ESSA-Forets Grant Report

1) What are the emergent discoveries on your burning issue? (provide a short description of the process and key insights) *

Burning issue:

Madagascar is expected to be hardest hit by the negative impacts of climate change, with decreases in agricultural productivity between 15-35% (IPCC, 2021). As the island already exhibits high vulnerability to weather shocks, the adaptive capacity of its agricultural systems must be urgently increased to meet the Sustainable Development Goals, and be resilient to worsening climate change. Agricultural land is severely degraded due to the continued use of shifting cultivation (involving burning and rotational farming), leading to reduced productivity and soil erosion, which in turn leads to further clearing for the acquisition of new arable land. Climate-smart agriculture (CSA) offers a suite of approaches for transforming agricultural systems by enhancing productivity and resilience for food security while fostering mitigation where possible. Despite their potential benefits, the adoption of CSA by forest-edge communities remains very low, and swidden agriculture which is unsustainable in the context of rapid population growth is still predominant.

Co-production process:

This project engaged multiple stakeholders (farmers, extension officers, researchers and other stakeholders) in a reflexive and iterative process of action research to address critical knowledge gaps on key enablers and barriers to CSA adoption and co-identify the most effective policy instruments to support the agroecological transition of rural communities around protected areas.

We first conducted key-informant interviews and focus groups with hundreds of farmers in remote villages located on the forest edge in western and eastern Madagascar in mid-March 2022. These interviews and focus groups explored a variety of themes around farmers' experiences with CSA, and their perceptions of the barriers and enablers to climate-smart agriculture (CSA) adoption. We also conducted a literature review on CSA practices in Madagascar, barriers, and enablers to their wider adoption and any policy interventions that can incentivise their upscaling in Madagascar.

We have further consulted several stakeholders who are expected to have influence on agricultural and land restoration strategies or who are practitioner experts on CSA-related initiatives, or those involved in designing and implementing intersectoral CSA-related projects in Madagascar (e.g., researchers, government officials at the Ministry of agriculture and Ministry of Environment and Ministry of land use planning, and practitioners and researchers on CSA interventions in Madagascar).

Knowledge from data collected in the rural villages, the literature review, and these consultation meetings fed into a one-day national workshop on 8th April in Antananarivo in a hybrid format, with both in-person and virtual participants. The workshop aimed to describe the state of practice of CSA in Madagascar, particularly focused on communities around protected areas, understand local perceptions, and co-identify catalysts and blocking factors to their adoption. It also provided a platform for exchanging experiences and reflections on policy instruments to support the agroecological transition of rural communities around protected areas. It was attended by 53 participants in total including representatives of small-scale farmers, government officials, conservation and development practitioners, donors, and

researchers. The key policy recommendations from the workshop will feed into the national strategy for scaling up the adoption of CSA practices in Madagascar and promote a cross-sectoral and coordinated approach to the various initiatives in the field.

Key insights from these activities:

- **Several terms are used by various actors to refer to CSA practices**: We note a more frequent use of the term agroecology European countries' stakeholders (AFD, EU, GIZ, Swiss Cooperation), while in the English-speaking networks, the terms more commonly used are Conservation Agriculture and Climate Smart Agriculture (USAID, FAO). The term 'sustainable agriculture' has been used frequently in policy documents since 2005, both in the environmental field and in agricultural and rural development. The concept of CSA has been increasingly used in policy framework or stakeholder documents since the years 2012-2013. Other terms have also emerged as alternatives, but their use remains rather limited in policy documents; or limited to a few groups of actors (such as ecosystem-based adaptation, sustainable land management, ecological intensification, permaculture, organic agriculture, biodynamic agriculture).
- **Main CSA practices in Madagascar**: across various regions in Madagascar, we found that the key agroecological techniques implemented are conservation agriculture, Agroforestry, integrated pest management, crop associations and rotations, integration of livestock into agriculture, improvement of small livestock rearing, management of organic matter or biofertilizers, intensive rice growing systems.
- **Policy instruments are uncoordinated, differ across sectors, and limit upscaling of CSA:** While various stakeholders broadly agree with the same basic principles of CSA (enhanced productivity and resilience), they often have different agendas and visions and intervene in various sectors, often in an uncoordinated way. The main policy instruments used to encourage the scaling up of CSA also differ largely across sectors, sources of funding (agendas of donors) and the themes of intervention. This sectoral silo limits sharing of lessons learned and coordination of efforts. Each sector has its own discussion networks. Even if actors from different sectors sometimes meet, actions are guided primarily by project objectives (linked to sectoral objectives and/or donor orientations).

  a) The agricultural and rural development policies (led by the Ministry of agriculture) are geared towards specific visions of productivism, agricultural modernization, value chains linked to the market, agribusiness, they very often target large farms and agricultural contractors. Their visions are largely economic. CSA practices are more integrated into land management and protection of watersheds. CSA is not yet well considered as a solution for increasing productivity (important place of the green revolution, and large farms) and is not sufficiently integrated into value chains.

  b) The food and nutritional security policies – (managed largely by the Prime Minister, but also by by the Ministry of agriculture) have a vision of food-nutritional security, resilience, access to food and food, and mainly target vulnerable households in very poor areas. The visions are largely social, focusing on emergency actions. CSA is increasingly used for increasing the resilience of small-scale farming households and enhancing food and nutrition security; but it is not integrated into the value chains and into environmental policies.

c) The environmental policies (climate change, biodiversity conservation, fight against desertification) (led by the Ministry of Environment) mostly focus the sustainable management of environmental resources and forest protection. The main targets are households and communities around Protected Areas. Their agendas are largely ecological. The mechanisms and potential instruments for the upscaling of CSA are strongly focused on forest conservation (payments for ecosystem services, Green Climate Fund, etc.).

- **Local perceptions of the barriers and enablers to climate-smart agriculture (CSA) adoption:** local communities are more likely to invest in CSA practices when the systems introduced respond to their needs, training, monitoring, and regular advice are available, and CSA leads to increased productivity. At the socio-economic level, farmers are more motivated to experiment with new techniques when they have access to large farms. The existence of a leader is also very efficient way to convince farmers to invest in more sustainable farming techniques. The production environment also plays a major role: facilitation of access to seeds, materials, credits; and access to market, and partnership with the private sectors.

- **Obstacles to CSA adoption** include the advanced and complex know-how required by most of these techniques. Extensions services are often short-lived because projects often have a limited duration and farmers abandon the practices as soon as the project ends. There are also natural constraints such as the pedoclimatic constraints of the environment, for example the unavailability of water. At the socio-economic level, the problems are often linked to access to inputs, credit constraints, as well as lack of market access, unavailability of land and low level of education. At the institutional level, reach and pilot test / experimentations often take too long to materialise or translate into tangible policy recommendations, and actions at the local level and traditional knowledge are not visible enough and insufficiently shared. Finally, protected areas are generally located in very remote areas, which significantly increase transactions costs and deter donors' investments. Follow-up support is scarce. More recently, these issues have been compounded by increasing migration leading to increased forest loss, increasing multi-ethnicity and community conflicts.

- **Policy instruments to encourage CSA upscaling:** Support for improved agricultural inputs is the most commonly used policy to encourage CSA adoption. However, very often, these projects are limited in time (3-5 years), limited in space (often at a very small scale) and with limited targets. Various types of public policies and incentive mechanisms to support CSA have been used (or might have potential in Madagascar) such as: i) direct support for farmers (training- Information – awareness raising, technician implementation, extension services, access to seeds, seedlings, other inputs, and materials, ii) Improvement of the production environment: Improvement of the direct environment for production (e.g. land security, etc.); iii) access to services (training-technical support services, climate-related information, etc.), iv) – Credit transfer: or other financing mechanisms (PES – Payment for Environmental Services, green climate fund, carbon market), v) Market-oriented policies or mechanisms: Markets for CSA products (creation of local and/or regional market, creation of national label, etc.); partnership with agribusiness or private sectors (contract

farming), promotion of rural entrepreneurship, social and environmental responsibility (CSR) companies, etc.); certification and premium prices, vi) Transversal and institutional policies: Support through the establishment of a legislative framework (integration into sectoral policies, translation of international commitments into national initiatives, specific legislative framework, etc.), landscape approach, national consultation mechanisms. The national workshop looked used interactive tools to encourage participants to co-identify driving forces and obstacles to the effectiveness of each category of policy instruments and criteria against which they can be assessed.

2) What opportunities for impact do you foresee in the future? Please explain how you would go about pursuing those" *

We envisage some robust field testing of some of the policy instruments identified in the workshop in collaboration with several stakeholders (researchers, government, extension officers, conservation organisations) across multiple settings in Madagascar. We specifically plan to use a a randomized controlled trial (RCT) to evaluate the impacts of two key policy instruments (unconditional cash transfers and information campaign associated with training) on the adoption of CSA and farmer perceptions. Such field experiment will provide robust empirical evidence on the most effective policy levers for wider adoption. Such scaling up is of critical importance for achieving real impacts beyond the site level and improving food security, climate resilience, and sustainable management of forest and natural resources in Madagascar, especially among small-scale farmers at the forest frontier.

We are also currently exploring the application and scaling up of knowledge produced from the workshops in other African countries' contexts such as Cameroon.

Workshop participants suggested that we also run similar workshops in other regions of Madagascar to gain more-context specific information and better tailor the policies to regional contexts. Also, it is critical to disseminate the key findings of the workshop through the press and the media, and to engage better with government authorities to foster ownership and ensure the key policy recommendations inform national policies.

3) What do you consider are some of the biggest successes you achieved? What are the factors that you think contributed to these successes (e.g. issues of timing, contextual factors, people involved, etc.)? *

Our biggest successes are the fact that 53 participants actively interacted with each other in the national workshop (including 10 representatives of local communities from some of the most remote rural areas of Madagascar) despite the two-weeks short notice and that most actors work within specific sectors, have very diverse backgrounds and education levels, disparate visions and agendas, and have not previously met in the same workshop setting. The network built between various participants and across sectors was also in itself a very positive outcome of the co-creation process.

Factors that have contributed to these successes include:

a) **Hiring of an experienced facilitator** who ensured everyone has a voice and the co-creation process is not being dominated by specific actors or sectors,
b) **Use of very engaging interactive tools** such as the fishbone diagrams and the forcefield analyses,
c) **Interest in the topic** especially among conservation and environmental actors who are desperately seeking more effective ways and policy levers for increasing the uptake of more sustainable agricultural practices, especially among small-scale farmers on the forest edge (given the urgent need to stop forest clearing for new farming lands and reduce food insecurity).

4) Which strategies and approaches do you think have worked to enhance / support the co-creation process with your stakeholders? *

Please see my responses to 3 above: Besides these factors, the key approaches which have supported the co-creation process include:

a) **Workshop design:** Rather than the dominant supply-driven models, whereby scientists produce information to fill a knowledge deficit (via a series of talks and questions and answers session), we ensured that the producers and users of information work together through sustained engagement and open discussions by limiting the presentations to 10 minutes long and deigning it in a way that is very easy and accessible to a lay audience.

b) **Understanding the specific user need and decision-making context:** Prior to the workshop, we conducted several interviews and focus groups with users of research (small-scale farming communities) to ensure their voices are heard and taken into account in the design of the workshop and the policy instruments examined in the workshop were relevant to them. We also ensured that representatives of local communities feel empowered by the workshop experience and are not being intimidated by the presence of government authorities or by perceived power imbalances.

c) **Embrace diversity and foster an ethic of respect for differences**: The national workshop involved stakeholders from different sectoral and professional backgrounds, often with different priorities and incentives, each bringing different knowledge and values. For instance, local communities might be primarily concerned with food security and enhancing their livelihoods while conservation practitioners might prioritise biodiversity conservation. We invested significant efforts in ensuring that participants listen to each other and embrace expertise that others bring to help understand the bigger picture. We did this by clearly outlining the objectives of the workshop at the start to ensure they are shared by all participants and to manage expectations.

5) What has not worked so well, and why?/ what would you do differently? *

a) **Time constraints:** The limited time in preparing the workshop was very challenging. Participants were only given a two-weeks' notice making it nearly impossible for the high-level government authorities (Ministers, General Secretary) to attend the workshop.

b) **Lack of trust:** When approaching various stakeholders at the start, The PI (Dr Rakotonarivo who has a background in environmental socioeconomics recently returned to her home country in Madagascar) was facing a lot of reluctance from specific actors, especially those that are working in the agricultural sector. This was because she was perceived as an opportunist. It took a lot of time and persuasion for these stakeholders to understand the main motivations of the co-production process and to be open to sharing ideas and knowledge. Some of them were eventually willing to collaborate once they understood that the process aimed to build on their experiences, co-identify issues of pressing needs, and seek added values for all involved.

c) **Messy process**: The national workshop was planned for a full day (from 8:30 am to 3:30 pm). We could not start on time because of some internet issues (the interpreter could not log in on Microsoft Teams for virtual participants). While we had already allowed for some extra time for each activity and accommodated for such unexpected turns, we run out of time very quickly and could not run the last group exercise which involved a multi-criteria decision-making analysis. This was also compounded by lengthy question and answer sessions during which various stakeholders strongly felt about the need to express their values and perceptions, which are at times disparate and conflicting.

6) What do you think are key elements of a successful micro-granting process? *

A successful micro-granting process stimulates action research that responds to the most critical needs of society. The micro-grant thus needs to have some clear and well-defined purposes, stimulate specific actions within a given area, establish clear guidelines, and increase the sponsoring organization's visibility, while broadening the audience for the organization's work. An additional key feature of a successful micro-granting process is anticipating how the activity might be continued once the micro-grant funds have been spent (such as the availability of any follow-up funding).

7) What key lessons could you share about undertaking a successful co-production process? *

a) **Building trust takes time:** Building trust is a critical component of co-production, as outlined earlier, yet it is very challenging, takes time and efforts. It is only the result of repeated engagements and interpersonal relationships between various actors. Maintaining the trust is even more essential for effective and lasting co-production.

b) **Flexibility**: Co-production is not a linear process; it requires navigation of unknowns and adaptive management. Participants should be willing to make compromises, have the flexibility to change timelines and priorities and be willing to understand other's viewpoints and positions.

c) **Careful facilitation**: Careful facilitation and sensitivity to cultural norms are extremely important when dealing with power imbalances, whether they be related to knowledge types, work, hierarchies, gender or historic oppression.

8) How could the ARA further support the next steps for this work now or in the future? *

Any funding or support for the various activities planned in section 2 would be invaluable. These activities include:

- Field testing of policy instruments: evaluate policy instruments for scaling up CSA with smallholder farmers around two selected protected areas in southern and western Madagascar using a robust experimental design (randomised controlled trial)
- Developing action research collaborations in other African countries, such as Cameroon, to further CSA adoption in other climate-affected contexts,
- Carry out regional co-production workshops to gain more-context specific information and better tailor the policies to regional contexts.
- Disseminate the key findings of the co-production process through the press and the media and engage better with government authorities to foster ownership and ensure the key policy recommendations inform national policies.