 05.05.20.

production has to be plugged with efficient arrangements at the distribution front of agricultural produce to make the system function successfully.

Towards the Post-COVID 19 India

COVID-19 should be taken as an eyeopener as far as food and farming is concerned. Rather than supporting unilinear agribusiness market models, diverse small farmer-producer organisations (FPO) should be promoted by the government through its policy and schemes. Local supply chains are extremely important as they can directly and successfully deliver to consumers as witnessed during lockdown. For example, in Chikkaballapur district, Bengaluru Mokshagundam Vishweshwarayya Farmer Producer Company Limited (MVFPCL) assisted farmers and customers connect by purchasing fruits and vegetables from 40 farmers and selling 5 tons of produce to 200 consumers in April (Shastry, Bose, 2020). Linking local farmers with local customers will help create efficient local production and distribution.

The way forward for agriculture to tide off the exigencies of situations like COVID-19 there must be a vision of restoration of indigenous food systems which were most based on agroecology.¹⁰ Traditional food systems are increasingly being established as productive efficient from a holistic perspective. Not only were they more stable, nutritious and palatable, but, most important of all, farmers were in the centrality of this system. On the other hand, the corporatist agribusiness model of agriculture is erected on the trade-off of environment and peripheralization of peasants. If agriculture has to become resilient and sustainable, there has to be a

¹⁰ Agroecology denotes conducting farming practices in sync with the natural ecosystems, environmental concerns and incorporates local and scientific knowledge.

synchronised move of government policies and farmer’s practices in firming up small and diverse agriculture. If farming is organised on the principle of ‘*produce locally; consume locally*’, the supply chains will stabilise and reflect the local demand without causing much wastage in storing, packaging, long transportation and so on.

Crucial Aspects of Local Food Supply System



The diagram has been drawn by the author.

COVID-19 crisis reinforces the requirement for paradigm shift more than ever as a diversified and resilient agro ecological food system is the way forward. Lockdown was followed by economic recession. The farm economy was the only active sector (Sharma, 2020). A panel report by World Economic Forum (WEF), *Nature Risk Rising: Why the Crisis Engulfing Nature Matters for Business and the Economy* (2020) strongly advocates for resilient agro ecological food

systems (World Economic Forum, 2020). All nations have to begin to coordinate their act towards the protection of biodiversity and sustainable food systems. The way forward in this direction is a collaborative effort in the creation of “One Planet Business for Biodiversity”, launched at the United Nations Climate Action Summit in New York on September 23 2019 and is an action-oriented business coalition on biodiversity.¹¹ This is a platform formed by 20 nations, including some of the most significant global food and beverage companies for creating a sustainable food system. Such global initiatives are exemplar of sustainable development goals and to proactively conserve and restore biodiversity, promote diverse production and distribution systems (Sustainability Next, 2020). The suspended vehicular movement during COVID 19 resulted in some good impact on the environment. This period marked a significant global reduction in emission of CO₂ in the last 50 years as depicted by the Global Carbon Project (Nasralla, Volcovici, & Green, 2020). In India, rivers like Yamuna and Ganga coping with pollution, found a new lease of life due to closed factories contaminating them. The Himalayan range Kanchenjunga could be seen from as far as 200 km due to lack of air pollution.

Conclusion

In conclusion, it can be remarked that the onus of sustainability of the food system and agriculture does not rest solely on either the government or the farmer. Rather it lies in the small but sustained efforts on the part of all of us to make conscious choices as consumers. Farmers will produce what the market will demand. If we adopt the approach of ‘*produce locally; consume locally*’, the food supply chain will mould themselves in tandem with the local demand

¹¹“One Planet Business for Biodiversity” is an international cross-sectorial, action-oriented business coalition on biodiversity with a specific focus on agriculture. Accessed May 16, 2020. <https://op2b.org>.

without disrupting ecology. These changes could be possible through more reliable mediums of Farmer Producer Organizations (FPOs) and Self Help Groups (SHGs). NABARD and Small Farmers' Business Consortium (SFBC) has been already working on this front with 7000 registered FPOs in the country under Farmers Producers Companies Act, 2013.¹² Such initiatives not only would provide the long term stability to the economy, but would also empower the marginal women farmers. Incorporation of mandatory one lady director in the board of Farmer Producer Company makes the FPO eligible for SFAC equity grant support scheme of Rs 15 lakhs per FPOs. In this way, repositioning of diverse grassroots initiatives and supporting them as consumers offers a fresh perspective for contemporary food, farming and agrarian systems.

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¹²Ch Radhika Rani and R Divakar. "Common Facility Centre: A Rallying Point for SHG-FPO Convergence", *Down to Earth*, 2020. Accessed May 18, 2020. <https://www.downtoearth.org.in/blog/agriculture/common-facility-centre-a-rallying-point-for-shg-fpo-convergence-71127>

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Akademios [2231-0584] Vol. 15

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