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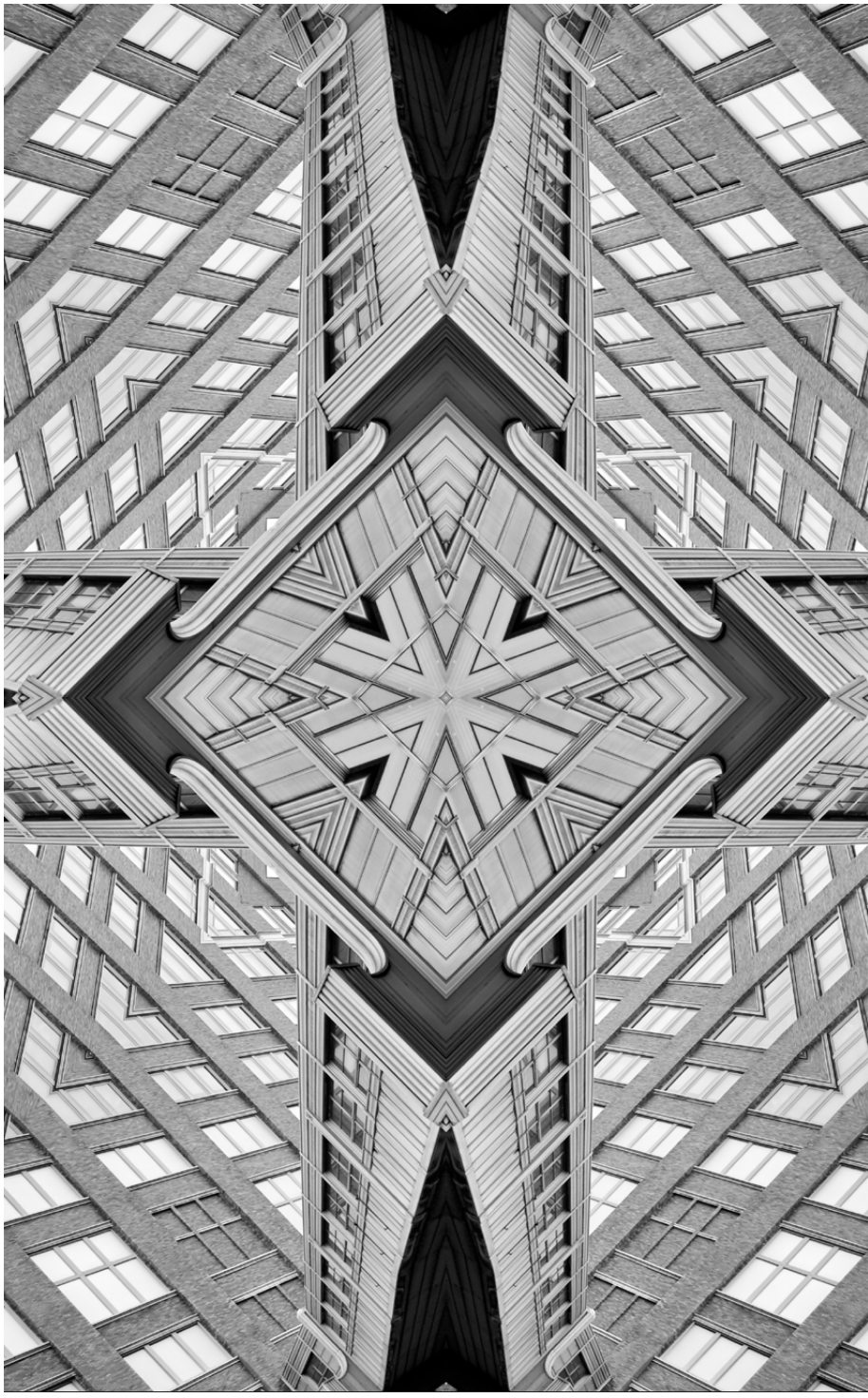

Degrowth and the Reimagining of Indian Agriculture

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Abstract

For decades, global agriculture has pursued an extractive model of relentless yield maximisation—at a devastating cost. Soil degradation, water scarcity, and deepening inequities have made it clear that the promise of perpetual growth in a finite world is an illusion. This brief challenges the dominant narrative of industrialised, high-input farming and reimagines Indian agriculture through the lens of 'degrowth'—an emerging concept that is not about producing less, but about producing differently: prioritising well-being over profit, biodiversity over monocultures, and local self-sufficiency over corporate dependency. The brief explores how regenerative practices, community-driven food systems, and ecological balance can create a sustainable, just, and resilient future for farmers and consumers alike. Drawing on ancient Indian wisdom, modern ecological science, and global case studies, it presents a roadmap for a transition that is not only necessary but inevitable.

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Introduction

For the past 25 years, development professionals have attempted to find a solution for poverty and food insecurity in developing countries. The template used is akin to log frame matrices perfected by Western agricultural science. It included training farmers in developing countries to use high doses of agro-chemicals (input), resulting in increased yield (output), a rise in income (outcome), and food security (impact).[1,2] This template became a norm in international development and has been prevalent since 1968, when William Gaud, then Director of the United States Agency for International Development (USAID), coined the slogan "Green Revolution"[3] to describe a framework marked by the extensive use of hybrid seeds with connected fertilisers and chemicals for monoculture farming, which created an output of a huge increase in yield. Gaud borrowed the idea from Henry Ford's 1913 concept of assembly lines with specialised tasks for each worker, which reduced the time needed to produce a car from 12 hours to 90 minutes while reducing manufacturing costs.[4] Soon, farms were transformed into "factories in the field," specialising in single-crop assembly lines.

This phenomenon of extracting as much as possible from the soil using modern science continued in the 1990s. The use of biotechnologies, as well as the growing of genetically modified crops resistant to pests and diseases, were introduced. The more recent years have witnessed the use of smart agriculture through digital technologies. The question that arises is whether such focus on growth has provided the expected results in India and the world. This brief explores the promise of a contrasting approach—i.e., transitioning from extractive, chemical-laden agriculture to a degrowth in agriculture; prioritising ecology over yield, and people over profits.

Social Impact

The Green Revolution has long been considered the silver bullet that eradicated hunger from India and other developing countries. Yet, hunger and food insecurity continue to increase at an alarming rate. In 1950, 600 million people globally faced hunger, which increased to 828 million people who went hungry and 2.3 billion who were food insecure in 2021.[5] Even with economic recovery, 670 million people will remain hungry in 2030.[6] Despite the Green Revolution, India currently ranks 105th on the Global Hunger Index out of 116 countries.[7] Experts like Amartya Sen, Nobel laureate in Economics, have long highlighted that the problem is not lower yields but inequitable distribution and lack of access to food.[8]

Economic Impact

Over 50 years of extractive agriculture have had minimal impact on the economic conditions of rural populations worldwide. As of 2023, 84 percent of the world's poor, or 800 million people, lived in rural areas.[9] While India has made progress in eradicating extreme poverty in the last 15 years, with 415 million people coming out of the poverty trap,[10] these figures mask "true poverty" levels even when considering the World Bank's US$3.20 daily rates. Using the Ethical Poverty Line (EPL) of US$7.40 per day—posited by economist Peter Edward and supported by the International Labour Organisation (ILO)—reveals a completely different situation.[11]

Farmers across the world, and particularly in India, are demanding higher prices for their produce. In India, paddy farmers earn INR 26,000 per cycle and wheat farmers earn INR 15,390 per cycle from one acre of land, which is the average landholding of the majority of Indian farmers.[12,13] In contrast, in 2020, the world's biggest four input companies—Bayer-Monsanto, Corteva (formed from the merger of Dow and DuPont), ChemChina-Syngenta, and Badische Anilin- und Sodafabrik (BASF)—controlled 75 percent of global pesticide sales (US$51 billion) and 65 percent (US$36 billion) of all seed sales.[14]

Environmental Impact

The seeds and chemicals bundled as packages and promoted during the Green Revolution resulted in a dramatic increase in their use in Punjab. The use of NPK chemical fertilisers in the state increased from 213,000 tonnes in 1970-71 to 2,040,000 tonnes in 2015-16, and pesticide use doubled from 3,200 tonnes in 1980 to 5,843 tonnes in 2016.[15] Such heavy use has led to salinisation, reduction in organic content, and soil degradation. According to the Punjab government's planning department, in 2013, around 39 percent of the land in Punjab was classified as degraded, 50 percent was found to have low nitrogen and signs of chemical degradation, and around 10.1 million hectares had suffered salinisation.[16] Overall, India in 2024 had 146.8 million hectares of degraded land (according to the National Bureau of Soil Survey and Land Use Planning), which is roughly the area of Western Europe and Japan combined.[17] The situation led to Indian Prime Minister Narendra Modi setting a target of achieving land degradation neutrality by 2030.[18]

India uses between 78 percent and 90 percent of all water available in the country for irrigation.[19,20] The country is also witnessing disputes over water usage and ecological needs between states. As of 2023, 17 states and Union Territories faced water distress, and 76 percent of people in India faced water scarcity.[21,22] As per Moody's Ratings, India's per-capita water consumption is 1,486 cubic metres, which is below the threshold level of 1,700 cubic metres, making it a "water-stressed" country.[23]

Health Impact

Punjabi University in Patiala found that pesticide use causes DNA damage in farmers.[24] A government study revealed heavy pesticide and metal contamination in drinking water, leading to cancer and other disorders.[25] In Ludhiana, 6.9 percent of cow's milk samples had pesticide levels exceeding acceptable limits.[26] Other studies have shown the presence of metal pollutants like arsenic, lead, and uranium in Punjab's Malwa groundwater, which may contribute to the region's high cancer rates.[27] According to India's Central Ground Water Board, India is facing a health hazard, particularly among children; in 2024, 56 percent of India's districts had excessive nitrates in groundwater, defined as more than 45 milligram per litre, largely due to the use of subsidised synthetic nitrogenous fertiliser in farming.[28,29]

The Origins and Evolution of 'Degrowth'

French social scientist André Gorz coined the word "degrowth" in 1972, emphasising that constant growth of the economy is detrimental to society and the environment.[30] French economics professor Serge Latouche defined degrowth as a political, economic, and social movement that seeks radical change in the patterns of consumption to achieve ecological sustainability and social equity.[31] Other scholars have defined degrowth as "equitable downscaling of production and consumption that increases human well-being and enhances ecological conditions."[32] Degrowth scholar Jason Hickel posited degrowth as a change in focus from GDP to human well-being, sustainable agriculture, renewable energy, and reduced material throughput.[33] In simpler terms, "degrowth is a planned, coherent policy to reduce ecological impact, reduce inequality, and improve well-being."[34]

Indeed, infinite growth is not possible on a finite planet, more so when confronted by the breach of scientifically established planetary boundaries—thresholds that describe the environmental limits that can sustain human civilisation.[35]

Degrowth in the Indian Context

Degrowth scholars have generally focused on its need in high-income countries using per-capita fair shares of planetary boundaries.[36] They do not clarify the role of degrowth in large developing economies like India. However, scholarship on this subject is rapidly emerging.[a]

The teachings in the *Vedas* and *Upanishads* provide a conceptual foundation for implementing degrowth principles in the Indian economy. These teachings promote a lifestyle that respects natural cycles, values ecological equilibrium, and prioritises spiritual and communal well-being over material gain.[37] The

a Indian scholar Ashish Kothari describes 'degrowth' using the concept of "ecological swaraj" (ecological self-rule). It is a framework that "respects the limits of Earth and the rights of other species while pursuing the core values of social justice and equity" with a "holistic vision of human well-being [that] encompasses physical, material, socio-cultural, intellectual, and spiritual dimensions." See: https://greattransition.org/publication/radical-ecological-democracy-a-path-forward-for-india-and-beyond

Nilanjan Ghosh argues that developing countries suffer from "growth fetishism", referring to an obsessive pursuit of economic growth despite its adverse effects on equity and environmental sustainability and suggests that India needs its own definition of 'degrowth', which includes "economic efficiency, equity through distributive justice, and environmental sustainability through legal statutes." See: https://www.orfonline.org/expert-speak/deciphering-colours-india-economic-growth

Vedic scriptures have highlighted that true progress is achieved not through the accumulation of wealth but through the enhancement of knowledge and spiritual growth, paving the way for a society that values contentment and simplicity over perpetual consumption. The *Rig Veda* praises a lifestyle that avoids excess and overconsumption, suggesting a societal model that values minimalism and sufficiency, reducing inequalities and focusing on collective well-being.[38] It is these cultural roots that Mahatma Gandhi described as "Sarvodaya", which equates development with nurturing ecosystems and enriching the "commons", or the shared public resources of nature, social services, and economic functions.[39]

Criticisms of Degrowth

Degrowth is often viewed as something negative because governments, academia, and even civil society have come to accept growth as a "structural imperative—an iron law" and measured through GDP.[40] While politicians across the ideological spectrum may differ on how the yield of growth is distributed, they are united on the need for growth. John Galbraith defined this "growthism" as the continuous effort required to keep an economy moving forward and stable.[41] Yet, economists like Amartya Sen argue that GDP is a poor measure of social welfare because it fails to account for the distribution of income among the residents of a country.[42]

Additionally, the question arises whether "green growth" would help decouple GDP from ecological impact through technological innovation. At present, green growth cannot be achieved at the scale and speed necessary to keep global temperature rise within 2°C.[43]

Scholars have also highlighted that degrowth may not be appropriate for developing countries, where it would reduce the income of already impoverished farmers, increase food insecurity, and exacerbate poverty.[44,45] However, degrowth "is not to have 'less of the same', but to organise appropriation, extraction, production, distribution, consumption and waste differently."[46]

By tackling important socioeconomic and environmental issues as required under degrowth, it provides a clear pathway for sustainable development for the developing countries. At the core of degrowth, social equity emphasises on lowering inequalities and improving community empowerment by means of participative and distributive strategies.[47] Degrowth presents a complete strategy for development that gives well-being and ecological integrity priority and a workable substitute for the conventional growth model, which sometimes results in vulnerability and overuse.[48]

Applying Degrowth in Agriculture

Degrowth is beginning to be applied in agri-food systems, such as in Europe. The European Union (EU) launched the Green Deal with the aim of reducing pesticide use by 50 percent and increasing organic farming by 25 percent by 2030 while promoting plant-based diets to lower environmental impact and ensure food security.[49]

A similar incremental approach and balancing the change in production with change in consumption is the key to success for such degrowth models in agriculture in countries like India. The experience of Sri Lanka highlights the challenges and potential consequences of abruptly shifting to organic farming without transitional strategies; food production in the country reduced significantly after the sudden conversion to organic cultivation in 2021.[50] A third of Sri Lanka's agricultural land was left unused due to the ban on agro-chemicals and rice production decreased by 20 percent and rice prices rose by 50 percent. The tea industry, which provides Sri Lanka's main export, also suffered economic losses of US$425 million, further exacerbating the country's currency situation.[51] To address the ways forward for a transition to degrowth in the agri-food system in India, five strategies are discussed that are already being implemented in India or other developing countries.

Adopting Regenerative Agriculture

Both regenerative agriculture and the degrowth movement advocate for a shift away from exploitative, extractive farming practices towards ecological health and community well-being. Many scholars believe that regenerative agriculture is degrowth in agriculture.[52]

Regenerative agriculture is commonly defined as a "way of farming to build and improve soil fertility, whilst sequestering and storing atmospheric CO_2, increasing on-farm diversity and improving water and energy management."[53] It does this through practices like cover cropping, no-till farming, and crop diversification,[b] which not only enhance the productivity of the land but also reduce the need for external inputs like chemical fertilisers and pesticides.[54] Solidaridad's[c] field trials in 2020-22 showed that 13,000 farmers cultivating cotton and soy in Maharashtra, India increased yield by 20-30 percent, reduced

b Cover crop: A crop grown for the protection and enrichment of the soil.
No-till farming: A cultivation technique in which the soil is minimally disturbed during planting, and plant residue is left on the soil surface.
Crop diversification: It means growing more than one crop on a farm, and it can be implemented through cover cropping, crop rotation, intercropping, etc.

c The author is affiliated with Solidaridad Network.

input costs by 30 percent, and received a market price premium of 3 percent.[55] Additionally, it was found that smallholder farmers in India can potentially sequester 1-4 tonnes of carbon by adopting regenerative practices on 1 hectare of land.[56]

Enhancing Local Economies Through FPOs

The increase in farmer producer organisations (FPOs) in India from a mere 100 in 2003 to 10,000 registered in 2025[57] represents a shift towards democratic, community-oriented economic systems. These legally recognised farmer collectives establish locally embedded production and consumption cycles, fostering self-reliance and minimising the ecological costs associated with long-distance transportation of goods.

For over two decades, Solidaridad has worked with nearly 300,000 farmers to set up dozens of FPOs organised under the Bharatkhand Consortium of FPOs in Madhya Pradesh.[58] Studies have shown that farmer members of FPOs experience an average income increase of 15-20 percent through better access to markets and higher bargaining power, compared to non-FPO farmers.[59]

This initiative embodies principles of economic democracy by combining community-based decision-making with equitable profit-sharing. Such models have the potential to enable the move away from an extractive agricultural model to a local, community-centred economic structure by prioritising sustainability over profits.[60] By embedding ecological and social priorities into their operations, they contribute to decoupling prosperity from material and energy consumption, which is a core tenet of degrowth.[61] Such models require further research and possible replication worldwide.[62]

Reducing Food Waste

Proponents of extractive agriculture often criticise degrowth in agriculture, suggesting that it would lead to increased food prices or a food shortage due to insufficient food supply.[63,64] On the contrary, degrowth suggests producing more wisely, better resource management, and reducing waste.[65] Globally, about one-third of all food produced for human consumption is lost or wasted, amounting to approximately 1.3 billion tonnes per year.[66] This also indicates a loss of essential resources such as water, land, energy, labour, and capital, while creating increased carbon emissions and environmental harm. According to the *Food Waste Index Report 2024*, households in India wasted nearly 78.2 million tonnes of food in 2024.[67] This amount could feed nearly 377 million people annually.[68]

Tackling food waste would lower the demand on the agricultural system, reduce the strain on water and land resources, and decrease greenhouse gas emissions from the decomposition of waste. It would also save billions of rupees currently lost in the food supply chain, improving the economic returns for farmers and potentially stabilising food prices. Such a process aligns with the broader degrowth vision of achieving sustainability through the efficient use of resources.[69]

Tackling Overconsumption

India grapples with the dual issues of malnutrition and obesity. The obesity rate in India surged from 1.2 percent in 1990 to 9.8 percent in 2022 (for women) and from 0.5 percent in 1990 to 5.4 percent in 2022 (for men).[70] India ranks just behind the US and China in obesity. Leading FMCG companies in India also earned 76 percent of their revenue from "less healthy products" in 2023.[71] There is a need to reduce tax benefits for processed foods and direct those benefits to set up farmer markets and farmer companies that provide food sourced directly from farmers who are located closer to consumers.*

Similarly, degrowth in Indian agriculture would require changing consumer habits through campaigns and educational programmes aimed at prioritising the consumption of local, organic foods that do not require long-distance transportation or excessive packaging, thereby reducing environmental impact.

Allowing Innovative Local Currency Systems

A local currency is a community-based system that encourages spending in a specific region, strengthening local businesses and fostering economic resilience. Unlike national currencies, it operates only within a defined area, promoting localised economic growth.[72] Such disruption is necessary because even impact investors seek "market rate" returns and do not support degrowth.[73] Promoting localised exchange systems would enable farmers' organisations to prioritise community needs over mere GDP growth.[74]

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d For example, through the SaFaL programme in Bangladesh, Solidaridad organised 100,000 small farmers and assisted them to produce sustainable and nutritious food, then sold at the nearby Village Super Markets owned by the local community. This shortens the supply chains and connects farmers directly with local consumers, promoting the consumption of fresh, healthy food. Such integration supports local economies, reduces transportation emissions, and ensures a sustainable, nutritious food supply. See: https://www.solidaridadnetwork.org/wp-content/uploads/migrated-files/publications/SaFaL%20Newsletter-Version%203_%20January%202017.pdf.

Local currencies stimulate production and consumption within specific regions, lessening the ecological impacts from extensive supply chains. Some examples include BerkShares in the US, Sarafu in Kenya, and Bristol Pound in the United Kingdom.[e,75,76,77] Auroville, an experimental township in Tamil Nadu, operates within a unique economic system that minimises reliance on money. Residents use an internal, non-monetary system called the Aurocard for transactions within the community.[78] Such localisation can enhance circular economies that function within planetary limits, highlighting the importance of reuse and regeneration.

e BerkShares: BerkShares are a local currency used in the Berkshire region of Massachusetts, USA. Launched in 2006, they aim to support local businesses and foster a strong sense of community by keeping spending within the local economy.

Bristol Pound: The Bristol Pound was introduced in Bristol, UK, in 2012 to encourage spending within local independent businesses. It was designed to keep money circulating within the city, supporting the local economy and community.

Sarafu: Sarafu is a community inclusion currency used in Kenya. It enables communities to trade goods and services and sustain local economies without relying solely on national currency. Sarafu helps mitigate liquidity constraints and strengthens economic resilience among users.

Conclusion

Degrowth in agriculture is not about producing less food but about redefining the goals and values of the agricultural system. The experience of the past five decades has shown that chasing ever-higher yields with ever-higher inputs has led the world into a cul-de-sac of diminishing returns and mounting problems. The soil is depleted, water drained, climate altered, diets degraded, and farmers marginalised. It is time for a paradigm shift—from an extractive, high-external-input model to a regenerative, community-centric model. This transformation would entail a suite of changes: policies that reward ecological farming and penalise pollution, economic structures that empower producers and shorten supply chains, and cultural shifts in how we grow, share, and consume food.

The strategies discussed—regenerative agriculture, farmer-led local economies, cutting waste, and innovative exchange systems—are practical pathways toward a degrowth-oriented food system. They are already taking root in varied forms across the world. These solutions need to be recognised and scaled up through supportive policy and investment.

Ultimately, transitioning to degrowth in agriculture also requires reimagining prosperity. Instead of evaluating success by the gross output of grains or the profit margins of food corporations, it should be measured by outcomes like nutrition levels, soil carbon content, biodiversity counts, rural employment, and community happiness.

In the Indian context, this shift could be revolutionary. Agriculture still sustains over half the population directly or indirectly. A degrowth approach could rejuvenate India's farms and villages—making them ecologically sound, reducing distress migration to cities, and preserving India's rich agro-cultural heritage. It aligns with traditional concepts like Gram Swaraj (village self-rule) and modern needs for sustainability. Food would no longer be treated just as a commodity but as a common good—a means to nurture people, strengthen society, and heal the planet.

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