

Eight research and innovation principles for sustainable and equitable agri-food systems



Geographic information system (GIS) scientists review a satellite map (Photo: Neil Palmer / IWMI)

In 2021, CoSAI brought together a **Task Force on Principles and Metrics** and gave it an ambitious task: to agree on a concise set of principles to guide and track innovation for sustainable agri-food systems. The **Principles for Agri-food Research and Innovation**, a scoring system and guidance are available to help decision makers orient innovations toward global goals.

Actions needed

- **Investors in the agri-food sector need to reorient existing funding toward transformative innovation** that will shape the future of agri-food systems. In order to do so, they require tools that facilitate the credible identification of innovations and reporting on which ones are likely to achieve sustainable and equitable outcomes. The Principles fill this need.
- **Organizations, companies and project managers can use the eight Principles for Agri-food Research & Innovation as a learning and management tool** for improving their innovation processes to make them more effective, sustainable and equitable. From the conception stage of research or innovation onward, the Principles offer a checklist that helps track activities and processes – including whether key social and environmental outcomes are measured.
- **Investors, organizations and companies should also use the Principles to demonstrate and report on their performance** against sustainability and equity objectives, using a simple scoring system, and gain recognition for following harmonized approaches.
- **Actors throughout the agri-food sector need to increase transparency in the sector's innovation landscape**, which the Principles can achieve if widely adopted and tracked by international systems. They can become an important lever that generates rich data, enabling public tracking of research and innovation as a mechanism to identify investment gaps and to incentivize investors to focus on innovation in support of agreed global goals.

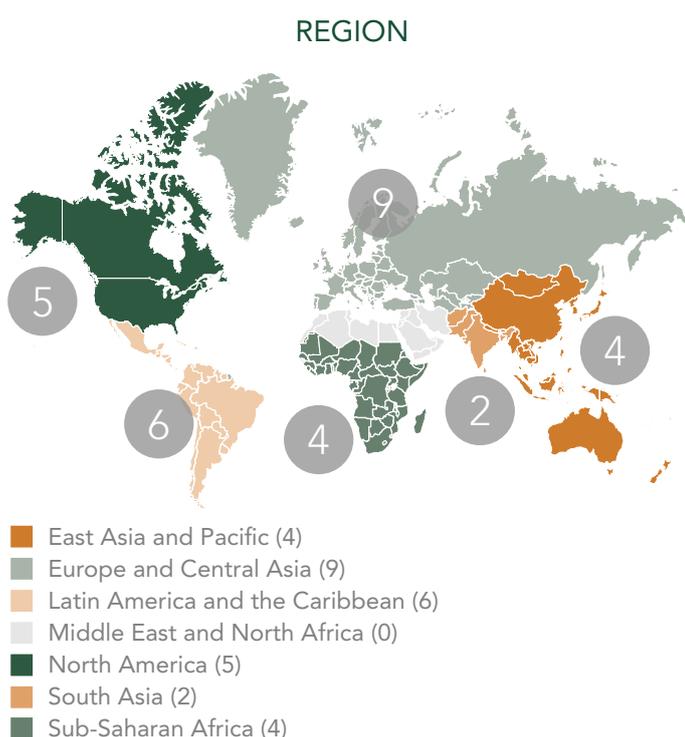
The great reorientation

A recent [innovation investment study](#) commissioned by CoSAI found that less than 5% of research and innovation funding for agri-food systems in the Global South has tangible environmental and social objectives. The study revealed an urgent need to reorient existing funding for research and innovation – in policies, social institutions and finance, as well as in technology. It also revealed that the agri-food sector lacks transparency on the objectives and outcomes of its investments in research and innovation.

A reorientation will need to be large in scale to meet the ambitions of the [Sustainable Development Goals](#) and [Paris Agreement](#) – that is, feeding an estimated 10 billion people with healthy, accessible, safe and nutritious food, while protecting and regenerating the natural environment, stabilizing the climate and sustaining equitable livelihoods.

Companies and organizations face two main barriers: they lack roadmaps for making their innovations sustainable and equitable, and they find it difficult to credibly report which innovations are likely to promote these outcomes. In other words, the choices that shape the agri-food systems of the future are too often made unconsciously and invisibly.

Members of the Task Force on Principles and Metrics



Principles for progress

CoSAI responded to this challenge by bringing together a voluntary [multistakeholder task force](#) of experts from regional and international research organizations, donors, the private sector and civil society to develop principles for tracking innovation progress in the agri-food sector. Over a year, the task force developed eight [Principles for Agri-food Research and Innovation](#) and a simple scoring system for these, based on iterative workshoping and consultation processes.

The results of this process were finalized after pilot testing in early 2022. The pilot phase involved the task force and external stakeholders contributing feedback to improve both the content and usability of the Principles and their accompanying [step-by-step guide](#) as well as helping identify obstacles to their integration in existing reporting processes. A [scoring template](#) and a larger database of potential metrics complement the developed products.

STAKEHOLDER CLASSIFICATION



THE EIGHT PRINCIPLES FOR AGRI-FOOD RESEARCH & INNOVATION

1 Set out a clear theory of change towards intended impacts, based on a food systems perspective and reflexive learning

- 1.1 Clear and flexible theory of change towards intended impact of proposed innovation
- 1.2 Applied systems thinking at different scales, including all impacted actors and activities
- 1.3 Reflexive monitoring and evaluation to adapt route to impact to changing conditions

2 Design transparent and evidence-based innovation processes

- 2.1 Information on innovation goals, key intended outcomes, and budgets publicly available
- 2.2 Analysis of needed resources and capabilities, and the ability to obtain them
- 2.3 Evidence-based processes including use of credible metrics
- 2.4 Sharing of knowledge/insights, as appropriate, with others (public or private entities)

3 Conduct innovation processes in an inclusive and ethical manner

- 3.1 Inclusive, fair and transparent decision making within innovation processes, ensuring all relevant stakeholders are included
- 3.2 Fair and inclusive partnerships, and fair and ethical apportioning of benefits
- 3.3 Active considerations of all relevant types of knowledge
- 3.4 Ethically conducted innovation processes in compliance with human rights and other relevant international standards

4 Address potential trade-offs, synergies, efficiencies, and unintended effects

- 4.1 Transparent and systematic analysis of inputs, outputs, and agrifood system outcomes (Principles 5 to 8)
- 4.2 Transparent monitoring of winners and losers in innovation processes and outcomes (including unintended)

5 Consider contribution to improved food and nutrition security and health

- 5.1 Food security
- 5.2 Adequate nutrition
- 5.3 *OneHealth*

6 Consider contribution to sustainable and circular management and utilization of natural resources

- 6.1 Biodiversity and integrated habitats
- 6.2 Climate change mitigation
- 6.3 Clean water
- 6.4 Clean air
- 6.5 Soil health

7 Consider contribution to a viable economy and sustainable livelihoods

- 7.1 A viable agri-food systems sector contributing to the wider economy
- 7.2 Secure and stable livelihoods of actors within the agri-food sector

8 Consider contribution to an ethical, equitable, and adaptive agri-food system for current and future generations

- 8.1 Human rights and working conditions
- 8.2 Distribution of risks, benefits, and decision-making power within the household and along the value chain
- 8.3 Inclusiveness
- 8.4 Animal welfare
- 8.5 Adaptation that is equitable, including to climate and environmental change

Users and benefits

The Principles are **designed to be used** by research and innovation managers and funders of innovation in the agri-food sector, both in the private and public spheres. The choices made by these actors during an innovation process will determine the future benefits and drawbacks of the innovations they develop. Their choices affect, for example, the types of people that gain and lose from the innovation as well as the environmental consequences of the innovation.

The Principles help organizations, companies, funders and project managers to deliver better outcomes by actively considering sustainable agri-food system objectives at key stages of the innovation processes. These actors are also able to easily and clearly demonstrate and report on their performance against sustainability objectives, and gain recognition as responsible innovators who follow best-practice approaches geared toward international harmonization.

As a learning and management tool, the Principles should be applied iteratively throughout the innovation process. A **step-by-step guide** instructs users who score their projects against the Principles using a **scoring template**.

Why common principles, not common outcome metrics?

It is very important that innovators collect relevant output and outcome metrics for their innovations, appropriate to their particular context and stage of work. This is reflected in the Principles (see Sub-Principle 2.3). CoSAI has started compiling a non-exhaustive **list of common metrics** that researchers and innovators can draw from to track progress in their research and innovation projects.

However, it is impractical to create a universal set of progress metrics for innovation that captures the critical issues for different stakeholders (e.g. indigenous people, scientists); spans different innovation types (e.g. technical or financial), geographies, stages of innovation and outcome types (e.g. social inclusion); and is suitable for measurement in all conditions.

Moreover, with few exceptions, innovation progress cannot be simply tracked according to outcome metrics such as 'people reached' and 'increased income'. The first problem is that the many factors affecting outcomes such as income can only be disentangled by **rigorous impact studies**, separating out the effect of the innovation from others. The second problem is that early results, collected in favorable conditions, often significantly overestimate the future **uptake of innovations at large scale**. If innovators report 'progress' via outcome metrics as a proxy for verified results at scale, this will often lead to disappointment in the long term.

As an alternative, the Principles allow organizations, companies and project managers to clearly demonstrate that they are considering and addressing sustainability and equity dimensions from the start of each project. The Principles can be applied across innovation types, contexts and stages and for different types of accountability.

Conclusions

The eight Principles and 28 Sub-Principles identified by the CoSAI-convened **Multistakeholder Task Force on Principles and Metrics for Innovation in Sustainable Agri-food Systems** have now been tested in pilots, during which they were successfully used within organizations and companies to strengthen and support their research and innovation processes.

They will continue to be promoted by the task force, with the eventual aim of establishing them as an internationally harmonized standard that can be mainstreamed into public reporting and benchmarking processes. Here, the Principles will increase transparency in the innovation landscape of the agri-food sector and will become an effective lever to generate rich data on the progress being made. This data can then become a foundation for identifying investment gaps and incentivizing investors to focus on innovation in support of our global goals.

For more information, see the full report at: <https://hdl.handle.net/10568/119439>



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