DeSIRA LIFT

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Actionable learning
Proving and improving R&I impacts in agrifood systems through project-based approaches

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This Synthesis brief presents the overall learning from DeSIRA Pilar 1

The DeSIRA-LIFT Service Area 1 supported the 70 projects of DeSIRA pillar 1 between 2021 and 2025, working across 65 countries in three continents (Africa, Latin America and Asia).

Through the DeSIRA Community of Action and Reflection, DeSIRA-LIFT Service Area 1 has brought together a community of like-minded research and innovation actors, to explore how participatory action-research, systems approach and international partnerships can activate and even drive successful transformation in agrifood systems towards more sustainability.

From its inception, DeSIRA-LIFT has intended to facilitate cross learning among projects and to also learn from them. Global organizations, national leaders, and community innovators have all been encouraged and supported to reflect on their ways of working and to learn from those working in different contexts. DeSIRA-LIFT actively celebrated and embraced the differences and contextual elements of each project's approach.

After 4 years of joint learning, DeSIRA-LIFT Service Area 1 compiles and critically reflects on the insights gained from several streams of work with DeSIRA projects: the managerial coaching, the learning reviews, the regional conferences and stakeholders' perspectives, the webinars of the Community of Action and Reflection.

The Synthesis Brief builds on all the knowledge products derived from these four work streams. It offers a snapshot of the main lessons learned, insights and recommendations for future action.

Background

The DeSIRA Initiative is a portfolio of 82 research and innovation (R&I) projects run in over 65 countries across three continents between 2019 and 2026. It is supported by a € 340,000,000 European Union contribution.

DeSIRA fosters the productive, green, and inclusive transformation of agriculture and food systems in low - and middle-income countries in Africa, Asia-Pacific, Latin America, and the Caribbean.

DeSIRA invests in R&I to address complex issues relating to sustainability transitions and agrifood system transformation, towards achieving the Sustainable Development Goals. To this end, it mobilizes academic and participatory research, that values local knowledge, creating evidence to inform future interventions and policymaking. DeSIRA encourages the adoption of climate-smart and agroecological innovations through multi-stakeholder collaboration. It emphasizes inter-institutional South-South and South-North cooperation and capacity development at individual and organizational levels to promote innovation. DeSIRA also supports the development of policies and strategies for food system transformation, focusing on climate change adaptation, agroecological transition, and socio-economic gains. Improved smallholder farmer resilience, stronger institutional innovation capacities, and private sector engagement to enhance the uptake and scaling of agricultural innovations are part of its expected outcomes.

Source: DeSIRA Global Annual Report 2023. Further details: https:// capacity4dev.europa.eu/projects/desira_en

The overall logic of intervention of the DeSIRA initiative is based on the promotion of research and innovation (R&I) within an agricultural innovation system (AIS) perspective as a major lever to transform agri-food systems towards more resilience and more sustainability, thus addressing the Sustainable Development Goals (SDGs).

Pillar 1 of the DeSIRA Initiative is composed of project-based interventions run by consortia mostly made of research organizations and their partners from civil society, the private sector and public services and authorities. A total project portfolio of 70 projects across the three continents in various countries was selected. Most of them started between 2018 and 2020 for 3 to 5-year periods. Several innovation domains were targeted by the European Commission, such as agroecological transitions, the water-energy-food-forest nexus, water management in rice farming systems in fragile and coastal States in Africa, or prevention and risk management (not exhaustive)[1].

These R&I partnerships are expected to deliver and scale innovations but also to contribute to more sustainable changes in the innovation capacities of their development partners and national agricultural innovation systems (AIS) themselves. AIS need to innovate and adopt new ways of working (mission-orientated, distributed innovation networks, innovation governance mechanisms, efficient innovation support services, etc.).

Given the high complexity of DeSIRA projects and the challenges they seek to address, the European Commission set up the DeSIRA-LIFT facility to upgrade the capacities of DeSIRA projects to manage for impacts, through on-demand training & coaching but also through mutual learning and enhanced collaboration between projects carried out in the same countries or the same innovation domains[2] thanks to a Community of Action and Reflection (CoAR) set up by DeSIRA-LIFT in 2021.

Delivering adequate and valuable on-demand support to these projects is a challenge in itself since little is known about the 'best ways' to innovate for climate-resilient agrifood systems, and there is no 'one size fits all' strategy for AIS strengthening. Most of the pillar 1 DeSIRA projects engaged in multi-actor innovation processes, with the purpose to co-create, experimenting or disseminate climate-relevant innovations in different socio-technical areas and diverse country contexts. They mobilize diverse types of action-research methodologies; they focus on different levels and actors of the agricultural innovation systems (niche level, territory level, value-chain level, policy level, etc.).

How do all these R&I projects deal with "participatory research and innovation", and to what extent do they operationalise the components of AIS thinking to make research more embedded into innovation processes and to increase research contributions to transformative systemic changes in AIS and agrifood systems? Even if some projects look similar in their narrative description (i.e. 'scaling agricultural innovation') or intend to carry out the same intervention strategy in multiple countries, projects work differently in different contexts and through different change mechanisms. Therefore, some innovation and action-research methodologies cannot be simply replicated from one context to another and are expected to achieve the same outcomes automatically. Theory-based understanding about 'what works for whom, in what context, and how' is, however, transferable. That is where the DeSIRA-LIFT facility deployed learning reviews, helping comparative and cumulative perspectives across projects and countries for the generation of actionable learning for future action to sustain DeSIRA outcomes, better target future investments, and better design new R&I interventions.

1] An overview of the "innovation domains" addressed by DeSIRA can be consulted here.
2] The available service offering is accessible here.

Approach to Learning from DeSIRA

Our learning approach is aimed at understanding the challenges and successes in DeSIRA for different evaluation uses, associated with key evaluation questions (KEQs):

- Purpose A: Understanding the challenges and success of DeSIRA Projects in contributing to innovation and transformation of agrifood systems in the Global South

  USE 1: Improving project design and management
  KEQ 1: What are the trends in DeSIRA project architectures and intervention strategies, and associated managerial challenges to contribute to innovation and impacts?

  USE 2: Improving action research in support of agricultural innovation system (AIS) strengthening and agrifood system transformation
  KEQ 2: To what extent does the use of AIS approaches increase research contributions to innovation and sustainability transitions?

- Purpose B: Understanding the contribution of meta-support at the program level.

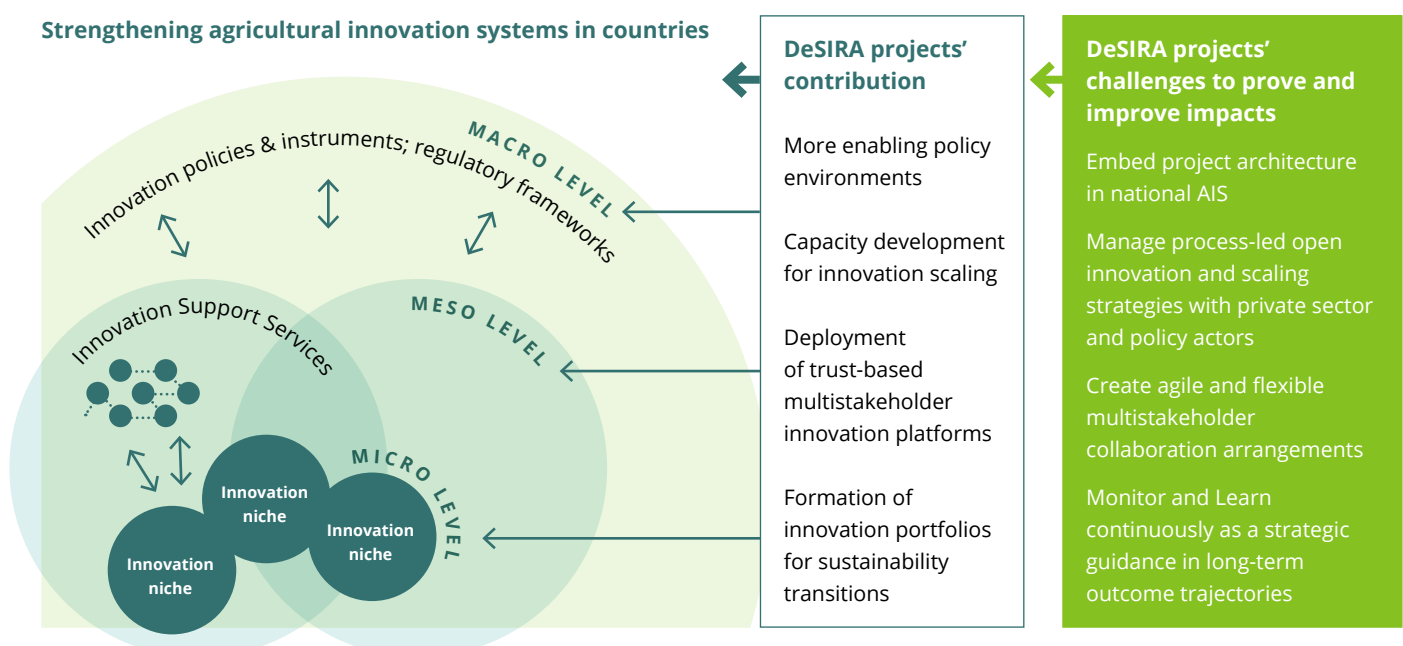 **USE 3:** Improving program-level outcomes and impacts
  KEQ 3: To what extent does support at the level of the DeSIRA community through DeSIRA-LIFT enhance DeSIRA impacts?

Our methodology combined three types of learning activities:

- Learning with project managers about their successes and challenges through learning reviews;
- Critical Reflection with DeSIRA partners on R&I contributions to agrifood system transformations in their regions through a Community of Action & Reflection and its associated learning events;
- Internal self-assessment of outcomes generated by DeSIRA and DeSIRA-LIFT.

The results are presented in a collection of knowledge products designed to address the knowledge needs of R&I project designers and managers, researchers, donors, investors, policy actors, and decision-makers regarding R&I for agrifood system transformation: a Learning Briefs series, a Perspective Brief Series, three handbooks with managerial guidance, and two books of stories of change. This Synthesis brief encapsulates the main lessons learned and recommendations.

Figure 1: *DeSIRA projects' challenges to prove and improve their impacts*

Strengthening agricultural innovation systems in countries

Innovation policies & instruments; regulatory frameworks

MACRO LEVEL

Innovation Support Services

MESO LEVEL

Innovation niche

Innovation niche

Innovation niche

MICRO LEVEL

DeSIRA projects' contribution

More enabling policy environments

Capacity development for innovation scaling

Deployment of trust-based multistakeholder innovation platforms

Formation of innovation portfolios for sustainability transitions

DeSIRA projects' challenges to prove and improve impacts

Embed project architecture in national AIS

Manage process-led open innovation and scaling strategies with private sector and policy actors

Create agile and flexible multistakeholder collaboration arrangements

Monitor and Learn continuously as a strategic guidance in long-term outcome trajectories

Key lessons learned

The lessons learned capture the essence of the main challenges and successes of the R&I projects in DeSIRA. They combine insights into the implementation realities of innovations for sustainability transitions through project-based approaches and possible best-fit approaches in different contexts. Together, they help to identify the building blocks of successful co-innovation and scaling strategies, which we formulate as key recommendations in the next section.

The key lessons learned, summarized here, focus on what we consider the minimum level of joint learning in the DeSIRA community. These lessons should be incorporated into the next generation of R&I projects for sustainability transitions.

1. Successful DeSIRA projects were mainly dedicated to **co-create and test solution-oriented innovation portfolios,** i.e. bundling technical, organizational and service innovations in each context, with rural communities, to address the most pressing problems in fields, farms, territories and supply chains through participatory approaches with diverse stakeholders (civil society, farmers' organizations, research, education, extension organizations, firms, and policy institutions). However, the focus on **prominent academic research has sometimes affected innovation efforts**. Too much time and resources were dedicated to research activities that were disconnected from the temporalities and requirements of innovation processes.

2. In addition to innovation co-creation and testing, several DeSIRA projects successfully contributed to **more profound changes in agrifood systems by developing new capacities to innovate**. These capacities are dedicated to open social innovation with several new principles that guide multi-actor collaboration in their activities, such as trust, inclusiveness, learning-by-doing, co-creation methods, community-driven innovation agendas, process-led innovation strategy, fostering youth and gender inclusion, and responsible approaches (envisioning ethical, legal, and societal impacts of the innovations).

3. The vast majority of DeSIRA projects used **"multi-stakeholder innovation platforms"** to organize multi-actor collaboration (such as living labs or innovation hubs), but the most successful were those that built on existing ones and **combined complementary collaboration mechanisms** for innovation, learning, and collaboration (such as the combination of farmer field schools, inter-professional platforms, and social incubators).

4. Many projects have encountered difficulties in mobilising the right partners and innovation stakeholders, **especially as some organisations play different and evolving roles during innovation processes**; innovation end-users may become co-innovators and advocates. The most successful projects were those that could continuously maintain a certain level of information and engagement with the broad set of concerned actors. They allowed them to play different roles depending on the innovation phases, mainly through the intermediation and orchestration role of **Living Labs or innovation facilitators**.

5. The most impactful projects contributed to **nested outcome trajectories through combined multilevel interventions in agricultural innovation systems** (micro, meso, and macro levels). These projects simultaneously supported micro-level innovation trajectories, meso-level capacity development trajectories, and macro-level policy change trajectories, which together enabled certain types of outcomes not otherwise achievable, such as the renewal of extension and education systems or the bifurcation toward more sustainable agrifood systems through agroecology or local food systems approaches.

6. For this to happen, researchers in DeSIRA project teams created **new practices that differ significantly from academic research and that are** rooted in community needs, geared toward societal missions, guided by shared principles of systemic thinking, joint learning and discovery, plurality of knowledge, transdisciplinary, process-led R&I strategy, and engagement in policy processes. This new set of practices is understood as **"action-research in partnership for innovation and sustainability transitions" (ARPIST)** and had consequences on researchers' roles and skills that need to be upgraded and acknowledged by research organizations.

7. These new action-research practices were developed in the context of **complex international R&I partnership architectures** that mutually reinforced Northern and Southern agricultural research systems to address the challenges of sustainability transitions. DeSIRA projects were used as mechanisms to create or sustain these transformative partnerships.

Key recommendations

A number of detailed recommendations to improve projects 'contributions to impacts were formulated for two categories of actors: upstream and downstream actors of innovation scaling. These may be the same organizations (funders, policy actors, project designers) but play different functions at different times. The recommendations concern all five areas below.

1. **Addressing identified gaps and challenges in DeSIRA project design and management is urgent to ensure more significant impacts from the next generation of R&I projects supporting sustainability transitions.**

   Both project leader organizations and donors can address design gaps through the adoption of best practices of action research for innovation and sustainability transitions that incorporate all stakeholders involved, long-term project portfolio management approaches, more extended inception phase, participatory formulation of a sound Theory of Change backed by outcome trajectories, alignment of project partnership with project vision and activities, learning-oriented MEL systems that are appropriate to support system-change interventions.

   Managerial challenges can be minimized by adopting sustainable project management principles, using agile management approaches, retaining senior staff with experience in adaptive management, utilizing innovation facilitation and implementing MEL systems with a focus on learning and adaptation. However, since managerial challenges may always be there despite improved design and management methodologies, and since managing a new generation of R&I projects dedicated to sustainability transitions will remain a novelty for many implementers, the maintenance of an on-demand service facility dedicated to managerial support of R&I projects is highly recommended.

2. **Proposing ways to scale successful initiatives and innovations in DeSIRA is necessary since most DeSIRA projects worked on innovation prototypes and proof-of-concept.**

   Scaling starts at the beginning of an innovation project with a proper codesign and experimentation approach. This leads to the definition of the prototypes' scalable components and the identification of potential scaling actors, such as private-sector entities, communities, and farmers.

   Some projects formulated scaling strategies with private sector entities or public actors. However, scaling strategies should be systematically developed for each promising DeSIRA innovation, with the support of EU delegations in their intervention countries. This approach has been successfully implemented in Burkina Faso through a series of events with major actors of the national agricultural innovation system (government, public research system, private sector) and all the DeSIRA projects in the country.

3. **Given the high number of MSPs created under DeSIRA, suggesting mechanisms for the sustainability of multistakeholder innovation platforms** remains a vast area of work. The best options involve a greater mobilization of existing alliances, networks, collaboration mechanisms, and innovation organizations to integrate those platforms into formal sustainable structures.

4. **Promoting institutional embedding of successful approaches into national agricultural innovation systems** can help phase out project approaches, fostering ownership of innovation approaches by national stakeholders. This process also creates more enabling conditions at policy and institutional levels to scale innovation effectively.

5. **Promoting cross-level integration and coordination of agricultural research, education, extension, entrepreneurship, and innovation programs** is a significant lever for amplifying the impacts of DeSIRA projects. It also ensures that efforts are aligned with the innovation priorities identified by the countries involved.

Part 1: Main lessons learned in the DeSIRA community

1. Mechanisms of change in DeSIRA, what worked, for whom, where

1.1. DeSIRA Projects in support of complex international research and innovation partnerships

Background

DeSIRA projects belong to a category of projects called "complex projects" due to their nature, size and expected developmental outcomes on agrifood systems. If not addressed well by suitable managerial tools and strategies, complexity becomes a significant source of uncertainty and risks affecting project costs, performance and outcomes. DeSIRA projects mix applied research and experimental development, with dynamic interaction between knowledge generation and the solutions to problems being solved. They are implemented by international consortia of research and innovation actors that deliver services to each other and country partners in six areas: research, education, extension, innovative entrepreneurship, institution building and agricultural innovation system strengthening. They are driven primarily by the needs of hosting countries and mainly focused on capacity development since they are limited-time contractual engagements.

Key Learnings

DeSIRA projects contributed to four key outcomes that support transformative changes in agrifood systems: new capacities for more responsive agricultural innovation systems (AIS); new knowledge infrastructures around successful innovations that serve as basis or evidence for influencing policies; multi-level strategies for working efficiently with all innovation actors and in particular policymakers; updated research and innovation agendas for sustainability transitions; methods, mechanisms and mindsets for trust-based international R&I partnerships.

To be effective, DeSIRA projects faced managerial challenges in four areas: boundary management (embeddedness), flexibility and agility, open innovation and participation, and monitoring processes and outcomes. Depending on the projects' transformative scope(s), the critical areas for successful management and delivery were not the same.

Four transformative scopes distinguish DeSIRA projects:

- Farm-level projects: projects with a focus on adaptation and adoption of new practices/technologies/services in farms in a specific context with a proof-of-concept objective and with additional objectives to set up sustainable mechanisms for continuous adaptation and

co-innovation with farmers and rural communities (living labs, platforms, innovation partnerships); these projects call for adequate management of boundary partners and open innovation processes;

- Supply chain-level projects: projects that focus on creating or developing agribusiness in a specific segment (production, harvesting, storage, and distribution) or developing new supply chains (organic farming, new crops) within a sustainable development perspective; these projects call for strong managerial capacities of boundary partners and monitoring processes and outcomes.

- AIS-projects: projects that support the strengthening and reconfiguration of innovation networks, services and policies by mobilising non-traditional actors and creating agility within national agricultural innovation systems (AIS) to increase their responsiveness to sustainability challenges. New partnerships pop up along project implementation and generate new project activities and unplanned outcomes; these projects require strong; these projects call for flexibility, agility and intense monitoring processes and outcomes.

- Agroecology transition projects: projects that explicitly support AE transition as a whole from farm to policy levels at regional or national levels, with systemic changes in agrifood systems. These projects call for adequate management of boundary partners, agility, flexibility, and outcome monitoring.

1.2. DeSIRA projects in support of the formation of innovation portfolios for sustainability transitions
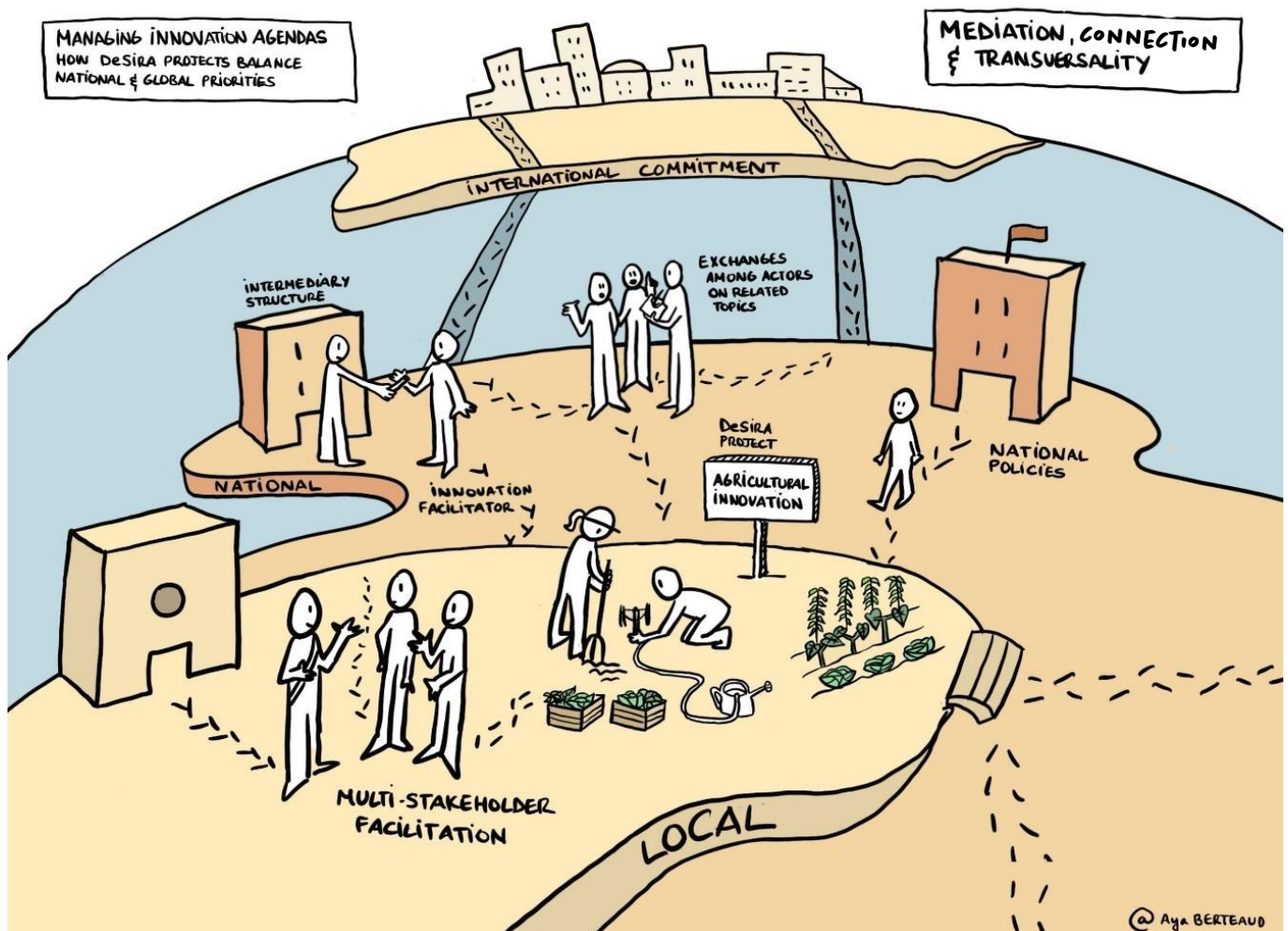
Background

Most DeSIRA projects have started their implementation with the primary objective of defining the innovation portfolio on which they will work in their different intervention contexts. Project narratives were formulated around problem resolution with some options to be tested. The first phases of project implementation consisted of refining these options with local communities and weaving progressively a set of activities to be developed to create necessary novelties or changes to address the problems. In that process, many DeSIRA projects worked with innovation portfolios bundled with several novelties (technical, organizational, service, social) aiming at solving complex problems. The composition of these innovation portfolios changed quite a lot between the start and the end of the project for different reasons that relate to the project constraints (being able to report on concrete achievement and success at the end of the project), to the partners' influence and contributions, to the efficiency of multistakeholder platforms, to the strategic alignment with country priorities; or to the available resources. Given this, the DeSIRA innovations present unique characteristics contingent on their development modalities.

Key Learnings

- DeSIRA Projects developed a variety of innovative responses to four main problems: livestock sector development, improvement of soil health, increase of agricultural productivity, supply chain development.

- 72% of DeSIRA innovations have a technological component; 85 % are multidimensional innovations (combination of new technologies, new organizations or services and/or new policies); 70% are part of a portfolio of several bundled innovations.

- The majority are primary/pilot explorations and experiments that will need to be continued by development partners when projects stop, especially to translate local innovations into economically and socially viable solutions at a large scale.

- Agricultural innovations promoted by DeSIRA projects simultaneously refer to national and international agendas that are not always fully aligned, which created tensions between project implementation and expectations. Projects constantly seek connection and coordination with policymakers to avoid such tensions, and their agendas are often designed to align with those of the countries. However, some countries loosely enforce the agendas to which they are committed, putting projects in the complex situation of being custodians of those – often international – commitments for which they have limited resources. Projects sometimes applied trade-offs, which meant letting go of planned innovation approaches to ensure that projects stick to a changing environment, favouring more dynamic and adaptive project interventions.

- Rationales and narratives behind similar innovation agendas differ across regions, which made it challenging to find synergies or common evidence among different international initiatives.

Visual illustration 1: *The difficulties of re-aligning innovation agendas in DeSIRA projects with country policies - the result of the webinar hosted by the DeSIRA CoAR on October 9th 2023*

- DeSIRA projects had to manage tensions and trade-offs in their research and innovation agendas, with acute dilemmas around multi-country R&I projects and open science approaches. While multi-country R&I is of high value for research purposes, international learning or cross-fertilization of national innovation systems, it doesn't fit well with farm-level innovation projects that require consequent investments in context-specific activities. Open science approaches clashed with a lack of readiness at numerous levels (individuals, organizations, policies).

- Projects that ensure from the onset that their activities are chosen based on converging points between national and international agendas, co-designed with beneficiaries, and where policy or decision makers are embedded in the project are in a better position to seize policy windows when they appear while having less difficulties and needs to adjust.
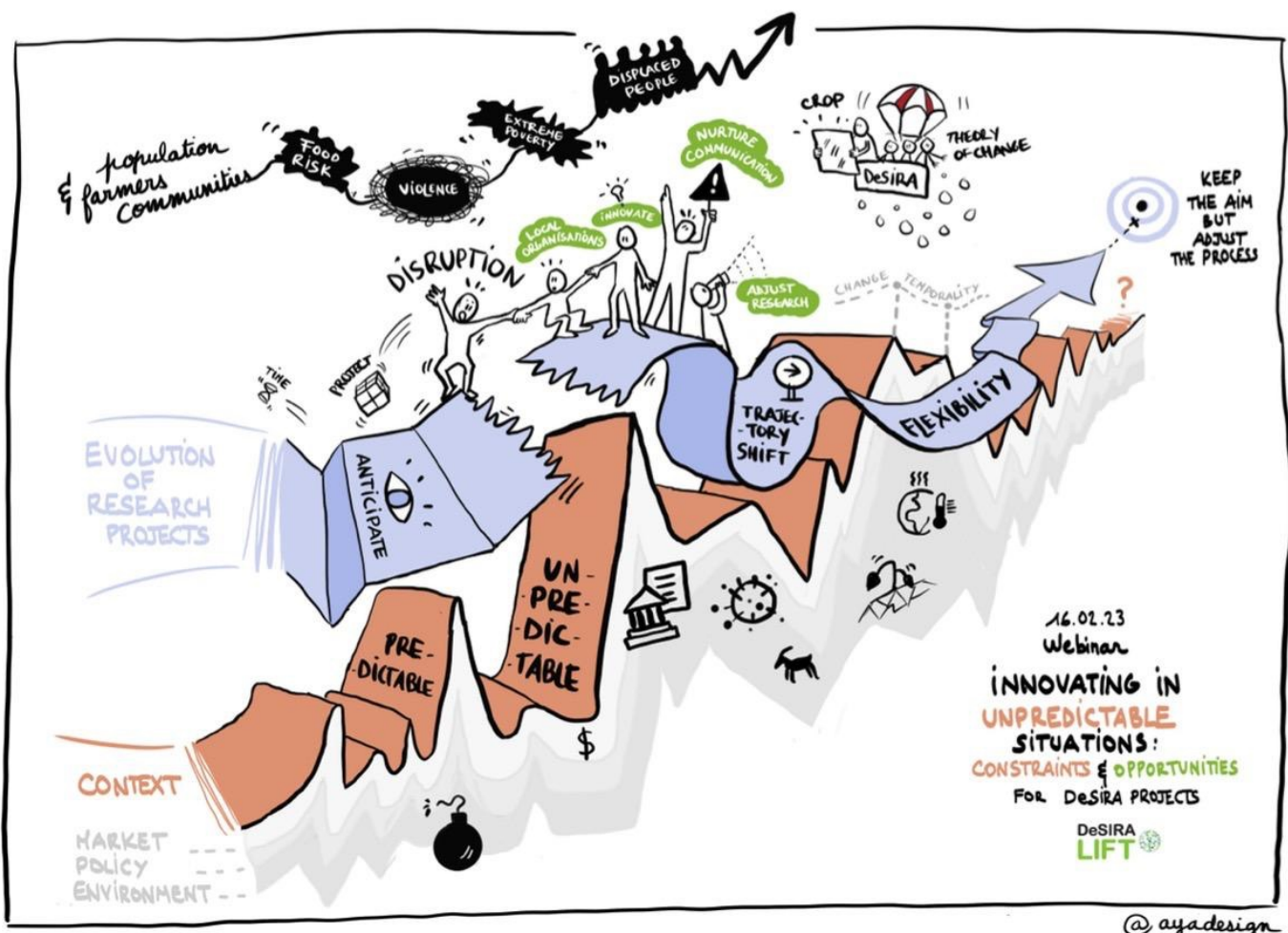
1.3. Agility of DeSIRA projects operating in insecure and fragile contexts

Background

Many DeSIRA projects operated in unpredictable situations and/or insecure environments, which required adjustments in their innovation strategy and responding to unexpected opportunities for innovation generated by these constraints.

Among the responses and strategies for overcoming these conflicting scenarios, the projects reported having successfully intensified. They adapted their interactions with their many stakeholders, from farmers to donors, and improved the level and quality of the communications. One thing that was sure for all projects discussed was that they adapted their action-research methodologies. They adjusted the timing of the activities and their capacities to use digital tools and carry out events online, allowing the continuation of activities during the worst COVID-19 pandemic. Local procuring of some field activities was done on several occasions to compensate for the lack of mobility by project staff. Budget relocation, changes in the projects' human resources and agile project management all contributed to the success of implementing project activities during unforeseen events.

Visual illustration 2: *The difficulties of DeSIRA projects operating in insecure environments - the result of the webinar hosted by the DeSIRA CoAR on16th Feb. 2023*

Key Learnings

Most successful strategies consisted of:

- Contingencies for some projects were already planned by the host organizations: while some projects experienced disruptions due to unforeseen disruptive events, others navigated more easily thanks to anticipation and agile capacities of the lead organization based on previous experience.

- Quick reaction to disruptive events meant shorter research timeframes and new ad hoc research practices, such as using digital technologies to access the field without being there, empowering local organizations, or relying on key local informants, which in turn questioned both the "quality" of the research and the research profession itself.

- Deeper structural changes in the project partnership strategy with the transformation of direct partners into indirect partners and new players, mainly local NGOs, to serve as research intermediaries.

- The project's innovation agendas appeared as adjustment variables, either to better meet the basic needs of affected populations or to take advantage of the disruptive event that affected project implementation.

1.4. DeSIRA Projects as catalysts of trust-based collaboration and innovation governance through multistakeholder innovation platforms

Background

At its core, DeSIRA acknowledges that no single organization or sector can solve today's agricultural challenges alone. Farmers need access to research innovations, and researchers need to understand local contexts. Government agencies require effective implementation channels, while private sector actors seek low-risk, sustainable business opportunities. Traditional knowledge must be integrated with scientific approaches, which must happen while ensuring environmental sustainability and social inclusion.

Multi-stakeholder collaboration emerges as a key strategy for addressing this complexity. However, bringing together diverse actors - from farmers to researchers, government officials to business leaders - presents significant challenges. Power imbalances can limit genuine participation. Different working cultures, terminologies and timeframes can impede cooperation. Resource constraints often restrict what's possible, while varying expectations about benefits can create tension.

Key Learnings:

- Agile management is crucial when R&I projects are deployed in fragile environments:
- Successful collaboration requires deliberate investment in building trust, capabilities and relationships:
- Working through existing structures rather than creating parallel systems proves more sustainable:
- Clear facilitation and governance mechanisms are essential and must remain flexible:
- Practical benefits for all stakeholders drive sustained engagement:
- Multiple complementary collaboration mechanisms are needed to address complex challenges.

1.5. DeSIRA Projects' contributions to institutional and policy changes

Background

In the DeSIRA initiative, policy outcomes were highly expected by the funder. According to the Policy Window theory, to influence policy, relevant actors need to work on the three streams continually: research to demonstrate policy needs and solutions, capacity building for implementation and advocacy, and building an enabling environment. While doing so, the actors must constantly look for windows of opportunity for progress to happen. Natural events such as pandemics, droughts or earthquakes can create windows of opportunity. For example, an earthquake is a window of opportunity to change building regulations if better regulations are available and known about. Policy windows can result from man-made events, such as spikes in air pollution, that lead to changes in clean air regulations. They can also be changes in government, budget cycles or landmark meetings and summits held as part of ongoing national, regional, and global processes. For example, the ASSET project leveraged Laos' ASEAN chairmanship to accelerate the development and adoption of agroecology guidelines. Policy windows are often short and may or may not be predictable. Whether policy champions can take advantage of windows of opportunity depends on alignment between and progress made along the three above-mentioned streams.

Key Learnings

DeSIRA projects contributed to five types of policy changes:

1) Creating and strengthening institutions,
2) Changing laws and regulations,
3) Shifting government investment priorities,
4) Modifying operations of public agencies,
5) Engaging with global treaties.

Successful DeSIRA projects used four out of seven empirically identified strategy components to drive policy outcome trajectories, namely:

- Build on previous projects, relationships, and evidence base;
- Align with and respond to government/regional/global priorities and policy windows;
- Facilitate multi-stakeholder engagement and coalitions
- Generate and communicate policy-relevant evidence;

- Provide technical assistance and piloting solutions;
- Develop local capacity and ownership for policy implementation;
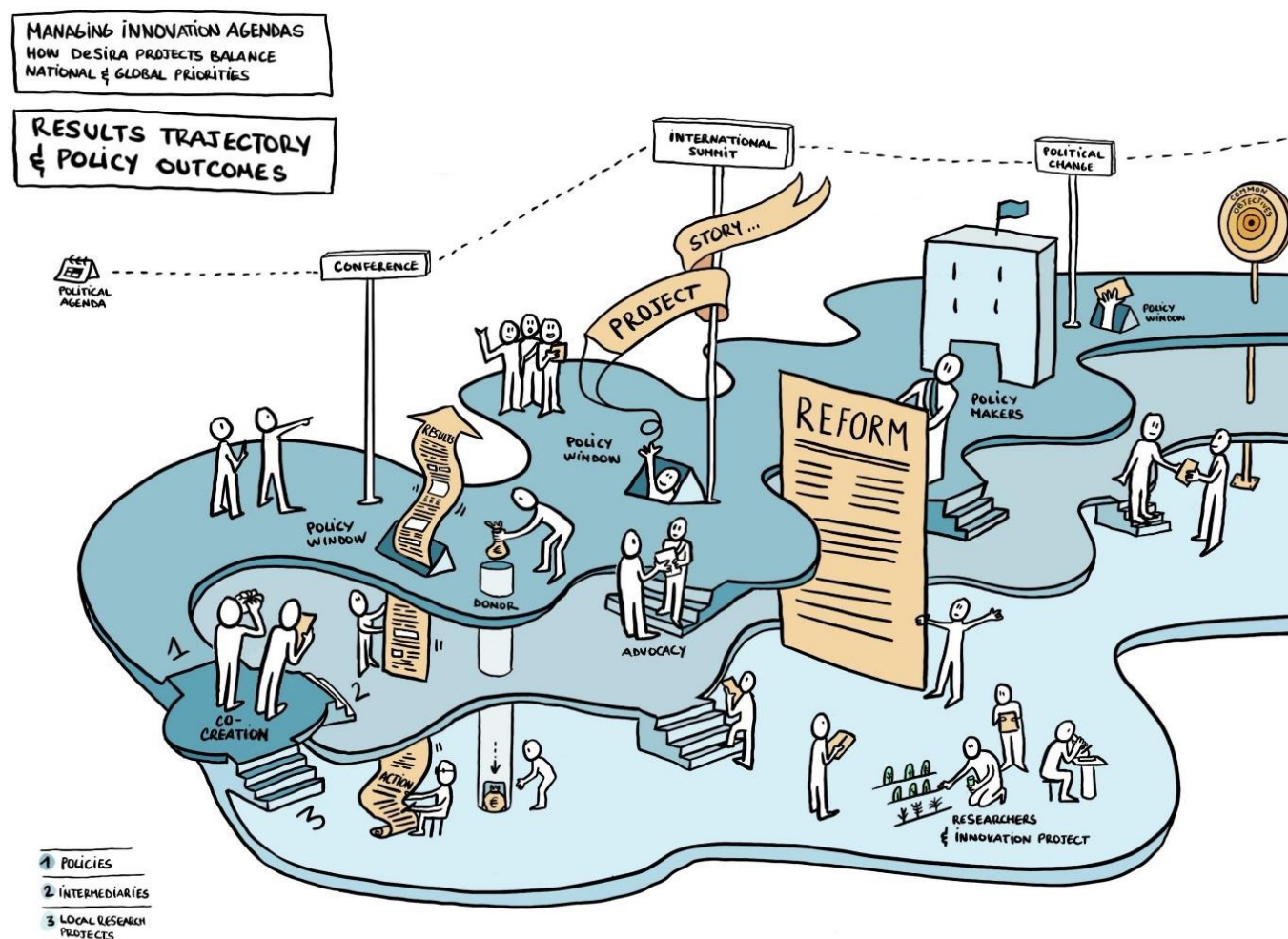- Adapt to changing contexts and learn iteratively.

1.6. DeSIRA Project contributions to agroecology transitions

Background:

The Majority of the 82 DeSIRA projects, directly and indirectly, targeted changes in food systems through agroecology, and about 20 explicitly stated the promotion of Agroecological Transition (AET) as a core objective.

Agroecology Transition (AET) aims to transform food systems through agroecology. This requires systems' shifts to happen, e.g., through technologies and innovations development, protection of the natural environment, reduction of greenhouse gas emissions, human skills

Visual illustration 3: *The contributions of DeSIRA projects to long-term policy outcome trajectories - the result of the webinar hosted by the DeSIRA CoAR on December 13th 2023*

development, support services to innovation development and implementation, supportive and coherent policies, conducive financing mechanisms, etc. One of the key features of transiting towards AE that separates it from other approaches is that AE is based on bottom-up processes that deliver localized solutions.

Key Learnings:

DeSIRA projects contributed to five types of outcomes that contributed to AE transitions:

1. New or improved AE practices and systems at the plot/ farm and landscape levels,
2. Improved market Access for AE products and AE farmers and articulation to existing or new value chains,
3. A more enabling environment, with policies, policy instruments and investments facilitating the scaling of AE results,
4. Improved capacities of a range of stakeholders,
5. Enhanced coordination among stakeholders and sustainable collective learning and action spaces.

Successful DeSIRA projects used five out of seven empirically identified strategy components to drive outcomes trajectories for agroecology transitions, namely:

- Use Participatory Innovation and codesign approaches;
- Establish and strengthen multi-stakeholder Platforms and Networks;
- Build capacities, develop and share various knowledge products, and document results;
- Develop a range of technical innovations for agroecological intensification at the farm/ field level, particularly to reduce or eliminate dependence on external chemical inputs;
- Develop and implement ecosystem and landscape;
- Approaches to create synergies between agriculture and natural ecosystems and conserve natural resources;
- Develop markets, value chains and appropriate labels for selling and valorizing agroecological products;
- Engage in evidence-based policy processes and advocacy to create more enabling environments for agroecological transition, scaling of results, and innovation.

2. New paradigms in agricultural action-research in partnership for innovation and transitions (ARPIST)

2.1. New contributions of researchers to innovation

DeSIRA projects deployed a diversity of research approaches to generate innovations and impacts. While they all used common principles in the way of doing research (participatory, systems approach, multi-actor, solution-oriented, inter and transdisciplinary), new or prominent research contributions that met the needs of innovation communities to transform agrifood systems were detected and valued by research partners:

- **Contribution 1:** generating evidence for feeding advocacy and policy processes as part of multi-actor coalitions;
- **Contribution 2:** developing meta-frameworks for evaluation and decision-making to increase autonomy among innovation and agrifood systems actors in developing their frameworks depending on their needs and specific contexts;
- **Contribution 3:** designing and organizing participatory action-research approaches that are context-sensitive, with dedicated methodologies and toolkits for local implementers;
- **Contribution 4:** facilitating innovation agendas and transformation pathways developed by multistakeholder platforms;
- **Contribution 5:** tracking promising "solutions" or new ideas not necessarily generated by research to support and nurture them;
- **Contribution 6:** facilitating multi-actor innovation platforms;
- **Contribution 7:** strengthening agricultural innovation systems (building capacities, facilitating connections between actors, bridging NAIS from different countries, advocating for policy change);
- **Contribution 8:** training of innovation stakeholders to upgrade their functional and technical capacities to support innovation;
- **Contribution 9:** supporting transformative global meta-community through global learning (DeSIRA-LIFT);
- **Contribution 10:** supporting the design of multi-level strategies to transform agrifood systems.

Co-innovation requires new roles for researchers who may support these processes in different ways: as explorers, experts, facilitators and mediators of interactions, designers of solutions and products, trainers, or by monitoring processes and supporting reflection. In DeSIRA, researchers endorsed multiple hats, ranging from traditional roles of knowledge producers and experts in technologies to critical roles of orchestrating, catalyzing and accelerating collective action for innovation and transitions.

We see the emergence of a diverse set of practices that belong to "agricultural action-research in partnership for innovation and sustainability transitions" (ARPIST).

These concern research practices, rooted in community needs, are geared toward societal missions and guided by shared principles of systemic thinking, joint learning and discovery, plurality of knowledge, and transdisciplinary. Multi-actor facilities, mechanisms or platforms are critical in orchestrating, catalyzing and accelerating collective action for innovation and transitions. These facilities open the necessary spaces beyond the boundaries of existing organizations to make trade-offs, share resources, include all those affected by the problems to be addressed, and engage key actors of change. Researchers play an essential role in designing and facilitating DeSIRA.

2.2. Targeting capacity development as an enabler of responsible innovation and transitions

These new research practices further contribute to capacity building for various actors in agricultural innovation systems and avoid the non-viability of solutions, as observed in technology transfer. The new capacities developed by DeSIRA projects included the following: individual capacities for genuine engagement, capacities for collective solutions of groups, facilitation capacities for creating transformative spaces, capacities for co-creation and adapted solutions, improved decision-making capacities through better information and knowledge, improved organizational capacities for more effective strategy processes when engaging in multi-actor innovation approaches, enhanced policy capacities to create more enabling environments for innovators.

Visual illustration 4: *The contributions of DeSIRA projects to agricultural innovation system (AIS) strengthening - a result of the webinar hosted by the DeSIRA CoAR on December 13th 2023*

2.3. International research in support of agricultural innovation systems as a new normal

Working within national agricultural innovation systems, both as a target for capacity development and as a system in which R&I projects must be embedded for responsiveness, relevance and impact, has demonstrated significant results. Several DeSIRA projects contributed to AIS strengthening through:

- The development of new connections within AIS, as a reconfiguration of innovation networks with non-traditional actors to better address innovation needs in countries, but also at regional and international levels, hence strengthening international AIS;
- Creating sustainable soft infrastructures that orchestrate collaboration in innovation networks (living labs, platforms, etc.);
- Capacity development of key actors at individual and organizational levels: innovation leaders, managers, and facilitators; pivotal organizations such as inter-sectoral bodies and inter-professional organizations.

2.4. Engaging in strategic and policy processes to increase research relevance

Most DeSIRA projects included activities dedicated to engagement in strategic and policy processes to increase research relevance. A few targeted regional networks, processes, and alliances that pre-existed in the projects and were key to achieving policy outcomes.

2.5. Nurturing trust-based international R&I partnerships: a fabric of the future

Above all, R&I projects are international partnerships that succeeded thanks to trust relationships and long-term collaboration mechanisms, which framed their engagement in the short-term projects of the DeSIRA Initiative. These global partnerships are instrumental in achieving long-term transformative goals related to agroecology transitions. They offer channels to reach ground-level stakeholders and game changers. Short-term projects allow them to operationalize their visions, build milestones of their outcome trajectory, and expand their partnerships with new partners when needed.

Part 2: Recommendations for Future Action

1. Perspectives of Regional Stakeholders

This section compiles the key messages and priorities expressed by the community of DeSIRA implementers regarding scaling the innovations they deployed and improving future interventions in support of R&I in their respective regions.

Their views and recommendations were collected between June 2024 and January 2025 during the 'DeSIRA Connect Days' events organized by DeSIRA-LIFT in each of the four regions where the DeSIRA Initiative was implemented. They are published in the DeSIRA Perspective Brief series (cf. the References section). These events gathered key R&I stakeholders from the regions, including research institutions, civil society organizations, farmer organizations, regional extension, education and research organizations, policy actors, agri-agencies, and international development agencies.

The recommendations were targeted at upstream and downstream ARPIST actors (actors of Action-Research in Partnerships for Innovation and Sustainability Transitions):

- **Upstream ARPIST actors** include all those who define innovation agendas, engage researchers, invest in them, and create the conditions for the early phases of innovation through investment in soft infrastructure, experimentation, adaptation, and capacity development. They also identify gaps in agricultural innovation systems and strategize and anticipate the conditions for innovation scaling. The actors may be funders such as international organizations, government agencies, private foundations, policy actors, community-based organizations, civil society representatives, farmers' representatives, national research entities, and universities.

- **Downstream ARPIST actors** include all the actors who support the scaling of validated proofs-of-concept and the implementation of pathways of change, setting priorities for capacity development in national agricultural innovation systems to ensure innovation scaling. These actors may be funders, policy actors, and value chain actors, including farmers' organizations, public services, and governmental organizations.

- Some actors may belong to the two categories but play different roles at different periods of time.

1.1. Key Messages and Priorities Across All Regions

INNOVATION APPROACHES

Place community-led innovation at the heart of the response to sustainability challenges

Several DeSIRA projects focused on innovation as a process. They looked at how communities and farmers' organizations can be supported to unlock their problem-solving and creativity skills, facilitate the design of their solutions and become innovation champions in their context. This has proven to be a winning strategy for two main reasons. The first reason is that short-term project approaches do not support the entire deployment and scaling of the solutions. The second reason is that sustainability challenges require holistic solutions on the ground, owned and scaled by the communities concerned, who can flag areas where research inputs are the most needed.

- **Suggestions for upstream actors:** allocating more investments in the soft infrastructures will enable community-driven innovations over the long term (living labs, farmer field schools, ecovillages, or innovation platforms) and indirectly increase the practical contributions of R&I projects. Funders should promote soft infrastructures that benefit from sustainable institutional anchoring, for instance, by being affiliated with universities, research centres, NGOs, international organizations or local governments.

- **Suggestions for downstream actors:** creating inclusive policies that elevate local communities and farmer organizations as key actors in national innovation strategies and country pathways towards a more sustainable agrifood system would facilitate their mobilization in R&I projects and their influence on the settings of research and innovation agendas to solve the most pressing needs.

Further embrace blended financing strategies for innovation scaling

DeSIRA project implementers have limited knowledge about innovation scaling strategies and the diversity of financing mechanisms to scale innovation.

- **Suggestions for upstream actors:** Policy actors are expected to create more visibility and transparency in financing instruments and possible linkages with banking systems and their associated foundations (e.g., the Elumelu Foundation, the Mastercard Foundation) dedicated to supporting innovation and agroecological transitions.

- **Suggestions for downstream actors:** Funders could provide long-term, flexible funding that accommodates scaling, capacity building, and follow-up initiatives for successful projects. Funding mechanisms should encourage partnerships, link existing projects, and emphasize pathways to impact rather than narrowly focusing on outcomes. Donors should have clear exit strategies to ensure the financial arrangements are viable. Providing clear guidance and support on scaling processes can strengthen donors' contributions.

INNOVATION ACTORS TO MOBILIZE

Mobilize regional organizations and alliances

Regional organizations and alliances were not systematically and intentionally included in DeSIRA projects. In contrast, they are the key actors in solving "the last mile" problem of putting impact at scale. They play multiple transformative and systemic roles: regional extension and education organizations use DeSIRA outputs to update and upgrade knowledge systems in countries through generic guidance, frameworks, revised curricula and training of universities and public extension workers; regional research organizations use DeSIRA outputs to feed regional R&I agendas and policy dialogues; multi-actor regional alliances use DeSIRA outputs to develop joint visions and support alignment of actions among innovation actors (civil society, farmers organizations, researchers, private sectors, policy actors, etc.); regional farmer organizations backstop and channel funding toward innovative initiatives promoted by their members in DeSIRA projects. These synergies remained poorly organized and thus were intentionally supported in DeSIRA. When existing, they were often subject to the vagaries of "stop-and-go" type collaborations, with high transaction costs due to organizational weaknesses.

- **Suggestions for upstream actors:** supporting long-term investments in developing targeted capacities of some critical regional organizations and alliances that support agroecology transitions and agrifood system transformation is necessary. The capacity to target is to support coherent programming of R&I investments and co-design project proposals with donors and beneficiaries, absorb outputs and lessons from R&I projects, and play a key role in dissemination in their membership networks and policy advocacy.

- **Suggestions for downstream actors:** further mobilization of regional organizations in national reforms and cross-country collaboration around shared innovation scaling approaches is crucial. Taking on board regional organizations in the multi-actor innovation platforms set up by R&I projects should be systematic. Another option is to embed their R&I projects into existing and well-functioning regional platforms and align project expected outcomes with their needs;

Mobilize the private sector from the early phase of innovation

Apart from farmer organizations, the private sector has been present in DeSIRA projects, albeit not so largely. Local private entrepreneurs were involved, for example, as equipment or input suppliers (i.e. ÌRRINN facilitated links between solar pump suppliers and smallholder farmers, contributing to the development of innovative arrangements between these actors) or through startups in incubation programs (i.e. SUSTLIVES accompanied new women-led initiatives in the NUS sector). SMEs were important innovation actors in implementing DeSIRA projects which worked on supply chains, such as BIOSTAR (agrifood SMEs innovating in bioenergy solutions) and SafeVeg (seed producers committed to producing high-quality vegetable seeds). CSARIDE (dairy processors learning innovative solutions for their activities to become more cost-effective) or STREAM (partnering with private companies to support Mongolian herders in transitioning towards more sustainable practice by creating conditions for developing a quality beef value chain). However, the involvement of private sector actors, even if proven beneficial to achieving projects' goals and creating conditions for scaling DeSIRA innovations, was not systematic across DeSIRA. This was due to the EC grant conditions and weak linkages between research systems and targeted countries' economic actors. It also reflects that R&I funded through grants remains at the early phase of innovation before the scaling phase.

- **Suggestions for upstream actors:** To engage with the private sector, prerequisites must be achieved: tested prototype(s), end-users validation, return on investment data business model, scaling strategy and identified structure to hold and disseminate the innovation product/service, clear understanding of the intellectual property rights regime that will apply to any commercially viable product/process and specify the rules to use in the project. In that perspective, funders should encourage project implementers to design a scaling strategy as one of the project outputs, facilitating private sector engagement from the start of the project; funders should also provide more guidance about available financing instruments for the innovations they promote. More policy incentives for private sector engagement and investments into priority innovation agendas for agrifood systems are essential.

- **Suggestions for downstream actors:** National research institutions could benefit from more support to promote their high-potential innovations and bring them to market with additional investments from the private sector. Joint innovation frameworks would be a prerequisite for guiding central issues around innovation objectives, end user and farmer community engagement, and value creation and capture.

Mobilize Youth and Women as the next generation of farmers and innovators

In several countries, DeSIRA actors mentioned several factors that advocate for better mobilization of youth and women as innovators for sustainability transitions, such as the ageing of the farmer population, women's critical role in the labour force, innovative entrepreneurship, in food security; the capacities to integrate new technologies, especially digital technologies (young farmers are more comfortable with digital technologies); youth and women often show greater interest in sustainable farming methods; employment generation in agriculture and mitigation of rural-urban migration; Women's economic empowerment through farming; role of young innovators to improve supply chains and market access. These levers have been poorly mobilized in DeSIRA projects.

- **Suggestions for upstream actors:** target funding mechanisms and programs that place youth and women at the core of the innovation strategy; create skills development programs for them in vocational training centres and mentoring approaches; create mobile-based learning platforms for remote areas; create incubator programs for agri-business startup.

- **Suggestions for downstream actors:** invest in digital infrastructures and create gender-responsive Policies and Youth-Focused Initiatives.

CREATE INNOVATION CAPACITIES IN COUNTRIES

Continuous support to research for responsible innovation and sustainability transitions

DeSIRA R&I projects played a vital role in bridging the gap between high-level policies and on-the-ground realities while ensuring transparent, equitable and responsible innovation processes, thanks to a wide range of knowledge, methods, services, competences, and solutions orchestrated by researchers and their partners in international consortia. However, a number of conditions need to be met for this to effectively happen.

- **Suggestions for upstream actors:** better guidance to project development in support of innovation trajectories and innovation systems, and co-design workshops with project beneficiaries are highly necessary.

Funders should look for further distinction, targeting and combination of different subsets of R&I interventions over the long-term to improve the efficiency of project-based approaches; for instance, the combination of capacity-development projects, early-phase innovation projects, partnerships mechanisms, scaling projects and policy change initiatives, together with prioritize sustained investments and focus on high-impact areas would improve programmatic

impacts. For these reasons, funders will receive higher-quality proposals when formulation periods are long enough to include capacity development for the bidding teams. It will also be advisable to create incentives so that the teams formulating projects are also the implementors; this will allow for ownership and continuity.

Policy actors are advised to be equipped with national innovation strategy developed in a participatory process, not only with agricultural actors, but inclusive and with sector as the nexus of sustainable agricultural development such as the energy, telecommunications, transport or peri-urban development sectors. Breaking silos among ministries when planning for innovation is crucial. Aligning national strategies with regional ones is also crucial.

Allocate funding for implementation focusing in low hanging fruits, own the strategy and present it to donors, advocate for complementary funding by demonstrating national investments.

- **Suggestions for downstream actors:** Policy actors should follow and support more closely international R&I programs with high-potential impacts for sustainable development. They should integrate project results into national strategies, allocate sufficient resources for implementation, establish standards and certifications for innovations and monitor innovation trajectories over the long-term, strengthen national public research organizations, extension, advisory services and agriculture public education (which in many countries are underfunded, staff is aging and there's no strategy for replacing them, and salaries are not attractive to younger people). Collaborative engagement with stakeholders across ministries, local governments, and parliamentarians is essential for prioritizing and institutionalizing innovations. Where possible, policymakers should benefit from capacity development interventions to assist them in knowledge translation and strategies to catalyze or take advantage of policy windows.

Support agricultural innovation policies and policy innovations using food systems as catalysts

DeSIRA R&I projects played a vital role in bridging the gap between high-level policies and on-the-ground realities while ensuring transparent, equitable, and responsible innovation processes. Thanks to a wide range of knowledge, methods, services, competencies, and solutions orchestrated by researchers and their partners in international consortia, DeSIRA R&I projects played a vital role in ensuring transparency, equitable, and responsible innovation processes. However, a number of conditions need to be met for this to happen effectively.

- **Suggestions for upstream actors:** Better guidance for project development in support of innovation trajectories and innovation systems and co-design workshops with project beneficiaries are highly necessary. Funders should look for further distinction, targeting and combination of different subsets of R&I interventions over the long term to improve the efficiency of project-based approaches; for instance, the combination of capacity-development projects, early-phase innovation projects, partnerships mechanisms, scaling projects and policy change initiatives, together with prioritize sustained investments and focus on high-impact areas would improve programmatic impacts. Funders will receive higher-quality proposals when formulation periods are long enough to include capacity development for the bidding teams. It will also be advisable to create incentives so that the teams formulating projects are also the implementors, allowing for ownership and continuity. Policy actors are advised to be equipped with a national innovation strategy developed in a participatory process, not only with agricultural actors but inclusive and with sectors as the nexus of sustainable agricultural development, such as the energy, telecommunications, transport or peri-urban development sectors. Breaking silos among ministries when planning for innovation is crucial. Aligning national strategies with regional ones is also vital. Allocate funding for implementation focusing on low-hanging fruits, own the strategy and present it to donors, and advocate for complementary funding by demonstrating national investments.

- **Suggestions for downstream actors:** Policy actors should follow and support international R&I programs with high potential impacts for sustainable development more closely. They should integrate project results into national strategies, allocate sufficient resources for implementation, establish standards and certifications for innovations and, monitor innovation trajectories over the long term, strengthen national public research organizations, extension, advisory services, and agriculture public education (which in many countries are underfunded, the staff is ageing and there's no strategy for replacing them, and salaries are not attractive to younger people). Collaborative engagement with stakeholders across ministries, local governments, and parliamentarians is essential for prioritizing and institutionalizing innovations. Where possible, policymakers should benefit from capacity development interventions to assist them in knowledge translation and strategies to catalyze or take advantage of policy windows.

Promoting cross-level integration and coordination of agricultural research, education, extension, entrepreneurship and innovation programs

Exchanges within the DeSIRA community and regional stakeholders' perspectives on future actions demonstrated complementary issues within the DeSIRA project portfolio

and other initiatives supporting agricultural innovation and transitions.

- **Suggestions for upstream actors:** more synergies between R&I projects working on the same topics to save time in innovation processes; more R&I projects addressing policy experiments; more support to continuous strategic learning and alignment within the international R&I community.

- **Suggestions for downstream actors:** more alignment between R&I projects and investments in technologies or equipment that received proof-of-concept in DeSIRA projects; more alignment between AIS-projects results and investments in soft infrastructures that demonstrated their added value and require sustainability (living labs, incubators).

Facilitate continuous strategic learning and global-level learning

The DeSIRA-LIFT facility, which supports DeSIRA, demonstrated its added value by creating opportunities for community learning at regional and global levels, offering on-demand guidance on innovation approaches and methodologies, and flagging critical approaches for sustaining projects' outcomes. However, one of the weaknesses of the DeSIRA initiative in achieving long-term impacts is the lack of support for learning at the organizational level, beyond the project level.

- **Suggestions for upstream actors:** More investments in program-level service facilities to prove and improve project impacts can ensure increased programmatic impacts. Support organizations in readiness self-assessments to create the conditions for capacity development investments that translate into organizational learning.

- **Suggestions for downstream actors:** policy actors should be regularly involved in global-level learning events to better understand the complexity and diversity of pathways to transitions and identify possible approaches that would suit their context.

CREATE LONG-TERM MISSION-ORIENTATED R&I PROGRAMS

Create long-term programs dedicated to sustainability transitions through agroecology

DeSIRA stakeholders acknowledge the importance of creating long-term programs that explore applying agroecology approaches and other approaches to sustainability transitions. Projects have specific settings and linkages with ongoing initiatives promoting the same approaches and vision. Long-term programs are crucial because expected changes and proof-of-concept require time and holistic system changes.

- **Suggestions for upstream actors:** Funders and leading organisations target multiple AE dimensions simultaneously, particularly biodiversity and soil health conservation and enhancement, external input reduction, and establishment of effective market linkages through better organisation. They also strengthen multi-stakeholder platforms and coordination, mobilise research in facilitation roles, embed or articulate projects and intervention strategies with existing initiatives, networks, and innovation trajectories, engage in participatory R&I approaches, and actively mobilise stakeholders from farmers to the private sector to policy actors. Funders should promote long-term, flexible (adaptive) projects and programs that provide sustained support for processes towards more AE; invest in developing capacities on the very concept of AE and the pathways for AET across stakeholders; Incorporate an explicit, systematic gender, youth and equity focus to address inequalities. Policymakers should prioritise participatory, transdisciplinary research and innovation processes that co-create solutions with farmers and value local knowledge.

- **Suggestions for downstream actors:** Policymakers should create enabling policy and institutional environments for AET through multi-stakeholder policy dialogues and evidence-based advocacy; Develop and expand markets and value chains for agroecological products to create economic incentives for transition.

Ensure the sustainability of DeSIRA outcomes

Several DeSIRA outcomes need to be sustained beyond the project duration, in particular, innovations that remain at an early phase of test and adaptation, successful innovation strategies, successful multistakeholder platforms, fruitful learning processes in organizations that did not reach their end, and research analysis and formulation of proofs-of-concept and evidence for decision-making.

- **Suggestions for upstream actors:** better anticipate the number and value of outcomes of such an initiative and the need for continuity and mainstreaming; identify key organizations that will be in charge of sustaining these outcomes.

- **Suggestions for downstream actors:** Plan, prepare, and organize dedicated events and opportunities to assess the outcomes and next steps.

1.2. Specific Key Messages and Regional Priorities

Below are examples of key messages from the different regions and the specific concerns they address.

AFRICA

Multiple global shocks have impacted the process of transforming food systems. The region has experienced restricted access to agricultural inputs, such as fertilizers, which has resulted in an increase in the cost of living and the return to a siloed approach. Macroeconomic instability, a large debt burden, limited access to finance, and limited technical capacities are major challenges to food systems transformation in the region. Poverty, food insecurity, and malnutrition remain serious concerns. In this context, innovation and agrifood stakeholders expressed specific concerns concerning R&I interventions and investments:

- It is better to link the research & innovation system with industry to trigger the sustainable intensification of farming systems and innovation scaling up and out;
- There is a need to bridge the gap between policymakers and researchers. More efforts should be made to align R&I programs with broader continental frameworks like CAADP, potentially increasing their policy influence;
- Renovated efforts to increase the deployment of gender-sensitive technologies and acknowledgement of and support for women-led innovative entrepreneurship;
- More focus on "actionable issues" rather than high-level "wish lists" of policy changes;
- Funding initiatives that carefully balance structure with flexibility are needed. These initiatives must ensure their strategic direction and flexibility to adapt to changing circumstances, including between projects. Initiatives that build on existing structures in territories, especially those that rightfully represent farmers, are also needed;
- Geopolitical factors should be further integrated into innovation strategies. Tensions and conflicts hinder regional cooperation on food security initiatives, such as cross-border trade agreements and infrastructure development.

LATIN AMERICA AND THE CARIBBEAN

Unstable political contexts, inadequate access to agricultural inputs, land degradation, deforestation, extreme events triggered by climate change, social and economic inequality, the high cost of healthy diets, and the double burden of malnutrition are seen as the main challenges faced by this region in the process of transforming their food systems. In this context, innovation and agrifood stakeholders expressed specific concerns concerning R&I interventions and investments:

- Developing R&I in support of and based on bioeconomy and agroecological transition;
- Increased focus on food system dialogues with attention to the importance of urban drivers in shaping food systems and attention to potential vulnerabilities in supply chains;
- We must shift focus from short-term localized projects to sustained territorial development processes. It requires building trust and maintaining long-term relationships with local stakeholders, recognizing that meaningful change often requires sustained effort over extended periods in each territory. Focus on bringing inclusive and diverse perspectives. More effort is needed to translate complex scientific findings into language comprehensible to policymakers, farmers, and other non-scientific stakeholders and to integrate traditional knowledge alongside scientific expertise. R&I efforts must be based on co-creation with multiple stakeholders;
- Need to strengthen multi-stakeholder collaboration and promote adaptive management of R&I projects. This requires enhancing knowledge sharing at all levels in AIS.

ASIA-PACIFIC

Systemic vulnerabilities, such as zoonosis, the rapid effects of global warming, particularly on fragile agricultural systems, nutritional challenges, the rising price of food and raw materials, limited and degrading natural resources, lack of awareness and capacity for sustainable agriculture practices, and ageing farmers, are specific challenges in this region. In this context, innovation and agrifood stakeholders expressed specific concerns concerning R&I interventions and investments:

- Empowering local communities as solution developers for the most pressing problem;
- Need to foster co-creation, diversify partnerships with local communities, farmers, and policymakers, and prioritize local ownership and embeddedness into government-led processes as core success factors of their action;
- There is a need for investments in strategic learning processes at the level of organizations and support robust coordination mechanisms that can ensure that program-level insights inform future programs and maximize overall impact;
- Accelerating agroecology transitions through more investments and policy action at the regional level;

- Boosting universities' transformative potential in shaping a new generation of professionals to lead sustainable agricultural transitions, emphasizing collaboration, inclusivity, and long-term investment as essential for success;
- Regional organizations and alliances need to be mobilized more effectively to help solve "the last mile" problem of scaling impact;
- Better support for agricultural innovation policies and policy innovations using food systems as catalysts, priority of bottom-up approaches, and capture and dissemination of lessons;
- Anchor multi-actor policy dialogues in legitimized platforms.

2. Project design, management and phasing-out: from vision to impact

A number of suggestions were formulated to upgrade the design, management, and phasing-out of R&I projects to improve their contributions to impacts and their capacities to demonstrate and explain their contributions. This will allow better coordination and synergy with other initiatives. The creation of innovation scaling strategies and multistakeholder collaboration platforms appear to be the two primary outcomes of DeSIRA projects. Provided that certain conditions (or building blocks) have been implemented, this allows for an appropriate gradual exit from the project approach (phasing out).

The recommendations are primarily targeted at the following actors:
- Project designers;
- Project managers;
- Organizations in charge of leading these projects;
- Project funders.

We grouped the recommendations into four improvement areas:
- Address identified gaps in the DeSIRA project design;
- Address identified challenges in DeSIRA project management;
- Mainstream innovations scaling strategies formulated by DeSIRA projects;
- Create mechanisms for the sustainability of multistakeholder innovation platforms created by DeSIRA projects.

For each improvement area, the DeSIRA community jointly identified several building blocks. These were selected based on their absence or great weakness in the DeSIRA projects.

2.1. Addressing identified gaps in the DeSIRA project design

Building blocks for improved design	Suggestions
Adoption of best practices of ARPIST as a common framework for the project consortia	Designing R&I projects based on a number of core principles: participatory action research, pluridisciplinarity, co-innovation methodologies, process-led innovation strategy, multi-actor platforms, fostering youth and gender inclusion, and responsible innovation.
Alignment of project partnership with project vision and activities	Adopting best ARPIST practices is necessary but not sufficient. Many projects failed to fully achieve their objectives because their vision, strategy, and architecture were not aligned, and the consortium was not mature enough. The consortium's maturity determines the achievable results and must be considered in the innovation strategy from the beginning.
Embeddedness of project architecture into national AIS and into key organizations	R&I project partnerships and activities must be embedded into: • National agricultural innovation systems, from the local to the policy level. It will facilitate the sustaining of successful approaches and innovations deployed by the project; • Their host organizations and their strategies. It will facilitate internal organizational learning and continuity in research & innovation programs and partnerships.
Sound participatory Theory of Change backed by outcome trajectories and regularly revised during project implementation	• Identify the main outcome trajectories to which the project will contribute: innovation trajectories, capacity development trajectories, policy change trajectories, and system change trajectories. • Conduct a stakeholder mapping exercise to identify key actors in the outcome trajectory, including champions; use a reference ToC as a checklist and a starting point to develop a tailor-made ToC; • Develop a stakeholder engagement plan that outlines how to collaborate with other actors in the trajectory. • Acknowledge the unpredictability of outcomes
Longer inception phase	• Build in extended inception phases for projects to gain prominence and develop trust; • Build in inception time for different stakeholders to agree on the co-design of the innovation agenda and for capacity development • Allow sufficient time to formulate and agree on an initiative that is coherent with the outcome trajectory; Design flexible funding mechanisms that allow for adaptive management; Require grantees to report on how their work aligns with and contributes to the different elements of their theory of change
Learning-oriented MEL systems that are appropriate to support system-change interventions	• Promote monitoring and evaluation with a focus on learning and adaptation, and relevant to innovation and system-change interventions
Expand the variety of R&I projects and refine their scopes to simplify their design	• Determine the scope of the R&I project and the contributions of research with reference to innovation phases, research needs and capacity development needs; • Limit R&I project scopes to two focuses: focus on innovation co-creation and experiment, focus on innovation deployment; decrease the academic research focus; revise priorities • Harness research and innovation projects as policy experiments in that scaling of the outputs will require enabling regulatory and policy instruments.

2.2. Addressing challenges in DeSIRA project management

International R&I projects with expected developmental outcomes are complex settings that are very sensitive to significant management capabilities beyond traditional requirements, to deal with their impacts on agrifood systems.

Building blocks for upgraded project management approaches	Suggestions
Traditional management combined with innovation management	• R&I projects should be managed with adequate resources (time, skills, budget) and adequate methodologies for innovation projects: adaptative management, real-time MEL system, outcome-oriented ambitions, behaviour change models, learning-by-doing, and intense communication, among other things. • check the alignment between the transformative scope and the managerial capacities put in place in transformative-orientated projects
Capacity gaps in project teams, missing profiles	• Retain senior staff with experience in adaptive management, clear communication, mediation • Invest in relationship-building to establish trust; • Attract team members with a track record in adaptation, flexibility and out-of-the-box thinking; • Seek researchers that are humble and good communicators, with core skills that are necessary for ARPIST practices; • Include marketing profiles for innovation scaling projects, with fundraising and advocacy capacities.
Stakeholder engagement	• Engage with multiple stakeholders from the start of an initiative, as innovations will require partnerships for further scaling • Engage with policy stakeholders throughout the policy cycle, from problem identification to policy evaluation, ensuring that processes are participatory and inclusive. In very short-term projects, looking for policy windows or focusing on the capacity development of policy actors are winning strategies. • Seek partnerships with intermediary individuals and policy entrepreneurs; • Invest in relationship-building to establish trust • Reduce project consortia to the core actors to pilot the innovation process. Keep resources to engage other partners step by step while deploying innovation activities. • Nurture partners' agility and agency
Adaptive management	• Encourage grantees to adjust strategies as conditions evolve. • Reflection and Refinement methodologies: Carry out periodic after-action reviews to monitor initiative progress against ToC expectations; • Organize training sessions for team members on the different project strategy components and how to implement them effectively • Allow changes in partnerships and timeframe; • Adapt implementation based on feedback. • Improve the use of digital tools for collaborative and adaptive management
Project portfolio management approaches	• Look at bundled innovations and partner coordination around the promotion of the different innovations promoted by the multiple R&I projects of an Initiative; • Provide more visibility and alignment opportunities across innovation agendas within a multi-project initiative to facilitate synergies between implementers

2.3. Mainstreaming innovation scaling strategies initiated in DeSIRA

Beyond the co-creation and adaptation of innovations with local communities, one of the significant outcomes of DeSIRA projects was the design and, in some cases, the operationalization of scaling strategies. The short project timeframes and evolving construction of scaling approaches while the innovations were being developed created tensions in project management, with teams trying to combine the two but lacking the budget and partnerships to do so. Since it's difficult to anticipate the scaling strategy at the very early phases of innovation, initial R&I projects should be able to clarify that the scaling strategy will be an output of their work and that resources dedicated to operationalizing the scaling approach will be necessary as part of project phasing out.

A number of recommendations were drawn from DeSIRA's experience in that domain and are compiled in the table below.

Building blocks for upgraded innovation scaling strategy	Suggestions
Innovation portfolios	• Identify all the necessary additional innovations (technological, service, organizational, social) that are necessary to the deployment of your innovation • Approach R&I project activities as a contribution to a diversity of bundled innovations
Co-evolution of the different innovations on track	• Acknowledge the fact that while testing and adapting solutions, changes may appear, such as new behaviours or new expectations from innovation end-users • Consider scaling as this co-evolution process.
Diverse actors played different roles along the process	• A farmer organization can play very different roles all along the scaling process: identifying new solutions, training farmers to change their cropping systems, and putting new products on the markets.
System changes	• Innovation scaling comes with system changes, changing the way national agricultural innovation systems operate is part of the mechanism of scaling • As such, capacity changes in national AIS are part of the scaling strategy.
Pace of scaling	• Time horizons of research, innovation and development are very different; often, research is too long compared to the innovation pace and innovators' support needs. Planning shifts can create true bottlenecks or even stop innovation efforts; • Different time horizons should be considered in scaling strategy

2.4. Sustaining multistakeholder innovation platforms (MSP) created in DeSIRA

Building blocks for greater sustainability of MSP	Suggestions
Improve platform design	• Budget adequately for relationship building; • Plan for long-term sustainability from the start; • Invest in quality facilitation; • Build on existing structures • Allow sufficient time for foundation building;
Improve platform management	• Focus on building trust before technical activities; • Ensure regular communication and transparency; • Monitor both practical and systemic outcomes; • Maintain flexibility while keeping strategic focus; • Seek partnerships to improve convening power to engage, both with the most marginal, and powerful actors • Support capacity development for collaboration; • Recognize the importance of process alongside results;
Support integration of platforms into formal structures	• Consider longer funding timeframes • Create enabling environments for collaboration; • Support integration of platforms into formal structures; • Recognize both immediate and systemic benefits; • Provide institutional support for sustainability.

Part 3: The legacy of DeSIRA to support future Action

DeSIRA's legacy for future actions consists of a network of professional innovation facilitators, managers, and leaders; a like-minded community of agricultural R&I actors; research agendas associated with promising innovation portfolios and their promoters; effective design models of international R&I projects; and a service facility model to upgrade managerial capacities of a global multi-project R&I initiative for sustainability transitions.

1. A global Community of Action and Reflection on agricultural innovation and sustainability transitions

The DeSIRA community of Action and Reflection was created in 2021 to stimulate peer-to-peer learning, capture and diffuse existing knowledge and practices on managing for impact in AIS-orientated interventions, enhance possible cross-support between DeSIRA projects, and elaborate some transversal knowledge products collaboratively across projects and regions.

The community offered a space for projects and DeSIRA-LIFT to meet, reflect and share relevant outcomes. It operated and was constantly built through working groups, community events, and activities – online and in the field – rooted in the reality of the various contexts of DeSIRA projects. The community acted as a complement and recipient of the other activities of DeSIRA-LIFT, such as training and mentoring. It provided permanent access to co-created knowledge and enhanced communications through a bi-monthly News Brief.

Transversal knowledge products are co-created with DeSIRA-LIFT, which facilitates cross-project mutual learning based on shared practices, critical reflection, and topical learning reviews from different contexts or within the same country or region. The DeSIRA Connect Days are a key mechanism of the community.

The publication of learning products aims to display "what worked for whom, in what circumstances, and how" by gathering common knowledge and key learnings from the DeSIRA projects, their implementing organizations, and their stakeholders about the innovation processes they are supporting and the domains in which these innovations intend to make a difference. Key learnings are also shared about how the support from DeSIRA-LIFT has been reinforcing the three core managerial capacities to make the projects more impactful.

Activities of the community have been transcribed and registered on a dedicated website. A general map with links to DeSIRA project distribution across the globe and their websites and documents of interest (when available) can be found here.

2. A network of professional innovation facilitators

At the heart of the DeSIRA project philosophy lies the idea that agricultural innovation results from the collaboration of multiple stakeholders (farmers, NGOs, service providers, researchers, decision-makers, etc.). These various stakeholders come together to build a shared understanding of a problem to address, co-construct innovative solutions that respond to actual needs, plan and carry out the activities necessary to make the innovation a reality and help it evolve if the needs of the context change. Innovation facilitation is essential for supporting these multi-stakeholder innovation processes. It helps create the engagement of various stakeholders in a flexible and creative group process, where diverse perspectives are recognized and contribute to finding joint solutions. It is based on a specific posture and employs appropriate methods and tools to help stakeholders define common objectives and how to achieve them.

The first cycle of support for DeSIRA projects identified a crucial gap: while effective innovation facilitation was needed, it was often overlooked or insufficiently integrated into project designs and strategies.

In its second cycle of support, DeSIRA-LIFT has launched a region-based training program for innovation facilitators working on DeSIRA projects to address this gap.

The training aimed to equip cohorts of innovation facilitators with knowledge and skills that would allow them to effectively support ongoing DeSIRA projects and prepare them to contribute to projects and organizations outside the DeSIRA initiative.

A total of 73 participants from 11 countries were trained. Their profiles are stored in a repository here: https://www.desiraliftcommunity.org/directory-of-innovation-facilitators/

3. Innovation portfolios and their promotors

The DeSIRA projects developed, tested and adapted "innovation portfolios" that constitute crucial innovation roadmaps for sustainability transitions in their contexts.

The innovations relate to the following domains:

- Strengthening of AIS Systems;
- Support to risk management and surveillance systems;
- Support to sustainable livestock and pastoralism;
- Support to the nexus of the energy-agrifood system;
- Support to water management in fragile and coastal states in Africa;
- Support to improved nutrition and food security;
- Support to agro-ecology transitions;
- Support to agroforestry.

These portfolios are accessible in a database.

4. A toolbox to support the design and management of impactful R&I Interventions

The learning from theory and the learning from practice have been pulled together by DeSIRA-LIFT into a set of tools and guidebooks for DeSIRA stakeholders:

1 Guidebooks for professionals
a) A collection of "How-To Briefs" providing practical guidance for DeSIRA project managers on diverse topics that appear as critical management areas in R&I projects, and consolidated in an Actionbook (Toillier et al., 2025);
b) A handbook for project managers to upgrade the skills of their innovation facilitators and make the best use of them in their project approaches (Lecomte et al. 2025)
c) A handbook for project managers to make financing options explicit for the scale-up of their innovations (Juguet et al., 2025).

2 A self-paced online eLearning for project designers and managers, on the core capacities to manage R&I projects for impacts.

3 A collection of knowledge products that encapsulate advanced learning on the success and challenges of R&I projects (Douthwaite et al., Drimie et al., Lof et al., Alexandre et al., 2025), and which includes :
a) Theories of change (ToC) to support critical outcome trajectories detected in DeSIRA. An example is given below for R&I projects in support of policy outcome trajectory (Douthwaite et al., 2025)
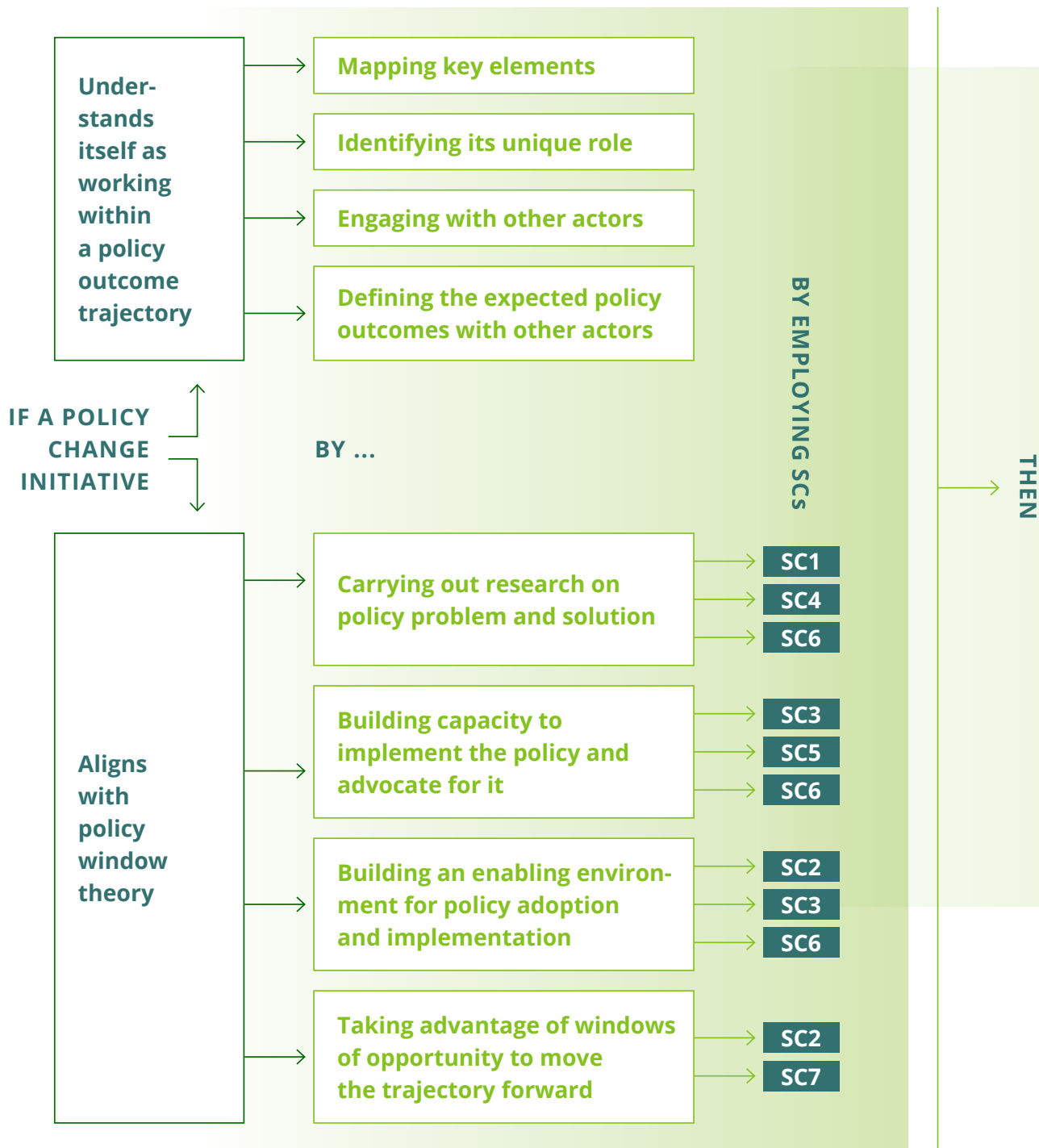b) Queryable dataset such as this one on policy changes: https://tinyurl.com/muxtsm7v.

This last tool is novel, made possible by recent advances in the ability of large AI language models to "sit on top" of datasets and query them using everyday language. Current practice is to use software such as SPSS or NVivio, which

requires extensive coding, which can be time-consuming and expensive before a data set can be analyzed. For this review, the ability of large language models, specifically Claude.AI, to directly analyze textual data and spreadsheets should allow any authorized person, not just the review team, to carry out one or more of the following:

- In-depth exploration of individual project cases;
- Custom comparisons across projects;
- Verification of claims made in published outputs resulting from the learning review;
- Discovery of additional insights not highlighted in the learning review publications;
- Ask follow-up questions based on initial findings.

Together, the outputs above aim to provide evidence-based insights, lessons and tools for DeSIRA R&I projects and the funders.

A graphic depiction of a policy influence theory of change (PIToC), derived from the learning review findings and lessons learned.

The initiative will be strategically positioned

The initiative's research will fill key knowledge gaps

Stakeholders will have the capacity to advocate and implement the policy

The enabling environment will be more conducive to the policy

Policy proposals will be stralegically timed and framed to seize momentum within policy windows

LEADING TO

Successful adoption and implementation of the policy

Strengthened stakeholder capabilities and networks

A more enabling institutional and normative environment for the policy

Acceleration and amplification of the overall outcome trajectory

5. A model for an on-demand service facility to support programmatic impacts

DeSIRA-LIFT has provided on-demand support services to country-based DeSIRA projects, helping project teams prove and improve their impacts on climate-oriented innovation systems, which are aligned with more sustainable food system transitions.

The overall objective is to enhance the outcomes and impacts of the country-based DeSIRA projects on the national AIS by promoting AIS thinking and the use of developmental evaluation approaches for managing transformative changes. The specific objective is to help DeSIRA project implementers and their partners in the immediate sphere of influence to identify how they can better achieve their goals with a more substantial contribution towards strengthening national AIS and accelerating innovation trajectories towards impacts.

DeSIRA-LIFT has developed a menu of support services and a delivery approach aimed at upgrading the five core capacities to manage impact while enhancing mutual learning and synergies between DeSIRA Pillar 1 projects. This menu has been adjusted gradually based on the feedback received from projects and their support requests to prove and improve their impacts.
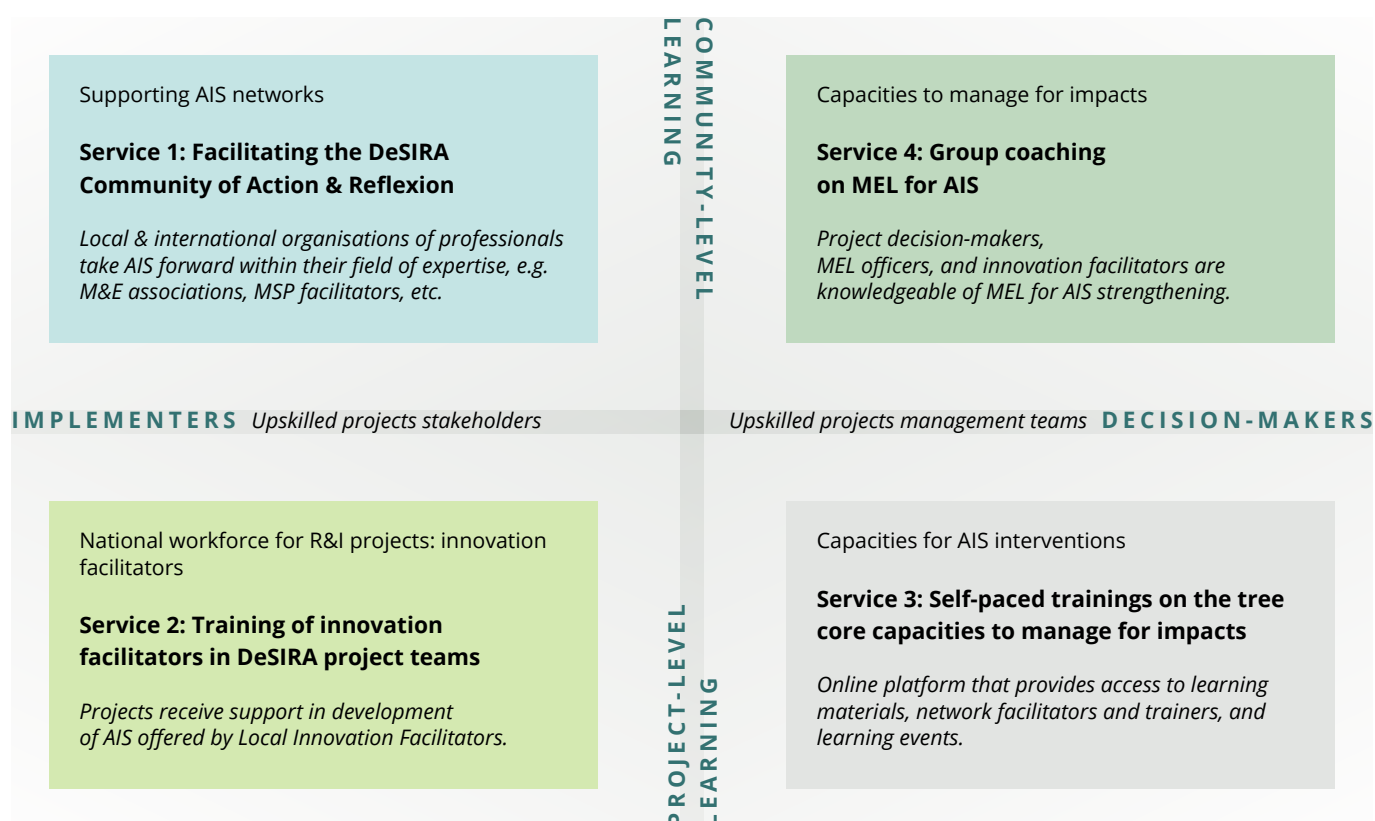
Four services were consolidated after a first cycle of tailored adaptation:

- **Service 1:** Facilitating the DeSIRA Community of Action & Reflection: Local and international. Organisations of professionals, such as M&E associations and multistakeholder platforms (MSP) facilitators, take AIS forward within their field of expertise;
- **Service 2:** Training of innovation facilitators in DeSIRA project teams. Projects receive support from local innovation facilitators in developing AIS;
- **Service 3:** Self-paced training on the three core capacities to manage for impacts: Online platform that provides access to learning materials, a network of facilitators and trainers, and learning events;
- **Service 4:** Group coaching on MEL for AIS: Project decision-makers, MEL officers, and IF know the participatory M&EL system for strengthening AIS.

More details on service contents are accessible here: https://www.desiraliftcommunity.org/training-and-coaching/. A final assessment details the value proposition of this service offering with respect to gaps and challenges in DeSIRA project design and management and with respect to expected outcomes at the program level. It demonstrates the importance of such a service facility to generate joint learning and upgrade capacities and approaches of action-research for innovation and sustainability transitions in a variety of contexts.

Figure 3: *The DeSIRA-LIFT service offer to strengthen DeSIRA project capacities to prove and improve their impacts*

Conclusion

As a conclusion we would like to highlight the importance of the knowledge generated with DeSIRA implementers and their partners with respect to:

- The scale and scope of the initiative (70 projects across 65 countries in Pillar 1 of DeSIRA);
- The emergence of a new paradigm that we called "Action-Research in Partnership for Innovation and Sustainability Transitions" (ARPIST);
- The value of context-specific insights about "what works for whom, in what context, and how";
- The creation of a global Community of Action and Reflection;
- The practical legacy of tools, resources, and trained innovation facilitators.

We emphasize how this knowledge provides a roadmap for future R&I investments that can deliver more meaningful impacts through trust-based partnerships, responsive project management, and strategic multi-level interventions.

The DeSIRA Initiative has generated invaluable knowledge about effective approaches to agricultural research and innovation (R&I) for sustainability transitions in agrifood systems across Africa, Asia, and Latin America. Through its portfolio of 70 projects implemented in 65 countries, and supported by the DeSIRA-LIFT facility, this initiative has created a robust foundation of actionable learning that will shape future R&I interventions.

Strategic Value of the Knowledge Generated

The knowledge generated with DeSIRA implementers is significant for several reasons:

1. **Evolution of R&I Practices:** DeSIRA has documented the emergence of "Action-Research in Partnership for Innovation and Sustainability Transitions" (ARPIST), representing a paradigm shift in how researchers contribute to innovation. This approach moves beyond academic research to embrace community-driven, solution-oriented co-innovation methodologies that address the most pressing challenges in agrifood systems..

2. **Practical Implementation Insights:** The initiative has captured concrete evidence about "what works for whom, in what context, and how" in supporting agricultural innovation systems (AIS). These context-sensitive insights provide transferable knowledge that can inform future project design and implementation.

3. **Scaling Pathways:** DeSIRA has identified critical success factors and building blocks for scaling agricultural innovations, including the importance of innovation portfolios, multi-stakeholder platforms, policy innovations and nested outcome trajectories that work across micro, meso, and macro levels of AIS simultaneously.

4. **Global Community Building:** The knowledge generated has fostered a global Community of Action and Reflection, creating enduring networks of research and innovation professionals who can continue to advance agricultural transformation beyond the DeSIRA Initiative's timeframe..

5. **Tools and Resources:** The learning has been translated into practical toolkits, handbooks, e-learning resources, and actionable theories of change that can guide future R&I investments and project management approaches.

Legacy for Future Action

The knowledge generated with DeSIRA implementers leaves a significant legacy for future action:

- A tested model for on-demand service facilities to support complex R&I programs;
- A network of trained innovation facilitators across multiple countries;
- Evidence-based approaches to strengthen agricultural innovation systems;
- Documented pathways for institutional embedding of successful approaches;
- Practical recommendations for project design, management, and phasing-out strategies.

This body of knowledge is particularly valuable as the global community seeks to accelerate sustainable transitions in agrifood systems to address climate change, food security, and rural development challenges. The insights from DeSIRA implementers provide a roadmap for more effective R&I investments that can deliver meaningful impacts through trusted partnerships, responsive project management, and strategic multi-level interventions.

By documenting both successes and challenges, the knowledge generated enables future initiatives to build on DeSIRA's experience, avoiding common pitfalls and adopting proven approaches to transform agricultural research into impactful innovation that contributes to sustainable development goals.

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This Synthesis Brief forms part of a collection of knowledge products, building on combined activities of the DeSIRA-LIFT Service Area 1 team that has been providing support to the 70 DeSIRA projects of DeSIRA pillar 1 in their various contexts. These knowledge products were developed in close interaction and with the inputs of the DeSIRA project teams. This Synthesis brief has been made possible thanks to the support of the DeSIRA-Lift Core Team.

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