



INITIATIVE ON  
West and Central African  
Food Systems Transformation



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# **Co-Designing Inclusive Landscape Management Plans: A Practical Guide**

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## Citation

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## Acronyms

CBO	Community-based Organization
DPSIR	Drivers-Pressure-State-Impact-Response
ES	Ecosystem Services
FAO	Food and Agriculture Organization
FGD	Focus Group Discussion
GESI	Gender equality and social inclusion
GESI	Gender equality and social inclusion
GIS	Geographic Information System
GWP	Global Water Partnership
IIRR	International Institute for Rural Reconstruction
ILMP	Inclusive Landscape Management Plan
IPCC	Intergovernmental Panel on Climate Change
IWMI	International Water Management Institute
LMP	Landscape Management Plan
LSA	Landscape Situational Analysis
NGO	Non-Governmental Organization
PLP	Participatory Landscape Planning
SIAF	Sustainable Intensification Assessment Framework
SWOT	Strength, Weaknesses, Opportunities and Threats
SWR	Strength, Weaknesses and Recommendations
TAFS-WCA	CGIAR initiative on Transforming Agrifood Systems in West and Central Africa
WCA	West and Central Africa
WP	Work Package

## 1.0 INTRODUCTION

### 1.1 Why Inclusive Landscape Management?

Pressure on natural resources in Sub-Saharan African countries is increasing due to human and naturally induced factors. Societies in Africa bear a greater cost due to the limited availability of natural resources management plans. Observed and sustained natural resource challenges include deforestation (FAO 2020), land degradation (UNCCD 2017), poor water management (Giordano et al. 2012), unsustainable mining (Hilson 2012), wildlife poaching, and climate change (IPCC 2014). The expansion in unsustainable land use practices has resulted in ongoing environmental degradation with implications for the growing demand for food in terms of quantity and quality, competition for productive land, urban expansion, demand for forest resources, demand for water resources, and climate change-related impacts. Coupled with the mounting impacts of anthropogenic climate change, this trend is projected to exacerbate exposure and vulnerability of production and livelihoods in agrifood systems, threatening their resilience.

Effective landscape management is critical in mitigating these difficulties, which can be accomplished using current and often traditional practices and cost-effective strategic management innovations implemented at various sizes ranging from individual fields to entire landscapes. Their success depends on integrating technologies encompassing soil, water, crops, cattle, and trees (German et al. 2007; Badolo et al. 2022). While sustainable landscape management approaches exist in some African landscapes, their complexity, implementation status, and stakeholder commitments vary across levels. However, their fragmentation is currently impeding scaling.

A wide range of different terms are being used to refer to natural resource management in the landscape. They include Watershed Management (FAO 2003), Integrated Water Resources Management (GWP 2015), Sustainable Landscape Management (Bürgi et al. 2017), and Socio-Ecological Landscape Management (Karrasch et al. 2017). There are also variations in these terminologies depending on the spatial extent (e.g., only hydrologic units in watershed management), the objectivity of sustaining which resources (e.g., focusing more on land units for sustainable landscape management or use of water in integrated water resources management), and the approach (such as the emphasis on social and ecological integration in socio-ecological landscape management).

As the importance of ecosystem services (ES) is gaining wider recognition, there has been a growing need for tools to provide decision-makers with information on demand and supply information for ES and the effects of land use management on these services (Portman 2013). There is a similar need to integrate the social and ecological aspects, with an emphasis on participatory governance and local knowledge integration, into the approach. The guide for co-designing an inclusive socio-ecological landscape management plan becomes particularly useful in sub-Saharan Africa. As such, this protocol is a useful guide not only for the TAFS-WCA initiative (specifically WP3) but also for other CGIAR regional initiatives' aims to collaborate with communities, local authorities, and other stakeholders to discuss and prioritize existing problems in a given area, co-identify and prioritize possible solutions, co-develop an action plan, and subsequently, co-implement the priority interventions.

## 1.2 Purpose of the guide

This protocol is prepared in the context of the CGIAR initiative on Transforming Agrifood Systems in West and Central Africa (TAFS-WCA), which operates in the six countries of Ghana, Nigeria, Burundi, Rwanda, the Democratic Republic of the Congo (DRC), and Cote d'Ivoire. The TAFS-WCA initiative aims to improve nutrition and food security within the context of climate change in West and Central Africa (WCA) through nutritious, climate-adapted, and market-driven food systems. The aim is to develop and scale agroecological innovations for small-scale farmers and related food systems to improve livelihoods in middle-income countries.

This practical guide supports Work Package 3 (WP3) on inclusive landscape management (Figure 1) based on the premise that integrating social and ecological dimensions in managing land and water resources leads to equal access to and proper use of natural resources, a prerequisite to building a healthy and productive environment for resilient agri-food systems and livelihoods. The activity on inclusive landscape management combines participatory tools and citizen science to co-develop and implement inclusive landscapes owned by the communities to enable sustainable scaling of bundled land, water, aquaculture, and climate-smart agronomic and digital innovations.



FIGURE 1. The TAFS-WCA WP3 implementation flow chart

The activities of the TAFS-WCA and WP3 are expected to align with the priority areas of government in the targeted countries. The landscapes and catchments have been selected in order to engage stakeholders and ensure inclusive management strategies can be implemented in response to the specific challenges.

To address the multiple challenges inhibiting the sustainability of productive social-ecological landscapes through participatory management tools, the focus for strategic intervention is on selected micro-watersheds within the broader landscape. This guide aims to contribute to the TAFS-WCA key outcome: An informed and inclusive landscape management plan co-developed, owned and implemented by 30 rural communities.

## 1.3 Overview of an Inclusive Landscape Management Plan (ILMP)

The inclusive landscape management (ILM) process emphasizes the integration of social and ecological systems, local participation, and sustainable resource use within landscapes (Kusters et al. 2018; Karrasch et al. 2017; Albert et al. 2014). It prioritizes inclusivity in the decision-making process, valuing diverse perspectives, and addressing power imbalances among stakeholders. 'Inclusive' in this context is based on shared ownership of decision-making. This approach is a response to 'top-down' approaches to development, where power and decision-making are largely in the hands of external development professionals. Because problems

involving unsustainable resource use frequently require complicated compromises and tradeoffs, processes that involve full participation from all stakeholders typically yield the best and most lasting results.

According to Karrasch et al. 2017 (also in Kusters et al. 2018 and Geoghegan et al. 2004), participation can improve management by incorporating diverse stakeholder knowledge, skills, perspectives, and opinions; increasing compliance and support through stakeholder involvement in decision-making; providing a forum for identifying and negotiating conflicts; and contributing to local empowerment, especially when the sharing of management responsibility is involved. Ostrom (2009) outlines a framework integrating the social-ecological approach in landscape management planning. This approach is based on the four key systems: the resource system, resource units, the governance system, and users or stakeholders. These systems are central to the inclusive landscape management plan and are defined in the next sections.

## **2.0 A STEP-BY-STEP GUIDE FOR INCLUSIVE LANDSCAPE MANAGEMENT PLANNING**

This step-by-step guide for inclusive landscape management planning prioritizes the active participation and collaboration of multiple actors, including stakeholders, end-users, and other relevant parties. It's participatory, process-oriented approach aims at creating inclusive, user-centered, and contextually appropriate landscape plans.

### **Definition of terms**

- **A catchment or watershed** is a hydrological boundary identified by GIS tools and constitutes one or more resource systems.
- **A resource system** is composed of the environment and land management systems. The designated area encompasses a specified territory containing various land and water systems, such as an agricultural land area with its crops, livestock, and water systems. It could also be an agroforestry area with forests, crops, wild animals, and water systems.
- **A resource unit** is the individual component of a resource system and its spatio-temporal availability. It explains the land use elements and their expected ecosystem service outputs. For an agricultural land system, resource units are represented by the type of individual crops, types of livestock, and the amount and quality of water.
- **The governance system** includes the government and other local organizations that manage the different resources and set specific rules on their use and how these rules are made.
- **Users** are individuals who use the land for their livelihoods and other purposes.
- **Regional or local experts** are groups of experts from stakeholders, including resource user representatives, who foster a collaborative landscape planning process and co-design adaptive socio-ecological landscape management plans for the case study region.

In many ways, the process of co-designing landscape management plans is like conventional land use planning approaches which typically assume linear relationships among components or



stages of the process. In contrast, however, inclusive landscape planning processes are not linear by nature since they bring about changes (i.e., in relationships, practices, outcomes, and perceptions) that influence the co-design and implementation of the process and its goals (see Figure 2). Therefore, it encapsulates the concept that action can be taken at any point during the planning process.

A key objective of an inclusive process in landscape planning is to trigger changes in conditions and provoke action. Therefore, it is critical to acknowledge that an inclusive landscape management plan works better by negotiation than the traditional top-down approach. Some consideration is needed on the prerequisite information and tools for effective landscape planning (see Appendices A and B). Consequently, identifying key governance systems or stakeholders, assessing stakeholders' expectations, rights, and obligations, and analyzing their power dynamics are very important steps in the planning process. The mobilization and sensitization of stakeholders are also essential for the participatory process. In this framework, the stepwise implementation of inclusive landscape management planning involves the following key components, and a simplified illustration is presented in Figures 2 and 3.

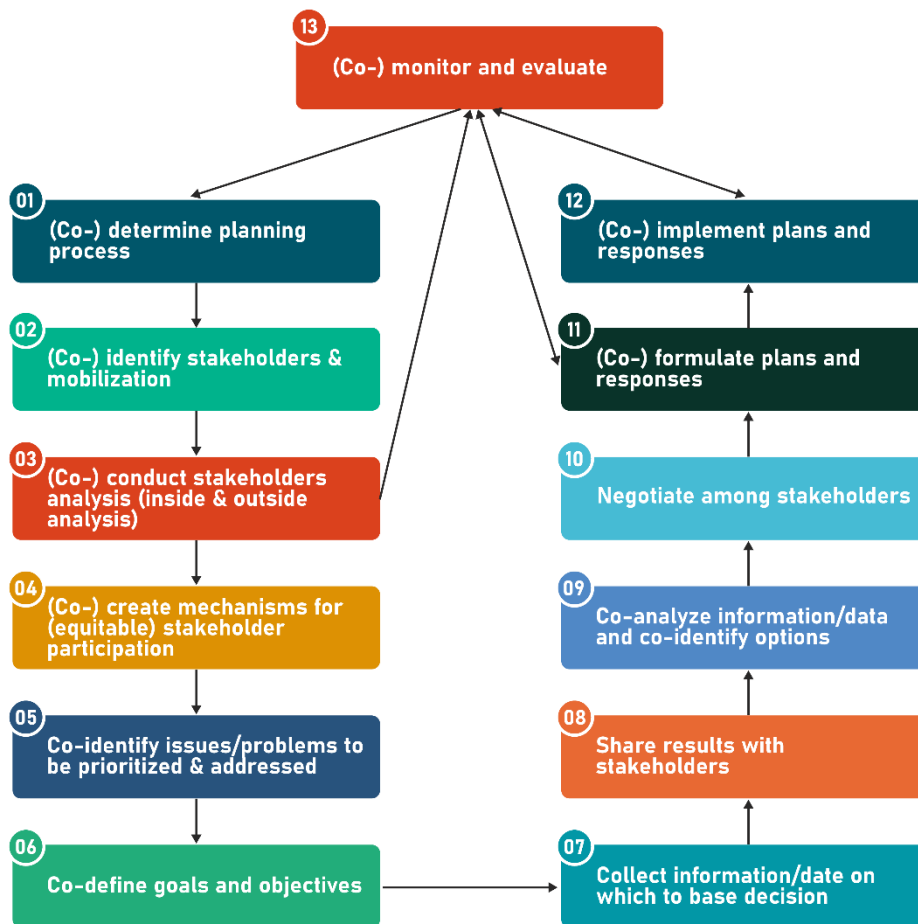


FIGURE 2. The non-linear inclusive landscape planning process  
 Source: Adapted from Geoghegan et al. (2004)

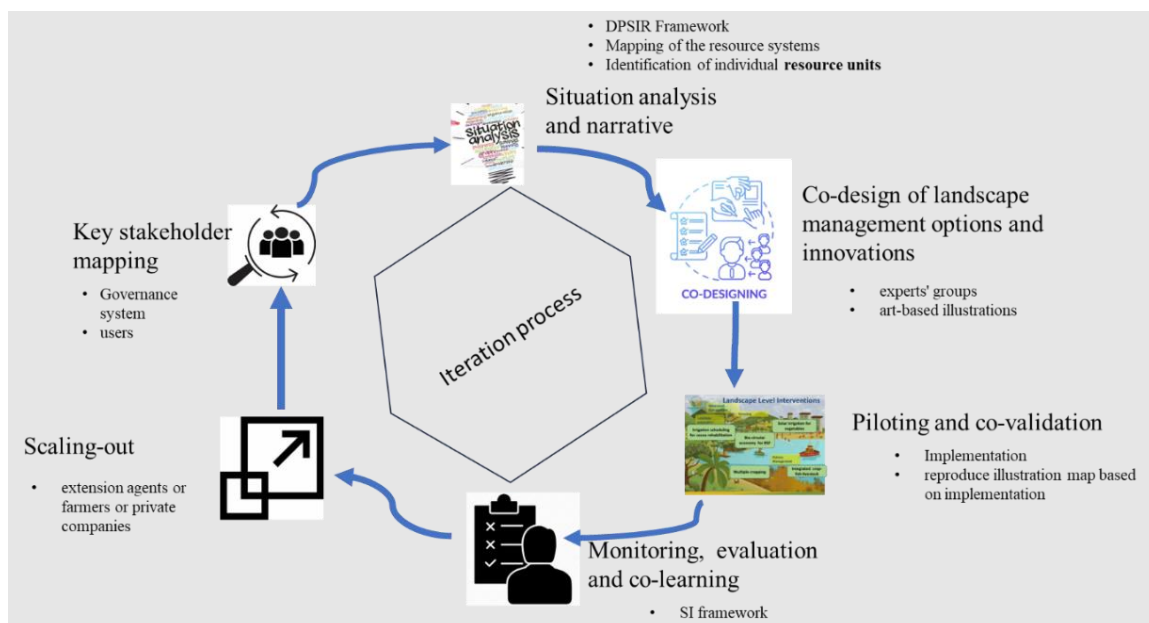


FIGURE 3. Simplified illustration of inclusive landscape management planning

### ***Step 1: Key stakeholders mapping and deliberation to review experience and knowledge***

Generally, a stakeholder is a person, group, or organization that is directly or indirectly interested in a process because they manage resources, set rules, can influence, or can be affected by goals, rules, or activities (Kusters et al. 2018). All institutions and users of land and water resources (i.e., government, citizens, experts and practitioners) who may impact or be impacted by the landscape planning process are deemed stakeholders (or part of the governance system) under TAFS-WCA WP3. They can be categorized as a stakeholder group when they share comparable goals and interests, due to their (livelihood) activities or institutional mandates. This concept implies that everyone, or a group with a unique set of goals or interests, needs to be considered separately, which could result in the division of stakeholder groups into smaller working groups throughout the process. In trying to identify relevant stakeholders and ascertain objective views of the power dynamics, answers should be sought for the following questions:

- Who manages or sets rules for the different resource systems in the landscape?
- Who uses the resources unit, and in what ways?
- Who benefits and who does not?
- Who wishes to benefit but is unable to do so?
- Who would be affected by a change in management's status, form, or outputs?
- Who can affect or be affected by landscape planning in the target watershed?
- Are these stakeholders formally or informally organized?
- Are there sub-groups?
- Where are they exactly located within the landscape?

In this step, the regional or local experts or stakeholders participating in landscape management planning are defined. This is a group of experts from the governance system and user representatives who can help foster a collaborative landscape planning process and co-design inclusive landscape management plans for the case study. The governance system includes the local government and other organizations that manage resources in the landscape and set specific rules related to the use and implementation of those rules.

## ***Stakeholder analysis***

Once stakeholders have been identified, the next step is to analyze their interests. Typically, a stakeholder analysis exercise will aim at answering questions such as (see Table 1 for a sample tool):

- What are the current and future interests of the various stakeholders in using and managing a resource, how do they use the resource, and what benefits do they derive?
- What are their past and current sources of **power, rights and responsibilities**, both formal and informal, and what are the networks and institutions that they are part of?
- What are the positive and negative social and environmental impacts of their past and current uses of and relationships with the resource?
- How ready and willing are they to participate in and contribute to management, and what are the potential areas of agreement and shared interest upon which consensus and collaboration can be developed?
- Are they vulnerable?
- What can or should be their role in the planning process?

TABLE 1. Stakeholder analysis tool

<b>Stakeholder</b>	<b>Interests</b>	<b>Power/influence (0 / + / ++)</b>	<b>Vulnerability (0 / + / ++)</b>	<b>Potential role in the process</b>

Source: WWF (2005)

### ***Step 2: Development of the specific ILMP narratives from a situation analysis.***

In this step, the goal and objectives of inclusive landscape management are defined, including the development of the specific landscape narrative. It is a general goal or principle without spatial dimensions to explain why co-designing inclusive landscape management is needed. This is obtained by conducting a situation analysis of the targeted landscape's biophysical, hydrological, socio-economic and livelihood assessment. To help document the situation of the landscape, any existing available tools are used, such as Drivers-Pressure-State-Impact-Response (DPSIR) (Atampugre et al. 2022) while also taking into consideration Gender Equality and Social Inclusion (GESI), citizen science initiatives, and application of earth observatory such as remote sensing, and modeling through multi-criteria decision support systems (e.g., for water risk assessment).

The situation analysis is used to define the baseline scenario before the implementation of practices and to help assess landscape pressures and impacts, including drivers of change and responses. The initial situation assessment needs is done in a catchment or watershed. This helps

identify the conflicting demands of natural resource use and map the resource systems<sup>1</sup> comprised of the environment and land management. The protocol of the situation analysis must be guided by standard and well-defined sustainability indicators. Here, the sustainable intensification assessment framework developed by Musumba et al. (2017) is recommended for defining the different domains, indicators and metrics required for the protocol. It includes the general demographic situation of the community, the identification of individual **resource units**<sup>2</sup> that are the components of the resource system and their spatio-temporal availability, and community perceptions of the environment and livelihood situations.

A multi-stakeholder meeting will be held to facilitate the discussion of intermediate results with the situation analysis and to finally define the main goal for landscape management. The discourse should include sustainability of the current situation or condition of the land management and also outline its future. In this step, the situation analysis report, the final goal of the ILMP and identified ecosystem services that need to be improved are outputs.

### *Step 3: Co-design of landscape management options and innovations*

This step involves the identification of demand-driven technologies and practices with the participation of stakeholders and expert groups (see Appendices C to E) and additional biophysical studies. The expert group will contribute through a series of workshops to propose a mid- or long-term plan that includes strategies, resources, responsibilities, and finances with the facilitation of researchers or other knowledge brokers. The engagement starts with a (de)briefing on the current challenges under each sustainable intensification (SI) domain as captured in step 2 (also see Figure 5), facilitated by the researcher(s) and citizen scientists. Thereafter, users and stakeholders will start defining their corresponding objectives or goals. If the challenges are too many, users can rank them by importance and focus on a few of the challenges for the plan. This process can be done with multi-stage workshops such as starting only with grassroots users (with due consideration of GESI) followed by a second workshop with expert groups. In this step, art-based illustrations (or spatial mapping) of the proposed landscape interventions can facilitate the conceptualization of the plan and simplify complex issues for better understanding. The expert groups will map the current situation (preferably in Step 2) and compile another spatial map for the future based on the proposed plan. The final plan is produced based on the visualization of the current land uses and alternative landscape management scenarios from various stakeholders. This will constitute an illustration map with implementation millstones, the timeline of actions, collaboration and partnership identifications, improvement in GESI, capacity-building strategies, and conflict resolution mechanisms.

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<sup>1</sup> This is a designated area encompassing a specified territory containing various land and water systems, such as an agricultural land area with its crops, livestock, and water systems. It could also be an agroforestry area with forests, crops, wild animals, and water systems.

<sup>2</sup> It explains the land use elements and their expected ecosystem service outputs. For agricultural areas, resource units are represented by the type of individual crops, type of livestock, and the amount and quality of water.

#### ***Step 4: Piloting and co-validation***

Piloting refers to the initial trial or testing phase of a specific aspect or intervention within the landscape management plan, while co-validation involves a collaborative process where stakeholders, including local communities, experts, governmental bodies, and other relevant parties, collectively assess and validate the effectiveness, feasibility, and suitability of the piloted interventions within the landscape. Piloting and co-validation involve selecting one or more defined resource systems in the landscape or hydrological boundaries (watershed/micro-watershed) where identified demand-driven technologies and practices based on Step 3 (see Appendix E) could be applied. The implementation process involves in-situ data collection and remote sensing tools to geo-reference innovations from farm level to landscape to watershed scale. Here, the sustainable intensification (SI) framework can be used to capture the different sets of socio-ecological objectives set during planning. Using documents available from previously validated bundles of innovations (such as IWMI's work on farmer-led irrigation development and irrigation scheduling), capacity building and training of stakeholders can be conducted to create armies of local trainers who would guide the scaling processes further in the landscape. Emphasis can be given to lead farmers who can serve as trainers to other farmers in the absence of extension service providers. The co-validation process involves the development of illustrative maps to showcase 'what works where' (producing another map based on the implementation) and what is continuously improved to satisfy the needs of local communities.

#### ***Step 5: Monitoring, evaluation, co-learning, and revisions***

This step involves presenting key results to stakeholders and learning from planning and implementing an inclusive landscape management plan (ILMP). Feedback mechanisms can be arranged through multistakeholder discussion groups, farmers' field and exchange visits, and farmer-to-farmer learning events. Technical personnel from research institutes and academia must guide and document stakeholder perceptions of planned or implemented technologies and practices in standard protocols for future improvement and learning. The differently collected datasets must be properly analyzed to determine the suitability of planned or implemented innovations. The analyses could include assessments in the areas of anticipated or realized ecosystem improvements through sustainability indicators involving productivity gains, environmental sustainability, socio-economic benefits, and rural well-being (nutrition) improvements. This will help to adjust and improve the landscape management plan.

#### ***Step 6: Scaling out the Inclusive Landscape management Plan to a wider geographic area***

Scaling out (or horizontal scaling) implies adapting knowledge and innovations to the conditions of different end-users, which requires understanding the principles underlying an innovation. For this to be done successfully, those doing the scaling out, whether extension agents or farmers, will need training and support networks to work with communities to adapt innovations to their needs. The framework checklist produced in a CGIAR-NGO workshop (Figure 4) may be followed to appropriately scale out. The framework recognizes specific pathways for scaling out, starting from identifying the needs to engaging people or events as 'sparks' or catalysts to initiate a planning stage, through to the management, for the desired impacts and outcomes of the scaling out process.

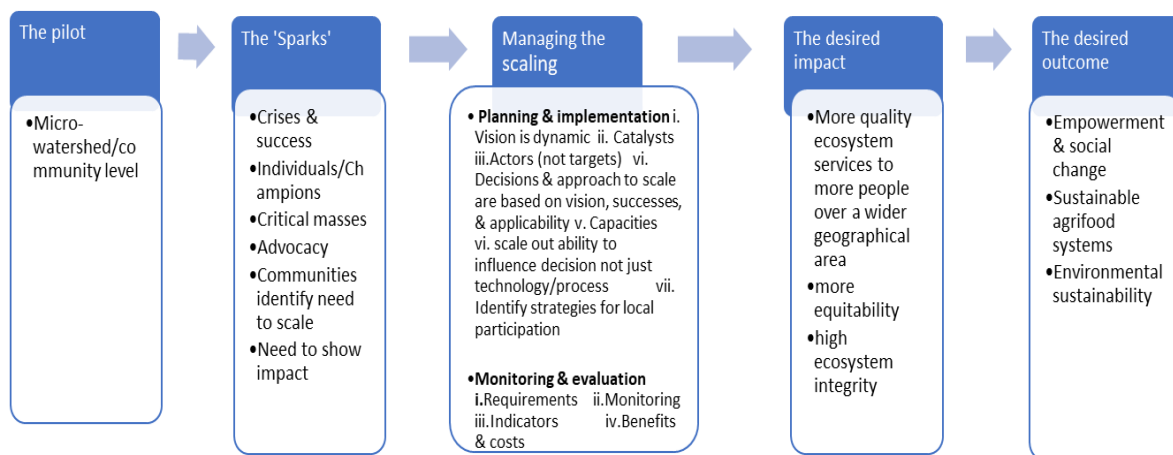


Figure 4. Framework checklist for planned scaling-up  
 Source: International Institute for Rural Reconstruction (2000)

### 3.0 MECHANISMS FOR CREATING EFFECTIVE AND EQUAL INVOLVEMENT OF STAKEHOLDERS

The whole process starts with the definition of the decision-making and solution-finding process. The procedure that will be used must be legal and acceptable to everyone. For instance, it is essential to guarantee that all key parties are involved in the process and that their perspectives and interests are represented by spokespersons who have been chosen and approved by those parties. The procedure ought to be politically, socially, and culturally acceptable. When it comes to gender, youth and minority rights, the traditional social norms may often be discriminatory. The project team must be willing to challenge these and provide training and sensitization to ensure gender transformative processes take place and allow for historically marginalized to be included.

The process must also be transparent in that all stakeholders are informed at every stage of the procedure and included in the decision-making appropriately. The use of local languages is key in this regard. The goals for each step of the negotiation process should be agreed upon at the beginning. This presents an opportunity to revisit the rules and necessary make adjustments. Identifying problems, issues, and needs involves all stakeholders in a participatory process. Stakeholders must endorse the method used and accept the data collected by any method as valid and sufficient for decision-making. Recognizing the wide range of perspectives on what "taking part" means is particularly significant. Depending on one's goal, distinctions have been drawn between the levels of engagement:

- Transmitting information: Unidirectional
- Consultation: Bi-directional, but the consulted party frames the issue
- Active participation: Based on a partnership in which citizens, stakeholders, experts and/or politicians actively engage in (policy) debate. All parties involved can frame the issue to a greater or lesser extent.

This inclusive planning guide refers to active involvement. It should be kept in mind that the degree to which participants are involved in framing the questions and topics and devising the



procedures will vary across techniques. The most active and inclusive approaches must be selected, as much as possible.

When there is conflict, research and technical support through in-depth analysis may be required to comprehend the various conflict manifestations (symptoms) and why the issue occurs (causes). For instance, a conflict over natural resources can take the form of noncompliance by a user group with rules governing the use of the resource or region. In such a situation, it would be crucial to understand whether all or just some of the group members are not complying, whether the non-compliant members were initially involved in the development of the regulations, and whether social and economic conditions outside the area have changed and had an impact on group members' behavior and decision-making. Creating negotiating procedures in stages is frequently beneficial, with each phase requiring success before moving on to the next. These procedures work best when by first identifying common ground and then building on that. Focusing on solving the simpler issues before solving more complicated ones is frequently helpful. This shows that agreements can be reached and allows negotiating parties to concentrate on problems that can be settled quickly. The involvement of a knowledgeable and impartial facilitator is particularly beneficial at this point.

One of the critical steps in a participatory process is when participants use the outcomes of their analyses to set priorities and identify the management options that are open to them, considering the costs and benefits associated with each. One of the advantages of these participatory evaluations is that they improve everyone's ability and confidence to participate in management and decision-making, especially the weaker players.

TABLE 2. Attributes required for effective and equal stakeholder participation

Category	Attributes
<b>Building trust</b>	<ul style="list-style-type: none"> <li>• Sharing information</li> <li>• Interacting repeatedly</li> <li>• Working through intermediaries</li> </ul>
<b>Involving directly affected stakeholders</b>	<ul style="list-style-type: none"> <li>• Working with the community</li> <li>• Working with representatives</li> <li>• Working surrogates</li> </ul>
<b>Seeking feedback</b>	<ul style="list-style-type: none"> <li>• Making on-site visits</li> <li>• Stakeholder review of documents</li> </ul>
<b>Involving the voiceless</b>	<ul style="list-style-type: none"> <li>• Building capacity</li> <li>• Mandating representation</li> <li>• Organizing separate events</li> <li>• Levelling techniques</li> <li>• Using surrogates</li> </ul>
<b>Involving the opposition</b>	<ul style="list-style-type: none"> <li>• Starting early and broadly</li> <li>• Finding common ground</li> <li>• Dealing with deadlock before proceeding</li> </ul>

Source: The World Bank (2008)

Farmer representatives, local NGOs, village chiefs and village executives, extension agents, and local community-based organizations (CBOs) working at the village or community level are key stakeholders in the ILMP process. Once the relevant stakeholders are identified, consultative meetings are organized to define the major landscape challenges. Existing multistakeholder platforms (if they exist) or new platforms can be created to systematically synthesize and record

discussion outputs. The discussions can be in groups or gender-disaggregated forms to capture the different views of the community collectively and in individual groups of females and males. A well-established local NGO, a representative of the CBOs, or a farmer group representative can guide the discussion process. Representatives from research for development institutes (national or international) and academia provide technical support to the process.

#### **4.0 GENDER EQUALITY AND SOCIAL INCLUSION (GESI)**

Gender equality and social inclusion are crucial considerations in landscape management planning to ensure that all members of society, regardless of gender, socio-economic status, ethnicity, or other characteristics, have equitable opportunities, rights, and representation. The key issues to consider:

- Gender transformative analysis leads to understanding and addressing the different roles, responsibilities, power structure and relations, needs, constraints and priorities of women, youths, men, and others concerning the landscape and helps develop plans that address all of the above.
- Ensure that women, the youth and marginalized groups have equitable access to and control over land and water resources, innovation bundles technologies, finance, and market opportunities.
- Ensure women and youth are represented and are given the opportunity to participate in the planning, implementation, monitoring, evaluating and learning of landscape management activities in an equitable manner with the other stakeholders.
- Monitor and evaluate the impacts of landscape management interventions on gender equality and social inclusion. It is important to define gender indicators (see in the next section) that capture changes in access to and control over resources, participation levels, decision-making power, and well-being of women, youths and other vulnerable groups.

#### **5.0 INDICATORS FOR EVALUATING THE PERFORMANCE OF INCLUSIVE LANDSCAPE MANAGEMENT PLANS**

This work adopts the sustainable intensification assessment framework (SIAF) as a guide for selecting context-specific indicators for landscape situational analysis and landscape performance under innovation and technology. The SIAF provides a synthesized list of indicators and metrics with the means to explore across all sustainability domains. It is an objective framework organized into five domains that are critical for sustainability: productivity, economic, environment, human condition, social, and institutions. The metrics for each indicator are categorized across spatial scales such as field, farm, household, and landscape, so that the assessment can be used for innovations at any scale with cross-scale linkages also being considered (Figure 4).



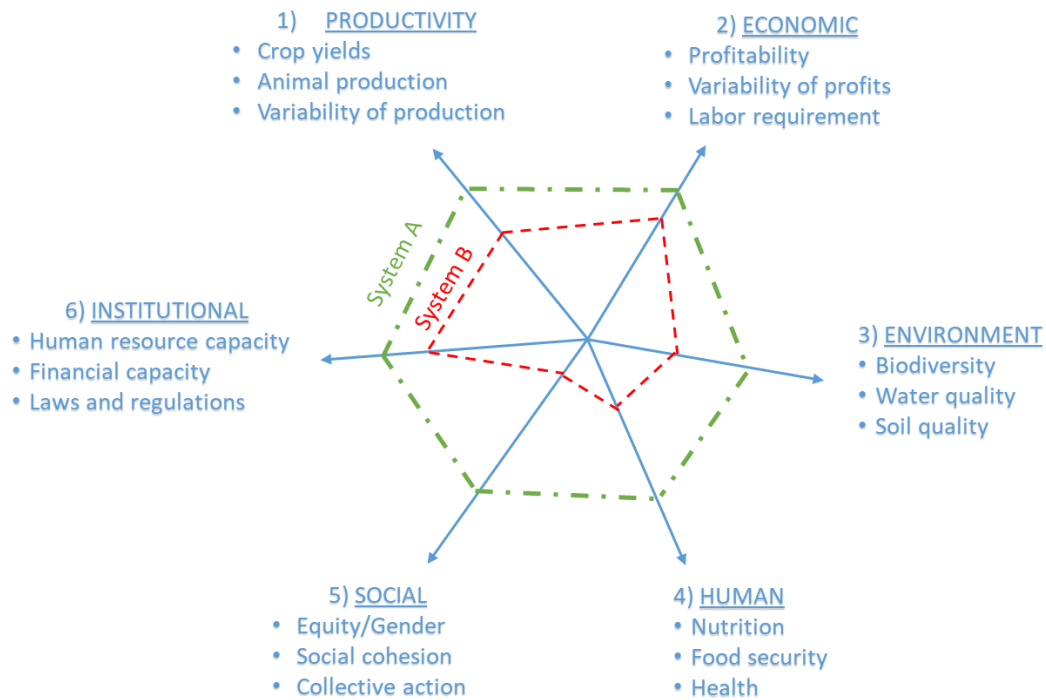


FIGURE 5. Interlinkages across the five domains of sustainable intensification and across spatial scales

Source: Adapted from Musumba et al. (2017)

The framework provides documentation for two main processes in indicator assessment: 1) indicator selection process that is objective-oriented, and 2) identification of tradeoffs and synergies across the five domains. A major strength of this assessment framework is that it provides scientists with tools to examine the process of selecting a balanced set of indicators across domains and an exercise to assess priori the tradeoffs and synergies that an innovation may cause. Figure 5 illustrates the selection of indicators and presentation of the output to stakeholders.

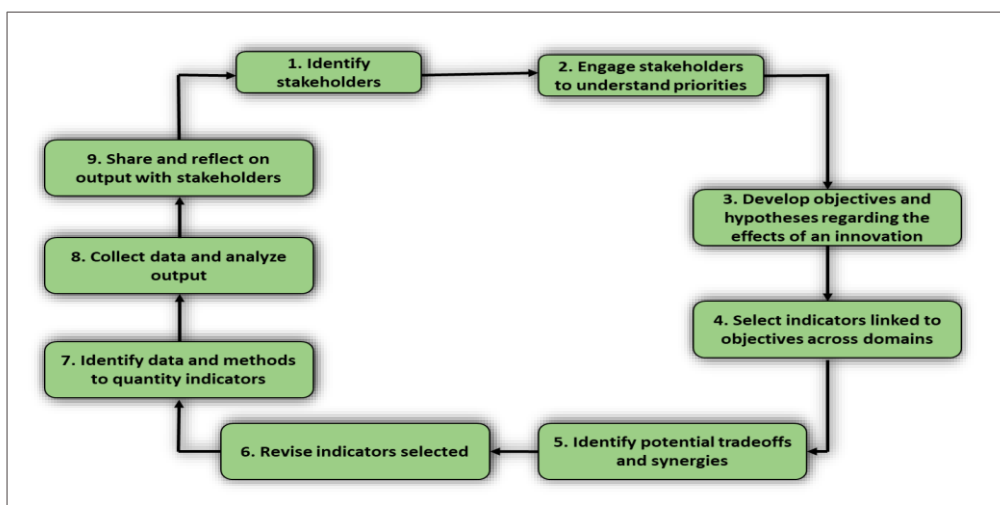


FIGURE 6. Illustration of the process of selecting indicators for landscape assessment

Source: Adopted from Dale et al. (2019)

Selecting the core set of landscape indicators is essential in landscape performance assessment. During this stage stakeholders will determine what will and will not be measured as part of the sustainability assessment. To make this a success, the selection should engage stakeholders and scientists working in different disciplines, not only bring divergent views and perspectives but also to ensure an improved understanding of different aspects of sustainability and arrive at a robust set of indicators. The indicator selection process should be transparent, well defined, and robust to ensure credibility (Latruffe et al. 2016; Dale and Beyeler 2001). It is critical to select set of balanced indicators that consider all the sustainability domains and ensure the involvement of all the relevant stakeholders.

## 6.0 CONCLUSION

Inclusive landscape management planning (ILMP) is essential to ensure the sustainable and equitable management of our landscapes. This guide provides a comprehensive overview of the main principles and steps in developing and implementing an inclusive landscape management plan. The key principles of ILMP are:

- **Participation:** All stakeholders, including marginalized groups, should have a voice in the decision-making and a share in the benefits of landscape management.
- **Sustainability:** Landscape management plans should promote sustainable land-use practices that protect and restore natural ecosystems, improve food security and income, and build resilience to climate change.
- **Equity:** Landscape management plans should seek to ensure that all landscape residents have equitable access to natural resources and opportunities.

The key steps for developing and implementing an inclusive landscape management plan are:

- **Establish a planning team:** The planning team should represent all stakeholders in the landscape, including local communities, indigenous peoples, government agencies, civil society organizations, and the private sector.
- **Conduct a situation analysis:** The situation analysis should assess the current state of the landscape, including its social, ecological, and economic dimensions.
- **Identify the desired future state:** The planning team should work with stakeholders to identify the future state of the landscape. This vision should be based on the needs and aspirations of all stakeholders.
- **Develop management strategies:** The planning team should develop strategies to achieve the desired future state. These strategies should be based on the findings of the situation analysis and should be inclusive and equitable.
- **Implement the plan:** The plan should be implemented through a collaborative process involving all stakeholders.
- **Monitor and evaluate the plan:** The plan should be monitored and evaluated regularly to ensure it is on track to achieve its desired future state.

This guide provides several tools and resources to help you develop and implement an inclusive landscape management plan. We encourage you to use these resources to create a plan tailored to your landscape's specific needs and circumstances. Inclusive landscape management planning,

or ILMP, is a critical tool for ensuring the sustainable and equitable management of landscapes. Following the steps outlined in this guide, you can develop and implement a plan to benefit all stakeholders and protect our landscapes for future generations.

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## APPENDICES

### Appendix A: Potential data/information for participatory landscape planning

The following classes of data or information are generally prerequisites for effective landscape planning.

Category	Data/information
<b>General information</b>	<ol style="list-style-type: none"><li>1. Location</li><li>2. Elevation</li><li>3. Accessibility (roads, distances)</li><li>4. Relevant infrastructure</li><li>5. Administrative division</li></ol>
<b>Climate (annual, seasonal, and monthly distribution, variability, and extremes, projection for future climate change)</b>	<ol style="list-style-type: none"><li>1. Rainfall</li><li>2. Temperature</li><li>3. Wind velocity</li><li>4. Potential evapotranspiration</li><li>5. Growing period</li></ol>
<b>Soils</b>	<ol style="list-style-type: none"><li>1. Relief (slopes)</li><li>2. Erosion</li><li>3. Soil fertility</li><li>4. Other soil related limitations</li></ol>
<b>Hydrology</b>	<ol style="list-style-type: none"><li>1. Rivers and streams (water level, relevant water quality as salinity, acidity, discharge)</li><li>2. Groundwater level and quality</li><li>3. Variations under climate change and sea level rise (if relevant)</li></ol>
<b>Land suitability</b>	<ol style="list-style-type: none"><li>1. Suitability for different land uses</li><li>2. Land capability</li><li>3. Carrying capacity</li></ol>
<b>Actual land uses</b>	<ol style="list-style-type: none"><li>1. Agriculture (major crops, including crop calendar, inputs and outputs)</li><li>2. Livestock</li><li>3. Forestry</li><li>4. Natural vegetation</li><li>5. Other uses</li></ol>

<b>Economy</b>	<ol style="list-style-type: none"> <li>1. Living standard</li> <li>2. Sources of income</li> <li>3. Expenditure pattern</li> <li>4. Agricultural and livestock production</li> <li>5. Farming systems</li> <li>6. Availability of (agricultural) inputs</li> <li>7. Labor availability</li> <li>8. Markets</li> <li>9. Farm size</li> <li>10. Land security and tenure systems</li> </ol>
<b>Sociology/social services</b>	<ol style="list-style-type: none"> <li>1. Demographics (e.g., population, ethnicity, gender, education, skills, etc.)</li> <li>2. Land pressure</li> <li>3. Presence of land-use conflicts</li> <li>4. Inter- and intra-regional migrations</li> <li>5. Settlement pattern</li> <li>6. Housing</li> <li>7. Status of and services for education and health</li> <li>8. Other (social) services such as shops, water supply, etc.</li> <li>9. Presence and effectiveness of local institutions</li> <li>10. Effectiveness of village leadership</li> </ol>
<b>Land management related policies, laws, etc.</b>	<ol style="list-style-type: none"> <li>1. Laws, policies, regulations, etc., concerning land</li> <li>2. By-laws concerning land management</li> </ol>
<b>Active projects in the area</b>	<ol style="list-style-type: none"> <li>1. Sectoral projects</li> <li>2. Integrated projects</li> </ol>
<b>Existing land-use plans and development plans</b>	<ol style="list-style-type: none"> <li>1. Village</li> <li>2. District</li> <li>3. Provincial</li> <li>4. Regional</li> <li>5. National</li> </ol>



## Appendix B: Participatory landscape planning methods/tools

A great deal of information is available on participatory tools adapted for use in community-based forestry facilitation, natural resource management and participatory community development. Table 5 lists commonly used tools, all of which are suitable for PLP – from top-level decision-makers in public institutions to smallholder farmers and villagers – in participatory workshops.

<b>Participatory Tool</b>	<b>Purpose</b>	<b>*Reference</b>
<b>Crosscutting tools PLP</b>		
<b>Brainstorming and grouping</b>	To quickly ascertain relevant information, working with large groups or with small groups of people directly involved in an issue. To pinpoint the issues raised.	1
<b>Building rapport</b>	To develop communication and establish working relationships with the local community.	2
<b>Fishbowl debate</b>	To level the communication "playing field" by reducing the influence of dominant participants and thereby providing opportunities for all to take part (ideal for multistakeholder meetings where there are contentious issues, grievances or conflicts.)	7
<b>Focus groups</b>	To organize people in a community that shares common interests or circumstances in order to address specific issues identified by the community.	1
<b>Guided discussion</b>	To make use of local knowledge, facilitate decision-making processes and guide stakeholders through conflicts.	11
<b>Ranking</b>	Can be used in various ways to arrange groups of issues (derived from brainstorming or other exercises), for example, according to priority.	2, 7, 9
<b>Secondary sources</b>	To supplement other information-gathering techniques and provide a richer picture of the local conditions.	2
<b>Semi-structured dialogue (interviews)</b>	To engage individuals ("key respondents"), families ("representative families") or focus groups on conversations, prompted by a series of open questions.	1,2, 3, 7, 9
<b>Gender analysis</b>	To determine gender differentials in access to sustainable livelihood assets. To assess who has access to the products of family labour, how decisions on those products are made, and how responsibilities are apportioned.	
<b>Tools for appraising general landscape community issues</b>		
<b>Community history chart</b>	To visually portray the changes that have affected community life in recent years in terms of social organization, health, production, and natural resources.	1

<b>Income classification</b>	To identify the main social strata that exist in a community in the eyes of its own members, based on their definitions of "wealth" or "well-being".	1, 8
<b>Livelihoods assessment</b>	To understand income levels within a community, as well as the conditions in which people have access to natural resources and sources of income. To develop a visual breakdown of household income in a community in order to study income levels and differences in access to resources.	1, 8
<b>Mapping services and opportunities</b>	To visually portray the services and employment opportunities known to, and used by, members of a community.	1
<b>Relationship mapping</b>	To explore perceptions of relationships among forest stakeholders, etc.	7
<b>Seasonal analysis</b>	To portray seasonal variations in certain parameters (e.g., yield, incomes, etc.) and activities in community life. To illustrate the relationships that exist between various activities and seasonal changes.	1, 8, 9
<b>Timeline/trend analysis</b>	To identify significant changes in a community's past that continue to influence events and attitudes in the present.	1, 7, 8, 9
<b>Tools for appraising landscape natural resource management</b>		
<b>Conflict analysis matrix</b>	To identify the main sources of conflict in a community.	1
<b>Decision-making analysis matrix</b>	To determine the individuals or institutions responsible for making decisions on issues, such as the use of specified resources.	1
<b>Historical diagramming and mapping of natural resources/timeline</b>	To discuss how natural resources have changed in order to better understand current problems. To assess trends in forest cover or quality and determine the causes of changes.	1, 7
<b>Mapping access to natural resources</b>	To develop a visual breakdown of household access to public natural resources. To determine whether certain members of a community have less access than others to resources.	1
<b>Participatory mapping</b>	To draw maps that reflect community perceptions of how physical space and resources are used. To identify the tentative boundaries, stakeholders and neighbors of community land, forests, and water. To facilitate boundary demarcation. To understand forest types, quality, uses and users. To understand land and water quality uses and users.	1, 5, 7, 8, 10

<b>Simple land, forest and water assessment form</b>	To assess the resources (wood and non-wood) of a community forest (baseline: preparation of management plan).	10
<b>Tools for the analysis of landscape problems and solutions</b>		
<b>Analysis of pros and cons</b>	To foster open dialogue on conflictive subjects using dynamic role-playing to overcome obstacles to discussion.	1
<b>Impact assessment</b>	To analyze ex ante with members of a community the possible or probable consequences of implementing a project or specific action.	1, 9
<b>Problem tree: Cause-and effect diagram</b>	To probe the root causes of forest-related problems and enable analyses of the interlinkages among causes and effects	7, 9
<b>Solution evaluation matrix</b>	To evaluate ex ante with a community the feasibility or sustainability of the various solutions considered.	1
<b>Solution tree</b>	To identify strategies for tackling the causes of problems identified in a problem analysis (acts as a bridge to management planning).	7
<b>Selected tools for planning</b>		
<b>Action (activity) plan matrix</b>	To mobilize the capacity of people to design plans of action.	1
<b>Matrix of needs and available resources</b>	To identify the resources needed to achieve objectives (e.g., money, supplies, technical personnel, and human, and natural resources).	1
<b>Visioning/guided visualization</b>	To assess expectations for participatory forest management or sustainable forest management, as a step towards developing forest management plans by identifying aspirations, goals and activities.	7, 9
<b>Selected tools for participatory monitoring and evaluation</b>		
<b>Follow-up and evaluation planning matrix</b>	To draw up matrices for planning participatory monitoring (or follow-up) and evaluation processes.	1
<b>Follow-up indicator matrix</b>	To draw up matrices showing the indicators to be used in monitoring or follow-up on landscape management plan (LMP).	1
<b>Impact assessment</b>	To draw up matrices with the indicators to be used in evaluating the impacts of the implementation of the LMP	1, 9
<b>Strength, Weaknesses and Recommendations (SWR) analysis</b>	To review the 1-year work plan to encourage learning from strengths and weaknesses and to look to the future based on lessons from the past (an adaptation and simplification of SWOT).	7
<b>Selected tools for participatory conflict and partnership management</b>		

<b>Conflict analysis</b>	To examine the rights, responsibilities, and benefits of stakeholders in relation to a resource as part of improving understanding of conflicts.	4,5,6,7
<b>Conflict mapping</b>	To show geographically where land-use or resource-use conflicts exist or may exist in the future. To determine the primary issues of conflict.	4,5,6
<b>Conflict timeline</b>	To assist stakeholders in examining the history of conflicts and in increasing their understanding of the sequence of events that led to those conflicts.	4,5,6
<b>SWOT analysis</b>	To analyze the internal strengths and weaknesses of organizations or groups of stakeholders and the external opportunities and threats they face.	4,5,6
<b>Venn diagram of stakeholders</b>	To analyze and illustrate the nature of relationships among key stakeholder groups.	4,5,6, 8, 9

*Source:* Adapted from FAO (2023)

**Note:** Numbers refer to the following references: 1. Geilfus (2008); 2. Jackson and Ingles (1998); 3. Lecup and Nicholson (2004); 4. Means and Josayma (2002); 5. Evans et al. (2006); 6. Engel and Korf (2005); 7. Said and O'Hara (2010); 8. Wilde (2001); 9. VSO (2009); 10. Gambia Forestry Department (2005, 2011); 11. SVAW (2015).

## **Appendix C: Development of Inclusive Landscape Management Plan (ILMP): Community-level engagement**

**Day 1:** Community engagement (2 FGDs per community) to develop shared vision, goals and objectives and identify strategic activities to achieve them.

### **Activity 1: Ranking of Challenges/Issues (Group Discussions) (30- 45 Mins)**

Community representatives will be divided into mixed/representative groups depending on the number present. Each group should have a maximum of 8-10 people.

The technical team needs to analyze the gender dynamics in the area. If mixing both men and women in the same groups could cause the women to be shy or afraid to express themselves, then it may be prudent to have separate groups for men and women. Having separate groups also ensures that the often-distinct perspectives from these 2 groups are captured.

The identified challenges/issues and objectives from Activity 2 will be quickly collated and written/pasted on flip charts. Participants in each group will then be asked to select the two most important challenges/issues and objectives under each of the SI domains (see Figure 5). This can be done by using small stickers with different colours to identify the different groups or markers of different colors in case small stickers are not available (everyone in the group votes by sticking a dot on their 2 top challenges and 2 top objectives).

### **Activity 2: Identification of strategies and responsibilities (Group Discussions)**

After the ranking exercise there will be a short break (20 mins), the facilitator will quickly collate the prioritized challenges/issues and objectives for each group and present them to the group

after the break. Participants still in their groups will then identify key strategies or activities that would enable them to achieve the prioritized objectives.

They will try to fill in the table below by focusing on the prioritized objectives. The main target is to get participants to think about strategies and responsibilities. If time permits, they can also explore the resources and timelines. Each group also discusses and agree on a shared vision, which encapsulates the objectives they have prioritized.

**Table: Guide for Community engagements through FGDs**

Planning domain by considering SI	Current state of landscape	Shared goals/objectives for the landscape	Strategic activities to achieve objectives/goals
Production			
Economic			
Social			
Human			
Environment			
Institutional			

**Activity 3:** Groups present the results of their discussions to plenary

Each of the groups present their shared visions and summary tables to plenary for discussion

At plenary and with the help of facilitator, participants will agree on a shared vision or the key elements they would like to see in the shared vision.

Wrap-up and presentation of next steps to community (30 mins).

At the end of the day, the meeting facilitators will meet to compile the information for the next meeting date.

**Appendix D: Development of Inclusive Landscape Management Plan (ILMP): District-level engagement with expert group and community stakeholders**

**Day 2:** Workshop with expert group and stakeholder groups from community

**Activity 1:** PowerPoint presentation of overview of Landscape Situational Analysis-LSA (Plenary)

- Summary of situation analysis including main challenges identified
- Presentation of consolidated outcome of community engagement from Day 1
- Presentations by citizen scientists

**Activity 2:** Discuss summary from community engagements and consolidate shared vision, goals and strategies (**Group discussion following Table below**)

- Participants will be divided into 5 groups according to the landscape planning domains. The groups would be as diverse and multistakeholder as possible. Maximum of 10–12 people in a group.
- Each group would make inputs into the table from the community engagement by fully developing the objectives, strategies, responsibilities, resources, and timelines.
- Each group will then review the vision and vision elements from the community level and propose a shared vision for the landscape.

**Table: Guide for District engagements**

Planning domain by considering SI	Current state of landscape	Goals/objectives	Strategic activities	Responsibility	Resources	Timeline
Productivity						
Economic						
Environmental						
Human						
Social						
Institutional						

**Activity 3:** Groups present the results of their discussions to plenary

Each of the groups present their shared visions and summary tables to plenary for discussion.

At plenary, and with the help of facilitator, participants will agree on **a shared vision**.

**Day 3:** Workshop with expert/stakeholder groups from the community

1. Finalize **Day 2** activities with expert/stakeholder group

## 2. Participatory land use mapping/planning

### Guide for participatory land-use mapping/planning

Based on the vision, goals/objectives and the strategic activities set by communities and validated by experts, the facilitator will engage the 5 stakeholder groups in:

- i. Zoning and Land Allocation:
  - Collaboratively designate different zones for various land uses, such as residential, agricultural, mining, industrial, conservation, and recreational.
  - Determine the appropriate size and location of each zone based on the community's vision, goals, and strategic activities.
- ii. Locations of any interventions and technologies:
  - Indicate in the landscape spatially where any interventions, practices or technologies proposed on the strategies from day 2.
  - Present these locations to stakeholders and gather their feedback and preferences.
- iii. Tradeoff Analysis:
  - Evaluate the benefits and tradeoffs associated with each scenario in terms of environmental, social, and economic aspects.
  - Discuss the tradeoffs with stakeholders to inform decision-making.