



Collectivizing Village Land Use Planning for Women's and Youth Participation in and Benefits from Tanzanian Watershed Management

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Introduction

Tanzania's Great Ruaha River flows have been decreasing since 1990, threatening the lives of millions of people and wildlife. Among other factors, unsustainable farming, such as river-bottom cultivation and the expansion of agricultural farms to forest and watershed areas have been cited among the main drivers of landscape and watershed degradation in the Southern Agricultural Growth Corridor (SAGCOT) region.¹ Lack of land use plans exacerbates loss of key ecosystem services, such as adequate flows of clean water for wildlife and people; this disproportionately affects small-scale farming communities, particularly women and girls, reliant on these flows for their lives and livelihoods. To address these challenges, the CARE-WWF Alliance in Tanzania designed a conservation and development program in SAGCOT with a key focus on integrated land and water management (ILWM) through innovation related to the collectivization of the government of Tanzania's Village Land Use Planning (VLUP) process. VLUPs are the legal framework in Tanzania for both planning for common pool resources users and individual land titles.

In 2018, the Alliance tested the practicality of VLUP in a shared watershed through a pilot initiative with six villages in Mufundi District along the Ndembera River.² A second phase of the

¹ Hyandye, C.B; Worqul, A; Lawrence W; Martz, L.W and Muzuka, A.N.N (2018). The impact of future climate and land use/cover change on water resources in the Ndembera watershed and their mitigation and adaptation strategies: Environmental System Research. <https://doi.org/10.1186/s40068-018-0110-4>

² CARE-WWF Alliance. (2021). 6 Villages Landuse Plans (Mufindi DED) – Story Map. Available at: <https://storymaps.arcgis.com/stories/d2f3a593c1a94f5787bbebc5e2bcf1c5>

project (2021-2023) is currently under implementation in 21 villages, which include the original six. This current phase builds on the learnings from the pilot a by strengthening Farmer Field and Business Schools and working with Village Saving and Loans Associations (VSLAs). Now in Phase 2, the project seeks to improve the income and food security of small-scale producers, especially women, and restore water flows in a key tributary of the Great Ruaha River, in part through ILWM.

At the beginning of the pilot, only 14% of villages nationally had VLUPs. The Alliance worked to increase the number of villages with VLUPs through a new approach that would more efficiently deliver land use agreements and improved connectivity in critical watersheds by using high-resolution satellite imageries and efficient mapping technology, and the promotion of ILWM across multiple villages simultaneously. The Alliance VLUP approach also addresses multiple dimensions of environmental justice by emphasizing the equitable participation of women, youth, small-scale farmers, and water users; recognizing the different needs and priorities of different groups; fairly distributing natural resources and their benefits; and improving capabilities at all levels so communities have the capacities and institutional support to realize their goals.

In this paper, we examine the ways in which collectivizing VLUP has contributed to improved environmental justice outcomes, including the importance of complementing these participatory zonation and land management processes with capacity strengthening, land titling, and creating enabling conditions for collective action processes around watershed restoration and management. We also highlight how the Alliance’s innovations integrate four of Elinor Ostrom’s principles for common pool resource management into the VLUP process and provide recommendations for how these innovations can be scaled.

Acronym Guide

CBNRM - Community-based Natural Resources Management	NLUPC - National Land Use Planning Commission
CCAPs - Community Conservation Action Plans	PLUM - Participatory Land Use Planning and Management
CCRO- Certificate of Customary Right of Occupancy	RBWB - Rufiji Basin Water Board
ILMIS - Integrated Land Management Information System	SAGCOT - Southern Agricultural Growth Corridor
ILWM - Integrated Land and Water Management	VLUMC - Village Land Use Management Committees
mMAST - Modified Mobile Application to Secure Tenure Technology	VLUP - Village Land Use Planning
	VSLA – Village Savings and Land Use Association
	WUA - Water User Association

VLUP and Natural Resources Management Challenges in Tanzania

Tanzania faces a range of natural resource conflicts that arise from exclusionary and uncoordinated land use planning processes and mechanisms. One of the key challenges is the competition for land resources between large-scale agriculture enterprises and small-scale farmers. The government's policies and programs aimed at promoting large-scale agricultural investments in Tanzania have often resulted in the displacement of small-scale farmers from

their land, leading to conflicts over land tenure and access to natural resources.³ Another challenge is the overuse and degradation of natural resources due to a lack of coordinated management and planning. Unsustainable natural resource use practices, including deforestation, overgrazing, and overfishing, have led to soil erosion, loss of biodiversity, and depletion of water resources which disproportionately affect communities that are marginalized.⁴

Among other reasons, conflicts arise from a failure to recognize the importance of community participation and inclusive decision-making in land use planning and management.⁵ The lack of coordination between different government agencies and stakeholders has also resulted in conflicting policies and regulations, leading to confusion and uncertainty around land tenure and resource access.⁶ The exclusionary and uncoordinated land use planning processes and mechanisms in Tanzania have created problems of the commons, where shared resources are overused or depleted due to a lack of collective action and management.

In Tanzania, community-based natural resources management (CBNRM) is governed by a range of policy and legal frameworks that aim to address some of these challenges and support communities in managing their natural resources sustainably. Policies, such as the National Environment Policy (1997), the National Forest Policy (1998), and National Water Policy (2002), seek to support sustainable management and use of land and land resources by developing comprehensive frameworks to manage specific resources. These policies have not all been translated into a set of coordinated norms that confer legitimacy to the planning process. Tanzania's VLUP Model, first introduced in 1999 as part of the Village Land Act, is a community-based participatory approach to land use planning that is aimed at addressing these challenges by promoting sustainable land use practices, reducing land conflicts, and enhancing community participation in decision-making processes.

The VLUP model is nested within Tanzania's Participatory Land Use Planning and Management (PLUM) model, which involves collaboration among various institutions at different administrative levels, including village, district, and regional authorities. It requires coordination between these institutions to ensure consistency and alignment of land use plans across multiple villages and jurisdictions. VLUP focuses on land use planning within individual villages, while PLUM provides a broader framework for coordinating land use planning across multiple villages and stakeholders. VLUP serves as a foundation for participatory decision-making at the village level, which is then expanded and coordinated through PLUM to achieve integrated and sustainable land use planning and management at a larger scale. The VLUP model involves a series of steps that are designed to empower local communities to identify and prioritize their land needs and develop land use plans that reflect their priorities, per the following stages:

³ Ros-Tonen, M. A. F., & Derkyi, M. (2020). The challenges of sustainable forest and land management in Tanzania. *Land Use Policy*, 94, 104502.

⁴ Mtei, K. M., & Noronha, T. (2017). The political economy of land governance in Tanzania: A review of contemporary analysis. *Journal of Contemporary African Studies*, 35(4), 397-416.

⁵ Kapinga, A. R., & Liwenga, E. T. (2019). Improving water resource management in Tanzania through public participation: A review of policy and legal frameworks. *Journal of Sustainable Development*, 12(4), 31-46.

⁶ Mtei, K. M., & Noronha, T. (2017). The political economy of land governance in Tanzania: A review of contemporary analysis. *Journal of Contemporary African Studies*, 35(4), 397-416.

1. *Mobilization and sensitization of the community*
2. *Participatory mapping and data collection*
3. *Community land use planning*
4. *Validation of the plan*
5. *Implementation and monitoring*
6. *Village land administration and land tenure security*

The participatory approach inherent in the VLUP model is one of its key strengths, ensuring that community members are actively involved in the land use planning process. In addition, VLUP focuses on promoting sustainable land use practices that consider environmental, social, and economic factors that influence land use decisions. However, there are also some weaknesses associated with the VLUP model. For example, critics have argued that the model can be time-consuming and resource-intensive, which has limited its scalability and impact.⁸ Additionally, there are concerns about the capacity of local communities to effectively implement and enforce land use plans, particularly in areas where there is a high level of poverty and limited access to resources.⁹

VLUP Innovations and Other CARE-WWF Alliance Interventions

The CARE-WWF Alliance piloted several innovations to the VLUP process to address challenges in the legal foundations of CBNRM in Tanzania. From the initial step of VLUP sensitization and preparation, the Alliance worked to increase the participation of women and youth, who typically lack equal weight in decision-making (relative to men and elders) at the household and community levels. Special attention was given to ensure that women and youth were able to attend the initial training sessions on the VLUP process and its relationship to land tenure and natural resources management.

The Alliance kicked off the process with a multi-day meeting to ensure that all sub-groups in the community had sufficient time to fully understand and engage in the VLUP process. Meeting preparations entailed targeting women, youth, small-scale farmers, water users, and other vulnerable groups as participants; communicating the meeting agenda to diverse invitees; ensuring venue selection reflected accessibility concerns for community members with disabilities; and hiring skilled facilitators to engage women, youth, and other marginalized groups around their land use concerns. During the meeting, women reported that they cultivated the land with the primary goal of providing food for their children, yet lacked decision-making power around how that land was used. Similar experiences of diverse sub-groups were registered to be factored into the VLUP. This level of participation was sustained throughout each VLUP stage, including the selection of VLUP committee members, participatory mapping, and the actual preparation of the VLUP.

⁸ Kisanga, D. E., & Songorwa, A. N. (2017). Assessment of the impacts of village land use planning in reducing land use conflicts in Tanzania. *Land Use Policy*, 69, 97-107.

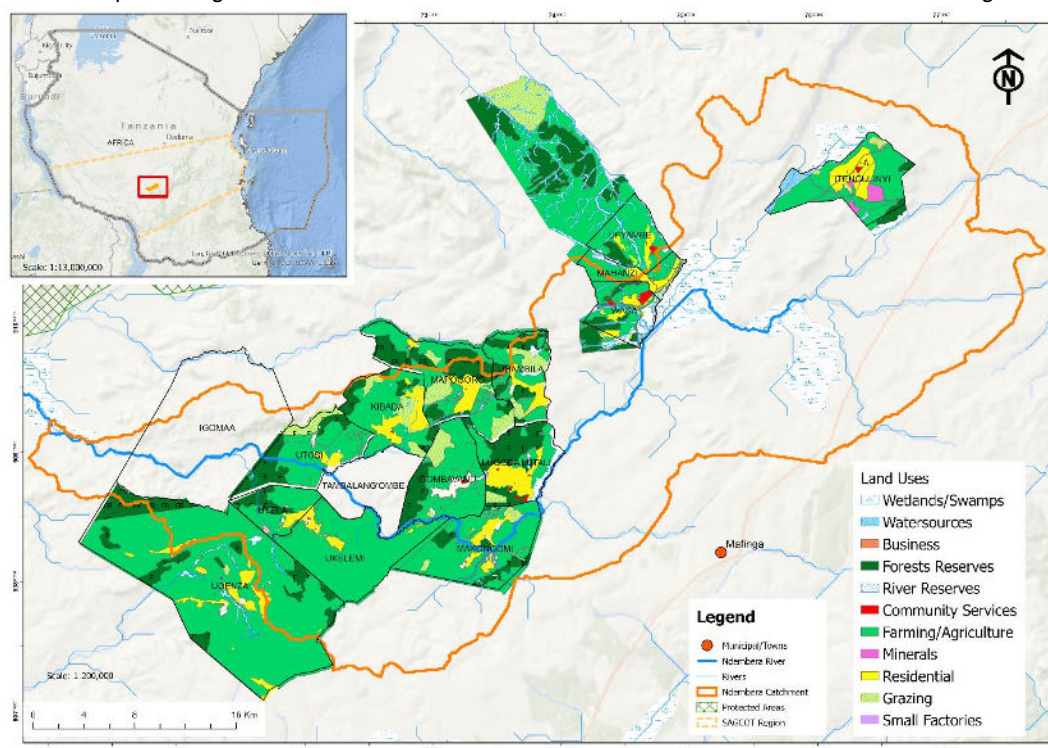
⁹ Mdemu, M. V., & Majule, A. E. (2012). Understanding community participation in the Tanzanian Village Land Use Planning process. *Land Use Policy*, 29(3), 771-780

Another key Alliance innovation to VLUP was taking a landscape approach. Per the national guidelines, VLUPs are done on a village-by-village basis, creating land use plans using administrative boundaries that are disconnected from the reality of natural ecosystem boundaries that often cut across them. In the first phase of the program, the Alliance piloted a VLUP process simultaneously across six neighboring villages in a shared watershed to improve integrated land and water management; in the second phase, an additional eight villages' VLUPs were prepared using the same process (such that 14 villages in the project now have VLUPs). *Table 1* illustrates the different types of land uses that were recorded during the innovative VLUP process across 14 villages in the first and second phase of the program, while *Figure 1* shows a map created using satellite imagery that details the location of different land uses.

Table 1. Area zoned under different land uses across 14 villages supported by the Alliance across Phases I & II

Village	Subtotal Phase I (Ha)	Subtotal Phase II (Ha)	Total Area (Ha)
Agriculture	26,071	8,758	44,828
Natural Forest Reserves	13,639	4,103	17,743
Grazing	5,945	1,448	7,394
Fuel wood	223		223
Settlement	6,757	2,749	9,506
water sources/wetlands	1,202	2,404	3,605
Other Uses	67	261	328
Total	53,903	29,723	83,626

Figure 1. VLUP map detailing the location of different land uses and natural resources across 14 villages



The diversity of partners – including local farmers and water users, as well as local and district government officials – helped identify social, economic, institutional, and technical factors that supported or constrained ILWM across ecosystems that transcend village boundaries. With Alliance support, the Village Land Use Management Committees (VLUMCs) collaboratively developed rules of common pool resource governance for collective implementation and enforcement across the villages sharing boundaries and natural resources such as water and forests. The bylaws cover areas such as forestry, agriculture, grazing land, water resources (e.g. rivers and wetlands), and infrastructure.

Having accurate, comprehensive, and trusted geographic information was critical for ensuring the efficient mapping of village resources. The Alliance strengthened the capacities of local government officials and community members in the use of high-resolution satellite imagery. Satellite data enabled the mapping of shared water sources that affect the Ndembera River, a key source of water for participating villages. In coordination with conservation groups and village leaders, water source protection interventions (such as tree planting and installing water monitoring systems) were incorporated into the Community Conservation Action Plans (CCAPs), which act as a water-related implementation roadmap for the innovative VLUPs. Although CCAPs are not part of the VLUP process, Alliance innovations facilitated the mapping and recognition of shared water sources that laid a foundation for their development. Through CCAPs, community members also identified alternative and sustainable livelihood opportunities, such as beekeeping and tree nurseries, to pursue individually and collectively.

The Alliance promoted Modified Mobile Application to Secure Tenure (mMAST) Technology, which enabled rapid and accurate mapping of village boundaries, water and natural resources, and land rights. The mMAST technology is a mobile-based system designed to support land tenure by allowing communities to map, document, and secure their land rights through a participatory and transparent process.¹⁰ The Alliance supported modifications to mMAST to localize its data and align it with the ILMIS (Integrated Land Management Information System) of the Ministry of Land and Settlement. Similar to the rest of the VLUP process, local youth were engaged as a key part of the participatory mapping process, enhancing the level of co-ownership and trust in the mMAST technology.

Because of the improved satellite imagery and innovations made to mMAST, improvements in efficiency and equity were made in the issuance and management of Certificates of Customary Rights of Occupancy (CCROs), particularly for women. The process involved education and awareness raising with community members on the entire process including legal procedures of acquiring these land titles, cadastral data collection, cleaning and analyzing parcel data through the mMAST system, and public display and approval of CCROs by Village Council and Village Assemblies. Overall, the introduction of the mMAST technology and satellite imagery played a key role in improving conflict resolution and in promoting land tenure security.

¹⁰ Dukuze, A., Muhumuza, F., Nampala, P., & Mbabazi, J. (2019). The use of mobile technology in land registration: Evidence from Uganda. *Land Use Policy*, 87, 104065. <https://doi.org/10.1016/j.landusepol.2019.104065>.

These innovations to the VLUP process were made possible through partnerships with local partners, such as the National Land Use Planning Commission (NLUPC). In Phase 1, NLUPC and the Alliance worked closely in designing interventions and informing the development of the PLUM guidelines.¹¹ Village Land Use Management Committees (VLUMCs) and Water User Associations (WUAs) were also key partners in the Alliance's approach to the VLUP process, helping to coordinate the planning process across villages and identify water sources and restoration activities. To successfully work at the watershed scale, the Alliance also worked closely with the Rufiji Basin Water Board (RBWB) to report subsequent community-gathered water monitoring data and organize the implementation of water source protection.

Each of these innovations (the improved participation of marginalized groups, planning at a landscape scale to enable improved land and water management, using satellite imagery and introducing mMAST technology, and working with diverse partners) were mutually beneficial and sequenced to improve VLUP efficiency, enable equitable processes and improve conservation outcomes.

How Alliance VLUP Innovations Employ Ostrom's Common Pool Resource Management Principles and Why that Matters

The design principles for sustainable CBNRM¹² originated from enduring concerns about the notion that communities, if left alone, would inevitably harm local resources.¹³ However, mounting empirical evidence contradicted this belief.¹⁴ Political economist Elinor Ostrom's significant contribution was to methodically recognize the characteristics of communities and resources that coincide with effective sustainable management of shared resources. These principles are now commonly referred to as the design principles. Today, Ostrom's principles provide evidence-driven criteria for how CBNRM can better support more sustainable and equitable outcomes in social-ecological systems.¹⁵ The afore-described innovations to the VLUP procedure helped to strengthen and better integrate several of Ostrom's common pool resource management principles into Tanzania's VLUP process. Specifically, the Alliance's work in Tanzania integrates and/or strengthens the following principles in the VLUP process:

Clear management boundaries are important because they help define the borders of a common pool resource area and the rights and responsibilities of those who use it. When management boundaries are clear, it is easier to monitor and enforce rules, increase accountability and transparency, and ensure that resources are not overused or degraded beyond their capacity to regenerate. Using high-resolution satellite imagery, 14 villages in the

¹¹ CARE-WWF Alliance. (2016). CARE-WWF Alliance supports the completion of four village land use plans in Iringa. Available at: <https://www.wwf.or.tz/?41682/CARE-WWF-Alliance-supports-the-completion-of-four-village-land-use-plans-in-Iringa>

¹² Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge University Press.

¹³ Gordon, H. S. (1954). The Economic Theory of a Common-Property Resource: The Fishery. *Journal of Political Economy*, 62(2), 124–142. <http://www.jstor.org/stable/1825571>

¹⁴ Berkes, F. (1985). Fishermen and 'The Tragedy of the Commons'. *Environmental Conservation*, 12(3), 199–206. <http://www.jstor.org/stable/44520413>

¹⁵ Cox, M., Arnold, G., & Villamayor-Tomas, S. (2010). A review of design principles for community-based natural resource management. *Ecology and Society*, 15(4), 38. doi: 10.5751/ES-03704-150438

Mufindi and Iringa Districts located in one of Tanzania's key watershed landscapes were able to be accurately zoned, detailing where one land use (such as agriculture, forestry, grazing, and water sources) started and another ended. This spatial data helped to facilitate the collective development of VLUPs and identification of village boundaries and shared natural resources across contiguous villages, as well as support the harmonization of bylaws for natural resources management. Mapping of shared water resources has been influential in sensitizing communities on the importance of the shared monitoring and protection of water points to improve water flows, quality, and security. In addition, the mMAST technology helped to improve the process of demarcating agreed boundaries for land use zones.

Participation of village resource users is critical to establish and maintain legitimacy in common pool resource management systems. In the case of VLUPs, even the most vulnerable land and water users should be involved in the process of designing and implementing natural resources management strategies to ensure that everyone's needs and perspective are taken into account. By increasing buy-in and providing a more complete picture of land and water uses to inform zoning decisions, participation enhances the likelihood that community members will feel ownership over and adhere to codesigned plans. In Tanzania, the Alliance worked to address the lack of participation among women, youth, and disabled groups by targeting their increased representation in the ILWM training, VLUP committees, and related processes, such as issuing CCROs. This way, every group had the knowledge and skills necessary to effectively participate in the creation of VLUP for land management and the identification and implementation of water protection actions in subsequent CCAPs.

Conflict resolution mechanisms are necessary to ensure that disputes are handled fairly and efficiently. Otherwise, conflicts foment distrust among natural resources users that leads to increased tension among community members and degradation of shared resources.¹⁶ By facilitating the VLUP process simultaneously in multiple contiguous villages, the Alliance's iteration supported faster resolution of village boundary and natural resource conflicts. Rather than each village making their claims independently, overlapping boundary claims were able to be resolved simultaneously with the assistance of an influential local leader as a mediator. Other methods for conflict resolution included dialogues, consultations, witnesses, and customs and traditions. Clear management boundaries are the foundation of resolving resource conflicts. The process reduced onward conflicts through clear land tenure at the village and individual levels – and laid the foundation to manage any conflicts that may arise over time through the Village Land Council.

Nested governance ensures that the management of common pool resources is organized across multiple, linked levels so that management strategies are consistent and coordinated across different scales of governance. The current VLUP model already contains components of nested governance, as village committees and plans are nested within larger land governance

¹⁶ Ibid.

at the district and national levels (PLUM and NLUPC).¹⁷ There are also nested structures for water governance that the Alliance linked to the VLUP process for ILWM. Improved mapping and monitoring of water resources in the Alliance's programming helps to bring together water and land use planning at the local watershed levels. For example, WUAs actively engaged in the VLUP process and were critical in the process of developing water source conservation actions, formalized in CCAPs. Through CCAPs, the Alliance also installed water gauges and trained WUA members to regularly collect and report water monitoring data to the RBWB. Direct linkages between community and basin-level actors, as well as the contribution of local data to basin decision-making, is critical for improved water management.

While the Alliance's innovations do not enhance all eight of Ostrom's interlinked design principles, they improve the VLUP model by better aligning it to four critical components of effective common pool resource management – clear boundaries, participation, conflict resolution mechanisms, and nested governance. By applying Ostrom's principles, the VLUP model is better designed to center the knowledge and meaningful participation of communities, promote sustainable resource use through collective action, and ensure land use planning is tailored to the specific social and environmental context.

Impacts on VLUP Processes and Outcomes

Through extensive monitoring in the project's Phase 1 and ongoing monitoring in Phase 2, the Alliance has documented evidence of the direct and indirect outcomes of the innovative VLUP process. This evidence also provides clear examples of how the updated VLUP approach and related Alliance interventions contribute to environmental justice outcomes, specifically dimensions of distributive, recognitional, and procedural justice as well as enhanced capabilities.¹⁸ These environmental justice impacts of VLUP ensure CBNRM contributes to the “fundamental right to political, economic, cultural and environmental self-determination of all peoples.”¹⁹

The Alliance's innovative approach to VLUP is more efficient, reducing the time for VLUP stages 1 through 4 by 71% compared to the traditional VLUP process. Importantly, this increased efficiency is not at the cost of meaningful participation by marginalized community members in land use planning decisions. In total, 46% of participants in the VLUP processes, community conservation organizations, and other ILWM processes were women, who are often excluded from having influence in decision-making. This increased equity in the VLUP process demonstrates *procedural justice*, i.e., contributes to fairness and inclusiveness.

¹⁷ Ministry of Lands, Housing and Human Settlements Development. (2020). Guidelines for Participatory Village Land Use Planning in Tanzania. Retrieved from <https://www.nlupc.go.tz/uploads/publications/sw1605705279-Draft%20of%20PLUM%20Guidelines%20-%203rd%20Edition%20Nov%202020.pdf>

¹⁸ Menton, M., Larrea, C., Latorre, S. *et al.* Environmental justice and the SDGs: from synergies to gaps and contradictions. *Sustain Sci* **15**, 1621–1636 (2020). <https://doi.org/10.1007/s11625-020-00789-8>

¹⁹ Bullard, R. D. (1994). Environmental justice for all: no exception. *Journal of Social Issues*, 50(3), 1-16. <https://doi.org/10.1111/j.1540-4560.1994.tb02499.x>

Moreover, *recognition justice* focuses on acknowledging and respecting the rights, needs, and contributions of different individuals and groups. In Phase 2, the engagement of 3,285 community members, including women and youth, in various trainings on ILWM, the identification of water sources, and the development of CCAPs gave diverse groups the opportunity to address their specific needs related to natural resources management. As a result, communities – led largely by women – have planted over 98,336 water-friendly trees around water sources across the 21 villages, and 887.3 ha of water sources are now under sustainable management. According to community members' accounts, some of the water sources that were seasonal have resumed annual flow. For instance, the Mkikifu River dried for 3 to 5 months annually prior to WWF and Alliance-supported interventions (since 2002 and 2018, respectively). By 2021, the river ran year-around again. Indeed, local water flows during the 2022 dry season increased 108% relative to the previous year (from 0.24 m³sec⁻¹ to 0.5 m³sec⁻¹). The restoration of these water flows has reduced the distance that women and girls need to walk to collect water for domestic uses, which creates numerous secondary benefits. In addition, the increased flows are contributing to enhanced sustainable livelihoods opportunities, including tree nurseries, fish ponds, and beekeeping. Many of these have co-benefits for landscape/watershed restoration and/or biodiversity conservation.

The Alliance's innovations also made strides in improving the equitable distribution of land titles, natural resources, and their benefits to all groups in a village, particularly women. The strengthening of VLUMCs' (47% female) capacity to manage and allocate village land equitably, with attention to the rights of all individuals, including women, youth, and elders, contributes to *distributive justice* by promoting fair access to and use of land resources. The Alliance also worked with VLUMCs and the District PLUM to deliver 6,604 CCROS to couples or individuals (38.5% women) in total during Phase 1 and Phase 2. For the first time in these villages, women possess land title deeds, as celebrated by a farmer from Utoosi village. Mrs. Lidia Kivinge explained, "I am very happy today to have this certificate, as a woman. For me, it is like a dream because I never heard of a woman possessing land in our community."

Through participation in conservation focused VSLAs in Phase 2, women have gained greater decision-making power in the planning and distribution of financial and water resources. Improved water flows laid the foundation for other NGOs to increase water access by providing 32 shallow wells, an infrastructure improvement that eases the ability of women to fulfill their culturally constructed roles. Over 300 school children have also benefited from the increased availability of water in schools. Water flow restoration also spurred collective distributional justice through expanded access to benefits from the establishment of apiaries near water sources. In each village, conservation groups have created a Memorandum of Understanding so that a percentage of earnings from honey production goes to support village-wide conservation and development priorities.

Improved *capabilities* of members of marginalized groups to realize their vision was also foundational. Capacity strengthening for women, youth, elders, farmers and water-users in the VLUP process and ILWM provided these groups with the knowledge, skills and confidence needed to meaningfully participate and lead in relevant processes. The Alliance also focused on

improved capabilities at the systems level, recognizing that the strengthening of collective capacities among institutions at multiple scales is necessary for communities to have the support and resources necessary to implement land management and water protection plans. District-level officials were trained in using satellite imagery and mMAST technology, and district land offices were supported with IT equipment (data saver, tablets, and GPS) and mMAST software. The coordination between VLUMCs, PLUM, the RBWB, and NLUPC facilitated effective planning across multiple villages and shared water resources, and shared learning as the process and outcomes from the Alliance's innovations helped influence their ways of working.

Overall, the Alliance's interventions demonstrate how the increased decision-making power of marginalized groups in VLUP and the focus on landscape-scale water source protection impacts multiple dimensions of environmental justice, leading to improved participation and the fair distribution of benefits with respect to the needs of specific groups.

Insights and Recommendations for Scaling

In addition to the direct outcomes of the innovative VLUP process and other supported interventions, the Alliance has worked to upscale impact beyond participating villages. The Alliance's interventions in VLUP innovations and other activities embedded different components of scaling from their inception.

The Alliance also proactively engaged new and existing partners in piloting the innovations to pave the way for influencing policy and practice at district and national levels. The evidence generated during Phase 1 led the NLUPC to invite CARE and WWF to participate in the revision of the 2nd edition of the National Land Use Planning Guidelines. The Alliance was also critical to the subsequent mainstreaming of gender in the 3rd edition of the guidelines in 2020.²⁰ Capacity strengthening in mMAST technology at the district level influenced the Mufindi District PLUM to adopt the Alliance's innovative VLUP process. In fact, the District PLUM facilitated VLUPs using this process in an additional 10 villages between 2022 and 2023 (in which the Alliance was not engaged).

Based on these experiences, insights and recommendations follow for how these approaches and innovations can be scaled in ways that enhance effective common pool natural resource governance and environmental justice outcomes in Tanzania and beyond:

Scaling Deep.

Develop and target trainings to embed capacity, knowledge, and resources from local to sub-national levels, ensuring equitable participation and increased sustainability of interventions. Throughout the VLUP process, the Alliance invested in training VLUMCs, conservation groups, and WUAs on land use processes and planning, the effects of climate

²⁰ Ministry of Lands, Housing and Human Settlements Development. (2020). Guidelines for Participatory Village Land Use Planning in Tanzania. Retrieved from <https://www.nlupc.go.tz/uploads/publications/sw1605705279-Draft%20of%20PLUM%20Guidelines%20-%203rd%20Edition%20Nov%202020.pdf>

change, issues related to gender equality, conflict resolution, and water source management and restoration. Inclusion of not only leaders but also women, youth small-scale farmers and water users in these trainings was key to ensuring that knowledge imparted was accessible to the most affected and vulnerable community members. Capacity strengthening supported the meaningful participation of all community members in the VLUP process, enabling their knowledge, perspectives, and priorities to inform VLUPs and related activities. The active leadership of the community in VLUP and the Community Conservation Action Plans helps to ensure conservation interventions and alternative livelihoods are chosen by communities to meet their own needs, ensuring buy-in and sustainability. In addition, community members and district-level government officials were trained in how to use the mMAST technology, and satellite imagery data is also housed at the district level, ensuring that technological innovations can be sustained by local participants and leaders. Powerholders have gained firsthand experience in co-facilitating more equitable land use management processes and experienced their benefits, including enhanced buy-in and sustainability. This will ideally influence their policies and procedures in the future.

Scaling Out and Up.

Engage diverse partners in pilots and leverage evidence to influence national level policy processes and guidelines. Inclusion of NLUPC and the PLUM in the Alliance's innovative VLUP pilot raised the profile of the experience and increased the perceived validity of the findings (e.g., of 71% efficiency gains). Key aspects of the piloted approach that were incorporated into the current National Land Use Planning Guidelines included use of satellite technologies to increase accuracy and increase efficiency; special attention to the participation of women and youth in VLUP processes to improve community ownership and development outcomes; and use of an integrated approach in land use planning and decision-making processes that considers land use issues such as biodiversity conservation, common resources, and climate change.

Embrace Cross-Sector Integration and Collaboration.

Working across land and water sector actors at multiple scales was critical to the success of the innovative VLUP process. At their core, the VLUP innovations demonstrate the value of integrated conservation and development²¹ and other silo-busting approaches to collaboration that are central to the CARE-WWF Alliance. Documenting approaches and sharing them to expand uptake and impact is another foundational goal for the Alliance. For example, the Alliance is collaborating with the government's agricultural research institute, private crop buyers and agro-dealers to integrate ILWM learnings into small-scale livelihood practices in VLUP agriculture zones. Similarly, it is through collaboration with district officials across community development, agriculture, and environment agencies that the Alliance is mainstreaming environmental sustainability criteria into Village Savings and Loan Association decision-making. This will enable the establishment of conservation funds to maintain

²¹ CARE-WWF Alliance. (2019). The Value of Integrating Conservation and Development – Learning Brief. Available at: <https://careclimatechange.org/wp-content/uploads/2019/09/Brief-1b-WWF-CARE-Value-Add-Moz-Tanz-Nepal1.pdf>

investments in sustainable beekeeping, tree nurseries and water restoration and management activities. While not directly attributable to the Alliance's scaling efforts, village level adoption of VLUPs has increased since the project's inception from a total of 14% of total villages in Tanzania with a VLUP in 2018, to 23.9% (2,944 out of 12,318 villages) in 2022²².

Towards Greater Environmental Justice through Community-Based Land and Water Resources Management



Despite Tanzania's ongoing natural resources conflicts and challenges, the improved VLUP model offers a bottom-up approach that provides local communities with the resources and approaches to identify and prioritize their land use needs and develop land use and water protection plans that reflect their goals. The Alliance's evidence and experiences showcase tangible ways to integrate common pool resource management principles that improve VLUP's scale and impact, participation, accountability, and meaningful contribution to meeting the needs of historically marginalized community members. Increasing adherence to those principles through the Alliance's VLUP innovations and related interventions has demonstrably contributed to environmental justice outcomes. The evidence underscores the importance of having effective and participatory means of planning for the use, restoration and protection of shared natural resources across villages at the landscape scale. While guaranteeing equitable participation of all groups is important, working

across a watershed improves the distribution of natural resource benefits specifically the shared benefits of restored water sources, which particularly benefit women. Working with diverse partners (e.g., public sector planning agencies and civil society organizations) across multiple sectors representing conservation and development also ensures land use plans integrate a holistic understanding of socioeconomic and environmental issues. Alongside the leadership of communities and partners, the Alliance has helped CBNRM in Tanzania become more equitable and effective by offering lessons for anyone interested and engaged in land use planning and contributing towards a more just and sustainable future for people and nature in Tanzania.

²² Tanzania National Land Use Planning Commission. (2022).