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SPECIAL FEATURE: ORIGINAL ARTICLE

Sustainability in Agri-Food Systems: Transformative Trajectories toward the Post-Anthropocene

Degrowing alternative agriculture: institutions and aspirations as sustainability metrics for small farmers in Bosnia and India

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Abstract

Much sustainable development in agri-food systems is predicated upon increasing the production of agricultural commodities amid changing climates, political organization, and markets. While this growth in exports is critical for the expansion of alternative production supply chains like certified organic commodities markets, the long-term success of alternative agriculture development programs in helping farmers achieve a range of rural aspirations depends not on sociotechnical fixes for specific ecological problems, but on the creative and performative reorganizations of labor and value in farm spaces. Degrowth, a political-economic theory of reorganizing production to achieve socio-ecological sustainability over the long term, provides a framework to evaluate the lasting impact of alternative agricultural development or persistent smallholder farming beyond the production or sale of agricultural commodities. This paper draws on research with organic cotton and coffee farmers in India, as well as a brief case study with small-scale heritage farmers in Bosnia, to argue that sustainability, broadly conceived, must account for factors beyond resource-efficiency or yields. Small-scale organic farming in India and household allotments in Bosnia will never outperform agri-food commodities producers with respect to profits, yields, or sustained growth. However, a degrowth perspective suggests that these are the wrong metrics for sustainability. Efforts that keep farmers in place and with local autonomy are best positioned to ensure that small-scale farmers can continue to manage agricultural landscapes over the long term.

Keywords Organic agriculture · Political ecology · Degrowth · India · Bosnia

Introduction

Certified organic agriculture is a $100 billion USD global industry spanning 70 million hectares and 2.8 million producers (Willer et al. 2020). This growth transformed global agricultural governance, providing new ways for farmers, distributors, and intermediaries to organize land, sales, labor, and production (Aistara 2018; Conford 2011; Flachs and Panuganti 2020; Galvin 2021; Guthman 2004a). Organic production's entry into mainstream capitalist agrifood markets has buoyed a rise in related alternative agricultures, promoting growth through diverse labels and regulatory structures (Asioli et al. 2020). Guthman (2004a, b), among other analysts of large-scale alternative agricultural production and corporate distribution (Gabriel et al. 2010; Jaffee 2012; Raynolds 2004, 2014), argues that many organic, fair trade, and other formalized alternative agriculture networks reproduce the systemic problems of conventional commodity farming. To scale up, these programs centralize agricultural decision-making and added-value accumulation among processors and distributors rather than farmers (Flachs 2019a; Sen 2017; West 2012); they rely on carbon-intensive global transportation (Holt and Watson 2008); and they promote monocultures (Guthman 2004a) where surveillance and enforcement contradict fair labor practices and exacerbate difficult working conditions for female workers without due compensation (Besky 2008; Lyon et al. 2018; Jegathesan 2019; Sen 2017). These tensions between environmental

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justice values and global market demands are largely driven by the pressures of growth.

Labels avoiding central governance like Via Campesina and agroecology emphasize the plural benefits of diversified agriculture and cooperative social organization for agricultural belonging (Anderson et al. 2021; Martínez-Torres and Rosset 2010; van der Ploeg 2020). In the absence of central governance, production methods vary considerably. It is beyond the scope of this paper to analyze the wider constellation of alternative agriculture production systems, in part because the specific arrangements of rural heterogeneity, class, nonhuman life, gender, and political opportunity make it impossible to generalize about the impacts of any particular smallholder movement (Edelman et al. 2014). As Bernstein (2014) observes in his overview of food sovereignty, it is critical to understand how small farmers differentiated by class and status do things differently, especially when short-term studies can misinterpret long-term trends (Stone and Flachs 2014) or misrepresent the range of economic activity that farmers participate in (Kantor 2020). Less widely discussed is the assumption that growth is a good indicator for success or that alternative agricultures should seek to increase production of agricultural commodities amid changing climates, political organization, and markets. This is not to be critical of alternative agriculture per se, but rather to be critical of tying its success to growth metrics. This caution is well founded in agrarian studies scholarship, and suggests a re-envisioning of sustainability defined by solidarity and heterogeneity.

Assumptions of good growth in alternative agriculture

In this paper, I argue that degrowth scholarship provides a useful set of metrics for understanding sustainability in alternative agriculture that avoids traps of yield growth and monetary valuation. Below, I discuss ongoing debates in degrowth and agrarian studies before delving into three case studies that illuminate how degrowth ideas offer a view of agricultural sustainability that centers neo-Chayanovian and neo-rural (Robbins et al. 2020; van der Ploeg 2018) metrics of farmer aspiration, rural wellbeing, and local control. Degrowth, a political-economic theory of reorganizing production to achieve socio-ecological sustainability over the long term (Gerber 2020; D'Alisa et al. 2015), provides an alternative accounting for the metrics of production efficiency, externalized costs, investments, or yield growth in small farmer economies. This allows me to ask instead how alternative rural development programs enable a range of possible futures on farms beyond models that demand continual expansion.

In many organic or fair trade cases, socioeconomic uplifting and ecological restoration occur when farmer groups mobilize solidarity made possible through alternative agriculture supply chains. Cooperative local institutions provide a forum through which to advance their own interests, and thereby make alternative agriculture continually attractive to practitioners (Brown 2018; Flachs and Richards 2018; Janssen 2017; Sen 2018). This labor solidarity is a critical sustaining metric missed in the valuations of alternative agriculture that privilege yield and participant expansion as the purpose of farming. Centering growth in alternative agriculture systems pegs their value to market production, thereby compromising their transformative potential in at least four ways.

First, even as alternative agriculture exists counter to productivist agriculture, an emphasis on growth and adoption repeats productivist logic (Buttel 1993) where the assumed goal of agriculture is to continually produce agrifood commodities cheaply and accrue net benefits to consumers, producers, industry, and the state. In producing value-added goods and pledging to pay environmental and social externalities, organic, fair trade, and other regulated alternative agricultures are already disadvantaged by metrics that value yield or capital growth above a longer term socioecological stability. Organic cotton researchers, for example, have shown that organic cotton can produce yields as high as genetically modified (GM) cotton in test trials (Angidi and Bogati 2020; Forster et al. 2013), but those results are not seen by farmers recruited for the organic cotton development projects that I discuss below. They lack infrastructure, input, and soil resources that make those higher yields possible. Global agri-food commodity production during the twentieth century relied on reorganizations of labor, water, plant genetic resources, and agrichemicals that externalized significant costs to small farmer communities and common environmental resources (Holt-Gimenez 2019; Magdoff et al. 2000; McMichael 2007). Productivist agriculture depresses prices for consumers, but in doing so, it cheapens the value of farm labor, nutrition, and ecological commons. Alternative agriculture is not and should not be designed to produce the same products in the same way.

Second, growth in organic agriculture has been accompanied by an explosion of labelling for distinction within global agri-food commodities. While such labels can quickly inform consumers and build trust in regulatory governance, the diversity in labelling and differences in regulation also confuses buyers (Asioli et al. 2020). More critically, the diversification of labelling places the onus of transformative change on individual consumer decisions that do not require restructuring networks of food production and consumption. Individual consumer choices divert attention away from collective action focused on environmental justice. Instead, labels become a commodity to

be consumed (Guthman 2009) and create an imaginary agrarian *other* divorced from the political and ecological struggles of actual farmer producers (Besky 2014; Bryant and Goodman 2004).

Third, academic or policy attention to growth through programs like organic or fair trade depoliticizes the specific environmental, social, and economic struggles that farmers experience. Farming communities are heterogenous spaces with class, ethnic, gender, and other historical inequalities (Agrawal and Sivaramakrishnan 2000). Alternative farming programs must consider the differential impacts of technological change and how local power dynamics drive environmental and sociodemographic risks (Taylor 2018). By contrast, Taylor (2018) discusses climate-smart policies ranging from chemical-managed monocultures to agroecology that provide blanket technological fixes: solutions to particular aspects of complex problems that provide short-term remedies, such as planting trees to offset carbon emissions, without reconsidering the structural causes of those problems, an economy that requires carbon emissions, or the particular political ecological context in which people live. This reductive approach is particularly fraught in the analysis of socioecological systems like farms, because it divorces interlinked social and ecological forces. Even the term "farmer" only represents one aspect of a rural livelihood (Kantor 2020). Against the disproportionate threats of climate change to smallholder producers experiencing historical inequities, such technological or policy fixes promote free trade and pursue capital growth as a limited set of possible responses to environmental injustice (Nightingale et al. 2020). Pegging success to production or technology adoption fails to address inequalities related to land, access to resources, economic return, or environmental change.

Most importantly, an emphasis on growth sidesteps the key transformative value that alternative agricultural programs can offer. Growth in production, farmers enrolled, land converted, and sales may provide important remunerative benefits to particular farmers without transforming socioecological relationships in agrarian spaces. Scholars of global agri-food systems have described this as a manifestation of hegemonic power, in which alternative or progressive food production systems provide concessions to producers without challenging the growth mission of productivist agriculture (Brown 2020; Dale 2020; Jakobsen 2019). The true benefit of alternative agriculture programs lies not in a product competitive on a global market defined by externalized social and ecological costs, but in new ways to succeed in agriculture beyond growth: stability, sovereignty over land and seed, heritage tastes, and aspirations for the future. Efforts that keep farmers in place and with local autonomy are best positioned to ensure sustainable landscape management.

Critical agrarian studies, degrowth, and alternative agriculture

If not growth, what? Smallholding farming systems follow different rules than other capitalist exchanges, in part because agriculture requires specific social and biological relationships. Smallholding farmers tend to work harder and longer than would be profitable by any hired labor force. They tend to value stability over profits, over returns to labor, and over total production. They seek to maintain political and cultural rights to land, production, and knowledge of diverse farming practices. Chayanov (1966) described these conditions as self-exploitation that preserves household autonomy, while Netting (1993), Brookfield (2001), and Boserup (1965) argue that they stem from the peculiar demands of a household unit working to maintain a diversified market production, usufruct rights, long-term planning, and skilled labor. In poor and wealthy nations, smallholders persist on comparatively marginal lands (Blaikie 1985; Flachs and Abel 2019; Reese 2019), where they receive marginal returns from labor and sometimes face special production risks including lead-contaminated earth, land speculation, or soil erosion.

Models stressing growth and devaluing labor can threaten smallholding farmers in that they consolidate landholdings and pull farmers into industrial work (Kautsky 1988), accumulate capital in the coffers of a global corporate agrifood class (McMichael 2007), or transform agrarian labor into a new rural class system dominated by market exchanges (Bernstein 2006). Asking why smallholding farmers persist despite land, demographic, and technological change, van der Pleog (2018) argues that they optimize not production or profits but a core set of agrarian values: maintaining family land in perpetuity, maintaining autonomy over agricultural decision-making, and minimizing the drudgery of agricultural work (Chayanov 1966; Netting 1993; Robbins et al. 2020). This calculus can, but does not always diversify farm economies and ecologies. In a counter example, Robbins et al. (2020) show how labor scarcities lead small coffee farmers to simplify agrobiodiverse holdings more than larger farmers by growing hardier species that required less-intensive management—a trade-off between biodiversity and labor that allowed small farmers to continue farming on their land. More than growth or diversity, easing the workload and maintaining autonomy over land drive agricultural decision-making.

Growth skepticism in agriculture is a diverse discussion (Eversberg and Schmelzer 2018), ranging from neo-Malthusian calls to curb population (Ehrlich 1971; Wilson 2016) to critiques of romantic depictions of poverty and hard work that risk ignoring political histories of

imperialism, labor scarcity, desires for technological innovation, or gender inequality (Correia 2012; Foster 2011; Mehta and Harcourt 2021; Robbins 2020). Drawing from political ecology and environmental justice to emphasize small-scale, collective, social, and cooperative alternatives to capitalist accumulation (D'Alisa et al. 2015; Latouche 2018; Kallis 2019; Kallis and March 2015), degrowth writers suggest a range of roles for states and governance in the economy (Boillat et al. 2012; D'Alisa and Kallis 2020; Huber 2021; Mocca 2020).

Agrarian degrowth writers celebrate democratic institutions for providing a space for communities to cope, adapt, and transform in their search for resilience (Etzold et al. 2012; Keck and Sakdapolrak 2013). Back-to-the-landers (Calvário and Otero 2015) and urban gardeners (Anguelovski 2015) can forge new networks of solidarity through negotiations around land rights and commons, while food sovereignty movements force participants to create a space for democratic governance over markets, land, and seed (Chappell 2018; Meek 2020; Roman-Alcalá 2017). Similarly, Boillat et al. (2012) argue that Cuban agroecology survived the collapse of the Soviet Union through decades-old socialist policies that prevented consolidation and gave small farmers access to credit and services cooperatives, even as central planning and productivist logic informed the state distribution system.

Beyond supporting local solidarity, agrarian degrowth scholarship is skeptical of technological fixes even as farmers pursue labor-saving technologies to ease difficult farm work. Gomiero (2018) considers GM and organic crops as case studies in appropriate technologies to degrowth. Both have flaws for a degrowth economy: organic farming produces crops less efficiently than conventional agriculture, while GM crops, represented by data on maize, represent a radical monopoly over key inputs. In arguing that US agriculture is efficient because 1% of the population feeds the rest, Gomiero ironically pegs efficiency to maize yields—a productivist argument—despite externalities like fertilizer runoff or exploited migrant labor. Furthermore, the ~ 1% of the American population employed in farmwork does not necessarily feed the US population, because the crops in question, particularly GM maize, are destined for chemical refinement or animal feed, not human consumption (Flachs 2020; Wise 2019). However, this larger point is an important and difficult one for agrarian degrowth, because it asks how farmers should consider technological developments that can promote growth or ease the burdens of farmwork. How, for instance, to optimize utopian visions of limited work, localized production, and fair distribution of resources in a profession that depends on difficult human labor and local ecological constraints?

Linking degrowth and critical agrarian studies discussions, Gerber (2020) asks how growth and degrowth affect key agrarian concerns of autonomy, ecology, labor, and collective organization. Growth in agrarian spaces exacerbates externalized costs, because it diffuses the demands of labor, hinders local democratic control, and continues capital accumulation by dispossession or extraction. Often, farmers are left to hope for a technological fix to heal the metabolic rift between agricultural commodity production and sustainable farming communities (Foster 1999; Schneider and McMichael 2010). As an anthropologist, I think that it is important to pay attention to the ethnographic particulars of alternative agricultures to understand their potential for transformative change. Inequalities in a political economy (Jaffee 2012; Raynolds 2004; West 2012) as well as localized inequalities of race, class, and gender (Lyon 2010; Sen 2017, 2018; Vasavi 2020) all complicate radical change in situ. In the remainder of this paper, I accept Gerber's invitation for more "on the ground" studies of agrarian change to argue that stability and institutionalized solidarity should be the direct and intended consequences of alternative agriculture projects.

Ethnographic agrarian degrowth studies are rare, because agrarian degrowth communities are rare. Scholars have used cases in food sovereignty (Roman-Alcalá 2017), organic farming and biotechnology (Gomiero 2018), urban agriculture (Anguelovski 2015), back-to-the-land neoruralism (Calvário and Otero 2015), and Cuban agroecology (Boillat et al. 2012) to investigate the reimagined social, economic, political, and ecological conditions of a degrowth agrarian space. This scholarship highlights benefits beyond production, often because agrarian movements spark local political reorganizations like democratic cooperatives or negotiations around commons. Organic and fair trade supply chains can, but do not necessarily, give small farmers a platform for securing land rights, production autonomy, or connecting to global political and environmental movements (Aistara 2018; Fletcher et al. 2020; Flachs 2017b). Growth that would scale these programs has faced major setbacks in India and Costa Rica in spite of promising starts because of local variabilities in ecology, labor, and supply chains (Galvin 2018, 2014; Doshi 2017; Fletcher et al. 2020).

There are many competing and fraught definitions of sustainability, ranging from a classic and normative attempt to meet the needs of the present while addressing the needs of the future to an argument for intergenerational justice based in natural capital and services (see Johnson et al. 2018 for a thorough discussion of sustainability as a paradigm and analytical concept). When focusing on sustainability in agriculture, the brief review of critical agrarian studies above shows the importance of focusing on the socioecological conditions that allow farming households to persist. This persistence is critical to measure. As Holt-Giménez et al. (2021) contend, if farmers cannot make a viable living, then they cannot practice resilient agriculture. This elegant observation demands a vision of agricultural sustainability

centered around farmer labor, knowledge, and valuation. To stay ethnographic and farmer-centric, I use sustainability here to refer to a range of socioecological conditions that allow agriculture to persist as a viable and attractive way of life. This allows me to focus on metrics for sustainable agriculture that privilege a key condition: farmers must aspire to practice it. Degrowth provides a useful intervention into the value of alternative agriculture, not because degrowth offers the existing solutions through concrete policies or programs, but because degrowth offers an alternative set of metrics in line with key smallholder goals: keeping people in place, securing community land rights, providing alternative futures, diversifying production and labor, and investing in local social institutions to redistribute risks and profits.

I draw from three short case studies with organic cotton farmers in Telangana and Maharashtra, India, organic coffee farmers in Andhra Pradesh, India, and small-scale farmers not producing for markets in Bosnia, to argue that sustainable alternative agriculture must account for factors beyond resource-efficiency or yields. These three cases represent a range of alternative agricultures in commercial and non-commercial settings, in places where alternative agricultural work is entwined with agrarian crisis and suicide (Indian cotton), land tenure (Indian coffee), and communal survival in place (Bosnia). In spite of their geographic and agricultural disparity, these cases illuminate how historical inequalities, alongside pressures from climate change in semi-arid or montane environments, intersect with alternative agriculture and require sociopolitical work to sustain. Research in India is based on 16 months of ethnographic, survey, and ethnobotanical fieldwork with cotton and coffee farmers conducted between 2012 and 2018. These sites represent communities who worked closely with different kinds of alternative farming companies and NGOs to provide a perspective on different organizational demands that farmers experience. My discussion of Bosnian gardens is drawn from a 1-month study in 2017 with 18 households in a village 1.5 hours north of Sarajevo, selected for its links to transnational migrants and its high rate of out-migration. In all three cases, small farmers perform an alternative agriculture that provides particular ways to imagine a future of continued, desirable agrarian life outside of a growth paradigm. Even if and when they would not describe their activities as degrowth, their decision-making suggests a range of rural aspirations not to increased production or technological fixes but through reorganizations of labor and value.

[1] All farmer, place, and NGO names have been anonymized.

Table 1 Average cotton yields reported by Telangana cotton farmers (descriptive statistics)

	N	Mean yield per acre (100 kgs)	Median yield per acre	SD
2012 Bt	288	7.21	7.00	3.68
2013 Bt	216	6.96	6.67	2.79
2014 Bt	163	8.15	7.81	4.48
2012 Organic	97	2.77	2	2.33
2013 Organic	69	1.56	1.33	1.05
2017 Organic	68	3.19	2.78	1.81

Valuing diversification in Indian organic cotton production

"I've got my own methods," explained Bhadra,[1] an organic cotton farmer in Vidarbha, Maharashtra. "These other farmers are looking for the best yields, following each other and whoever does best, but my yields are good enough. Why go looking for something new?" I was speaking to Bhadra as part of a larger survey of organic cotton farmers based in northern Telangana. In a context where 95% of the cotton seeds sown are genetically modified and thus cannot be legally certified as organic regardless of how they are grown, organic cotton farmers that I met worked closely with sponsoring NGOs and cooperatives to gain access to seeds, inputs, training, financing, and marketing. Often, development NGOs will recruit whole villages, simplifying the distribution of these resources and encouraging cooperative solidarity. In five cotton seasons (2012–2018) of interviewing and surveying farmers in Telangana's Warangal, Medak, and Asifabad districts,[2] I never saw non-GM seeds offered for sale in the Telangana shops where farmers purchase them. Overwhelmingly, GM-planting farmers justified years of agricultural decision-making through a consistent logic, expressed in Telugu as: "*e samvacaram, manci digubadi annukunthunnanu*" (this year I'm hoping for a great yield). This relentless and competitive pursuit of yields drives rapid changes in seed choices as well as other investments in labor, fertilizers, pesticides and herbicides, and decisions about field plant density. And so, it was disorienting to hear Bhadra casually dismiss yield growth and new seeds.

Between 2012 and 2018, I surveyed 142 organic farmers and 394 GM cotton planting farmers, recording 1,211 and 4,599 planting decisions and rationales. The farmers planting organic cotton whom I spoke with reaped considerably lower yields than farmers planting GM seeds (Table 1).

[2] In 2016, the newly bifurcated Telangana state began the process of renaming districts. For consistency's sake, I use the previous district names here.

There are several reasons for this: NGOs recruit farmers for organic cotton programs, because they experience generational poverty, farm marginal land, sow polycultures, benefit less from state infrastructure, and plant commercial refugia hybrid seeds designed to be sown on field edges to slow evolutionary pest resistance to GM crops. Although these seeds are not genetically modified, they are bred to respond to synthetic fertilizer and water inputs and thus underperform on organic farms. "The ideal field is edged with okra and surrounded by sorghum," explained one farmer in 2014. "It has cotton on the inside with a row or two of castor, as a trap plant, and many interspersed vegetables along with a strip or two of pigeon pea." In making these farms significantly more biodiverse (Flachs 2016), farmers also employ non-pesticide management, use legumes to fix nitrogen, and reduce the density of cotton in their fields. These design elements are a stark contrast to the political ecology of GM cotton, where fertilizer and pesticide sprays have increased steadily since 2008 (Flachs 2017a; Kranthi and Stone 2020), and short-duration, high-density fields are promoted as a strategy against rising insect resistance (Mohan et al. 2015; Najork et al. 2021; Venugopalan et al. 2014).

Organic cotton farmers know that they produce less cotton than their GM cotton-planting neighbors. "Yes, [the organic development program] gives us free seeds," grumbled one Telangana organic cotton farmer in 2014. "But the yields are bad and the profit margins are even worse, thanks to [the program's] small premium combined with the small yield. Their rules are difficult because they are banning the solution—chemical fertilizers. If we use them, they won't take our cotton." Another farmer, listening in, leaned into the conversation to agree. "The yield is too small from organic. The investment may be less but the profit is also less…who wants to make mixtures and all, even the cows are fewer now—so where can we get urine and manure [needed for organic pesticides and fertilizers]?" A few days after these complaints, a GM-planting farmer interrupted me during a different interview to brag about the yields he was seeing with Ajeet-155, a GM cotton seed. "My field is like a forest," he grinned. It is better to buy seeds and inputs from shops, he continued, because when you have a problem "you can just call up the shop and ask what to do. With this organic production, you have to go to all these meetings and spend all of your time in groups." The farmer that I was interviewing looked offended, and countered that "those with money can afford to make big investments," but he preferred to grow with organic where low yields were balanced by low investments. Shaking his head, the GM cotton-planting farmer drove away.

These moments illustrate the tension that cotton farmers face with growth. Return on investment is the normal, expected reason to grow this cash crop. In a social life where debts transcend agricultural investments to include wedding costs or investments in home infrastructure, farmers desire yields and profits as paths to a more comfortable life. When the dominant narrative about Telangana cotton farming follows the script (Vanclay and Enticott 2011; Flachs 2019b) of chasing yield growth, it is difficult to pursue a low-yield strategy. During a 2014 field visit from Fairtrade UK, organic cotton farmers complained that the positive impacts of Fairtrade premiums were countered by low production volumes, and that the work required more and more difficult labor. "Our neighbors laugh at us and say 'we're getting Rs 40,000 (~$700) [from our cotton sales] when you are only getting Rs 20,000 (~$350)'", grumbled one farmer. "While we know that organic is better for the soil and for our health, it still hurts. Besides, we have so many meetings!" Degrowth literature notes the transformative potential of cooperative social organization in agrarian spaces, yet farmers hint that regular meetings can also be a burden. Partnerships between key farmers and organic field staff are necessary to develop hyper-local management practices, save farmers time in meetings, and trust that the regulation is fair. This collective organizing creates conditions where yield growth is secondary to other negotiated benefits including work, subsidized agricultural inputs, and collective institutions for buying, selling, and decision-making.

Local cooperative institutions are critical for distributing resources and trainings, but also for helping small groups solve problems ranging from pest attacks to gripes about a seedling distribution. Some of these systems build from Indian state institutions like self-help groups, organized around women's financing and local problem solving (Desai and Olofsgård 2019). In 2018, cooperative meetings helped to facilitate labor exchanges and negotiate labor costs for key moments when organic farmers needed extra help in their fields, particularly plucking, weeding, and planting. Importantly, these events regularly happen and farmers voice their concerns. Organic groups who ignore those concerns see farmers leave (Flachs 2018).

As with any institutionalized networks of power and economic distribution, some people have turned program resources to their advantage and secured loans, special access to subsidized programs, and local prestige. Organic farmers are not homogenous, and some 'show farmers' (Flachs 2017b; Stone 2014) have opportunistically seized upon new social and economic rewards for publicly performing organic agriculture. Yet that attention means that the demands of village meetings, self-help groups, and cooperative planning sessions also fall to these enthusiastic

farmers. Others are happy to avoid these duties. "I'm not educated, how can I go," complained one organic farmer. "In group meetings, everyone else explains what to do, especially the sarpanch[3] and the educated farmers." "We don't go to meetings, they're far away—others go and report back to us," agreed his neighbor. Preferring to learn from those who attend planning meetings and distribute seeds, such farmers treat organic knowledge and inputs as products brought to them at a discounted price.

While farmers have a range of opinions on the yields and time commitments, they also see benefits beyond economic growth that can be normalized through organic agriculture. Jalapathi, an organic cotton 'show farmer' with a Bachelor of Science shrugged aside concerns about yield. "There's a risk for low yields at first," he explains, "but after the first three years you do as well as before. More important is the larger benefit to your health and to this environment that you get by not using any chemicals. There's no risk of poisoning yourself, or animals, or your neighbors, and the cow manure gives many micronutrients and lasting strength. Its good science," he says with finality, appealing to me as an academic. Another farmer who recently returned to organic agriculture also emphasized the respite from chemical pesticides. "The problem is that now we're all eating chemicals. They're in our foods, everywhere. We don't eat the cotton, but the sprays get on the other vegetables. In organic the yields are fine—not great but acceptable—and when we spray chemicals you can smell them everywhere. They must be causing all sorts of health problems."

If productivist metrics are insufficient to explain farmer decision-making and sustainability here, agrarian degrowth metrics ask how organic cotton provides a path to keep people in place, secure land, diversify socioecological relations, support alternative futures amid local institutions, and reduce the most difficult and unremunerative labor. Organic cotton farmers saw their work as a long-term investment in children with deep ambivalence about working the land as farmers but a firm commitment to maintaining the land as a family asset. "I expect that they will want to come back to the farm," explained an organic cotton farmer in 2018 when asked about his school-aged children. "What other work are they going to do? They know about this. In the summer they can do other kinds of work, but they should be here rather than migrate to any other cities. When they're not in school they help with the weeding, they know how to speak to the cows," he continued with a smile. To prove his point, his young son, listening in to our conversation, giggled, mooing and clicking in imitation of the sounds farmers use to direct cattle in the fields. Others in the village were more ambivalent about who would do the work. "My children are studying," explained one organic farmer with finality when I asked who would take over the farm. "This is the last work they should do. Outside work is the first preference, and only if they don't get a job elsewhere should they farm." Would you sell the land then, I asked? "No, not that," he answered taken aback. "I have four sons, someone will take this work on." "Study first," agreed a third organic cotton farmer in 2018, but someone must come back. "Otherwise, we won't have a village. Even if my children are not interested in farming, the grandchildren might be." But do they know how to do all this work, I asked? "Oh, everyone knows how to do it all, even if they don't like doing it—even if they'd prefer to write and study rather than gather cow dung."

Organic cotton agriculture does not offer an escape from difficult work or exceptional yields, the key promises of productivist farming and the key challenge to degrowth models that demand more human labor. Instead, many of the more difficult logistics in farming are directly subsidized through financing or through the work of show farmers. The meetings may be a tiresome burden for some, but that investment in local social institutions keeps a path open for children to return in spite of middling yields. Cooperative institutions provide venues for discussions over labor and resource sharing, and farmers disinterested in collective meetings can still reap some of the benefits as long as they agree to follow organic guidelines. In this way, organic agriculture offers smallholding Telangana cotton farmers a degree of flexibility and autonomy absent in the free market capitalism of productivist cotton farming where yield growth overshadows other concerns. Organic cotton yields are comparatively poor, but that reality alone does not dissuade farmers. In subsidizing diversified social and ecological farm work, organic agriculture provides a way for farmers to continue managing land by decentering growth. When organic cotton development groups sever relationships with partner farmers, try to emphasize growth, or threaten that stability, farmers leave (Flachs 2018).

Valuing land and collective organization in Indian organic coffee production

In 2014, the Hudhud cyclone caused billions of US dollars in damage, killed over 100 people, and relocated entire communities as it swept across eastern India. In Andhra Pradesh's Araku Valley, the cyclone ripped through hillside coffee gardens managed by historically marginalized Adivasi smallholders. Organic coffee agroforestry depends on long-term investments in perennial trees and bushes, creating a biodiversity proscribed and intensified by the ecological opportunities of a forest ecosystem where crops grow from forest floor to canopy. In toppling tall trees and washing out sloped fields, the Hudhud set farmers back years. When

[3] The local elected village leader and liason to mandal authorities.

I spoke with Araku organic coffee farmers in 2018, they were earning a fraction of the coffee yields they had received earlier. Why continue with the program after the cyclone, especially when it offered a chance to sell land or plant coffee plantations that would see far quicker and more dramatic returns on investment?

In Araku, building an agricultural supply chain developed as a means to an end for a development agency focused primarily on education and infrastructure. "We weren't thinking about coffee until we linked it to the household economy and livelihoods," recalls Vijay, the project manager. "Our director saw that people were growing coffee and thought, why not start coffee cooperatives and get a new kind of marketing structure" By 2018, the project was working with nearly 11,000 farmers in seven administrative districts in the Araku area, transforming the surrounding landscape through diversified farm work, stability, cooperative resource distribution, and, most importantly, legal help against land dispossession. Telangana organic cotton provides farmers with an alternative to aggressive free market individualism by limiting seed choice in favor of cooperative distribution, promoting an alternative future through local governance. More directly, Araku organic coffee provides farmers with a legal anchor for a future that includes farming.

In a 2018 survey of 36 organic coffee smallholders living in a village near Araku, Andhra Pradesh, I spoke with farmers who reported managing an average of 1800 trees (median 1600) on sloping land as a recovering agroforest, from which they reaped an average of 426 kg of coffee (median 350) (Flachs and Panuganti 2020). Given that brokers were paying between 50 and 60 (~ $1 USD) rupees per kilogram, while the government and the organic program were paying 110 rupees (~ $2 USD), this harvest did not provide for all household needs. Black pepper, a more lucrative crop that climbs the silver oaks used to shade coffee gardens, was not being sold as an organic product at the time, while farmers reported that they continued to sell most (69% on average, median 71%) of their coffee to government buyers or private brokers who do not offer organic premiums. Clearly, organic yields and price premiums were not convincing farmers to partner with the organization—and yet, farmers kept an aggressive foothold in the program by continuing to sell and certify their land as organic. A combination of a desire to keep autonomy over land within the family and the program's strategic subsidies for socioeconomic diversification help to explain why farmers are not pursuing growth.

Araku coffee farmers face special difficulties in securing their rights to land and its use because of the ore that lies below it. The state claims Araku land managed by farmers for generations through the forest service and the Integrated Tribal Development Agency, while extractive industries are eager to log timber, lease deforested land to herders, and mine Bauxite found throughout the Eastern Ghats (Oskarsson 2017). The Forest Rights Act of 2006 strengthened Adivasi usufruct claims (Bandi 2014), but an array of bureaucratic institutions stymie this process by manipulating the flow of documents and meetings necessary to vest authority over land and resources (Choudhury and Aga 2020). "I had to fight for respect," the organic coffee cooperative president explained during a 2018 interview, describing various negotiations with outside stakeholders: registering land with forestry officers and district collectors in urban Vishakhapatnam, securing financing from banks, and arguing with prospectors and local law enforcement to insist upon local land control. Organic agriculture provides an institutional backing to Araku farmer land claims and a bulwark against extractive industries, state officials, and lawyers who threaten to take it.

Subsidized trees are an important component in keeping this land in active production, and the NGO works with Araku farmers to distribute coffee and shade trees. Where the state distributes economic crops like coffee and silver oak seedlings, the organic program also distributes fruit trees as sources of food and diversified income. Organic farmers manage multiple types of shade trees, including valuable fruit trees like fig and wild mango, a greater diversity of plant life than agroforests replanted on grazed lands. Farmers who lease land to grazers see cattle deforest their hills, making future investments in agroforestry expensive and difficult. When and if farmers wish to plant coffee agroforests, they must replant with imported silver oaks, which are thin and vulnerable to extreme weather like the 2014 cyclone. "Only for the sake of coffee is this forest here," sighed Vijay, as we hiked through the forest with coffee farmers. "And even in coffee we have mostly silver oak and coffee trees. In other areas you won't find forest like this. We've ruined our nature." I smiled appreciatively, but he stopped me. "Most of these places really are gone." Many of the coffee gardens we pass are overgrown with weeds during late July. During rice transplantation, labor is squeezed and there is no time to weed coffee gardens. In simplifying procurement while curbing investments in production, the NGO effects a range of changes in how farmers calculate long-term success in their farm management defined by economic and ecological diversity.

Judged by its ability to keep farmers in place, build social institutions, diversify economic and ecological activity, and provide an alternative future, organic coffee has already proven to be sustainable through a natural disaster. Production growth, by contrast, is low. Like cotton farmers concerned about the drudgery and difficulty of small-scale agriculture, coffee farmers also hope their children avoid hard work (Telugu: *kasta badi*). While many children in Araku do indeed use NGO and state development programs as a springboard, not all are successful in finding high paying or desirable work. Still, the goal is not to grow participation

in the program but rather to envision a future where agriculture is a secure and non-totalizing anchor to rural well-being. Vikram, a manager who works with Vijay, explains that many farming families see education as a ladder to better paying jobs, especially with the reservation programs designed to ease historically marginalized students into schools. Yet, "most come back," he continues, "as they can usually only find unpleasant or unfulfilling work. They come back saying that their coffee is the best, our village is great, we have good mangoes here." Security in and autonomy over land provide a degree of flexibility for farming households even as children leave and return. "We had so many obstacles in our own studying, I want the children to study well," explains an Araku coffee farmer during an interview. Still, as with the coffee farmers above, selling land outright or imagining a future without farmwork was not attractive. "I have three children, one of them will farm—if not the oldest son then one of the others surely will." Another farmer stressed how land ownership eased this pressure: "I'll show them how to do all this if I need to, but now [my children] don't need to know. If they study they can get jobs elsewhere and we'll rent the land to someone."

Both farmers and the organic coffee managers come to see agriculture as a means to an important end: sovereignty over their land and flexibility in its management. Where some farmers saw coffee expansion as a way to further secure their flexibility and claims to their land, the net effect of coffee agriculture through this program has been to preserve and improve livliehoods on farmers' own terms through a set of cooperative governing bodies, even through a climate disaster and middling coffee production. Farmers accepted program trainings, subsidized trees and fertilizers, and rural infrastructure improvements, even as they sold much of their coffee to others. But, when devastating storms destroyed coffee gardens, farmers chose to rebuild decades-long investment—not because they would provide the greatest economic returns, but because they offered the best chance for stability and autonomy.

Valuing comfort and heritage on Bosnian small farms

With the dissolution of Yugoslavia and the subsequent Bosnian genocide of the mid 1990s, Bosnian Muslim (Bosniak) small farmers have endured the collapse and rebuilding of socioeconomic order. Cooperative labor and land management in farming communities were strengthened first by socialist governance and later by rural distress (Henig 2012; Marsh 1998), resulting in culturally bound knowledge of forest resources and agrarian practices that sustain seed breeding, wild resource management, and animal husbandry (Jašarević 2018; Kurbanova et al. 2011; Malcolm 1996). In June 2017, I took part in a short study with Bosniak small farmers near Teslić, Bosnia and Herzegovina (BiH), investigating the transnational links between traditional culinary and agricultural practices in Bosnia and St. Louis, Missouri. Increases in production were beside the point here, although these farms provided food security through calories and culturally meaningful foods.

In Cuba, economic collapse intensified the role of local, cooperative, and informal markets, including agricultural production (Altieri et al. 1999; Boillat et al. 2012; Koont 2008). Garth (2020) has shown how low-input urban agriculture provided many with the means for an adequate meal, even as people are not always able to find meals that are dignified or decent. This is a sociocultural rather than a nutritional distinction. As elsewhere in post-socialist Europe (Jehlička et al. 2019; Sovová and Veen 2020), Bosniak gardening both supplements diets and maintains community relationships through socioeconomic and ecological change. Jehlička et al. (2019) do not explicitly describe Czech food self-provisioning as agrarian degrowth, but they emphasize that the benefits gardeners take from their allotments are non-economic: fresh and healthy food, sharing with others, pursuing particular tastes, and strengthening attachments to family land. Such spaces, as Ančić et al. argue (2019), are as important for nourishing identity and heritage as for economic and nutritional benefit.

Amid mortar bombardments in the 1990s, home gardens and rural allotments for residents near Teslić provided a chance to spend time outdoors and work with others. Despite this national trauma, Bosniak gardeners Dalila and Emir insist that life went on during the war. Although houses and barns in their village suffered mortar attacks, they married at 17 and 20, respectively, during the war. In one photo, Dalila proudly shows off a thriving potato field and notes that she has been saving potatoes and vegetables seeds since that time. "We learned to be resourceful (Bosnian: *snalažljiv*)," she explains. "We're village people, so we make potatoes, have cows, have chickens, make our food. We do everything." A significant part of "doing everything" is giving food away in a perpetual cycle of debt and gifting. Open air markets in the region re-sell food from aggregators based in Mostar, BiH, and Italy, but also foraged foods including flower teas, elderberry, and linden. "No, I don't want [to sell my excess]," Dalila said during an interview. "If I sell it, I'll get 10, 20 marks ($6–12 USD), what's the point of that? It doesn't feel good. If I give it to my neighbors, to my relatives, I can feel good. It's better."

Jašarević's (2017) exploration of debt and health at Bosnian open-air markets shows how regular debts and overextensions in giving make social life possible. Both physical objects and conversation are critical terms of exchange, as people experience life through a body that is not individual but bound to others in this depressed economy. Home

medicines or exchanged fermented foods (Jašarević 2018, 2015) are not simply paid for but exchanged in acts that blur lines between giving, selling, healing, and obligating. This localized community exchange (*komšiluk*) is both a longstanding norm through which to perform community identity (Bringa 1995) and an intimate exchange actively maintained through neighborly acts (Henig 2012). These include sharing food and labor, but also regular acts of caregiving and sharing space—especially alongside coffee and cigarettes. Sharing is also practical in a context of high unemployment and informal goods and labor markets. "We need to buy seeds every five years," Dalila told me as we looked through tins full of seeds saved and traded from her garden. "These [seed exchanges] are not things that people keep track of," she responded when I asked who was giving to whom. "If we have a lot we share it. If not, others give it to us. If we have some really good seeds, we save from those and share them." Seeds and work are here understood to be expected exchanges in a larger network of debt, care, obligation, and giving (Nazarea 2014). Rather than investments in a future growth, they are investments in stasis. Gardeners protect patches of wild thyme in the spaces between garden allotments and homes, while most houses boast several varieties of fruit and nut trees, a net effect that diversifies work, ecological knowledge, and biology. In a cursory ethnobotanical survey of 18 Bosniak households in one village, homegardens and attached rural allotments featured an average of 14 (median 8, standard deviation 12.27) actively managed and locally circulated edible or medicinal plants.

Small-scale farming here is disinterested in agricultural growth. Instead, working in gardens maintains a baseline food security, taste, and community. Yield and capital growth do not offer much for these small farms, tucked amid houses left empty by outmigration and high youth unemployment. As such, gardening provides a space in which to cultivate a landscape of care amid tangible reminders of war and scarcity. In producing familiar tastes, holding community, and demarcating land, gardens promise a more stable future or at least a refuge that relatives working abroad can invest in—not for some future growth but as a place to return (Henig 2020; HadžiMuhamedović 2018). Cultivated Bosnian homegardens and allotments secure land even as children and other relatives migrate for work in cities or other countries, while the exchanges of food, seed, work, and sociality facilitate *komšiluk*. As in the Indian cases, the smaller scale of the garden helps to facilitate social institutions that promote stability like workshares while clearly demarcating land within the community. More than in the above settings, growth would hinder the kinds of sharing, gifting, and debts practiced here.

Strengthening producer communities by growing less

The communities above aspire to stability and autonomy against larger changes to their agrarian political economy. By metrics of participant growth, yields, and capital investment returned, many of these farms are failures. However, I have argued that these are the wrong tools by which to measure the sustainability of alternative agriculture, because they decenter the needs and aspirations of participating farmers. These programs do not provide stability because they are growing. Rather, they provide stability because they offer a way to imagine a viable agrarian future through local social institutions, diversified socioecological life, and local control. Telangana organic cotton farmers, Araku organic coffee farmers, and Bosnian allotment farmers each pursue agricultural work against growth. Agriculture helps to strengthen community ties and makes land claims explicit, whether that manifests as a chance to preserve land as a home to return to or as a definitive asset that cannot be threatened by state or private interests. Institutions, including the formal organic regulatory groups in south India as well as the informal neighborhood links in Bosnia, are critical in subsidizing risks and promoting solidarity against the larger systems of extraction where people live.

Debt, tenure insecurity, and falling production drive farmers off their land around the world. Shifting focus away from growth has allowed Telangana cotton farmers to pursue biodiverse agriculture without precarious investments leveraged against a hope for yields, helped Araku coffee farmers protect their lands from dispossession, and helped Bosniak farmers preserve a sense of home amid longstanding outmigration. Small-scale, collective distributions of resources insulate vulnerable farmers from market risks while encouraging agroecological practices that make future agricultural production possible. Importantly, formal and informal institutions insulate growing communities from existential risk as well: in guaranteeing land and markets, they ensure that farming communities have homes to pass on and return to.

Ethnographic insights should always be closely tied to live experiences of particular times and places. Importantly for me as an ethnographer, no farmers claimed that they want to produce less. Growth can be desired by households who want to clear debts or build savings for a range of goals like weddings, home constructions, education, or retirement. The certified organic programs that manage supply chains for the Indian farmers in particular are proud to see their production and participation numbers grow, while India celebrates the growth of organic farmers in the country as a national marker of success. Many small farmers fear economic contraction and associate it with poverty and marginalization.

However, a degrowth perspective on agricultural sustainability allows for expansions of particular kinds. I argue against a particular model of short-term extraction (D'Alisa et al. 2015; Gerber 2020) that imagines agricultural resources, and the communities who produce them, as short-term assets to be leveraged and then liquidated in the mode of financial capitalism. A feminist political ecology perspective would similarly challenge any notions of degrowth that require further disproportionate sacrifices on the part of the global poor or place limits on the very commons, care, and livelihoods discussed above (Mehta and Harcourt 2021). The growth that these alternative producers pursue serves a long-term goal of land ownership and continued production through local democratic institutions, one kind of diverse economy existing alongside the larger political economies of capitalism in which these farmers are embedded (Gibson-Graham 2008). As such it looks quite different from the limitless growth of productivist agriculture. Domazet and Ančić (2019) find that Croatian environmental justice activists express their goals in terms compatible with degrowth even as they see degrowth as an insufficient path to achieving those goals. Similarly, farmers often want to expand their sales, group memberships, savings, and production, because this growth helps them escape difficult work, subsidize risks, and build a promising future in their own terms. Yet, this growth is limited and localized. Alternative agricultures provide institutions to achieve these goals without pursuing growth at the expense of solidarity or common ecological resources.

Degrowth offers a promising way to understand how organic and allotment farming might be sustainable that moves beyond what is produced to ask more fundamentally how these systems keep small farming possible and even desirable. Producing to keep a sense of home, or, more politically, to protect one's home from state and private extractions of resources and labor, has a cascading positive effect on the long-term ecological sustainability and resilience of local agricultural systems. Recent reviews (Anderson et al. 2021; Campbell and Veteto 2015; Zimmerer and Haan 2019) of agroecology and biodiversity are clear that small farmers and agricultural systems in place play a key role in maintaining food security and biodiversity through cataclysms like climate change or global pandemics—and that they cannot do so when facing scarcities of labor, when they can't make a living, or when they lack collective supports (Robbins et al. 2020; Holt-Giménez et al. 2021).

Growth in yields or participating farmers hint at the reach of alternative agriculture, but these are ultimately the wrong metrics to understand the value of these alternative agriculture systems or capture the social depth of farmer decision-making. Far more important is how institutions keep farmers in place with the flexibility and autonomy to pursue agrarian life on their terms. This persistence is critical. We misunderstand the value created by these social organizations when arguing that organic methods are just as productive or that gardens are valuable only because they preserve biodiversity. The small-scale organic farming in India and household allotments in Bosnia discussed above will never outperform agri-food commodities producers with respect to profits, yields, or sustained profits. I have argued that these are the wrong metrics for sustainability, because they do not fully consider the range of aspirations held by producer communities and they are based within a model of externalizing long-term social and ecological costs in the pursuit of economic growth above stability. Persistent, low-input farming in place is sustainable when it secures ongoing land rights for rural communities, and promotes diverse agricultural labor, aspiration, and production.

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