Editorial: Agroecology and the Sustainable Development Goals

JONATHAN CASEY

Agriculture is back in the spotlight of development efforts, and is seen as central to achieving many of the interdependent Sustainable Development Goals (SDGs), and achieving the mitigation and adaptation targets of the Paris Agreement on climate change. With the global population expected to grow to over 9 billion by 2050, coupled with the negative impacts of climate change on agricultural production, a serious strain is being placed on the sector. This is exacerbated by the concentration of extreme poverty among smallholder farmers in the least developed countries.

Agroecological farming systems are increasingly seen to have the potential to meet the triple challenge of productivity, sustainability, and poverty eradication. Yet the current paradigm of the food system tends to view agroecological approaches as niche, difficult to scale, and – by some – unproven. Meeting this triple challenge is at the heart of the SDGs, which call for 'leaving no one behind'. Intensification-centred approaches to agricultural development have fundamentally failed to be inclusive; they do not address the needs nor tap the productive potential of smallholder farmers (Henderson and Casey, 2015). To address this triple challenge, we need a system-wide approach to sustainable agricultural development.

Yet the tide is turning, and there is both growing interest in agroecological approaches and a rapidly expanding body of evidence, demonstrating that innovative agroecological principles have the ability and agility to balance yield growth, environmental sustainability, and decent livelihoods. This is evidenced through the 2014 Agroecology Summit and subsequent regional workshops hosted by the United Nations Food and Agriculture Organization (FAO), and the high-level meeting on scaling up agroecology, convened by IIED and Practical Action in 2015 (Adolph et al., 2015), among others.

This special issue of *Food Chain* explores how agroecological principles are being applied to agricultural systems in Africa, Asia, and Latin America, focusing on the needs and resources of smallholder farmers. The articles in this issue explore the full range of issues across the 'food chain': from input provision (Henderson et al.), to production services (Ewbank), the fostering of local knowledge and innovation systems (McCune), through to value chain development (Carpena et al.). Together the papers explore the political, economic, social, gender, and environmental dimensions of how agroecology can be successfully scaled, to be a truly transformative disruptive-innovation approach to achieving the SDGs.

Chis Henderson and colleagues at Practical Action explore the opportunity to respond to decreasing soil fertility and rural poverty in Nepal through endogenous

Jonathan Casey (jonathan.casey@practicalaction.org.uk) is a Policy Adviser for Gender Equality and Technology Innovation at Practical Action, UK.

http://dx.doi.org/10.3362/2046-1887.2017.004, ISSN: 2046-1879 (print) 2046-1887 (online)

organic inputs, taking a market systems approach to analysing the barriers and opportunities for change. They present new evidence which demonstrates that a transitional system of mixed organic and inorganic inputs boosts yields, increases incomes, and reduces risk for farmers, while fostering national business opportunities for organic input production.

Richard Ewbank presents a variety of evidence from Christian Aid-supported work in Africa and Asia, highlighting the complementary impacts of combining improved access to short- and long-term climate forecasting information and measurement technologies, with agroecological farming practices. The combination of improved climate knowledge services and leveraging local indicators of climatic change increases the adaptive capacity of smallholder farmers to respond to climatic shocks and slow-onset hazards. Both these papers highlight the importance of considering the significant cost savings of agroecological farming alongside yield and resilience measures.

Pietro Carpena and colleagues at Tree Aid present findings from their work in Burkina Faso, where the gendered nature of farming and production has significantly limited women's abilities to create secure livelihood opportunities. By focusing on non-wood forest products (NWFPs), Carpena et al. demonstrate how utilizing communal land and strengthening the value chains for NWFP markets can enhance women's economic empowerment. By recognizing women as important agents of change and custodians of the land, this article finds that agroecological approaches combined with local resource governance structures can have positive impacts on sustainable forest management.

Through a deep-dive exploration of the political economic history of Nicaragua, Nils McCune highlights the socio-political dimension of agroecological transformation, and the importance of integrated public policy in shaping a new 'post-neoliberal' agenda for social, environmental, and food systems change. As agroecological knowledge is reproduced, shared, and multiplied, social organizational structures and education systems become essential components to scaling-out and scaling-up processes. McCune discusses the role of the state in determining the popular diffusion of agroecological methods and thinking across the Nicaraguan countryside.

One of the barriers to scaling agroecology to date has been the perceived confusion among various stakeholders about its meaning and applications, traversing technical practices, holistic resource management principles, and as a social movement (Silici, 2014). The papers in this issue address all of these dimensions of agroecology, and by taking them together we can see that these are overlapping and interdependent factors to achieving scalable change, that can create positive outcomes for people (in particular smallholder farmers), the planet, and prosperous societies.

There is a clear and urgent need to systemically disrupt and transform the existing global agricultural system to achieve the SDGs, respond to climate change, and ensure that smallholder farmers are not 'left behind' as developing economies grow and change. Intensive production systems damage and degrade soils, undermining the natural resource base of smallholder farmers. These systems not only contribute to

greenhouse gas emissions that cause climate change, but also promote a short-term vision of agriculture, potentially shifting the impending food crisis from this generation to the next, and leaving it unable to provide for a rapidly growing global population. The diverse physical conditions for agriculture are markedly different both between and within countries, and also across seasons. And while the dynamic and adaptive nature of agroecology is more attuned to such complexities compared with conventional farming systems (Altieri et al., 2015; De Schutter and Vanloqueren, 2011), this concurrently poses challenges for scale and replication. The papers in this issue demonstrate how a variety of policy, technology, market, and social responses can work together to create a more enabling environment for equitable, productive, and sustainable farming systems.

References

Adolph, B., Henderson, C., Cook, S. and Casey, J. (2015) 'Summary report of the high-level workshop on scaling up agroecology to achieve the SDGs' [online], Practical Action and International Institute for Environment and Development <http://hdl.handle.net/11283/594772> [accessed 3 January 2017].

Altieri, M.A., Nicholls, C.I., Henao, A. and Lana, M.A. (2015) 'Agroecology and the design of climate change-resilient farming systems', *Agronomy for Sustainable Development* 35(3): 869–90 <http://dx.doi.org/10.1007/s13593-015-0285-2>.

De Schutter, O. and Vanloqueren, G. (2011) 'The new green revolution: how twenty-first-century science can feed the world', *Solutions* 2(4): 33–44 [online] <https://www.thesolutionsjournal.com/article/the-new-green-revolution-how-twenty-first-century-science-can-feed-the-world/> [accessed 3 January 2017].

Henderson, C. and Casey, J. (2015) *Scaling Up Agroecology through Market Systems: Using Technology Justice in Agriculture to Leave No One Behind* [online], Technology Justice Policy Briefing 3, Rugby, UK: Practical Action Publishing <http://policy.practicalaction.org/component/dspace/item/scaling-up-agroecology-through-market-systmes> [accessed 3 January 2017].

Silici, L. (2014) *Agroecology: What it is and what it has to offer* [pdf], IIED Issue Paper, London, UK: International Institute for Environment and Development <http://pubs.iied.org/14629IIED.html> [accessed 3 January 2017].

FARMING MATTERS

Photo: Roberto Luna

Join a global platform for experiences in family farming and agroecology

www.farmingmatters.org

agricultures

@ileia_int

ileia