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Co-designing Inclusive Landscape Management Plans: A Training Manual

Trainer's Manual for Implementers

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Disclaimer

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List of Abbreviation

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
GIS	Geographic Information System
GWP	Global Water Partnership
IIRR	International Institute for Rural Reconstruction
ILMP	Inclusive Landscape Management Plan
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

Introduction

Inclusive landscape management (ILM) is a comprehensive and adaptive approach that focuses on planning, implementing, and managing the interrelations between human activities and natural ecosystems through active stakeholder participation. It focuses on integrating social and ecological systems, local participation, and sustainable resource use within natural and human-modified landscapes by the local government and other implementers. Here, landscape is a physical boundary such as watersheds or any boundary that recognizes the interconnection among different resource systems including land uses and its management and people. ILM integrates multiple land uses and stakeholders to achieve sustainable landscapes. This holistic method ensures that diverse stakeholders, including marginalized and vulnerable groups, are involved in the decision-making process. ILM aims to create productive, biodiverse landscapes, and support the well-being and livelihoods of the people who depend on them. The goal is to co-design and implement strategies for land use and resource management that are environmentally sustainable, socially equitable, and economically viable. Key principles of ILM include meaningful stakeholder participation, equity and social justice, sustainability, transparency and accountability, and adaptive management.

The ILM starts with planning (hereafter ILMP) and lies in its ability to create equitable and inclusive processes that address the diverse needs of all stakeholders. By promoting social equity and justice, ILMP ensures that the benefits and responsibilities of landscape management are distributed fairly, fostering a sense of ownership and commitment among community members. This approach also enhances landscape resilience by considering the interconnectedness of ecological, economic, and social systems, enabling communities to better respond to environmental changes and challenges. The collaborative nature of ILMP facilitates innovative solutions, reduces conflicts, and builds trust through transparency and shared decision-making. Additionally, the adaptability of ILMP supports continuous improvement based on stakeholder feedback and evolving conditions, ensuring that landscape management practices remain relevant and effective over time. Overall, ILMP is crucial for achieving sustainable development, fostering resilient communities, and protecting the natural environment, benefiting both people and nature.

The ILMP should follow the pathway of a co-design approach which is an adaptive and inclusive landscape by creating strategies that are sensitive to health, promote sustainable intensification, and are embedded within local and national governance systems (Tilahun et al., 2023). The co-design process aims to develop a landscape management plan integrating ecosystem functions, social processes, and land management within existing government frameworks. An inclusive landscape management plan (ILMP) includes considering a resource system (e.g. land uses and its management), resource units (e.g. crops, livestock, or water bodies, etc.), a governance system (e.g. government agencies and traditional bodies), and users (Atampugre et al., 2023). The co-design process involves assessing current situations and alternative scenarios of resource systems, resource units, and governance in the landscape through inclusive participation of all stakeholders. One could use the sustainable intensification (SI) domains and indicators such as productivity, economic, social, human well-being, and environment, including an additional domain of institutions to define current situations and future scenarios in an iterative design process that incorporates stakeholder perspectives, piloting, and learning through monitoring and evaluation.

About this Manual

This Manual was designed and developed as part of the Transforming Agrifood Systems in West and Central Africa Initiative (TAFS-WCA) to provide additional perspectives to existing inclusive landscape management (ILM) practical guides (1000 Landscapes for 1 Billion People, 2022; Thaxton et al. 2017). In this manual, we place more explicit focus on: (i) Gender equality and social inclusion (GESI) analysis, and integration of marginalized groups; (ii) Co-design and implementation of an ILM plan (ILMP); and (iii) Detailed step-by-step guide with specific tools on how to develop and implement an ILMP. This is to further guide landscape conveners, implementers, facilitators, and stakeholders in acquiring the necessary knowledge base and tools to practice ILM. To scale the adoption of the ILM approach, it is crucial to enhance the capacities of numerous stakeholders such as Planning Officers/Planning department of local authorities or related expertise within various institutions, programs, and projects involved in developing landscape-related management plans, strategies, and policies. This manual is also tailored for a diverse audience of professionals and stakeholders involved in the planning and implementation of landscape management. It is an essential resource for creating inclusive, equitable, and sustainable landscapes through active stakeholder participation and collaboration, while ensuring that landscape management plans are effective in meeting current needs. It also allows for adaptability to future challenges and changes, leading to sustainable outcomes that benefit both people and the environment.

How to use this Manual

This manual has been structured into four main chapters as shown in Table 1, to offer the basic background knowledge on concepts and principles of ILM and the various steps involved in carrying out an ILMP.

Table 1. Chapters of the manual

Chapter	**Content**
1	Preparing to facilitate the process
2	Conducting Situational Analysis
3	Developing and implementing the Inclusive Landscape Management Plans (ILMP)
4	Implementation and Monitoring

Chapter 1: Preparing to Facilitate the Process

This part of the manual serves as preparatory material for facilitators or trainers who are completely new to inclusive landscape management and have been tasked to lead the process of developing inclusive landscape management plans. This is also useful for facilitators or trainers who need refresher training on the processes. The sessions under this chapter cover why inclusive landscape management is important, definitions and principles of inclusive landscape management, and facilitation skills for inclusive landscape management.

Section 1. Why Inclusive Landscape Management?

Natural resources in developing countries, especially in Sub-Saharan Africa, face increasing pressure from deforestation, land degradation, poor water management, unsustainable mining, wildlife poaching, and climate change, driven by both human and natural factors (FAO, 2020; World Bank, 2019). These pressures hinder the agrifood systems' ability to utilize the landscape's potential to sustain its growing population (FAO, 2020). Various terms and concepts have been used to describe natural resource management in the landscape, such as Watershed Management, Integrated Water Resources Management, and Sustainable Landscape Management (Reed & Stringer, 2016). The primary challenge lies in the current landscape management practices, which often focus solely on natural resource development and overlook the importance of socio-ecological and participatory approaches (Berkes and Folke, 1998; Warner, 2016). The socio-ecological landscape management approach is gaining acceptance due to its inclusivity and integration of social and ecological systems through co-design and participatory processes. This inclusive and co-design approach is particularly relevant to agrifood systems, as it fosters stakeholder collaboration, innovation, risk resilience, resource sustainability, and community satisfaction (Warner, 2016). By promoting these aspects, inclusive landscape management can address the challenges of resource pressures and enhance the sustainability and productivity of agrifood systems in Sub-Saharan Africa.

To achieve widespread adoption of the inclusive landscape management approach, it is crucial to train numerous practitioners associated with various institutions, programs, and projects involved in developing landscape-related management plans, strategies, and policies. This manual is a tailored resource for a diverse audience such as practitioners and stakeholders involved in the planning and implementation of landscape management. It is an essential resource for creating inclusive, equitable, and sustainable landscapes through active stakeholder participation and collaboration. It touches on the theoretical and practical elements and thoroughly addresses the different phases of the inclusive landscape management approach. This includes:

1. **Theoretical Foundation**: Provides a robust understanding of the principles of inclusive landscape management, such as stakeholder engagement, socio-ecological system integration, sustainability, and adaptive management. It should also explore the significance of equity and social justice in landscape management and the role of diverse stakeholder groups in creating resilient and sustainable landscapes.
2. **Practical Application**: Details the methodologies and tools necessary for effectively engaging stakeholders throughout the planning and implementation processes. This part of the guide includes hands-on activities that allow practitioners to experience the co-design process, stakeholder engagement techniques, and conflict resolution strategies.
3. **Stages of Implementation**: The guide outlines the various stages of the ILM approach, from initial assessments and narrative development to resource mapping, plan formulation, and monitoring

and evaluation. For each stage, the guide will provide clear instructions, checklists, and examples of best practices from successful ILM projects.

4. **Integration into Existing Systems**: The guide also focuses on how the ILM approach can be integrated into existing governance frameworks and aligned with local, national, and international policies and regulations. This ensures that ILM practices are theoretically sound and practically feasible and legally and institutionally supported.
5. **Adaptive Strategies and Continuous Learning**: Emphasizing the importance of adaptive management, the guide prepares the facilitator to anticipate and respond to changes in the landscape's socio-ecological dynamics. This includes training on the use of innovative tools and technologies for monitoring landscape changes and stakeholder feedback mechanisms.

Section 2. Definitions and Principles of Inclusive Landscape Management

The manual for inclusive landscape management planning prioritizes the active participation and collaboration of multiple actors, including stakeholders, end-users, and other relevant parties. It requires working with a shared understanding of the definition and principles of inclusive landscape management by all stakeholders. In this section, we explain the definition, principles and key concepts of inclusive landscape management.

This is crucial for achieving the objectives of inclusive landscape development. The following definition and principles of inclusive landscape management integrate multiple land uses and stakeholders to achieve sustainable landscapes.

Key Definitions

- *Inclusive Landscape Management:* It is defined as a process that emphasizes the integration of social and ecological systems, local participation, and sustainable resource use within landscapes.

- *A Landscape or Watershed:* It is defined as a hydrological boundary identified by GIS tools and constitutes one or more resource systems.

- *A Resource System:* It 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 area with crops, livestock, and water systems. It could also be an agroforestry area with forests, crops, wild animals, and water systems.

- *A Resource Unit*: It 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, livestock types, and water amount and quality.

- *The Governance System:* It 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:* It is defined as individuals or groups of individuals who use the land for their livelihoods and other purposes.

- *Regional or Local Experts:* These 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.

Key Concepts and Principles

- *Stakeholder Participation*: The active participation of local communities in landscape development and management is essential to sustaining the landscape. Therefore, communities need to be involved in all stages of planning, implementation, and management of landscape development activities. It is a continuous process and not a one-time exercise. Different participatory techniques are used based on existing and innovative experiences.

- *Gender Equity and Social Inclusion*: Women and youth are the most affected by environmental degradation. They need to walk long hours to fetch increasingly scarce water and firewood, which results from the degradation and depletion of water resources, forests, and woodlands. Their involvement in landscape development planning, implementation, and management is key to ensuring that they equally benefit from various interventions.

- *Building Upon Local Experience and Adaptive Management*: Local knowledge is essential to improving existing technologies, adapting new ones, and managing natural resources and other measures introduced and established. Applying flexible strategies that can be adjusted in response to new information and changing conditions is key.

- *Sustainability*: Integrating ecological, economic, and social dimensions to promote sustainable land use practices. Fostering resilience to environmental changes and socioeconomic shifts.

- *Transparency and Accountability:* Promoting open communication and information sharing among stakeholders. Establishing mechanisms for accountability and feedback to build trust and ensure responsible management.

Section 3. Flexibility of Inclusive Landscape Management

Inclusive landscape management can be applied to all landscapes or watersheds, administrative areas, and agro-ecological zones but needs to be tailored to the local context. The planning approach can be adapted to suit different landscape sizes and to accommodate different communities and their boundaries. Relationships between communities and landscapes, as well as the application of various sustainable land and water management technologies under different conditions, can also be accommodated. Adaptability is also required to treat landscapes with various measures. Numerous relationships as well as sub-divisions can be identified at the landscape level.

Section 4. Facilitation Skills for Inclusive Landscape Management

Preparing for inclusive landscape management requires excellent facilitation skills and identification of relevant tools to use. The facilitator should be someone with the following traits and characteristics. The facilitator should be:

- Someone with authority and who commands respect
- Have integrity

- Have basic knowledge in natural resources management including social aspects, biodiversity, and ecosystem.
- Good facilitator, unbiased and independent
- Must not be part of a stakeholder group in the landscape.

In preparation for a meeting or workshop, the facilitator should prepare adequately for the stakeholder sessions by arranging all necessary logistics for the meetings and workshops ahead of time.

- Suitable venue for the meetings and workshops (facilitator may require the support of some local people on the ground for ground assessment beforehand)
- Transportation and accommodation arrangements (if required) for participating stakeholders.
- Refreshments and water for the meetings and workshops
- Requisite stationery for the meetings
- Any equipment as required, like projectors, microphones, sound systems etc.
- Make provision for language translation.
- Prepare presentations, discussion points, and note-takers beforehand.

Creating a Conducive Environment for Participation

The facilitator should ensure inclusive, safe, and respectful discussions. Also, ensure stakeholders are comfortable and energized throughout the meetings. Some of the ways to create a conducive environment are by:

- Welcoming stakeholders and asking them to introduce themselves.
- Finding out participants' expectations
- Setting ground rules
- Communicating the duration of the meetings
- Making the meetings lively through the interactive engagement of stakeholders
- Taking various languages into consideration.
- Being GESI-responsive
- Allowing open and free communication
- Minimizing dominating views
- Active listening
- Strategies for resolving disagreements.

Chapter 2: Conducting Situational Analysis

This part of the manual outlines how a baseline data collection or what is referred to as a situational analysis in a landscape could be carried out. This baseline data and information will inform the management process. This is obtained by conducting a situation analysis of the targeted landscape's biophysical, hydrological, socio-economic, and livelihood assessment. The situation analysis is used to establish the baseline scenario before the implementation of practices and to help assess landscape pressures and impacts, including drivers of change and responses. The section in this chapter offers easy-to-follow steps and suggested activities that can be adapted to different contexts of landscapes. It outlines how to select a landscape, stakeholders' analyses, conduct GESI analysis, and collect biophysical data for decision-making. This is useful for trainers or facilitators who are completely new to working with landscapes or could also serve as supplementary resource for facilitators already working in landscapes.

Section 1. Selection of a framework to guide data collection for the situational analysis

Selecting a suitable framework to guide situational analysis of the landscape is key to capturing all the relevant dimensions of the landscape. In this manual, we used the Driving Force-Pressure-State-Impact-Response (DPSIR) framework described in Box 1. The DPSIR framework is a structured approach used to analyze socio-ecology and situational analysis of landscapes.

Box 1. An example data collection using DPSIR framework in Ghana.

DPSIR framework

Driving Forces motivate human activities and fulfill basic human needs, consistently identified as the necessary conditions and materials for a good life, good health, good social relations, security, and freedom. Driving forces describe "the social, demographic, and economic developments in societies". Social determinants also have a strong influence on SEL dynamics. Therefore, for this framework, driving forces have been broadened to include socio-cultural and political factors. Accordingly, during the stakeholder workshops, focus group discussions (FGDs) and key informant interviews (KIIs), respondents were asked about what they thought motivated the type of land uses in and around their communities.

In this paper's context, Dynamic Pressures are human activities derived from the functioning of natural, social and economic driving forces that induce changes in the environment or human systems. For this study, participants were asked about: (i) Land use changes resulting from alterations in the natural landscape; (ii) Discharges of pollutants that may result from the operation of industries or vehicles or the diffused distribution of contaminants from agricultural lands, mine sites, or roads through groundwater or storm-water run-off, etc., (iii) Contact uses activities that lead to a direct alteration or manipulation of the open/closed vegetation, water resources, or land, including: (iv) Physical damage – direct degradation through mining, dredging, and filling, deforestation; (v) Biological addition – ballast discharge, the release of non-natives, feeding, creation of artificial habitat; (vi) Biological harvest – harvesting, fishing, accidental by-catch, clear-cutting. The State of the landscape in this work refers to the state of the natural and built environment. From respondents, information was sought on the quantity and quality of the following components of the landscape:(i) physical, (ii) chemical, (iii) biological, (iv) and human systems. With regards to impacts on ecosystems and human well-being, the notion is that changes in an ecosystem's structure, functioning, and composition will impact the production of ecosystem goods and services and, ultimately, human well-being through, for example, health and food insecurity. For the impacts on ecosystem goods and services, the study sorts of

data/information on: (i) Provisioning services, (ii) Regulating services, (iii) Cultural services, and (iv) Supporting processes.

On the impacts on human wellbeing, as abstract as the concept is, the study tried to get qualitative information on a mixture of people's life circumstances and the degree of fulfillment of basic human needs for food, water, health, security, culture, and shelter. Human well-being reflects a positive physical, mental, and social state. For this paper, human well-being includes Economic prosperity (e.g., productivity, ability to work, income), Health and safety (e.g., life span, medical or insurance costs, sick days, pain and suffering), Cultural and social well-being (e.g., "happiness", sense of belonging, community vibrancy, spiritual fulfillment).

Responses: A key benefit of using the DPSIR-SEL framework is that it explicitly includes an Action or Response component that can be taken at any level of the causal network. In the DPSIR-SEL assessment framework, responses are considered actions taken by groups or individuals in society and (non) governmental institutions to: (i) prevent, (ii) compensate, (iii) ameliorate, (iv) adapt to changes in the state of the environment, (v) modify human behaviors that contribute to health risks and (vi) directly modify health through medical treatments or to compensate for social or economic impacts of the human condition on human well-being. Responses may be directed at driving forces, pressures, landscape state, or impacts. Responses were solicited from participants and review of official reports.

Qualitative data collection and analysis for DPSIR

The primary data were largely qualitative. In AASWD (case study 1), nine parallel FGDs and Participatory Rural Appraisal (PRA) sessions were carried out. These sessions engaged not only community members but also community leaders. Simultaneously, a comprehensive set of 12 institutional interviews was conducted, encompassing vital entities such as the Agricultural Department, Forestry Department, Education Directorate, Health Directorate, Ambulance Services, Social Welfare and Community Development, Environmental Health and Sanitation, Judiciary (Registrar), National Commission for Civic Education (NCCE), Commission for Human Rights and Administrative Justice (CHRAJ), and the Police. Consent forms were methodically employed to ensure a foundation for informed consent before the participants' involvement. Privacy safeguards have been established by applying pseudo-identification methodologies. Participants were educated on the study's objectives to mitigate potential response biases rooted in social desirability. Comprehensive records were maintained for all interviews and focus group discussions, each with the participants' explicit consent.

Section 2. Selection of Landscapes/Watersheds

Step 1. Setting Criteria for landscape selection

Landscape management planning is preceded by the selection and prioritization of the target landscape. It is important to set a criterion or a set of criteria to help select and prioritize the landscape. This should be guided by local needs or strategy from the government, which may include funding, the timing, identified land and water challenges, demand for intervention, existing infrastructure orsting state of the landscape, including its ecological health, land use, and socio-economic factors. This assessment should identify areas of degradation, deforestation, or other forms of environmental stress. An example of criteria used in Nigeria is described in Box 2.

Box 2. Landscape selection criteria used in Nigeria and Ghana

Nigeria:	**Ghana:**
In the build-up to the selection of the site for a situational analysis involving experts from IWMI and the consulting team in Nigeria, several themes were outlined throughout the discussions for the initiative's case including: ● Case landscape location: Nigeria requires the site to be in the zone of natural vegetation transition. ● Considerable degradation associated with competing land uses, such as forestry, agriculture, and the growth of settlements. ● Considerably fishing and aquaculture practice. ● Watersheds and associated concerns: water quantity and quality, as well as efficient water usage. ● Current landscape management programs and low-hanging fruit. ● Organizations and associated initiatives, such as TAAT, and AfricaRice. ● Current multi-stakeholder forums and platforms. Consequently, the Doma-Rutu Landscape (DRL) was selected. DRL is located within latitude 80 17' 32" to 80 26' 48" N and longitude 80 12' 34" to 80 23' 16" E, with altitude ranging from 73m above sea level around the Mada River to 217 m above sea level southwest of the Doma Dam.	The criteria below were informed by two expert workshops facilitated in Ghana by IWMI (i.e. the WP3 team) and one workshop in Ivory Coast by the TAFS-WCA partner institutions. During these engagements, several themes/items were outlined for the selection of case landscapes for the initiative: ● Location of case landscape: In the case of Ghana, the site must be in the forest transition zone. ● Significant competing land uses and related degradation (e.g., Agriculture, Forestry, Mining, settlement expansion, Chain-saw operations, etc.). ● Types of crops: vegetables, sweet potato, rice, cassava, plantain, cowpea, cocoa, Yam, maize, cocoyam. ● Fishing and aquaculture ● Watersheds and related issues: quantity and quality water and productive water use. ● Existing landscape management initiatives/Low-hanging-fruits (preferably CGIAR institutions and related projects- e.g., International Institute of Tropical Agriculture (IITA), Alliance Bioversity-CIAT, AfricaRice, Technologies for African Agricultural Transformation II (TAAT II), Accelerating Impacts of CGIAR Climate Research for Accra (AICCRA), Climate Change, Agriculture and Food Security (CCAFS), The West African Agricultural Productivity Programme (WAAPP), Integrated Agriculture Research for Development (IAR4D), etc.). ● Existing multi-stakeholder platforms/forums

Step 2. Stakeholder Mapping and Engagement

For the purposes of this manual, a stakeholder refers to an individual, or a group of individuals, or an organization/institution that is directly or indirectly interested in a process or that is affected by a process directly or indirectly because they manage resources, set rules, can influence, or can be affected by goals, rules, or activities. Therefore, any institution and user (as defined in section 2 of chapter 1) 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. Stakeholders can be categorized as a group when they share comparable goals and interests, due to their (livelihood) activities or institutional mandates.

- *Identification of relevant stakeholders*

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. To help identify relevant stakeholders and their level of influence, 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 of women, youth, people with disabilities, or migrants any other that should be considered?
- Where are they exactly located within the landscape?

During this process, 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

- *Stakeholder analysis*

Once the relevant stakeholders have been identified as described above, the next step is to analyze their interests. Typically, a stakeholder analysis exercise will involve answering questions in a tool (Table 2) such as:

- 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 2. Stakeholder analysis tool

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

Source: WWF (2005)

Step 3. Gender equity and social inclusion (GESI) analysis

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 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 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.

Steps in conducting GESI analysis as part of situational analysis

1. Define Objectives and Scope
    - Clarify the goals of the GESI analysis (e.g., identifying barriers, needs, and opportunities for marginalized groups).
    - Specify the geographic area, sectors, and social groups to be studied (e.g., women, youth, ethnic minorities, persons with disabilities).
2. Stakeholder Mapping and Engagement
    - Identify key stakeholders (community members, local authorities, NGOs, etc.) with a focus on diverse social and gender groups.
    - Ensure representation of marginalized voices through participatory approaches.
3. Data Collection
    - Desk Review: Analyze existing reports, policies, and data on GESI in the context of the landscape.
    - Field Research:

- Conduct focus group discussions (FGDs) and interviews with diverse groups (men, women, youth, elders).
- Use participatory tools (e.g., gender mapping, seasonal calendars).
- Gather quantitative and qualitative data disaggregated by gender, age, ethnicity, and other relevant factors.

4. Identify GESI Issues and Constraints
    - Assess structural, cultural, and institutional barriers to equality and inclusion.
    - Examine access to and control over resources, participation in decision-making, and livelihood opportunities.
5. Analyze Power Dynamics
    - Understand how power relations affect inclusion and equity in resource use and decision-making.
    - Map social norms and behaviors that hinder or promote equality.
6. Synthesize and Validate Findings
    - Summarize key findings with clear evidence of inequalities and their drivers.
    - Share findings with stakeholders, especially marginalized groups, for validation and refinement.
7. Develop Recommendations
    - Suggest actionable strategies to address identified barriers and promote inclusivity in the specific context.

NB:

- Cultural Sensitivity: Respect local norms while promoting equality.
- Intersectionality: Recognize how overlapping identities (e.g., gender, ethnicity, disability) create unique experiences of exclusion.
- Sustainability: Focus on long-term solutions that build local ownership and capacity for inclusivity.

Step 4. Data collection and analysis for Situational analysis

➢ *Data type*

To be able describe the baseline scenario of a landscape prior to any intervention, there must be data collection and analysis. This is what we refer to as conducting a situational analysis. Data requirements for the baseline assessment include but not limited to:

- Biophysical data (e.g., Data on land use, Data on soil health, Data on water quantity and quality, biodiversity, etc.)
- Socio-economic data (e.g., population dynamics, economic activities, social infrastructure, etc.)

These data requirements for effective landscape planning are classified into following information categories in Table 3:

Table 3. Potential data/information for inclusive landscape planning

Category	**Data/information**
General information	Location
	Elevation
	Accessibility (road, distances)
	Relevant infrastructure

	Administrative division
	Pollution (water and soil)
Climate (annual, seasonal, and monthly distribution, variability, and extremes, projection for future climate change)	Rainfall
	Temperature
	Wind velocity
	Potential evapotranspiration
	Growing period
Soils	Relief (slopes)
	Erosion
	Soil fertility
	Other soil-related limitations
Hydrology	Rivers and streams (water level, relevant water quality as salinity, acidity, discharge)
	Groundwater level and quality
	Variations under climate change and sea level rise (if relevant)
Land suitability	Suitability for different land uses
	Land capability
	Carrying capacity
Actual land uses	Agriculture (major crops, including crop calendar, inputs and outputs)
	Livestock
	Forestry
	Natural vegetation
	Other uses
Economy	Living standard
	Sources of income
	Expenditure pattern
	Agricultural and livestock production
	Farming systems
	Availability of (agricultural) inputs
	Labor availability
	Markets
	Farm size
	Land security and tenure systems
Sociology/social services	Demographics (e.g., population, ethnicity, gender, education, skills, etc.)
	Land pressure
	Presence of land-use conflicts
	Inter and intra-regional migrations
	Settlement pattern
	Housing
	Status of infrastructure and services for education and health
	Other (social) services such as shops, water supply, etc.
	Presence and effectiveness of local institutions
	Effectiveness of village leadership
	Laws, policies, regulations, etc., concerning land

Land management related policies, laws, etc.	By-laws concerning land management
Active projects in the area	Sectoral projects
	Integrated projects
Existing land-use plans and development	Village
	District
	Provincial
	Regional
	National

- *Data collection tools*

Data collection tools or a combination of tools should be used. The tools can be either primary data collection tools or secondary data collection tools. Examples of primary data collection tools are focus group discussions (FGDs), In-depth interviews (IDIs), participatory resource assessment (PRA), Key informant interviews (KIIs) etc. For secondary data tools, examples can include geospatial datasets, demographic datasets, etc. In the study in Ghana, the secondary data used, and their sources are described in Table 4.

Table 4. Secondary data used in the study

Available Data	**Source**	**Purpose**	**Year**
Socio-demographic and economic data	Ghana Statistical Service	Profile of study districts/communities	2021 population census
Satellite images	European Space Agency, NASA	Land Cover/Land use mapping	1986 – 2022
Digital Elevation models	NASA	Watershed and Topographic Mapping	2013 – 2017
Forest/Game Reserves	Forestry Commission	Protected area mapping	
Roads	Roads and Highways		2021
Streams and Rivers	Hydrological Services Department	Drainage Density, Watershed delineation, water quantity and quality assessment	2021

For primary data collection, FGDs, IDIs, and PRA are used appropriately. An example of how the primary data using FGD was collected in a study in Ghana is described in Box 3. Additionally, the use of a citizen science research approach in collecting primary data, especially on hydrological monitoring offers a convenient avenue for precise data collection. This can be used to collect data biophysical data described above for the baseline assessment. Refer to Box 6 below for resources on how to train and use citizen scientists to collect data for baseline assessment.

Box 3. Some primary data collection in Ghana

During the fieldwork which was conducted in 3 communities within the Offin sub-basin in the Ahafo Ano Southwest district (Kunso, Baniekrom, and Mmrobem). The FGDs were categorized in two; one with the heads (unit committee members, assembly members, chiefs, and elders) held in the District

Assembly's Hall in Mankranso (Plate 1) and the other with the community members in each community under study. FGDs with community members were also into two separate groups (male and female) and included traders, farmers, and those into illegal mining (galamsey) who have been residents of the community for over ten years and could give information on the research themes. After each FGD, participatory resource mapping activities (Plate 2) followed. Issues discussed during the focused group discussions/participatory mapping included: Agricultural production and other competing land use systems; conservation, maintenance, and restoration of wild biodiversity and ecosystem services; sustained/enhanced livelihoods and well-being for all social groups in the landscape; establishment and maintenance of institutions for inclusive governance/management, ongoing planning, negotiation, implementation, resource mobilization, and capacity-building in support of social-ecological landscape sustainability.

Plate 1: Focused group discussions in Mankranso **Credit**: IWMI

Plate 1: Participatory resource mapping activities by the focus group **Credit**: IWMI

Key informant interviews with institutions were done based on the preferred time and day within the research period. This was arranged with the institutional heads who formed part of the research. The themes that guided the interviews were: What is the state of natural resources and ecosystems? How are the institutions helping to solve the problems surrounding resource use? What are the challenges related to natural resource management in the district? What are the institution's working conditions in relation to (most prevailing issues, performance, challenges, relationships with other institutions, etc.)? After each interview, researchers requested data/reports on the discussed issues from institutions.

- *Data Analysis*

Baseline data collected should be analyzed using simple techniques for data analyses and visualization for decision-making. This should not be too scientific or complex in visualization and presentation. Two kinds of analyses are carried out namely quantitative data analysis and qualitative data analysis.

Quantitative Data Analysis

The quantitative data analysis involves the analysis of secondary data collected above. After selecting the target district, geospatial techniques were used to facilitate the selection of the target landscape/watershed/catchment. Here pour points located at the southernmost confluence of the Mankranso river were identified and used to delineate the watershed after a hydrologically conditioned DEM was created. Extraction of flow characteristics (flow direction, flow accumulation, stream order, flow length, stream link and stream feature) was carried out. The resultant watershed was the Offin sub-basin.

The selection of this watershed was informed by the fact that the research required a watershed with boundary transcending both Ahafo Ano South West and East Districts to scale innovations (as contained in TAFS-WCA WP3). The Offin sub-basin contains parts of the Tinte Bepo and Tano-Offin forest reserves. The major competing land uses include agriculture, mining, chainsaw operations/lumbering, forestry and infrastructure development due to urbanization. An informed opinion (relative number of 1sts to 4th order streams, relative prevalence of agricultural activities, relative prominence of forest and biodiversity degradation), the Offin sub-basin presents a good social-ecological landscape (SEL) for the activities of WP3. Historical images of the Offin sub-basin were obtained from Google Earth for 2008, 2015, 2018 and 2021, with 2008 being the base year. All the images obtained were for January except for the 2021 image, which was for December. The images were georeferenced within the ArcGIS Pro version 3.0 software, using a network of latitude and longitude lines. A modified version of the Food and Agricultural Organizations' land cover classification system was adopted to identify land cover and land use types in the watershed. The original eight dichotomous classes were expanded to 11. The field data collection, such as participatory resources assessment (PRA), gave insight into the land cover/land use classification. During the field data collection, community members and some leaders were engaged to map the land cover/land use in the study area.

Qualitative Data Analysis

The qualitative data analysis involves the analysis of primary data discussed and collected above. Content analysis was used to analyze the reports and transcripts from key informant interviews and FGDs. According to Elo and Kyngas (2008), qualitative content analysis is a mixed methods approach that assigns categories to text through qualitative steps, working through many text passages. Content analysis (CA) is considered a systematic approach for analyzing and making inferences from text and other qualitative forms of data. It is a research method for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, a representation of facts and a practical guide to action (Krippendorff 1980). However, the method is criticized for being a simplistic technique that does not lend itself to detailed statistical analysis, while others like Morgan (1993) argue that it was not sufficiently qualitative in nature. Despite the various criticisms, content analysis as a method has gained roots in social science research. The reason for its increasing relevance, as argued in literature, is that it is a content-sensitive method and flexible in terms of research design (Harwood & Garry 2003; Krippendorff 1980). The study uses content analysis for the analysis of focus group discussion (FGD) and key informant transcripts. Vaismoradi et al. (2013: pp 399) and Mayring (2014) highlight that CA is both inductive and deductive, which has predominantly been applied to recordings from FGDs and in-depth interviews.

Step 5. Validation of situational analysis

Validation of the results from the landscape situational analysis is fundamental since it ensures the reliability and applicability of the findings in decision-making processes. Validation of the results from the landscape situational analysis is critical because it ensures:

1. **Accuracy of Data**: The findings accurately reflect the actual conditions, challenges, and opportunities within the landscape. This is crucial for informed decision-making.

2. **Stakeholder Confidence**: Validation fosters trust among stakeholders by demonstrating that the analysis is thorough, credible, and inclusive of diverse perspectives.

3. **Identification of Gaps**: It helps uncover any missing or overlooked information, ensuring a comprehensive understanding of the landscape.

4. **Relevance**: Ensures the results are contextually appropriate and align with the social, environmental, and economic realities of the landscape.

5. **Consensus Building**: Validating results with stakeholders promote collaboration, ensuring that all parties agree on the baseline understanding before proceeding to planning or intervention stages.

6. **Informed Decision-Making**: Provides a robust foundation for developing strategies, policies, or plans tailored to the landscape's unique needs.

7. **Accountability**: Establishes transparency and accountability by involving stakeholders in reviewing and affirming the findings.

This process ultimately ensures that subsequent steps, such as planning and implementation, are based on reliable and widely accepted information. See Box 4 for examples of steps to effectively validate the results of a landscape situational analysis. Box 5 shows an example from a validation exercise in Ghana.

Box 4. Steps to validate results of landscape situational analysis

1. Preparation

- **Define Objectives**: Clearly outline what aspects of the analysis need validation (e.g., data accuracy, stakeholder inclusivity, or specific assumptions).
- **Identify Stakeholders**: Map out all relevant stakeholders (e.g., community members, local authorities, NGOs, private sector) whose input is critical for validation.
- **Select Validation Methods**: Choose appropriate methods (e.g., workshops, FGDs, field verification) based on the objectives and stakeholders.
- **Prepare Materials**: Create user-friendly materials to present the findings (e.g., maps, charts, summaries).

2. Present Findings

- **Simplify Data**: Translate findings into clear, accessible formats for different audiences.
- **Use Visual Aids**: Present data visually (maps, graphs, infographics) to make it easy to understand and discuss.
- **Contextualize**: Explain the purpose of the analysis, the methodology used, and the importance of validation.

3. Engage Stakeholders

- **Conduct Workshops/Discussions**: Organize participatory sessions to present findings and invite feedback.
- **Facilitate Dialogue**: Use skilled facilitators to ensure inclusive participation and manage differing opinions.
- **Encourage Critical Review**: Prompt stakeholders to share agreements, disagreements, or observations about the findings.

4. Collect Feedback

- **Document Input**: Record all feedback, corrections, and additional information provided by stakeholders.

- **Prioritize Inputs**: Identify critical insights that directly impact the accuracy or completeness of the analysis.

5. Field Validation

- **Verify On-Site**: Visit specific areas to validate physical or ecological findings, ensuring alignment with local realities.
- **Cross-Check Data**: Compare on-the-ground observations with documented findings to confirm or adjust conclusions.

6. Synthesize Feedback

- **Analyze Inputs**: Consolidate all feedback from stakeholders, field verification, and other sources.
- **Identify Gaps**: Highlight areas where further information or analysis is needed.

7. Revise Findings

- **Incorporate Feedback**: Adjust the situational analysis based on stakeholder inputs and field verifications.
- **Clarify Assumptions**: Document any revised assumptions or interpretations.
- **Fill Gaps**: Conduct additional analysis or research if necessary.

8. Validate Revisions

- **Share Updated Results**: Present the revised analysis to stakeholders for a final round of validation.
- **Confirm Consensus**: Ensure stakeholders agree on the updated findings and that major concerns are addressed.

9. Document the Process

- **Record Changes**: Keep a log of all adjustments made to the analysis based on validation.
- **Highlight Disagreements**: Note areas of divergence among stakeholders and any unresolved issues.
- **Provide Transparency**: Include a detailed report on the validation process as part of the final analysis documentation.

10. Finalize the Analysis

- **Ensure Completeness**: Confirm that the analysis incorporates diverse perspectives, validated data, and stakeholder buy-in.
- **Communicate Results**: Share the final, validated situational analysis widely with all stakeholders and relevant parties.
- **Use as a Baseline**: Establish the validated analysis as the foundation for planning and decision-making.

Box 5. An example of validation process in Ghana

Validating Situational Analysis in Ghana

MSD in Ghana started with engagements with the District Chief Executive (DCE), the District Coordinating Director (DCD) and department heads on the team's mission and the landscape situational analysis (LSA) report was also discussed and a copy given to the Assembly. Preliminary activities towards the MSD involved mobilizing logistics and participants from the Mmrobem, Barniekrom, Kunsu, and

Mankranso communities. Even though letters of invitation were sent two weeks before the engagement, there was a need to follow up with community leaders as traditional courtesies demanded. The MSD was held on the 21st of March 2023 and started with a presentation of the key findings of the LSA to all stakeholders, after which the dialogue ensued (Figure 1). The interactions captured issues, including driving forces behind the pressures that delineate the state of and impacts within the Ahafo Ano South West District Assembly (AASWDA) social-ecological landscape (SEL). Discussions also centered around respondents' visions of the future, i.e., per the priority challenges that respondents identified, their future expectations and which pathways could lead them to those expectations. Forty participants from government/non-governmental organizations and local representatives from different segments of the communities attended the workshop on 21st March 2023 at the assembly hall of Mankranso Senior High School in the Ahafo Ano South West District. After the plenary, where introductions and discussion of the objectives of the dialogue, and presentations on the LSA, participants were then grouped into four by the community (i.e., Mmrobem, Barniekrom, Kunsu), with the fourth group consisting of representatives from (para)statal and non-governmental institutions. This broadened the range of stakeholder perspectives and generated robust responses on key issues. Accordingly, participants had the opportunity to give and receive feedback, which helped validate LSA findings.

Step 6. Reporting of Situational Analysis

After collecting and validating data and information on the situational analysis of the landscape, the information should be organized into a report. The content of the report should look like this, an example from Ghana:

CONTENT

As a guide or reference, refer to the resource box 6 on situational analysis.

Box 6. Resource Box

https://www.iwmi.cgiar.org/Publications/Other/PDF/situational_analysis_of_a_social-ecological_landscape_in_the_ahafo_ano_southwest_district_of_ghana.pdf

https://cgspace.cgiar.org/bitstreams/22bcc177-77db-4b77-92ca-b07076d06a6c/download

https://www.iwmi.cgiar.org/Publications/Other/PDF/fostering_community-based_water_quality_and_quantity_monitoring_through_citizen_science_in_the_ashanti_region_of_ghana-a_citizen_science_training_report.pdf

https://cgspace.cgiar.org/items/5cc6aa58-2459-472b-8c1e-978d1ad9e00e

https://cgspace.cgiar.org/items/c5d29bbd-ec8a-45a7-85d0-e233d418aa9d

Chapter 3: Co-developing the Inclusive Landscape Management Plan

This part of the manual outlines the step-by-step processes on co-developing the ILMP framework. The activities 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. 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. This chapter outlines steps taken to develop the shared vision, goals and objectives and identify strategic activities to achieve them.

Getting ready for the co-design/participatory process

Inclusive landscape planning requires the involvement and commitment of various stakeholders at the community level to assist in preparing the plans based on local conditions and priorities. Ideally, there is more than one community sharing a specific landscape under consideration. Hence a proportional number of engagements should be conducted in each of the communities.

Various participatory tools are used to promote local participation and enhance effective community development. Some commonly used tools suitable for participatory landscape planning from village level to high level decision-makers in public institutions mentioned below. Most landscape planners often use conventional planning methods which have often been "top-down" and therefore not adequately considering the views of the local population or users. Hence making it difficult for the local actors and target communities to own sustainable land and water management practices. The "bottom-up" participatory approach is the way to go.

Some participatory planning tools include:

a) Multi stakeholder dialogues
b) Focused group discussions (FGDs)
c) Working in an interdisciplinary team
d) Participatory targeting
e) Group meetings and brainstorming
f) Problem identification and ranking
g) Village and household mapping
h) Watershed and community area delineation
i) Action planning
j) Participatory and result-based monitoring

Depending on the scale and the level of interactions required, multistakeholder dialogues and focus group discussions are ideal participatory tools for co-designing ILMPs. Community engagement can take the form of focus group discussions (FGDs), segregated based on gender or any other form of social groupings to jointly develop the shared vision, goals and objectives and identify strategic activities to achieve them. Assuming the facilitator is using FGDs, there is a need to ensure that groupings are inclusive and do not exceed the acceptable range of 8 – 12 people.

Note: The facilitator should analyze the gender dynamics, social construct and balance of power in the area. For example, if mixing both men and women in one group could cause some women to be reserved and shy from contributing then it would be more prudent to separate the groups according to gender. Having separate groups also ensures that distinct perspectives from each group are brought to the fore.

Before planning the dialogues, the facilitator should review the situational analysis report prepared in previous chapter (Chapter 2) and present the findings into thematic areas that would form the basis for the dialogues. These include preparing presentations either using PowerPoint or on flip charts. The following steps in this section should be followed:

Step 1. Agreeing and analyzing challenges with stakeholders

Following the unpacking of the situational analysis report, the next step is to tease out the main challenges and rank them in order of priority at the community level FGDs and/or clustered under the sustainable intensification (SI) framework. The ranking can also follow a guided criteria for example, which of the challenges affects many stakeholders? Can action be taken almost immediately? For each challenge identified and ranked, the FGDs would have to co-identify strategies or key solutions as well as the actor responsible for the key solution (s). After going through all the stages of prioritizing challenges, identifying the solutions to the challenges and identifying the responsible actors for those solutions, the information, and discussions of the FGD is presented to the plenary. Here are the key activities to consider:

Activity 1: *Identification and ranking of challenges/issues.*

All the challenges co-identified during the situational analysis should be clustered based on the domains under the sustainable intensification (SI) framework i.e. Production, Economic, Social, Human, Environment and Institutional.

Present the challenges under each domain (one after the other) to the groups on a flip chart and ask them to select the top three (3) challenges in their communities by ranking from 1 (being the most important) to 3 (being the least important).

This can be done by using small stickers with different colors 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 top 3 challenges).

Activity 2*: Identification of strategies and responsibilities (group discussions)*

After the ranking exercise in Activity 1, there should be a short break (20 mins). The facilitator should quickly collate the prioritized challenges/issues and present them to the group. Participants still in their groups should then identify key strategies or activities that would enable them to overcome the prioritized challenges. At this stage, the groups should be thinking of the shared objectives for the identified strategies and responsibilities.

They should complete Table 5 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 agrees on a shared vision, which sums up the objectives they have prioritized.

Table 5. 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 group presents the findings of their information and discussions in the FGD to the plenary. Each FGD session could take between 60 – 90 minutes depending on the following:

- Complexity of the topic/identified challenge: More complex topics may require longer sessions to fully discuss.
- Number of questions: The more questions to be covered, the longer the FGD may need to be.
- Size of the group: Larger groups may require more time for all participants to share their opinions.
- Participant characteristics: Certain groups, such as professionals or experts, may have less time available for longer sessions.
- Skills of the facilitator: Skilled facilitators can adapt their approach to extract valuable insights within the available time while keeping participants engaged throughout the discussion.

The facilitator can employ the following strategies to optimize FDG length:

- Prioritize key questions and focus the discussion to fit within the 60–90-minute time limit.
- Use engaging activities and exercises to maintain participant energy and interest in longer sessions.
- Provide breaks in extended sessions to allow participants to refresh and refocus.
- Invite 10-20% extra participants to account for no-shows but avoid creating too large of a group.

Step 2. Analyzing GESI gaps

1. Incorporate GESI findings into the ILMP Process
    - Integrate the situational analysis findings into the planning framework.
    - Identify priority areas for intervention that address GESI gaps.
2. Establish Inclusive Decision-Making Platforms
    - Form representative multi-stakeholder platforms that include women, youth, and marginalized groups.
    - Ensure equitable participation in workshops, meetings, and consultations.
3. Promote Capacity Building
    - Train stakeholders, including marginalized groups, in technical skills, rights, and leadership to enable active participation.
    - Raise awareness among decision-makers on the importance of GESI in landscape management.
4. Develop Inclusive and Context-Specific Strategies
    - Co-design solutions that address specific barriers (e.g., access to land, decision-making participation, benefit-sharing).
    - Use tools like participatory mapping and visioning to incorporate diverse perspectives.

5. Set Measurable Goals and Indicators
    - Define GESI-sensitive objectives in the ILMP, with specific indicators to track progress (e.g., participation rates, resource access, livelihood improvements).
    - Use data disaggregated by gender, age, ethnicity, and other factors.
6. Implement Targeted Interventions
    - Roll out initiatives to address specific gaps, such as land tenure security for women, vocational training for youth, or infrastructure for persons with disabilities.
    - Foster partnerships with local organizations specializing in GESI.
7. Monitor, Evaluate, and Adapt
    - Establish participatory monitoring and evaluation mechanisms involving diverse stakeholders.
    - Use adaptive management to revise strategies based on feedback and outcomes.
8. Promote the institutionalization of GESI in local level Landscape Governance
    - Advocate for policies that promote GESI at local and national levels.
    - Build institutional frameworks to sustain inclusion beyond the ILMP process.

NB:

- Cultural Sensitivity: Respect local norms while promoting equality.
- Intersectionality: Recognize how overlapping identities (e.g., gender, ethnicity, disability) create unique experiences of exclusion.
- Sustainability: Focus on long-term solutions that build local ownership and capacity for inclusivity.

Step 3. Setting the scene: Agree on a shared vision of the landscape.

After each group presents their summary tables to the plenary for discussion (above), the next step is to agree on a shared vision. During the plenary and with the help of the facilitator, participants should agree on a shared vision or the key elements they would like to see in the shared vision. There should be a wrap-up and presentation of the next steps to the community. The meeting facilitators should meet and help to compile the information for the next meetings.

The next meetings include meeting the expert group (in next steps 3 and 4) to share the findings from the Steps 1 and 2 carried above at the community level to the expert group usually at the district or local authority level.

Step 4. Identifying potential solutions for the landscape

The next step involves the identification of demand-driven technologies and practices with the participation of stakeholders and expert groups. 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 should take the form of workshops and should happen within a day. Under ideal conditions, the disciplines or expert groups should be composed of one each of the following specialists:

- Soil conservation
- Forestry/agroforestry/ecology
- Livestock
- Rural sociologist
- Agronomist
- Land use and administration.

- Water harvesting/irrigation and water resource management
- Food security expert.
- Cooperative/marketing and inputs expert
- Rural road construction expert
- Social science/ gender and social inclusion expert
- Legal practitioner

At the District Assembly level, the core members necessary for the engagement should include:

- District Director of Agriculture
- District Planning Officer
- District Engineer
- Extension Supervisor
- District Coordinating Director
- District Social Welfare/ Gender Officer
- District Environmental Officer

Step 5. Share with expert group and stakeholders.

At the district-level, share the proceedings from the community engagements with the expert group and stakeholders through various workshops. The key activities to follow are:

Activity 1: *Overview presentation of landscape situational analysis (Plenary)*
There should be a PowerPoint presentation to the plenary on the summary of the situational analysis including the main challenges identified; the consolidated outcome of the community engagement from Steps 1 and 2; and presentations by citizen scientists.

Activity 2: *Discuss summary from community engagements and consolidate shared visions, goals, and strategies*.
For this activity, participants should be divided into five groups according to the landscape planning domains. The constitution of the groups should be diverse with multi-stakeholders as much as possible. Between 10-12 people should be in a group. Each group should make inputs into Table 6 below from the community engagement by fully developing/expanding the objectives, strategies, responsibilities, resources, and timelines.

Table 6. Guide for District level engagement

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

Each group should then review the vision and vision elements from the community level and propose a shared vision for the landscape.

Activity 3: *Groups present the results of their discussions to the plenary.*
Each of the groups should present their shared visions and summary tables to the plenary for discussions. At the plenary, and with the help of the facilitator, participants should agree on a joint shared vision. If this is done well should conclude the day's activities. The next activity should be conducted the next day.

Activity 4: *Participatory land use mapping/planning*
Based on the vision, goals/objectives, and strategic activities set by the communities and validated by experts, the facilitator should engage the five stakeholder groups in the following:

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 this engagement.
- 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.

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 should 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 should 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.

Step 6. Report writing and validation.

This step involves compiling all the information and final plan into a report which is the ILMP document. The content of the ILMP report should like this example from Ghana, but not limited to the content in this training manual:

Table of contents

There should be a validation step of ILMP document in the co-design process. The steps described in Box 4 should be repeated to validate the ILMP document.

Chapter 4: Implementation and Monitoring

This part of the manual outlines how the solutions or interventions jointly agreed on should be implemented and monitored to inform on future implementation, improvement, and scaling of the process. The steps discussed in this section include Prioritization of interventions from ILMP, Action Planning, Piloting and co-validation, Monitoring and evaluation.

Launching of the ILMP

The first step of implementing the ILMP is to launch the ILMP document with the presence of stakeholders at a recognized event and integrate it as part of the government's plan.

Preparing for implementation plan

Implementation plans should be prepared immediately after the close of the engagement processes described in the previous section. The people to participate in the preparation of the implementation plans are the technical team, expert groups and community leaders. The information for the preparation of the implementation plans are the reports from the various groups and all collected data in line with the landscape.

The implementation plan should indicate the various activities (as suggested by the various groups) to be undertaken towards solving the identified problems. A well-formulated implementation plan should have the following headlines:

- Activity
- Location (use local name of place where an activity would be implemented within the community)
- Time to start implementation of each activity.
- Responsible person(s)
- Remarks

The implementation plan should also be presented graphically in the form of a sketch map. Most of the community stakeholders would more easily comprehend a graphical presentation than a written document. A solution/implementation sketch map showing the suggested solutions and areas where the suggested solutions would be implemented within the landscape should also be drawn. The implementation plan, together with the sketch maps should be presented to the stakeholders at the workshop for authentication and validation before detailed planning within the various groups.

Step 1. Prioritization of interventions from ILMP

Prioritization of which intervention to pilot is key. This should be done through a participatory process with the technical team, expert groups and community leaders. Some guiding principles or criteria should be agreed on to guide the prioritization process to ensure that most of the stakeholders have ownership and benefits from the interventions. Then the same participatory process should select one or more defined resource systems in the landscape or hydrological boundaries (watershed/micro-watershed) where identified demand-driven technologies and practices based on the ILMP could be applied.

Step 2: Action Planning

Translating strategies into actionable plans requires drawing more detailed planning of activities. Detailed activity plans are plans to indicate the sequential outline of how the various suggested activities would be implemented including a financial plan. There is no format for the preparation of detailed activity plans, but every detailed activity should have certain ingredients as a necessity. Every detailed activity plan should have items concerning the following:

- Detailed sequence of sub-activities.
- Period during which the activity will be implemented.
- Responsible persons for each sub-activity
- List of inputs and labour required.
- A financing plan

It is important to note that allocating roles and responsibilities to stakeholders (responsible persons) must be a clear assignment of tasks to each responsible person (s). Remember that where everybody is responsible then no one is responsible. It is important to facilitate the various groups during the preparation of the detailed activity plans to understand that, regarding the funding of the various activities, they should first think of resources available within the community that could be utilized before looking outside for assistance.

Step 3: Piloting and co-validation (piloting of some landscape innovations)

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 the ILMP 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 4. Monitoring and evaluation

This step involves presenting key results to stakeholders and learning from planning and implementing an inclusive landscape management plan (ILMP). Feedback mechanisms should 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 piloted 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 piloted 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.

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Annex

Annex 1: participatory landscape planning methods/tools

Participatory Tool	Purpose	Reference

Methods for validation of LSA

Here are several methods for validating the results of a landscape situational analysis:

1. Multistakeholder Workshops

- **Description**: Organize participatory workshops where stakeholders review and discuss the findings.
- **Purpose**: To ensure that all voices, especially marginalized groups, are heard and that findings resonate with on-the-ground realities.
- **Tools**: Visual aids (maps, charts), breakout groups, and facilitated discussions.

2. Focus Group Discussions (FGDs)

- **Description**: Conduct smaller, targeted discussions with specific stakeholder groups (e.g., farmers, local leaders, women, youth).
- **Purpose**: To dive deeper into aspects of the findings and capture detailed feedback.
- **Tools**: Semi-structured questions, case studies, and participatory tools like ranking exercises.

3. Key Informant Interviews (KIIs)

- **Description**: Engage experts or individuals with extensive local knowledge to validate technical or nuanced findings.
- **Purpose**: To cross-check data with credible, informed sources.
- **Tools**: Structured or semi-structured interview guides.

4. Field Verification

- **Description**: Conduct on-site visits to validate findings directly in the field.
- **Purpose**: To ensure alignment between the analysis and the physical, ecological, or social realities.
- **Tools**: GPS mapping, photographic evidence, and field observation checklists.

5. Community Feedback Sessions

- **Description**: Present findings to local communities for their review and feedback.
- **Purpose**: To validate cultural, social, and historical aspects of the analysis and incorporate grassroots perspectives.
- **Tools**: Visualizations (maps, videos), storytelling, and open Q&A sessions.

6. Triangulation

- **Description**: Cross-check findings from different data sources (e.g., community input, satellite data, government reports).
- **Purpose**: To ensure consistency and reliability of data from multiple angles.
- **Tools**: Data comparison matrices and GIS software.

7. Scenario Testing

- **Description**: Simulate possible outcomes based on the findings and evaluate their feasibility or accuracy with stakeholders.
- **Purpose**: To validate assumptions and test practical implications.

- **Tools**: Scenario planning software, role-playing, or facilitated scenario discussions.

8. Questionnaires and Surveys

- **Description**: Distribute surveys to a broad audience to gather feedback on the situational analysis findings.
- **Purpose**: To validate findings quantitatively and capture additional insights.
- **Tools**: Online or paper-based surveys, Likert-scale questions.

9. Peer Review

- **Description**: Have external experts or neutral third parties review the situational analysis.
- **Purpose**: To ensure objectivity and the credibility of the findings.
- **Tools**: Independent reviewers or technical working groups.

10. Participatory Mapping

- **Description**: Use maps to present findings and invite stakeholders to annotate, update, or correct information.
- **Purpose**: To validate spatial aspects of the analysis, such as land use, resource distribution, or infrastructure.
- **Tools**: Printed maps, GIS software, and digital participatory tools.

These methods can be used individually or in combination to ensure the landscape situational analysis is robust, inclusive, and actionable.

CGIAR Initiative on West and Central African Food Systems Transformation

The CGIAR initiative on West and Central African Food Systems Transformation aims to help realise the potential of agriculture to improve nutrition and food security by developing nutritious, climate-adapted and market-driven systems. The TAFS-WCA initiative is a collaborative effort of nine centers including six CGIAR centers, namely the African Rice Center, (AfricaRice), the International Institute of Tropical Agriculture (IITA), the Alliance of Bioversity International and the International Center for Tropical Agriculture (Alliance Bioversity-CIAT), The International Water Management Institute (IWMI), the International Center for Potato (CIP) and the WorldFish and three international centers namely the West and Central African Council for Agricultural Research (CORAF), The World Vegetable Center (WorldVeg) and The International Center of Insect Physiology and Ecology (icipe). The initiative further collaborates with national partners in different countries.

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