African Food Fellowship

Leading the change in Africa's food systems

TOWARDS SUSTAINABLE LAND USE: ACTIONS OF FOOD SYSTEMS LEADERS IN RWANDA

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1 Introduction

Worldwide countries are striving to prevent, halt and reverse various environmental degradations, livelihood loss and deforestation in a bid to realise the ambitions stipulated in the UN Declaration of Ecosystem Restoration (2021-2030).

It is argued that ecosystems restoration, including landscape restoration, is advantageous in creating synergies and managing trade-offs among the different functionality objectives, while being sensitive to the diversity of local ecological conditions (van Oosten et al., 2021, Wiegrant et al, 2022). Landscapes have different stakeholders interacting in formal and informal processes making decision that shape how landscapes are used, who utilizes them and for what outcomes. Whether there are expert policy communities, programmatic groups or citizen collectives seeking to prioritize or delay specific actions, there is urgent need to understand the processes of dialogue, negotiation and spatial decision making which determine how landscapes are transformed either positively or negatively (Bizoza 2023, van Oosten et al. 2021). Key questions such as how do stakeholders mobilise themselves to engage in sustainable landscape policies and programs; and what leadership practices are necessary or emerge at different governance levels and in diverse landscape domains to nudge and facilitate the restoration of landscapes remain important. Further, there is need to identify the specific conditions enabling and hindering efforts to adopt practices for sustainable use of landscapes. This case study focusing on Rwanda aimed to explore and explain how systems leadership by landscape stakeholders contributes towards sustainable utilization of landscapes.

Rwanda is a front runner country in landscapes restoration. For instance, in 2018 the government brought 35 percent of the 2 million hectares of degraded land under restoration to realise commitments made at the Bonn Challenge (IUCN, 2020). It is estimated that 1.4 million tons of land are lost annually in Rwanda which is equivalent to losing 320,000 US dollars/year (FAO, 2015). Rwanda's landscapes are highly fragmented often characterized by over-cultivation, deforestation and water scarcity; and is often affected by soil erosion, climate change threats and pressures associated with infrastructure development. The political commitment is geared towards averting, preventing and reversing the challenges of ascertaining sustainable agricultural based livelihoods in the midst of high population densities, increasing land scarcity and accelerated soil degradation (Imasiku and Ntagwirumugara 2020, Chigbu et al. 2019).

The different vulnerabilities afflicting land use collectively affect the country's food systems leading to negative impacts on the socio-economic, environmental and food and nutrition security outcomes. The government of Rwanda considers transforming the food systems as an important approach to eradicate poverty, improve living standards of the population, address malnutrition while protecting the landscapes. Fragmented agriculture land use, productivity of cropland and food crop self-sufficiency are key policy concerns in Rwanda (Bizoza 2021). The agriculture sector, which accounts for about a third of the country's GDP and employs about 72% of its population (ILO,2020)[1], is a key pillar to achieving the objectives of Rwanda's Vision 2050. The Vision 2050 aims to professionalise the food system by sustainably increasing agricultural productivity while reducing soil erosion, restoring degraded land, and ensuring sustainable and multiple uses of land. For instance, transform towards high-tech, mechanized and irrigated client-resilient agriculture systems that are managed by professional farmers with ability to increase productivity, efficiency of value chains and improved markets. However, the strategic actions based on agriculture intensification programs are frustrated by the challenges of land degradation, declining forests and climate change.

There is good progress in terms of policy frameworks to transition the food systems through landscape restoration approaches complemented with sustainable land use aspects. It is expected that the National Land Use Master Plan provides guidance for the spatial location and preservation of agricultural land and other land use categories by 2050. For example, sustainable land use is one of the prioritised strategic pathways. Landscape approaches that support multiple functionalities (livelihood, consumption and protection) and identify alternative climate-smart production strategies (such as conservation agriculture, agroecology and regenerative agriculture practices) have potential to contribute towards transforming the food systems in Rwanda. Attention to sustainability with a strong focus on land tenure practices and soil conservation efforts, like widespread construction of terraces and planting of trees and so forth, are presumed to be positive interventions for sustainable food systems.

The key challenges to implementing sustainable land use strategies include access to funding and capacities to implement and monitor government strategies on land use, involving specific population groups (particularly youth, private sector) in policy processes and culture norms such as land inheritance. Addressing the diversity of pressing land and food availability related issues while simultaneously putting the food system on a sustainable pathway requires leadership that can balance varied proven technical and processual approaches specific for the Rwandan context. It is acknowledged that achieving sustainable land use will also be determined by whether and how the diversity of stakeholders operating at different governance levels interact, and how their interactions relate to the landscape processes that should be changed.

Systems leadership is an essential catalyst for effective landscape restoration initiatives, yet how it merges, how its practiced and sustained and the resultant outcomes in different contexts are underexplored. Zooming out systems leaders are anticipated to nurture

The agriculture sector, which accounts for about a third of the country's GDP and employs about 72% of its population (ILO,2020), is a key pillar to achieving the objectives of Rwanda's Vision 2050. The Vision 2050 aims to professionalise the food system by sustainably increasing agricultural productivity while reducing soil erosion, restoring degraded land, and ensuring sustainable and multiple uses of land.

1 Youth employment. (2020). https://www.ilo.org/employment/areas/youth-employment/WCMS_760578/lang—en/index.htm

collaborations, build shared visions, promote reflection and generative conversations (Senge et al., 2015). It is argued that leaders and the leadership practices that they exercise promote or disrupt and co-opt change processes in particular directions (Evans et al. 2017). Zooming in, the vast nature of landscapes enables the emergence of multiple formal and informal leaders at all administrative levels who work either individually or collaboratively across organizations; and navigate spatial and geographic boundaries, alongside dealing with different tensions and power dynamics, to determine the landscape outcomes (van Oosten et al., 2021). Landscape actors performing different leadership functions, such as agenda setting, policy formulation, service delivery and evaluations, can shape stakeholders' interactional patterns, values and norms which have potential to facilitate or impede shifts towards sustainable use of landscapes. Yet, these practices and outcomes of leadership in landscape initiatives remain underexplored. It is timely to understand the leadership practices including their intentions, actions and strategies and the outcomes (e.g., shifts in policies, incentives, investment and power dynamics) in fostering sustainable land use in Rwanda.

The question explored in the study are:

? **What leadership practices are impelling the actions implemented that contribute towards sustainable land use in Rwanda?**

2 Leaders and the food systems actions

This study draws lessons from the four food systems leaders participating in the African Food Fellowship[2], and are contributing towards ascertaining sustainable land use in Rwanda. The food system leaders, or fellows, recognize the aforementioned complex challenges and are implementing different (food) systems actions to tackle to reverse, prevent or reduce the negative outcomes of landscape degradation in the country. Study participants were selected because they had made advanced strides in implementing their food systems actions and were openly sharing their plans, lessons learnt and the experienced challenges with other fellows. Here, food systems actions refer to the activities and practices by any person that are intended to improve the enabling conditions that give rise to problems in the food systems. These leaders work in different areas in government, private sector businesses, non-governmental organisations and civil society organisations. We conducted in-depth qualitative interviews in August and September 2022 with the four fellows and the stakeholders with whom they collaborate to gain deeper understanding of their food systems actions in relation to sustainable land use in Rwanda. The food systems leaders in the sustainable land use impact areas exhibit leadership practices through the management roles held in current employing organisations and/ or through independent private initiatives implemented alongside their job. The questions explored the food systems actions implemented by the fellows, the leadership practices adopted and the contextual factors determining the practice as well as the (anticipated) outcomes of their systemic actions.

Table 1. Summary of initiatives to (re)design land use in Rwanda

RICHARD MAKUZA

Program Officer, Mennonite Central Committee Rwanda and Burundi Program

Regenerative and Conservation Agriculture Coalition (RCA)

PROMOTING AND UPSCALING CONSERVATION AGRICULTURE +

Objective: To influence the adoption of Climate Smart Agriculture using three principles of conservation and regenerative agriculture, namely: minimum tillage, permanent soil cover crops and crop association and diversity.

Rationale: Rwanda grapples with high degrees of soil erosion, land degradation and low resilience to climate variability as a result of unsustainable conventional agriculture practices. Conservation Agriculture + approach, which combines use of inorganic inputs alongside adopting the recommendations in the Rwandan agriculture policy increases shifts towards conservation agriculture practices.

Approach: Richard employs a three-prong approach which includes 1) targeting lead farmers at local level through FFS; 2) experiential learning, involving and training local authorities and political and agriculture technical officials on CA+; and 3) creating a coalition of CSOs organisations at the national level to influence public decision making on CA+. Richard shares information about the benefits of conservation agriculture +, working with different stakeholders who are promoting Climate Smart Agriculture so that together they can have one voice and be in a good position to influence the Government to adjust the policies to possibly scale up this new approach which would greatly affect the food systems in Rwanda.

2 African Food Fellowship https://africanfoodfellowship.org/

3 https://mcc.org/what-we-do/where-we-work/rwanda

THACIEN MUNYAMAHAME

Global Restoration Initiative, World Resources Institute

Youth in Agroecology and Business Learning Track Africa (YALTA) Rwanda

PROMOTE AND BRING TO SCALE AGROECOLOGY

Objective: Promote agroecology to youth through a market-lead approaches to ensure a transition towards sustainable food systems. Support youth and their businesses on agroforestry, organic fertiliser production and organic apiculture

Rationale: Learning obtained from implementing the YALTA initiative can be leveraged to continue empowering youth to identify and lead viable business opportunities in agroecology that support transition towards sustainable food systems.

Approach: Through the social enterprise approach, Thacien identifies youth entrepreneurs, coaches them, and connects them with relevant actors for the development of viable business opportunities in agro-ecology. Collaborate with different stakeholders to integrate the concept of agroecology into curricula at the University of Rwanda. Stakeholder include the private sector, youth and national education systems.

ALEXIS RUTAGENGWA

Land Use Management and Mapping Department, Rwanda Land Management and Use Authority

PARTICIPATORY LAND USE PLANNING AND RESTORATION AT SCALE

Objective: Introduce participatory approaches to land use planning as a strategy to ensure balanced, multiple utility and sustainable land use in Rwanda. The initiative supported food systems outcomes primarily securing agriculture and food plans for future needs using spatial planning approaches.

Rationale: Ascertaining the coherence between national and district land use master plans while simultaneously satisfying interests and needs of multiple landscape stakeholders in a sustainable way is challenging. Collaborative and participatory planning processes are crucial to ensure good adherence at the implementation stage. District specific land use plans enable informed, balanced and consensual allocation of land to the food and agriculture industry, while preserving bio-diversity and economic uses of landscapes.

Approach: Alexis' strategically positioned to facilitate translation of the national land use master plan into contextualized district land use master plans. With support and financial resources from the Rwandan government and collaborating with different stakeholders, Alexis designed and piloted a participatory approach to district land use planning in Rwanda. Stakeholders including national and local government entities, academic institutions, private sector businesses, communities representatives, and various communication channels (local radio and social media platforms) were involved to foster ownership, address context specific needs and to increase the visibility of the planning process. The approach was successfully piloted in one district and it is the ambition that all 27 districts countrywide have district land use masterplans by 2024 to inform the goals of Rwanda Vision 2050.

ASSUMPTA UZAMUKUNDA,
Restoration Lead, World Resources Institute (WRI) Rwanda.

Adjusted food systems action from promotion of kitchen gardening to socializing the TerraFund

SOCIALISING, ACCELERATING AND SCALING LAND RESTORATION IN RWANDA

Objective: Leveraging the Terrafund for Africa[4], Assumpta aims to support local NGOs, enterprises and SMEs who are champions of land restoration in Rwanda, but cannot access financial credit facilities, with grants to accelerate their actions and scale up in different localities in Rwanda.

Rationale: Local organisations implementing restoration initiatives often have limited or no access to grants or credit from financial institutions due to due to complex fund requirements like rigorous financial audit reports, and or high-interest rates. Socialising the TerraFund will ensure that local CSOs and private sector enterprises have access to additional financial resources to support their landscape restoration projects. This is needed to speed up restoration at wider scales.

Approach: Through her position at WRI, she made a decision to specifically target the 'missing middle' stakeholders in the land restoration movement in Rwanda, including CSOs (e.g., ARCOS, Nature Rwanda) and the private sector businesses (e.g., Shekina Enterprise), that implement innovative approaches that could significantly accelerate land restoration. Assumpta facilitates different stakeholder engagements to socialize the fund, and provides capacity building, coaching and mentorship for the landscape restoration champions. This initiative is at an early stage, and no significant results are yet available to report.

4 TerraFund for AFR100 https://www.africa.terramatch.org/

3 Leadership practices contributing towards sustainable land use

This section highlights five different practices identified among the interviewed food systems leaders (**Table 1**) that enable them to contribute towards addressing the challenges impeding sustainable land use in Rwanda. The identified practices imply the existence of top-down translation of land use policies to implementation levels as well as bottom-up learning from implementation to influence policies and projects in the sector.

Table 1. Common practices of systems leaders (re)shaping the sustainable land use space

Practices	Alexis	Assumpta	Thacien	Richard
Experimentation and building contextual evidence	x			x
Learning, advocacy and creation shared narrative	x	x	x	x
Building and leveraging influential networks		x		x
Capacity sharing (literacy about land use approaches)	x		x	x
Normalization through institutional embedding	x		x	x

3.1 Experimentation and building contextualized evidence

Contextual evidence from applying 'new' approaches in Rwanda is critical for triggering dialogues and guiding decision-making processes at both national and local levels. Knowing that the success of adopting sustainable land use approaches depends on availability of knowledge bases that illustrate viability of their application in Rwanda, some food system leaders prioritised investment in evidence building through experimentation. This was realized through piloting either planning processes or conservation agriculture approaches in a few Rwandan districts. For instance, Alexis Rutagengwa piloted a participatory spatial planning approach for district land use in Rwanda. Piloting in one district provided insights about how the approach could be redesigned and adapted to support scaling up this way of planning in all districts in the country to develop district land use masterplans. Backed with his mandate for land use planning, Alexis adopted a cross-sectoral consultation approach to reach consensus on district land use plannings, which gave a better chance for compliance at the implementation stage and for incentivizing stakeholder investment in sustainable approaches to the use of land. '*The pilot helped me illustrate to government that if it was to apply the participatory planning approach these would be the types of stakeholders that needed to be involved, and the material and financial resources that are needed*' **Alexis**.

Similarly, in collaboration with World Food Programme, Richard Makuza implemented a climate smart agriculture project in several districts of Rwanda, where lead farmers and extension staff experimented with different Conservation Agriculture + (CA+) practices. This provided local governments with evidence of the environmental and economic benefits of the CA+ approaches for farmers and the local governments.

"Action research was conducted with the RAB, University of Rwanda and the farmers on the use of different species of green manure cover crops to understand whether there are enough mulches to cover the soil, and their performance compared to other crops. The next step is to reach out to the experimenting farmers to obtain their perspectives on the using CA so far'

Jean Turwingiyumukiza, Canadian Food Grain Bank.

We (MCC) having been doing this initiative for 7 years and caught Rwanda Government's interest last year, 2022 and now through Rwanda Agriculture and Animal Resources Development Board (RAB) is experimenting it to 4 sectors of each District of Rwanda looking forward to scaling it up"

Richard.

Not only did the experimentation assist in contextualizing ideologies that were hypothetical, these experiences of trial and error, and knowledge exchange contributed towards trust building and nurturing ownership of the processes or programs by the different stakeholders that were engaged.

3.2 Learning, advocacy and creation of shared narratives

Fostering learning and advocacy to create shared stories was another key practice demonstrated to contribute towards the drawing attention to and, in some, cases institutionalizing the transformative initiatives into government planning processes, in funding mechanisms, and in businesses. All fellows engaged in learning to identify systemic challenges related to land utilization, access to resources and used the acquired insights to advocate and create shared narrative about the potential solutions to achieve equitable and sustainable land use. Learning with others through experimentation contributed to creation of shared narratives and identification of strong allies who supported elevation of the relatively new sustainable land use approaches higher on policy and programming agendas. As shared by both Thacien and Richard *"there was consensus among different actors to use similar terminologies in the advocacy for conservation agriculture+ and agroecology approaches as beneficial solutions to transition towards more sustainable agricultural systems in the country"*.

Both food system actors believe that the transition towards sustainable land use in Rwanda is only possible if alternative agricultural practices become adopted by small holder farmers and agri-preneurs at scale; and if the political and institutional structures adopt and promote these practices widely. This advocacy was focused through networks of well positioned stakeholders such as in the case with the CA+ coalition that is spearheaded by Richard. One of the coalition partners explained that coining the advocacy message around the CA+ approach terminology which calls for the use of chemical fertilizers and pesticides (the normative government advisory) together with implementing key conservation agriculture principles (such as minimum tillage, crop diversification, rotation and association, permanent soil cover using of cover crops), secured the buy-in of the piloting local governments and triggered the curiosity of the extension service providers to participate in the trainings organized by MCC.

Other food systems leaders engaged in advocacy activities targeted to the media, work contacts who hold strategic positions in organisations and to youth audiences to engage in the entrepreneurial opportunities in the sector. The advocacy and knowledge sharing using different channels at different levels was important for the food system leaders to successfully realise the adoption of proposed practices at varying scales of operation. Based on the interview with Assumpta, lobbying for support from well positioned members in her work network contributed to elevating the ambition to make the TerraFund more accessible to less privileged actors. The members had clarity why there was need to re-strategise and refocus the end users of fund which in turn assisted in reducing potential tensions and conflicts from the usual users of this financing mechanism.

"In the launch of TerraFund grant in the Western Province this year, I engaged and worked together with the Governor and all mayors of districts in the province and other local authorities to collectively talk to the people to become more confident and apply for the fund to achieve the mission of restoring the land in the province"

Assumpta.

On the other hand, media engagement and advocacy was tapped into during the participatory spatial planning processes that were initiated and coordinated by Alexis. By inviting the journalists to participate and provide coverage for the planning processes, they served as a means of publicizing and popularizing the participatory approach in conversations about land use in Rwanda. Another advocacy approach identified involved the use of learning generated from implementing the Youth in Agroecology and Business Learning Track Africa (YALTA) project to create shared stories about the processual approaches and technicalities of doing agroecology as a business. This is aimed at attracting youth and the private sector to invest in agroecology businesses.

Conservation Agriculture and Agro-Ecologies principles, while they somewhat align with current agricultural policies and guidelines in Rwanda, are not yet well reflected in the national extension systems and therefore minimally adopted and practiced by farmers. Indeed, the heavy reliance on chemical fertilizers, pesticides,

hybrid seeds under the CIP, and the fact that most of the agricultural land in Rwanda is on slopes have significantly contributed to soil erosion and land degradation in the country. This challenge informed Thacien's strategy to ensure government involved in the Multi Stakeholder Partnerships on Agro ecology (MSP on AE), which has raised the profile of the coalition and given them the potential to have their voices heard at the national level while securing more adhesion of stakeholders and youth, in particular, in the coalition.

3.3 Building and leveraging influential networks

One food system leader directly invested in coalition building to accelerate the development of consensus on the understanding of conservation agriculture and to speed up propagation of information about its potential in Rwandan landscapes. Nurturing a coalition was also seen as a way to mitigate possible tensions and reduce competition among interested actors.

"Richard's coalition consists of 14 organisations which include RDO, One Acre fund, WFP, SNV, Imbaraga, RICA, AEBR, Mennonite Central Committee, PDN, African Leadership University, and Bridge 2 Rwanda. There are CSOs, local and international NGOs and some academia. The coalition has three main objectives: advocacy, research and document evidences that can be used to collectively promote conservation agriculture as one voice and extension services"

Brian, African Leadership University.

By mobilising and engaging this wide range of stakeholders that work on improving agriculture and food security in Rwanda, the coalition built up a shared vision and developed common messages to push for the integration of CA+ practices into the forthcoming Strategic Plan for Agricultural Transformation (SPAT) in Rwanda. The diversity of stakeholders hold different resources which could be leveraged in the advocacy. At the time of this case study, the CA coalition had held its third meeting and selected both WFP and SNV to chair their operations and, One Arce Fund to lead the research while MCC where Richard works would focus on the extension activities.

Coalition building, management and maintenance of members' interest is another key task undertaken by the food system leader. Pulling this necessitated, on one hand, a combination of ambition, good communication, facilitation and stakeholder engagements skills and hard work to foster ownership; as well as the ability to delegate, remain humble and ensure inclusion of all voices to expedite decision making, on the other hand. As summarized by a representative of one of the coalition partners: *"Richard is passionate about conservation agriculture and works hard as an advocacy champion alongside ensuring good stakeholder engagement ensure proactiveness in the coalition. Rwanda is data driven; all the work that is undertaken is documented to gather evidence and keep members informed"* Jacqueline Iradukunda, AEBR. The (Richard's) coalition has already registered some successes, for instances, government representatives from the district agriculture department and Rwanda Agriculture Board requested for CA+ training for their staff. CA+ principles are now integrated in the current SPAT. This is a starting step towards scaling up CA+ principles across the countries.

Thacien Munyamahame is another food system leader engaged in facilitating a multistakeholder partnership called the Rwanda Agroecology Multistakeholder Platform which promotes organic production and market development in Rwanda. The movement brings together the private sector, youth entrepreneurs, government agencies, civil society organisations (CSO) and academia to engage in actions to introduce agroecology into the SPAT; integrate it into the agriculture education curriculum; and push for significant support to youth-led enterprises in the agroecology sector. Different approaches are used to identify and engage the membership and to promote agroecology. For example: *'Through the agroecology movement, Thacien is mobilizing and influencing the private sector actors to develop the organic market. He is creating awareness and advocating to key actors in the ministries of agriculture and environment and NGOs through yearly symposium, conferences and learning journeys to expose and support the movement'* Jean de Dieu Kwizera, Bee Limited.

Proactively searching for learning and financing opportunities, and connecting the members in the agroecology movement is another form of support that Thacien undertakes. *"He is a connector and empowers partners. He knows the networks and keeps informed of the developments in agroecology field. He tries to make the youth seize opportunities after crossing checking whether they are real. He tries this to ensure his network is growing and therefore giving a better change for agroecology growth in Rwanda"* Justine Mbabazi Niyibizi, Sustainable Agricultural and Livestock Initiative/ Secretary general Rwanda Agroecology in Research and Education Cluster.

"Thacien inspired and motivated me when I was starting the company. He invited me to workshops and exhibitions to present my business and believed in me which increased my confidence. He brought us from zero to heros"

Jean de Dieu Kwizera, Bee Limited.

3.4 Capacity strengthening, fellows as knowledge brokers

All the fellows have contributed to enabling the agency of members within and outside their networks by using various capacity strengthening strategies. Some of the strategies included structured trainings for trainers to cascade the information about conservation agriculture and agroecology; mentorship and coaching especially for youth entrepreneurs; and knowledge brokering opportunities to inspire the interest of different NGOs and small and medium enterprises. The case of Thacien is quite illustrative in that sense. As together with three other coaches of YALTA Rwanda, they provide direct training, coaching and mentoring to youth to engage in businesses in agroecology sector. Assumpta is also enabling her network by organizing workshops and by providing capacity-building services to NGOs and SMEs that fit the criteria for the Terrafund to have the ability to manage such large funds in the area of land restoration.

"One of our youths has signed a contract to export chilli to the Chinese market. We work with youth who are inspired to champion and drive the food systems change through attractive business ventures. Part of the journey includes mentoring the youth to sustainably grow from small scale operations to medium enterprises"

Justine Mbabazi Niyibizi, Sustainable Agricultural and Livestock Initiative/ Secretary general Rwanda Agroecology in Research and Education Cluster

In all efforts, the landscape leaders mentioned that the main objective for the capacity sharing is to enhance understanding of desirable practices to inspire imitation and repetition by others engaged in sustainable land use and to develop similar language. Its such capacity sharing strategies that contributed to building the networks and inform the advocacy processes.

"There were many people with adequate knowledge and experience to sell the agroecology products to potential investors. We found these mentors/coaches to train inspired young entrepreneurs in agroecology as a business including developing business plans and stakeholder' engagement"

Thacien

The stakeholders we target are usually the ones not targeted by banks. Local NGOs and SMEs are able have access to significant long-term funding that can support their restoration activities in Rwanda".

Assumpta.

3.5 Normalizing sustainable practices through institutional embedding

1. The **main ambition** of the interviewed leaders is to normalize the promoted sustainable land use practices in the day to day operations of government, communities and farmers. This institutionalizing thinking is explored through embedding the proven practices in various policies, processes and structures of government. The statement, 'the initiatives have to be aligned with governments priorities to be given a green light for implementation' was stated by all the food system leaders and their corresponding partners. Examples of ways institutionalising is realized or pursued include; **one**, aligning the food systems actions with existing policies, such as the National Agriculture Policy and associated program trajectories. This is mentioned to have contributed towards ascertaining that the topics (conservation agriculture, participatory spatial planning and agroecology) become more visible to government for buy-in. For example, Thacien explained that *'agroecology is an alternative land use strategies that are proposed in the policy, but it is not effectively implemented. Government will become more interested in the approach if there is evidence how the approach could be scaled across Rwanda'*. Political and policy embedding was vital to garner support to scale up the promoted practices across Rwanda.

"I selected a food system action for which I can potentially convince the government to finance and implement it. It seems that district land use plans were needed so much by the central and local governments to help resolve existing land management issues and to guide the development at the local level. That's why it was so much welcomed"

Alexis.

2. **Two,** through participation in ongoing strategic policy development processes and liaising with government counterparts to ensure prioritization of the topics. This was the case for integrating conservation agriculture (CA+) principle in the SPAT 5. Apart from targeting the policy processes, the leaders are working to ensure the integration of the principles of CA+ and agroecology into the education curriculum of extension workers.

3. **Three,** the strategies that facilitated and secured the buy-in and institutional embedding of the participatory spatial planning process were the creation of joint national and local planning teams, consultations at all levels (community, local and national governments), and scheduling the stakeholder and policy makers' review processes at different planning stages as well as digitalizing all the plans to increase access for and verification by the public. For example, *"an economic cluster comprised of officials at local and national levels was created to critically review drafted plans for alignment with their sector needs and national directive"* Alexis.

4. **Four,** the agroecology coalition signed a memorandum of understanding with higher learning institutions to include agroecology in their curricula. A similar approach is to be used by the CA+ coalition to ensure that the principles and practices are embedded in the training curriculum of agriculture extensions workers.

4 Conditions enabling action of the food system leaders

A combination of contextual conditions are enabling the interviewed leaders to pursue the food systems actions and practices described in the earlier sections. Unraveling these conditions is important because they have a decisive role in determining which practices become exhibited, which strategic decision arenas are accessible, in what ways food systems actions become implemented, their potential outcomes and their magnitudes. The conditions identified include:

One, **the strategic positioning leaders in their different organisations**. All four leaders hold high managerial posts in their organisations which makes it easier to make connections, have insights about strategic topics on land use in Rwanda and better entry into different networks and decision spaces/offices. The food system leaders hold decision making powers about what needs doing. Taking the case of Alexis, he was the project manager in developing the National Land use and Development Master Plan for Rwanda and was allocated the responsibility to ensure upscaling the planning processes across the country. This backing by government ensured assess to local governments and different ministries and other landscape stakeholders to contribute in the processes. In addition, the fellows have long histories of working on the different sustainable land use approaches during which they have developed social capital; become known in the communities, local, national and even regional spaces; and hold a wealth of knowledge about the sector. Leveraging these past experiences contributed to elevating their systems actions.

Two, **having a good understanding of the government systems and the dynamics in the operational environment**. All fellows proactively sought to work with local and national level authorities in Rwanda, a key practice to foster ownership of the food systems actions. The leaders illustrate how their actions contribute towards government policies, including Rwanda Vision 2050, and the explicit programs in the local development plans and budgets that they contribute towards. Apart from the policy alignment, it is essential to understand the policy cycles and the actors with strategic connections to influence processes. Richard's coalition has a key advantage of having WFP, a member of the senior advisory committee of the Government of Rwanda in Agriculture. This linkage is leverage to advocate for the wider application of CA+ principles into Rwanda's extension system to curb soil degradation and improve agricultural productivity sustainably. Fellows are aware of government and the communities' struggles to ensure food and nutrition security, while simultaneously addressing the challenges of soil erosion, declining soil health and productivity. Knowledge about current debates, for example, food systems transformation, climate smart and regenerative agriculture and landscape restoration approaches, was another condition propelling the food system leaders to zoom in on specific issues that are deemed important in Rwandan context. *'It's been eight years since Richard and the MCC have been pushing for CA+ in Rwanda. In 2022, they finally got the attention of the government, as the country is experiencing record levels of soil erosion and land degradation due to conventional agricultural practices, reduction in crop productivity and weak resilience to climate variability and change. To address this issue, the Rwanda Agriculture and Animal Resources Development Board (RAB) is now cooperating with MCC along with other organisations to test CA+ in selected districts in Rwanda"* Richard.

Three, **availability of potential funding and knowledge of potential financing mechanisms**. Its challenging to implement the food systems actions without specific funding either through the work activities or separate funding sources. The food systems actions described in this study are funded either by government or non-governmental organisations. Experimentation of the CA+ practices was financed by WFP, Alexis secured financial support from government to pay facilitators implementing the planning processes while Thacien partnered with the Netherlands Food Partnership to train the youth in agroecology and pay the mentors. Similarly, Assumpta leverages the funding availed through the TerraFund grants to inspire equitable participation of less privileged landscape stakeholders.

Four, **food systems actions are components of existing (planned) work activities**. Assumpta lacked funding to pursue her original systemic action of restoring city landscapes by establishing kitchen gardens. She seized the opportunity offered by World Resources Institute and redesigned her systemic actions around socializing the Terrafund and making it accessible to local NGOs and SMEs that champion land restoration in Rwanda. Similar observations of anchoring the food systems actions to their organisation's work is made for the other fellows. Such arrangements not only reduce certainties about funding of the systems actions, it's also perceived that there is better commitment to pursue the set goals and less time investment required compared to pursuing parallel ambitions. *"I selected an idea that can be part of my job and for which I can potentially convince the government to finance and implement it. My role was initiation and coordination of this initiative as part of my responsibility of organizing land use planning in the country"* Alexis.

Five, **participation in the food systems leadership program** inspired rethinking how they implemented their work projects, realise the opportunities available to them to make systemic changes in land use and opened up a network of other fellows in Rwanda who acted as spurring partners in designing the food systems actions. According to Richard, through AFF, he understood that working as MCC alone in advocating for CA+ would not garner scope; others stakeholders were needed and this motivated the creation of a coalition to bring together others working in this space together. Similarly, Alexis described how the AFF offered a sounding board of peers that allowed him to develop the participatory methodology and offered advises on inclusive engagement of stakeholders. The fellowship provided ideas about process facilitation and learning from the scenarios approach that enable him to become flexible and share draft district land management plans based on different scenarios for decision makers to select the ones that best suited for their visions of the district. Breaking down the siloes and fostering integration of agroecology into CIP is a key message Thacien learnt from the fellowship. *"The fellowship helped me gain more understanding of the importance of agriculture. People, at office, are now calling him Mr Agriculture not an urban planner because I am checking the plans to see how much land is allocated for agriculture"* Alexis

5 Reflection

The study explored the leadership practices including their intentions, actions and strategies in fostering sustainable land use in Rwanda.

Food systems leaders applied varying strategies to build and maintain the networks including leveraging their personal social capital, creating shared stories through practice, inspiring and daring others to think more innovatively, bringing projects to scale through policies and curriculum, and fostering equitable access. Similar networking strategies are identified by Meehan and Reinelt (2012) as features observed among systems leaders in the education sectors.

The food systems leaders require variation in the bundles of practices that can be adopted in different situations to realise their food systems actions. For instance, experimentation and capacity sharing offer pathways to influence and empower disinterested stakeholders to pay better attention to potentially impactful landscape strategies. However, agility of the leaders is also a crucial practice to be able to proactively utilise emerging opportunities to change the landscapes. Taking initiative (e.g., coalition building), anticipating potential demands for support (e.g., local government land use planning) and proactive brokering of opportunities (e.g. socialized Terrafund, business investment) offer examples of agile leadership.

The study demonstrates that food system leaders mainly work independent of other fellows working in the same landscape concerns. This is also reflected in the different terminologies (i.e. conservation agriculture - CA+, landscape restoration, agroecology) used despite the overlap in the actions and practices promoted by the fellows. Diversity in terminologies is not bad, as long as there is similarity in the messages promoted to ascertain shifts towards sustainable land use. That said, fellows can leverage their small wins obtained so far to explore the possibilities of collaborating and fostering better connection among their food systems actions for better impact at scale, and improved working within and across multiple levels of operation simultaneously. There is need to rethink the description of the food systems actions within the African Food fellowship as well as to identify creative strategies to finance innovative ideas to ensure improved commitment in pursuing the set goals.

The food systems leaders mainly focus on the influencing the formalized policy-oriented government processes in sustainable land use. However, there are landscape actors from the private sector domain as well as local communities for whom there is inadequate insight whether similar leadership practices would be applicable. Or how leadership practices evolve when targeting different landscape stakeholders; the changes that occur over time, and in different geographic and administrative boundaries. Second, the study highlights the positive aspects and successes of the food system leaders, but offers minimum insights into the challenges experienced in implementing the food systems actions. Addressing land use issues at scale involves dealing with multiple stakeholders that often might have conflicting interests. At the time of the interviews, most food systems actions were in the initial stages of implementation to permit any conversations about possible tensions and conflicts.

It can be concluded that through the five key identified practices – experimentation and evidence building, advocacy and creating shared narratives, capacity sharing and knowledge brokering, building and leveraging influential networks, and institutional embedding – the food system leaders contribute towards changing mindsets of landscape stakeholders (scaling deep) as well as endeavor to accelerate the scale up of promising outcomes through institutionalization processes

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