

Agriculture in a Wellbeing Economy

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**WELLBEING
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WEAll Briefing Paper

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Vision

Food is both a basic human need and one of the most enjoyable aspects of life. How we grow, cultivate and consume food shapes cultures and connects people to one another and to our natural environment. Food and agriculture are critical to our wellbeing. In a Wellbeing Economy, all people have secure access to nutritious food that is grown in a fair and regenerative way. This asks for structural changes to the way our food is produced and distributed. To move towards a Wellbeing Economy, agriculture should prioritise the following:

SUSTAINABLE ACCESS

finding ways to meet the growing demand for food while preserving and regenerating the natural systems that underpin productive agriculture.

SECURITY AND RESILIENCE

ensuring that healthy food is affordable and accessible to all, treating it as a human right or a commons rather than a commodity.

SOVEREIGNTY AND FAIRNESS

fostering democratic and inclusive food systems that empower local communities and build on local and indigenous knowledge.



Current Challenges

Currently, modern production practices are destroying our ecosystem whilst leaving much of the world underfed and undernourished. Food production is one of the most significant drivers of global environmental degradation (Eat-Lancet Commission, 2019). Our existing agricultural systems are also highly resource intensive, accounting for about 70% of global freshwater withdrawals (WRI, 2013), an estimated quarter of global greenhouse gas emissions (OECD, 2021) and almost 90% of deforestation (FAO, 2021). At the same time, substantial inequalities prevail in the global food system. Many of the world's poorest people live in rural areas and depend on agriculture for an essential share of their incomes (OECD/FAO, 2019). Highly industrialised diets pose health issues for the world's most affluent inhabitants, further drive up carbon emissions and threaten biodiversity, whereas undernourishment and hunger still threaten large parts of the world's population (OECD, 2021).

Three shifts towards wellbeing-focused food systems

Despite the inadequacies of our current food systems¹, we can ensure universal access to nutritious food without exceeding our planet's environmental limits (Searchinger et al., 2019). Doing so is key to empowering communities and lifting some of the world's most vulnerable communities out of poverty (Christiaensen and Martin, 2018). However, the only way to achieve this is by structurally changing how food is produced and distributed.

This paper will discuss three shifts that are needed to move towards wellbeing-focused food systems, illustrating each of them with case studies. Each of these shifts asks for interconnected actions at multiple scales – from individual farms to communities, cities, nations and intergovernmental organisations. The good news is that elements of a wellbeing-oriented food system already exist in places around the world. Even though these initiatives are currently scattered, they provide hopeful inspiration for what is possible.

This paper is intended as a starting point for thinking about what the agricultural system could look like if we put wellbeing first rather than an exhaustive overview of best practices or major changes required. A list of sources for further reading on these topics is included in the 'key resources' section at the end of this paper. As this paper focuses on the supply side of our food systems, that is, how our food is produced, strategies to shift diets are largely left out of the scope of this paper, notwithstanding their fundamental importance.

¹ Food systems comprise a set of activities and outcomes ranging from production through to consumption, which involve both human and environmental dimensions and the interactions between them (Ericksen, 2008). In this paper, we focus on the production-side of our food systems.



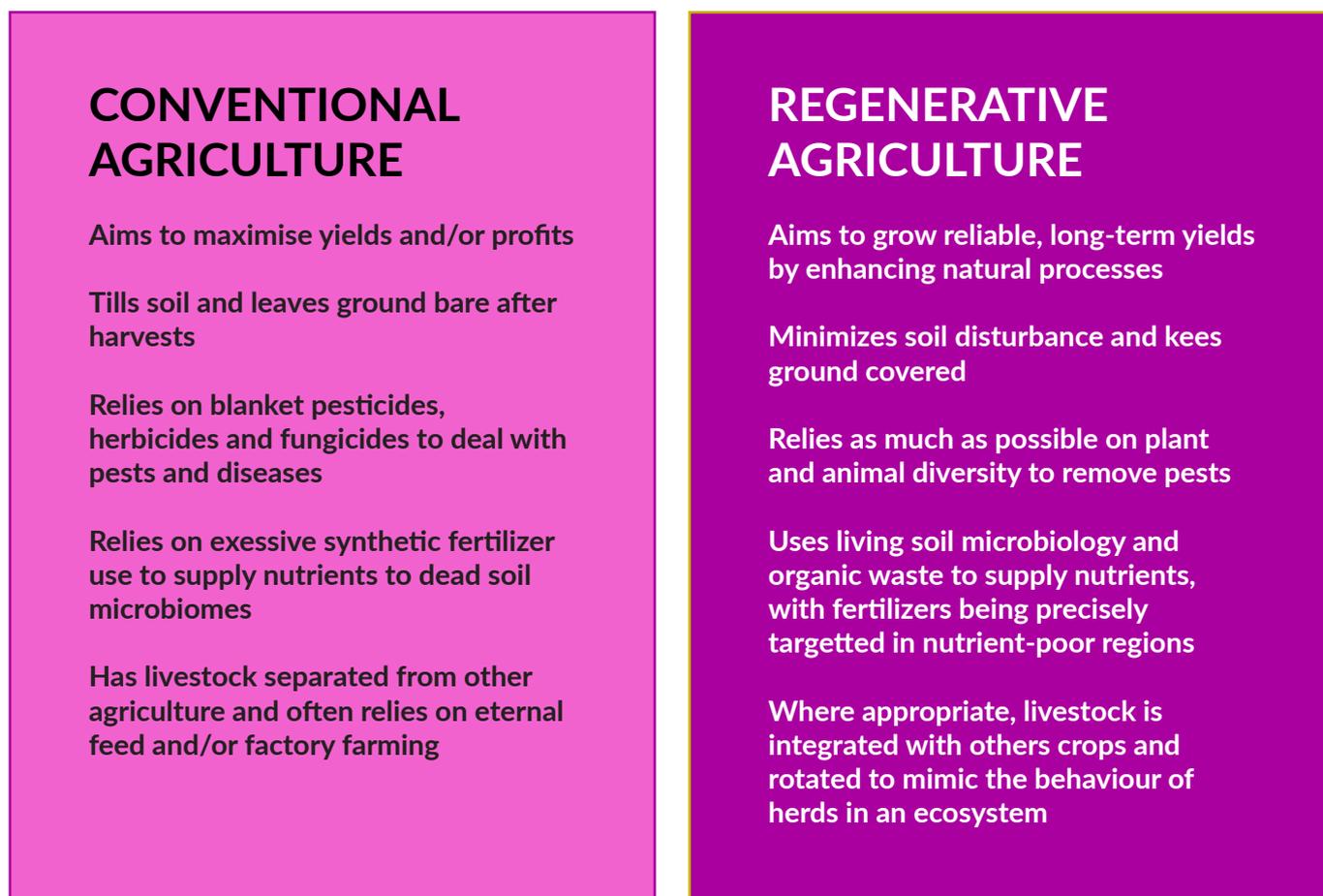
1. Sustainable access:

Harnessing the potential of natural systems to preserve long-term food production

Keeping up with the growing demand for food and ensuring the long-term viability of our food systems means that we must find ways to continue meeting this demand while preserving and regenerating the natural systems that underpin productive agriculture. While it is often perceived that there is a trade-off between environmental restoration and food production, we can only continue to provide everyone with food if the natural systems that agriculture is based on are preserved. As described above, our current agriculture systems are highly extractive, polluting and CO₂-intensive in many parts of the world. However, holistic, regenerative and agroecological models are gaining traction among small and medium-sized food producers in many countries due to their ability to counteract the trends of increased erosion, water and nutrient loss, soil CO₂ emissions, biodiversity loss (especially insect biomass loss), chemical pollution and desertification that are prevalent in much of the world's farmland today (Rhodes, 2017).

Several terms are used to describe these practices, such as regenerative agriculture, agroecology, permaculture and agroforestry. At the core of all these methods is prioritising rebuilding or maintaining natural processes that underpin productive agriculture and provide broader ecosystem services (Figure 1), creating harmony between food production and ecological protection. We use the term 'regenerative agriculture' here because it has been gaining a lot of attention recently and focuses on actively rebuilding degraded soils and ecosystems rather than only reducing the negative environmental impacts of farming (Newton et al., 2020). It does this primarily by increasing carbon-rich soil organic matter, locking more carbon into the ground and preventing it from entering the atmosphere, while also improving soil fertility, water retention and nutrient uptake (Project Drawdown, 2020).

Figure 1. Features of conventional agriculture vs regenerative agriculture.



Farming can have very low profit margins and many farmers live at or below the poverty line. Therefore, a swift practice reversal is often not financially viable without assistance.

To shift to regenerative farming techniques, farmers must invest in nature-based solutions, change planting practices and potentially abandon investments in industrial farming infrastructure and products. At the same time, the benefits of regeneration are often not seen immediately. Therefore, a successful transition here will entail a stepwise process of reducing synthetic input use on farms where it is excessive while implementing more soil and environmentally friendly practices over time (Fletcher, 2019). In many countries, practices that degrade land are subsidised, so removing or replacing these with subsidies for restoring land plays an important role in facilitating this process.

Many small-scale farmers still use traditional/indigenous farming knowledge to grow food in generally regenerative ways. Permaculture and agroecology draw from and build on these traditional/indigenous practices, which have allowed humans to sustainably feed themselves for centuries or millennia. In some cases, the promotion of regenerative farming is therefore more a case of ensuring the proper support for the kinds of practices people already know – where currently they are often pressured into more industrial/commercial models of agriculture.

In the longer term, because regenerative farming practices are more resistant to environmental shocks, they often provide greater resilience for farmers and greater food security for consumers (Shulte et al., 2022). This resilience will be increasingly important as climate change intensifies. While the results of small-scale case studies vary, there is evidence from a range of regions and contexts that this long-term investment benefits both farmers and the broader communities they serve (Ogilvy et al., 2018; LaCanne & Lundgren, 2018; Sharma et al., 2021).

While our current food system produces more than enough food for everyone, much of it is wasted, or otherwise not getting to those who need it most. Whether a regenerative global food system would have higher or lower yields is still debated. If yields did not continue to meet demand globally, more land would need to be converted for agriculture, causing further environmental stress. Nonetheless, there are very hopeful signs. For example, the

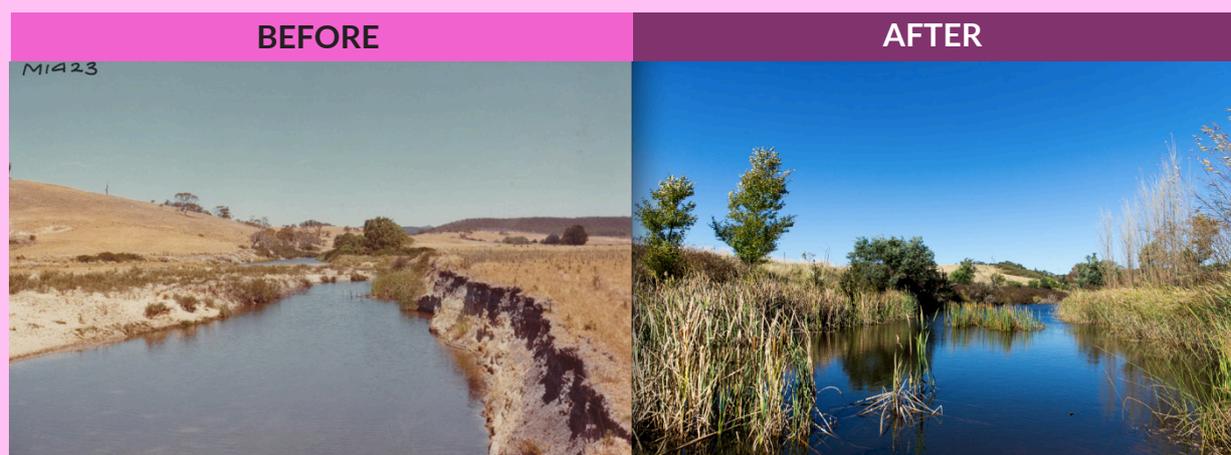
IDDRI has estimated that a transition to regenerative farming across Europe would provide adequate and healthy food for all Europeans while maintaining its export capacity, reducing Europe’s food-related carbon footprint and rebuilding biodiversity (IDDRI, 2018). Similarly, a recent large-scale analysis of regenerative agriculture, including nearly 42,000 comparisons between ‘diversified’ (regenerative) and ‘simplified’ (intensive) agriculture practices, concluded that “agricultural diversification promotes multiple ecosystem services without compromising yield” (Tamburini et al., 2020). This suggests that it is possible to provide enough food for growing populations with expanding demand without clearing more land. Nonetheless, it will take careful planning and requires different social and environmental solutions working in harmony – beyond regenerative agriculture alone (Searchinger et al., 2019).

Ultimately, given the huge diversity of agricultural systems worldwide, there is no one-size-fits-all solution. What regenerative agriculture means in practice must be defined based on the local context of farms and the needs of surrounding communities (Giller, 2022). Further research is necessary to determine the optimal mix of agricultural methods that can work in specific locations to sustain both crop yield and ecosystem functioning (Tamburini et al., 2020).

REHYDRATING AND REHABILITATING THE LANDS OF MULLOON CREEK NATURAL FARM, AUSTRALIA

The colonisation of Australia brought intensive grazing practices that degraded the native grasslands and the spongy, water-retaining soils of South-Eastern New South Wales. The region around Mulloon Farms suffered from drought, low productivity and erosion of productive topsoil. This is a common story in many other parts of the world. To rehabilitate these lands, the Mulloon Institute established ‘leaky weirs²’ to slow water flow through the landscape and allow more of it to seep into the groundwater. Riparian trees were planted to hold the banks together and bring more moisture and biodiversity into the landscape. Grazing patterns were also changed to support natural grassland nutrient cycles. This transformed the farm, increasing its soil productivity, improving its drought resilience and increasing the quality and quantity of water flowing from the farm (Figure 2).

Figure 2. Features of conventional agriculture vs regenerative agriculture.



Note: The image on the left-hand side shows the farm before regenerative practices. The image on the right shows the farm after a shift to regenerative agriculture practices (Photo credit: Mulloon Institute).

2. Leaky weirs are structures of natural materials such as rocks, logs, or soil, placed into a river channel, with vegetation to hold the structure together. The aim of the structure is to slow water down, but not to block flow entirely, thereby rehydrating the landscape.

SIKKIM, INDIA: THE STATE THAT PROVED IT IS POSSIBLE TO GO 100% ORGANIC

The Sikkim Government in India is the first in the world to achieve its vision of 100% certified organic farmland state-wide. Every single one of Sikkim's 66,000 farms is organic, free from agrichemicals and synthetic fertilizers. It wasn't something that happened overnight. It also didn't happen because Sikkim's food shoppers suddenly decided to buy organic food only or because its farmers woke up one day and decided to switch to organic without any support. Instead, the Sikkim Government used policies, public investment and a transition plan to make it happen.

In 2003, the head of the Sikkim Government, Pawan Chamling, announced his vision for Sikkim to become the world's first organic state. These words were backed up by action: Chamling and his Government mandated the gradual phase-out of agrichemicals. The phase-out was supported by the state's organic road map, a fully funded and concrete transition plan detailing all the actions the Government would take to help farmers shift away from pesticides and synthetic fertilizers. In 2014, the sale and use of all agrichemicals became illegal in Sikkim (FuturePolicy, n.d.). This has not only benefited the land, but also supported more secure livelihoods and expanded tourism due to Sikkim's new sustainable identity (FuturePolicy, n.d.).





2. Security and resilience:

Diversifying food production to create secure, nutritious and resilient food supplies

Sufficient, nutritious food should never be a luxury. Ensuring that healthy food is affordable and accessible to all and treating it as a human right or a commons, rather than a commodity, is fundamental to basic wellbeing (Vivero-Pol et al., 2019). To avoid spikes in the cost of food that disrupt this security, we must diversify food production. Diversifying food production also improves the resilience of our food systems and reduces the environmental impacts caused by industrial monoculture operations. Diversification is important both in terms of what is produced and where food is produced.

Crop diversification helps to increase the local availability of diverse foods. Currently, the production of many staple food products comes from monocrop farms, concentrated in a few locations around the world (e.g. corn in the US and wheat in Russia and Ukraine). By growing just one crop species in a field at a time, monocultures have enabled farmers to increase the efficiency of activities like planting and harvesting. However, monocropping depletes healthy topsoil, dramatically increasing our vulnerability to the effects of climate change (Eat-Lancet Commission, 2019).

Instead, crop diversification – meaning that farms cultivate a variety of crop types – makes the soil healthier, reduces the need for excessive fertilizer use, and increases the nutrients in our foods. While monoculture leaves crops vulnerable to diseases and pests, diversification ensures that crops are more resistant to these threats. As a result, diversified crops require fewer agrochemicals such as pesticides, thereby supporting larger populations of beneficial insects. In turn, lower risk of pests or diseases strengthens farmers' financial security, ensuring more stable livelihoods. In many cases, small-scale farmers have shifted from cultivating healthy, traditional crops (e.g., millets in India or teff in Ethiopia) to less nutritionally valuable cash crops (such as maize and soy). Bringing back this diversity could make food more nutritious and make food systems more secure.

In addition to crop diversification, diversification in terms of where food is produced and sourced is important to further close the gap between farm and fork. For example, around the world, a growing number of urban farms and food forests are providing urban residents with food while supporting environmental stewardship and bringing together community members. Mixing agriculture with urban land uses provides more secure access to food and grants urban residents sovereignty over their food production. Where urban farming is well-established and regulated, such as in Cuba, once-underused urban spaces can successfully produce healthy food while providing jobs and creating a greener urban landscape, thereby improving wellbeing in cities (Poulsen et al., 2017; Othman et al., 2018).

URBAN FARMING IN CUBA

When trade sanctions hit Cuba after the fall of the USSR in 1989, a time of economic crisis followed. As resources dwindled and food became scarce, the citizens of Havana took matters into their own hands, starting a Grow-Your-Own revolution. Urban farms began popping up in unused lots of Havana and other cities, becoming an important food source for over 30 years. The food production infrastructure has been woven into the city fabric, with plots ranging in size from backyard gardens to large peri-urban farms. The Cuban Ministry of Agriculture has supported the initiatives and, in 1994, an Urban Agriculture Department (UAD) was formed. Grassroots community organisers continue to receive government training and support, creating a healthy, diverse and accessible food supply for urban residents. Hallmarks of Cuba's 'organopónico' system have been sustainable production, low levels of pesticide use, and other organic farming practices, such as crop rotation and soil management. Farm output has been remarkably high. Available data suggest that urban farms supply over 50 percent of the city's fresh produce (FAO 2015).

Figure 3: Urban farming in Cuba



Photo credit: Andy Cook

REDUCING FOOD WASTE AS ANOTHER MEANS TO INCREASE FOOD ACCESS FOR THOSE IN NEED

Efforts to reduce food waste are another important way to significantly improve food availability without expanding production, thus avoiding additional environmental pressures (OECD, 2021). For example, in Johannesburg, The People's Pantry in Victoria Yards (thepeoplespantry.org.za/) supports and helps to maintain eight community kitchens. Through partnerships with suppliers such as SA Harvest, Nutripick, as well as various local small-scale growers and Love Our City Klean, The People's Pantry provides the community kitchens with access to food that would otherwise be wasted. Waste reduction in its broadest sense is at the heart of the operating model of The People's Pantry: In addition to reducing food waste, when community members hand in recyclable plastics, carton boxes and tins, they receive points that are redeemable at The People's Pantry. In this way, the initiative builds close connections and networks towards a shared sense of collective wellbeing.

Similarly, at Just Zilch, in Palmerston North, New Zealand, volunteers rescue food from restaurants and supermarkets to stock New Zealand's longest-running 'free-store'. Anyone can come in and take a wide range of food for free. Just Zilch manages to give away approximately \$95,000 worth of food each week, avoiding food waste and providing reliable access to food for residents who need it. On the other side of the world, in France, since 2016, large grocery stores have been banned from throwing away unsold food that could be given away. Instead, they must donate it to charities and food banks. The new law has not only expanded food access, but has also unexpectedly led to savings for supermarkets, as less money needs to be spent on disposal services.

Figure 4: The People's Pantry advocates for food sovereignty in South Africa by implementing plans to combat hunger, food wastage and climate change



Photo credit: The People's Pantry



3. Sovereignty and fairness:

Ensuring a more equitable food system to empower both farmers and consumers and rebuild food sovereignty

Food sovereignty³ is vital to achieving food security. Food production must be democratic and inclusive, calling for fairer food systems that empower local communities and build on local and indigenous knowledge. Today, ten companies own and control most food and beverage brands worldwide (Oxfam, 2013). These companies have enjoyed unprecedented commercial success. However, they are leaving the communities and natural environments that supply their products in increased hardship and push small-hold farmers into debt and poverty (Hossain, 2017). Food industry consolidation has placed critical decisions about food systems in the hands of a few large companies, giving them outsized influence to lobby policymakers, direct food and industry research, and influence media coverage (Howard & Hendrickson, 2021). This inflates prices and reduces food sovereignty for consumers (FAO et al., 2021).

Similarly, today many farmers rely on patented seeds owned by agrochemical companies, which usually cannot be replanted. Currently, four corporations control over 60% of the world's agricultural seed sales (DW, 2021). Because it is costly to secure a patent, these corporations focus on improving a very small variety of seeds. While this has made mechanised production more cost-effective, it has also decreased crop diversity (Pilipinas, 2007). With less crop diversity, crops have become more vulnerable to pests and diseases, requiring the application of more chemical fertilizers and pesticides, which are often inaccessible to poorer farmers and damage human and ecosystem health (Esquinas-Alcázar, 2005; Cohen, 2007). At the same time, especially since the early 2000s, there has been increasing financial investment in farming and food distribution, leading to a growing influence of corporate investors over farm practices (Magnan, 2015). This leads many farms to run with short-term returns on investment as the primary goal rather than long-term sustainability or food security.

In moving towards more sustainable, secure and equitable food systems, questions of land ownership and the need for decolonisation and restorative justice are central. Our current food systems are built on colonisation and structural inequality. A resilient food system that feeds everyone can only be achieved through a more equitable distribution of power, by addressing historical injustices, empowering people to take back the means of food production, creating food systems that benefit local communities, and better supporting small-scale and sustainable farming. This includes

3. Food sovereignty can be defined as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (Via Campesina, 2021).

efforts to strengthen community – or cooperative-owned farms and to democratise our food production system (NatureFood, 2020). For example, agriculture cooperatives go beyond solely seeking profit gains to ensure their operations' long-term sustainability (Frontiers of Development Institute, 2022). Communal urban gardens enable people to grow their own food, reduce food miles and create much-needed green spaces. Seed-saving networks help farmers increase the diversity of what they produce and reduce their reliance on acquiring new seeds from seed corporations. What these initiatives have in common are the restoration of autonomy, local communities and the value placed on natural resources, building on the growing recognition that each of these elements is essential to address our interconnected food, health and environmental crises.

Many of the concepts now termed 'regenerative farming' and 'agroecology' are based on the practices of Indigenous people prior to colonisation. Respecting and acknowledging the value of Traditional Ecological Knowledge (TEK) and pre-colonisation agricultural practices is therefore fundamental (Box 3). Indigenous communities across the globe have developed a deep connection with their ancestral lands, employing agricultural methods that have been sustainable for tens of thousands of years in some cases (Pascoe, 2018). Yet, Indigenous voices have been forcibly removed from their lands and have long been excluded from agricultural conversations. Understanding that humans are an equal part of healthy ecosystems alongside plants and other animals, rather than the centre, is an essential element of agroecology and TEK. The mindset of industrial agriculture has centred around dominance, leading to the spread of extractive and destructive practices that ignore basic ecological principles. Consciously restoring a value of equity – both between humans and between humans and our natural environment – is vital in the work on decolonising agriculture (Whitney, 2022).

DREAM OF WILD HEALTH: DECOLONISING REGENERATIVE FARMING IN THE UNITED STATES

While regenerative agriculture is often put forward as a new and innovative approach, its guiding principles echo many Indigenous peoples' existing values and practices, such as recognising humans as stewards rather than controllers of the land. In the United States, Native Americans are continuing and restoring Indigenous food practices that have been tailored to their local environments. This not only creates a productive food system embedded in a thriving ecosystem but also returns the freedom of Native Americans to determine their diets and food production practices – something that has been severely undermined by colonisation (Green America, 2021). For example, Dream of Wild Health is one of the oldest and longest-operating Native American led and focused non-profits in the Twin Cities. Dream of Wild Health originated in the 1980s as a program to provide transitional housing, health and support services for Native Americans. In response to beneficiaries' requests for re-connection with their lands, traditions, foods and medicines, Dream of Wild Health was officially created in the late 1990s. Today, the initiative has grown into a 30-acre farm that serves the Twin Cities Native community as an independent entity, helping to restore and preserve Indigenous relationships with the land and offering access to healthy foods and lifestyles.



COMMUNITY SEED BANKS TO EMPOWER WOMEN AND PROTECT BIODIVERSITY IN UGANDA

Rather than leaving the development and distribution of seeds up to large external corporations, community seed banks help local producers to develop and work with locally-adapted seed varieties. This improves food security while also maintaining local sovereignty over seed distribution. Most seed banks are run by farming communities, allowing farmers to share traditional knowledge and responsibilities in the management and maintenance of the seed bank. Seed banks can also play an important role in promoting greater gender equality. For example, in the Kizibi Community Seed bank in Uganda, women are active custodians of traditional crop varieties and play key roles in managing and maintaining the seed bank, thereby supporting their empowerment (Biodiversity International, 2016).

Figure 5. Seeds sold at Kizibi Community Seedbank



Photo credit: Biodiversity International

LOCAVORE AND LUFA FARMS: LOCAL FOOD PRODUCTION AND DISTRIBUTION IN SCOTLAND AND CANADA

Locavore is a Community Interest Company and social enterprise in Glasgow which exists to help build a more sustainable local food system that is better for the local economy, the environment and communities. The organisation works to create an alternative to the supermarket model, which has dominated food production and sales in Scotland. Since 2011, Locavore has been working to improve Glasgow's food network by producing and distributing organic fruit and vegetables, as well as providing food education. Locavore grows produce on three sites, totalling around 1.2 hectares, all within 10 miles of the Glasgow city centre. This produce is distributed via Locavore's shop and its vegetable box scheme. Locavore uses the money raised from food sales to achieve social and environmental gains by funding projects and education about the global impact of food, including climate change, animal welfare, exploitation, and workers' rights. Similarly, Lufa Farms in Montreal, Canada, aims to reconnect people with where their food comes from by growing veggies right there in the city on rooftops, partnering up with hundreds of farmers and food makers, and providing it to customers through an online farmer's market (Lufa Farms, n.d.).



Conclusion

Some wellbeing economists have likened the narratives of traditional economics to ‘machine thinking’, calling upon economists to start thinking more as ‘gardeners’ (Karacaoglu, 2021). Economics is then about creating the conditions in which our natural environments and societies can flourish. Nowhere is this metaphor more applicable than concerning our agricultural systems. More sustainable and equitable agriculture systems are a fundamental part of a Wellbeing Economy that works for people and the planet, leaving no one behind.

This paper has highlighted three directions for moving towards wellbeing-oriented agriculture systems. This includes 1) Harnessing the potential of natural systems to preserve long-term food production, 2) Diversifying food production to create secure and resilient food supplies, and 3) Ensuring a more equitable food system to empower both farmers and consumers and rebuild food sovereignty. While these three directions provide a starting point for thinking about agriculture in a Wellbeing Economy rather than a comprehensive overview of required changes, the examples above illustrate that change is possible. Our challenge now is to continue to sow, feed and nourish these vital seeds of change.

Additional resources

Key Resources

- Creating a sustainable food future <https://research.wri.org/wrr-food>
- IDDRI report ten years for agroecology in Europe <https://www.soilassociation.org/media/18074/iddri-study-tyfa.pdf>
- Regeneration International <https://regenerationinternational.org>
- Grain <https://www.grain.org>
- Cranfield Environment and Agrifood <https://www.foodandlandusecoalition.org/wp-content/uploads/2019/09/Regenerative-Agriculture-final.pdf>
- Regenerative Annual Cropping. Project Drawdown. Available at: <https://www.drawdown.org/solutions/regenerative-annual-cropping>
- Sustainable Intensification for Smallholders. Project Drawdown. Available at: <https://www.drawdown.org/solutions/sustainable-intensification-for-smallholders>
- Green Global Travel. What is permaculture gardening? Available at: What Is Permaculture Gardening? An Intro to Permaculture Design and Principles (greenglobaltravel.com)
- FoodTank. 122 Organisations Transforming Food Systems. <https://foodtank.com/news/2021/12/organizations-transforming-food-systems/>

References

- Biodiversity International, 2016. Women of the Kizibi community seedbank. Available at: <https://www.biodiversityinternational.org/news/detail/women-of-the-kizibi-community-seedbank/> (Accessed: 18 October 2022)
- Bodapti, S. & Chander, M., 2013. Integrating indigenous knowledge of farmers for sustainable organic farming: An assessment in Uttarakhand state of India. *Indian Journal of Traditional Knowledge*, 12, 259-264.
- Christiaensen L. and Martin W., 2018. Agriculture, structural transformation and poverty reduction: Eight new insights. *World Development* 109: 413-416.
- Cohen M., 2007. Environmental toxins and health: the health impact of pesticides. *Australian Family Physician* 36(12).
- DW, 2021. Seed monopolies: Who controls the world's food supply?. Available at: <https://www.dw.com/en/agriculture-seeds-seed-laws-agribusinesses-climate-change-food-security-seed-sovereignty-bayer/a-57118595> (Accessed 14 October 2022)
- Eat-Lancet Commission, 2019, 'Food Planet Health' Available at: https://eatforum.org/content/uploads/2019/07/EAT-Lancet_Commission_Summary_Report.pdf (Accessed: 24 November 2021).
- Ericksen, P.J. 2008. Conceptualizing food systems for global environmental change research. *Global Environmental Change* 18(1): 234-245.

- Esquinas-Alcázar J., 2005. Protecting crop genetic diversity for food security: political, ethical and technical challenges. *Nature Reviews Genetics* 6(12): 946-953.
- FAO, 2015. *Urban and Peri-urban Agriculture in Latin America and the Caribbean*: Havana. FAO, Rome. <http://www.fao.org/ag/agp/greencities/en/GGCLAC/havana.html>.
- FAO, 2021. COP26: Agricultural Expansion Drives Almost 90 Percent of Global Deforestation. Food and Agriculture Organisation Newsroom, Rome. Available at: <https://www.fao.org/newsroom/detail/cop26-agricultural-expansion-drives-almost-90-percent-of-global-deforestation/en> (Accessed 01 August 2022).
- FAO, IFAD, UNICEF, WFP and WHO, 2021. *The State of Food Security and Nutrition in the World 2021. Transforming food systems for food security, improved nutrition and affordable healthy diets for all*. Rome: FAO.
- Fletcher, K., 2019. Deep roots: a regenerative approach to agriculture. Available at: <https://www.oecd-forum.org/posts/56876-deep-roots-a-regenerative-approach-to-agriculture> (Accessed 3 October 2022).
- Frontiers of Development Institute, 2022. Good Practices for the Commercialization of Agroecological Foods: Recommendations of The Amazonia to Belém Project: Fostering Regenerative Food Systems. Available at: https://drive.google.com/file/d/1XHJSQHQA2xj6r7R-abu2fxETT_oq5VNX/view?usp=sharing (Accessed 18 January 2023).
- FuturePolicy (n.d.), Sikkim's State Policy on Organic Farming, India. Available at: www.futurepolicy.org/healthy-ecosystems/sikkims-state-policy-on-organic-farming-and-sikkim-organic-mission-india/ (Accessed 14 October, 2022).
- Giller, K.E., 2022. Why the Buzz on Regenerative Agriculture?. Our First Issue!, p.12.
- Green America, 2021. Native Growers Decolonize Regenerative Agriculture. Available at: <https://www.greenamerica.org/native-growers-decolonize-regenerative-agriculture> (Accessed 14 October, 2022).
- Hossain, N., 2017. Inequality, hunger, and malnutrition: Power matters. International Food Policy Research Institute, Welthungerhilfe, and Concern Worldwide.
- Howard, P.H. & Hendrickson, M., 2021. Monopolies In the Food System Make Food More Expensive and Less Accessible. Available at: <https://civileats.com/2021/02/17/op-ed-monopolies-in-the-food-system-make-food-more-expensive-and-less-accessible/> (Accessed 14 October, 2022).
- IDDRI, 2018. An agroecological Europe in 2050: multifunctional agriculture for healthy eating. Findings from the Ten Years For Agroecology (TYFA) modelling exercise, Iddri-AScA, Study, 9, p.18.
- Karacaoglu, G., 2021. Love you: Public policy for intergenerational wellbeing, Tuwhiri, Wellington.
- Lacanne, C. E. & Lundgren, J. G., 2018. Regenerative agriculture: merging farming and natural resource conservation profitably. *PeerJ*, 6, e4428.
- Lufa Farms, n.d. Our mission is to create a better food system. Available at: <https://montreal.lufa.com/en/about> (Accessed 31 October 2022).
- Magnan A., 2015. The financialization of agrifood in Canada and Australia: Corporate farmland and farm ownership in the grains and oilseed sector. *Journal of Rural Studies* 41: 1-12.
- NatureFood, 2020. Democratizing food systems. *Nat Food* 1, 383.
- Newton, P., Civita, N., Frankel-Goldwater, L., Bartel, K. and Johns, C., 2020. What is regenerative agriculture? A review of scholar and practitioner definitions based on processes and outcomes. *Frontiers in Sustainable Food Systems*, p.194.

- OECD, 2021. Making Better Policies for Food Systems, OECD Publishing: Paris. Available at: <https://doi.org/10.1787/ddfba4de-en> (Accessed 14 October 2022).
- OECD/FAO, 2019. OECD-FAO Agricultural Outlook 2019-2028, OECD Publishing: Paris. Available at: <https://doi.org/10.1787/990badf8-en> (Accessed 14 October 2022).
- Ogilvy, S., Gardner, M., Mallawaarachichi, T., Schirmer, J., Brown, K. and Heagney, E., 2018. NESP-EP: Farm profitability and biodiversity project final report. Canberra Australia Strategy.
- Othman, N., Mohamad, M., Latip, R. A. & Ariffin, M. H., 2018. Urban farming activity towards sustainable wellbeing of urban dwellers. IOP Conference Series: Earth and Environmental Science, 117, 012007.
- Oxfam, 2013. Behind the brands. Food justice and the 'Big 10' food and beverage companies. Available at: <https://www.behindthebrands.org/> (Accessed 14 October 2022).
- Pascoe B., 2018. Dark Emu: Aboriginal Australia and the Birth of Agriculture, New Edition. Magabala Books.
- Pilipinas, K.M., Layosa, P.M., Acharya, K., Quijano, R.F., Adapon, S.Q., Pelegrina, W.R. and Cruz, P.A.Z., 2007. The Great Riice Robbery: A Handbook on the Impact of IRRI in Asia (PDF).
- Poulsen, M. N., Neff, R. A. & Winch, P. J., 2017. The multifunctionality of urban farming: perceived benefits for neighbourhood improvement. Local Environment, 22, 1411-1427.
- Project Drawdown, 2020. Regenerative Annual Cropping. Project Drawdown. Available at: <https://www.drawdown.org/solutions/regenerative-annual-cropping> (Accessed: 24 November 2021).
- Rhodes, C.J., 2017. The imperative for regenerative agriculture. Science progress, 100(1), pp.80-129.
- Searchinger, T., Waite, R., Hanson, C., Ranganathan, J., Dumas, P., Matthews, E. and Klirs, C., 2019. Creating a sustainable food future: A menu of solutions to feed nearly 10 billion people by 2050. Final report.
- Sharma, A., Bryant, L., Lee, E. and O'Connor, C., 2021. Regenerative Agriculture Part 4: The Benefits. New York: Natural Resources Defense Council. Available at: <https://www.nrdc.org/experts/rohi-sharma/regenerative-agriculture-part-4-benefits> (Accessed: 24 November 2021).
- Schulte, L.A., Dale, B.E., Bozzetto, S., Liebman, M., Souza, G.M., Haddad, N., Richard, T.L., Basso, B., Brown, R.C., Hilbert, J.A. and Arbuckle, J.G., 2022. Meeting global challenges with regenerative agriculture producing food and energy. Nature Sustainability, 5(5), pp.384-388.
- Tamburini, G., Bommarco, R., Wanger, T.C., Kremen, C., Van der Heijden, M.G.A., Liebmanand, M., and Hallin, S., 2020. Agricultural diversification promotes multiple ecosystem services without compromising yield. Science Advances, 6 (45).
- Via Campesina, 2021. Food Sovereignty, a Manifesto for the Future of Our Planet. Available at: <https://viacampesina.org/en/food-sovereignty-a-manifesto-for-the-future-of-our-planet-la-via-campesina/> (Accessed 01 October 2022).
- Vivero-Pol, J.L., Ferrando, T., De Schutter, O. and Mattei, U. eds., 2018. Routledge handbook of food as a commons. Routledge.
- Whitney, L. (2022). Agricultural decolonization in West Africa. Factory Farming Awareness Coalition, <https://ffacoalition.org/articles/agricultural-decolonization-in-west-africa/>
- WRI, 2013. Water Stress by Country. World Resources Institute: Washington DC. Available at: <https://www.wri.org/data/water-stress-country> (Accessed 31 December 2021).

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