Guest Author Aug 11, 2020 6 min read

So, Wherein The Crop Goes?: grain diversity in Indian agriculture

Updated: Sep 10, 2020

Swaran V., a PhD candidate at the Centre for Technology Alternatives for Rural Areas at IIT Bombay examines millet production in rural India, exploring the aftermath of the Green Revolution and the promise the grain holds for easing the burden of monocultures and providing a more nutritious, climate-adapted staple.

When was the last time you had a square meal? If you're reading this it's almost 100% probable that your last meal is still under digestion. But as per the Food and Agriculture Organisation's recently published 'State of Food Security and Nutrition in the World 2020', about '2 billion people in the world did not have regular access to safe, nutritious and sufficient food in 2019'. They go hungry without adequate nourishment and since 2015, world hunger is increasing globally. after decades of decline. In parallel, the number of obese people was around 650 million in 2016. So, many are not getting adequate food and those who are, are not getting the food mix right.

The term 'food system' evokes an imagery – especially if one is from the factory farming economies – of vast swathes of farmlands cultivating cereals, large facilities teeming with livestock, machineries and industrial plants for harvesting and processing, supply chain logistics, supermarkets, etc. This is a sophisticated mechanism to produce and consume food driven by the might of fossil fuels. But it has some inherent vulnerabilities. This system is not quite resilient to the repercussions of the global climate crisis. Resilience comes from diversity and in this system, diversity is traded for efficiency. In the quest to make farm produce amenable to markets and supply chains, and thereby 'efficient', agricultural research institutions and agri-businesses blurred the difference between say, cobs of maize harvested at a farm in Mexico and cars churned out from an assembly line. Agriculture has been stripped out of its lively ecological context and turned into a sterile mechanistic process.

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The result is that under the facade of a surplus global food production we ended up with a fragile agro-biodiversity. Today, 66% of global crop production comes from just nine crops. In the case of bananas, almost 47% of global production is

from a single subgroup of the species – the Cavendish banana. Diversity in agricultural practices and produces have been sacrificed for producing more of the same kind.

Challenging the Cereal Binary of India

Crop diversity is a key element of the traditional agriculture of the tropics. Farmers in arid Western India, drylands and unirrigated parts of hilly Central and Eastern India had, for many centuries, cultivated and preserved the seeds of cereals that could survive in their uncertain weather conditions. Among these, sorghum and millets have been in cultivation in the Indian subcontinent for at least 4500 years. These predominantly dark, small cereals are the best bet for farmers to tide over the uncertain weather conditions of these regions. Apart from the diversity of these grains, the traditional practice of mixing and sowing different millet varieties and pulses ensured that at least few crops will survive the vagaries of weather. Millets and the associated cropping pattern are in a way evolved along with the uncertain weather conditions and are well adapted to the local ecology. In brief, millets are inherently 'climate-smart'. And the nutrition profile of these grains is better than rice and at par with, or even outperforming, wheat. Inevitably this made the millets a forerunner in the alternative agricultural movements in India that began in the aftermath of the Green Revolution and the 'violence' it had unleashed.

The majority of India's population do not take millets as a staple. For instance, the National Sample Survey of India's statistics suggests that the monthly per capita consumption of rice and wheat put together is thirty times that of millets, which is 8.64 kg and 0.274 kg respectively. This contrast may be attributed to at least three factors. First, these grains are traditionally cultivated by the socially marginalized Indigenous (Adivasi) Communities in the geographically marginalized mountains and drylands. This led to millets being treated by the wealthy and urbane classes as inferior grains. Second, the dark color of millets did not go well with the age-old preference for anything white in the sub-continent. Third, the repercussions of the Green Revolution and the Public Distribution System of food has reduced the cereal cultivation predominantly into the binary of rice and wheat. The result was a disconnection of food production and consumption from its immediate socio-geographical realities.

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Reimagining Agri-Food Systems

In the past three decades, Civil Society Organisations (CSO) are trying to diversify the agriculture and food system. This was out of the growing realization that some of the pressing problems India is facing, like climate risks, farmer's distress and suicides and the triple burden of malnutrition might be addressed through an alternative agriculture and food system, with millets playing a key role. The idea is to diversify the farmers' produce and to bring back the marginalised cereals and other crops like legumes.

With the growing realization about the multifarious possibilities of millets, the union government of India started a program - the Initiative for Nutritional

Security through Intensive Millet Production (INSIMP) - in 2011 to rejuvenate millet production. Despite the reference to nutritional security in its name, the primary focus of the program was increasing production and productivity. It was a Green Revolution monoculture model refurbished for millets that overlooked the bigger picture of consumption, agro-biodiversity and socio-cultural aspects. Here the policymakers had again missed the crops system for mere production of crops. Meanwhile, CSOs like the Deccan Development Society, MS Swaminathan Research Foundation and the Watershed Support Services and Activities Network (WASSAN) had already scripted some success stories with their millets projects. Unlike the government projects' focus on yield, the CSOs were working on the nutrition, livelihood, agro-biodiversity and climate resilience aspects.

The last decade saw millet getting widely portrayed in the media as a 'miracle grain', creating a buzz among the health and environmentally conscious urbane like what quinoa did in the western world decades ago. But, unlike the discovery of quinoa, millets were being rediscovered by the Indian society. The accumulated wisdom from the Green Revolution aftermath and successful, and importantly failed, millet projects seem to have culminated in one programme getting it right. The Special Programme for Promotion of Millets in Tribal Areas, or informally the Odisha Millet Mission (OMM), is now widely hailed by the government and CSOs as a programme worth emulating elsewhere in India.

The state of Odisha lies in the eastern coast of India and it has 62 Indigenous (Adivasi) Communities constituting roughly 23% of the state's 42 million population. Millets used to be their main staple and daily life and rituals. As the official name of OMM suggests, it aims to promote millets in the tribal communities. The motto of OMM, however, reflects its larger goal, 'to bring back the millets, on farms and plates'. This is unlike the earlier programmes which were predominantly focusing on the supply side. Moreover, OMM formed a unique institutional partnership between the government, CSO and research institute which are respectively the state government of Odisha, WASSAN and Nabakrushna Choudhury Centre for Development Studies (NCDS), Bhubaneswar.

OMM has managed to popularize the production and consumption of millets in Odisha, in particular the finger millet, within three years of its inception in 2017. Importantly, the agro-biodiversity-focused approach by means of participatory varietal trials and community seed centres reinstated the control of farmers over the seeds they sow and preserve. This is in parallel with monetarily incentivizing farmers for incorporating seedling transplantation instead of the traditional practice of broadcasting the seeds. OMM has disrupted the longstanding rice-wheat binary in PDS as the Odisha government has begun to procure the finger millet from farmers and distribute it via the Fair Price Shops and introduce millet-based food in the Integrated Child Development Services. The alternative agroecological framework to the Green Revolution by OMM is explored and appreciated by the likes of Cambridge University, the International Fund for Agricultural Development and the Food and Agricultural Organization.

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Currently finger millet and its monoculture is prevailing in the OMM. This may suggest that one more grain got added to the binary of rice and wheat and the status quo is to continue. That would be a setback for the overarching goal of the program to promote millets and not just one of them. However, the proponents of

the programme had acknowledged this and are actively pursuing adding little millet, foxtail millet and other small millets into its mix. OMM has reinvigorated the policy dialogues on millets and thereby agro-biodiversity in the country. The year 2018 was declared as the National Year of Millets by the union government of India and their proposal to declare 2023 as the International Year of Millets was endorsed by the Food and Agriculture Organization. COVID-19 pandemic has already exposed the vulnerability of the global food system and it's imperative upon the policymakers to reimagine the system. Programmes like the OMM offer a template for diversifying and bringing resilience to the agri-food system.

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