

Create, Reorient, Phase Out

The Way Forward for Food-System Transformation through Research and Innovation

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Highlights

- Research and innovation have a unique value proposition in the context of food-system transformation; creating, reorienting, and phasing out aspects of our current research systems can realise their potential.
- We can *phase out* research institutions, mental models, and incentives that are siloed and that promote top-down silver-bullet thinking.
- We can *reorient* agricultural research for development to food-system research wherein performance is measured based on benefits to users and the ability to scale rapidly.
- We can *create* spaces and matching incentives to catalyse action, imagine shared futures among stakeholders, and support intergenerational allyship and learning.

19.1 Rethinking Food Systems, Research, and Innovation: Key Takeaways

Multiple social, systemic, and structural factors threaten our current food systems. Climate change is pushing us to transform these systems, not only to mitigate its impact but also to ensure food and nutrition security and pursue other ecological, social, political, and economic benefits. As Chapters 1–3 have highlighted, research and innovation can enable that transformation in four action areas: (1) rerouting food systems along novel trajectories, (2) addressing nascent socio-cultural issues and thereby reducing risks, (3) responding to new environmental challenges, thereby lowering emissions, and (4) realigning enablers of change such as policies, regulation, finance, and innovation. Research and innovation can generate necessary knowledge and practical applications to support these actions (Chapter 3) but doing so will entail rethinking our research systems in the context of food-system transformation.

Chapters 4–14 have sketched out eleven actions – the ‘what’ – that will lead to urgent transformation within the four action areas, and *how* these actions can be realised. The *rerouting* of food systems will require innovative financial mechanisms that can empower actors to pursue change, complemented by a robust pipeline of bankable projects, mechanisms to aggregate such projects, and efforts to matchmake investors and projects. If they are attentive to gender and age differences, integrated policies that combine safety nets with incentives for climate-smart practices will also enable a shift in markets and production systems. *De-risking* our food systems in the face of climate change calls for a climate security agenda combined with early warning and action mechanisms that are backed by finance for safety nets. Specifically for farmers, information and communication technologies and climate data can mitigate risks, so creating options for access and connection to these resources will be vital. *Reducing* emissions, through climate-friendly diets and fighting food loss and waste, entails large-scale behavioural change. Market innovations, like more sustainable meat alternatives and demand-driven planning and supply chain coordination, can facilitate that change if policies actively promote them. All these actions depend on a *realignment* of the enablers of change in our systems, structures, and society, to ensure that our policies, institutions, and innovations foster and finance transformation.

Chapters 15–18 have highlighted how outcome-orientated research and innovation can support the eleven actions through (1) transformational theories of change, (2) strategic partnerships, (3) working across horizontal and vertical scales, and (4) transformative leadership. The use of theories of change to guide research, engagement, and capacity development activities helps steer research programmes beyond outputs to impact. In addition, theories of change, combined with adaptive management, can help identify key leverage points and strategic partnerships. Diverse, flexible, multi-scale partnerships, in turn, can move research from generating knowledge to driving societal changes. By propelling action on multiple scales, partnerships are also essential to successful scaling. Transformative leadership characterised by a strong mission orientation, embodied in both organisations and individuals, can pioneer these approaches to realise the potential of research and innovation to catalyse transformation.

19.2 It Is Time: Create, Reorient, and Phase Out

All the chapters in this book highlight how a food-system transformation could be realised. Taken together, they express one overarching message: transforming food systems not only means changing *what* is done, but also changing *how* things are done. Research can act as an important driver of that change. As it stands,

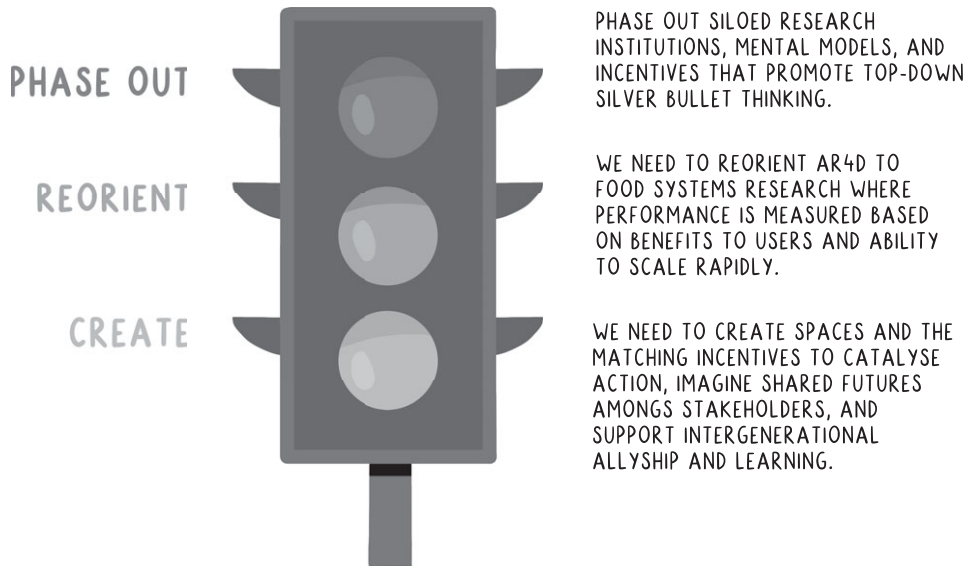


Figure 19.1 Create, reorient, phase out: The way forward for food-system transformation through research and innovation

however, our research and innovation systems are too much intertwined with our current food system and not the force for change that is needed. To fulfil the transformational potential of research and innovation, we can reflect on which aspects of our research and innovation systems need to be *phased out*, which ones we can *reorient* for transformational purposes, and what is missing and should be *created* (Figure 19.1). Building on the insights of this book, it is time to do as follows.

19.2.1 Phase Out

The path to food-system transformation requires moving away from a one-sided focus on growth as the hallmark of development. In the context of agricultural research for development (AR4D), this shift entails phasing out mental models that ignore the social, political, and ecological challenges that climate change brings. In addition, the food-system perspective also demands sensors throughout the system to grasp the complex dynamics at play. Yet too much research focuses on aggregating results to the highest level, looking for and promoting silver bullets, and obscuring insights into complex dynamics at lower levels. Along the same lines, siloed research institutions, where disciplines and academic buzzwords can limit innovative thinking and practical relevance, are not fit-for-purpose any more and could be phased out. On the governance side, the time of purely voluntary

commitments to transformation has passed: we do not have enough time left to transform our food systems using only soft incentives. Research can create the evidence base needed to design and justify policies and strong incentive structures that push unwilling actors into action.

19.2.2 Reorient

When reoriented, other aspects of current research and innovation systems can actively support food-system transformation. Research can produce high-quality, timely evidence that will enable us to navigate the uncertainties and options that beset the pathways of transformation. Academic dialogues, institutions, and funding can open up and explicitly use transdisciplinary methods to address the many causes of our food system crisis. In addition, the reorientation of performance measurement in research will shape both the research agenda and the evidence base. Moving away from a definition of ‘success’ that favours the supply side and towards performance indicators that incorporate user perspectives and truly allow for innovative research will promote the uptake and scaling of innovations. As such, scaling strategies that are currently top-down and disconnected from research processes can be redirected so that scaling is part and parcel of innovation trajectories from the onset. Overall, AR4D must be reoriented as food systems research for development to deliver the needed systems change.

19.2.3 Create

Our research and innovation systems are still missing spaces that bring together the wide variety of actors from our food systems to catalyse necessary transformation. These spaces will support the creation of shared visions of transformational goals. Hence, in the face of climate change, we need platforms that facilitate dialogues among sectors and among the wider range of stakeholder groups that are linked to food-system transformation, such as farmers and consumers, across different generations. Promoting intergenerational allyship can preserve valuable lessons from past traditions, experiences, and failures. Research can build on these visions to guide agendas that are people-centred and demand-driven, while contributing the evidence base that is needed to realise them. We must not stop at dialogue, however, but ensure that action emerges from these shared visions. Partnerships among research, policy, and private-sector organisations will play a central role in translating evidence into large-scale action throughout our food systems. Action will require the creation of incentive and funding mechanisms that value research based on its functionality for end users.

19.3 Way Forward

Research and innovation have a unique value proposition in the context of food-system transformation: they can inspire, enable, and assess transformative action through knowledge creation and evidence. Harnessing this potential can promote transformed food systems that sustainably manage current and future resources and stresses and bring about a world in which all people, including future generations, are well-nourished and food secure. This book provides an agenda for the transformation of food systems and supporting research and innovation systems, building on insights from twelve years of the CGIAR Research Program on Climate Change, Agriculture and Food Security, a prominent effort in AR4D to respond to climate change challenges. Transformation will require big, bold investments from both public and private actors to finance fundamental changes in our food systems (Chapter 2). At the same time, it will be crucial to ensure there is continuous and rapid multidimensional and multi-level feedback through transdisciplinary metrics and measurements, to secure directed transformation that maximises benefits and minimises trade-offs (Chapter 1).

In some cases, this transition to transformational food systems research and innovation will involve phasing out, reorienting, or creating entire institutions and initiatives. In other cases, some parts of the same institution or initiative may need to be phased out, others reoriented, and new parts created. Identifying each of these parts requires critical, humble self-reflection about how research and innovation systems are currently hindering the transformation of our food systems and what must change to enable transformational research. Reluctance from incumbent actors to do so will end up stranding assets so they do not address the necessity of transformation. Moving forward, urgent priorities include fostering transdisciplinary and multi-level research-action relationships and creating spaces for shared learning, targets, metrics, and failure. In this process of phasing out, reorientation, and creation, leadership from organisations and individuals can fulfil the potential and responsibility of our research and innovation systems in realising the food-system transformation we need.