



Landscapes  
in Practice  
**Integrated  
Landscape  
Management**

A guide for landscape  
champions

Kim Geheb

Landscapes in Practice is a series of practitioner guides to facilitate implementation of the six core dimensions of landscape approaches. The series is supported by the European Union's Landscapes For Our Future programme, which supports 22 projects across >30 countries in the Global South, proposing Integrated Landscape Management as a process for fostering co-created sustainability and resilience in landscapes through adaptive, inclusive and integrating strategies. For other guides in this series, see [landscapesfuture.org/landscapes-in-practice](https://landscapesfuture.org/landscapes-in-practice).



Landscapes For Our Future

MAY 2024 • ISSUE 2

DOI: 10.17528/CIFOR-ICRAF/009185



Funded by the  
European Union

## Key messages

- Integrated Landscape Management (ILM) is a process for fostering co-created sustainability and resilience in landscapes through adaptive, inclusive and integrating strategies.
- Lack of integration in Natural Resources Management (NRM) is a major problem. This is fundamentally an institutional problem that requires a new approach to address the challenges of natural resource management.
- In the literature, there is a high degree of consistency around what comprises a 'landscapes approach'. We identify five areas where there is broad agreement: they acknowledge that landscapes are social-ecological systems; they typically call for high levels of stakeholder engagement, require high degrees of adaptivity, acknowledge landscape multifunctionality, or call for multi-, inter or trans-disciplinarity.
- Based on experience and the literature, the Central Component of the Landscapes For Our Future programme hypothesized that ILM comprised six highly interconnected dimensions:



### Stakeholder identification

Knowing and understanding who the stakeholders are and the relations between them is a strategic necessity for effective ILM interventions.



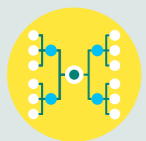
### Multi-stakeholder fora

These are carefully moderated spaces for stakeholder deliberation and decision-making around a vision. They are probably the single most powerful way of enabling NRM integration.



### A common vision

This describes an imagined future state that stakeholders agree to work towards. It provides an agreed-upon direction to actions and a framework for goals and purpose. It isn't always an 'alternative' as the vision might entail maintaining or conserving the status quo.



### Institutionalization

This refers to whether or not a project's processes are incorporated in a landscape's (formal and informal) governance institutions. Where this occurs, the likelihood that an intervention's positive impact is sustained is far higher.



### Iterative and adaptive management

Here, an intervention progressively improves its ability to generate outcomes during the course of implementation in response to the experience of engaging with the landscape system of which it is a part.



### Technical solutions and tools

These are the methods, technologies, strategies and arrangements used to address resource management. To be effective these need to be appropriate for the context and targeted to the specific issues, scale, processes and actors present in the landscape. These enable the previous five dimensions

*It's a process*

## What will we be talking about?

In this introductory Landscapes in Practice brief, we will provide an overview of what Integrated Landscape Management (ILM) is – in particular, how we have approached the concept – and the reasons why it is needed. We will then look at the Landscapes For Our Future (LFF) approach to ILM – the initial hypothesis that we proposed that allowed us to then explore the concept across six dimensions: stakeholder identification, multi-stakeholder fora, common vision, institutionalization, adaptivity and tools.

Here, we will only provide a brief introduction to the six dimensions. Five more Landscapes In Practice briefs will accompany this introduction, exploring each of the dimensions in greater detail. There will be no brief on ILM tools – these were initially defined as a separate dimension but, due to the contextual nature of this topic, it is better addressed as an aspect of each of the other five dimensions.

## What is Integrated Landscape Management?

We define ILM as “a *process* for fostering co-created sustainability and resilience in landscapes through adaptive, inclusive and integrating strategies.” In thinking about ILM as a *process* we have focused on what this might look like, while recognizing that a wide diversity of variables will influence landscapes and affect their condition.

## Why do we need ILM?

Because *disintegration* in Natural Resources Management (NRM) is a major problem, and many of the worst environmental problems that we confront today can be traced back to disintegration. It has, for example, been argued that the disintegration amongst the 17 Sustainable Development Goals is a key reason for lack of progress,<sup>1</sup> while the modest success of institutional responses to climate change are another example.

Historically, much NRM has been highly sectoral ('siloed') – structured around technical specialities and foci. Governments are a good example of this. Here, responsibility for addressing different parts of different ecosystems (soils, water, air, forests, climate, land, etc.) is distributed across ministries; or even across departments within ministries – even if all of these elements within an ecosystem are tightly interconnected. This means that when we do something in one part of a landscape, the interconnections deliver impacts to other parts of the landscape which we may not have considered. For example, industrialization may seem like a very positive intervention if our focus is on economic growth and development, but it will have 'knock-on' impacts on air quality, water quality, contribute to climate change, etc. These knock-on impacts are often referred to as 'unintended consequences' and may be serious.

The challenge of disintegration is not restricted only to sectors but also to scales. Landscapes are located within a continuum that arguably starts at the most local of scales – such as the microbial processes that influence soil formation, through to the widest, global scales where international decisions are made.

Integrated Natural Resources Management, Integrated Landscape Management, Integrated Water Resources Management and the Water-Food-Energy Nexus are all NRM approaches that have emerged as a result of the widespread recognition that disintegration is a problem. In many respects, however, it is not the natural resources themselves that are the issue here, but the diffuse or fragmented institutional approaches we deploy to address them. In our view, therefore, the spotlight of our attention needs to be shifted to designing institutions that are fit for the purpose of addressing highly interconnected natural resources problems.



ILM is a member of the family of landscape approaches that place landscapes at their centre, and apply a set of concepts, methods and tools designed to yield interconnected environmental and socio-economic outcomes. There are a large number of approaches and concepts that can be understood as a 'landscape approach'. Sarah Scherr and her colleagues, for example, identify 80.<sup>2</sup> In what follows, we focus on what we consider five central themes in the landscapes approach literature – although note that landscapes researchers and thinkers typically identify more than this.

**Landscape approaches acknowledge that landscapes are social-ecological systems**

Their appearance and condition emerge as a consequence of the complex and dynamic interplay between the societies that exploit them and a landscape's ecology.

**Landscape approaches generally require high levels of stakeholder involvement**

ILM is frequently regarded as an explicitly multi-stakeholder approach to landscape management. Where such engagement is called for, much

literature implies that platforms for stakeholder participation may be adequate loci around which integration can occur.

**Landscape approaches need to be adaptive**

Sayer et al.<sup>3</sup> comment that "continuous adaptation and even 'muddling through' is necessary" in a landscape approach. 'Adaptivity' may be defined as, "the ability to recover or adjust to change through learning and flexibility so as to maintain or improve into a desirable state".<sup>4</sup> Introducing adaptivity into the design of interventions often focuses on adaptive management – a structural ability to respond to dynamic contexts.

**Landscape approaches acknowledge the multifunctionality of landscapes**

Landscapes are diversified and complex and reflect many, often competing, interests of various stakeholder groups. Multifunctionality assumes that this leads to the supply of a diverse set of (market and non-market) goods leading to many environmental, social and economic benefits. Multifunctional landscapes contrast with 'homogenous landscapes' – for example, large areas of plantation agriculture, which lead to biodiversity loss, climate change and land degradation. Promoting or applying multifunctionality is often perceived to represent a significant trade-off between agricultural productivity and ecosystem functions.

**Landscape approaches are multi-, inter- or trans-disciplinary**

'Multi' means separate disciplines that are conversant; 'inter' refers to two or more disciplines working together; while 'trans' references the need to transcend disciplinary boundaries, both across disciplines, as well as other sources of knowledge and stakeholders, to solve a problem that all consider relevant. Such cooperation between and across disciplines is necessary for integration and to approach problems with solutions derived from multiple different directions.



**What is the LFF's approach to ILM?**

The Landscapes For Our Future (LFF) programme comprises 22 projects operating across 32 countries. All of these identify as ILM projects and are being led by a wide diversity of institutions ranging from large international organizations, international NGOs, government agencies and local NGOs. How each project perceives ILM, and has sought to operationalize it, varies considerably.

The Central Component (CC) of the LFF, created as a project to provide support to the LFF projects, is housed in CIFOR-ICRAF, which has extensive experience with landscapes and their management. In order to assess project needs, the CC developed a typology of six ILM 'dimensions' as an *initial hypothesis* about ILM, subject to change as learning progressed together with the programme's projects. Below, we describe why these variables were included, while the ways in which our learning progressed will be described in a separate Landscapes in Practice paper.



**Stakeholder identification**

A landscape's stakeholders are the single greatest determinant of its behaviour as a system. Knowing and understanding who the stakeholders are and the relations between them is a strategic necessity for effective ILM interventions. Stakeholder assessments should be able to provide this information, and to help an intervention to narrow down which stakeholders should populate multi-stakeholder fora (MSFs). Not all stakeholders are located in the landscape – there will be others elsewhere at, for example, regional, national, or international levels. In identifying stakeholders, it is important to assume that there will be tensions between them. This will yield information relevant to intervention strategies, and how MSFs may need to be structured – for example, several MSFs may be needed if the groups that they address are not on speaking terms, and ways of integrating their combined decisions and knowledge will need to be designed.

There are many different stakeholder assessment methodologies, some of which we provide in the 'Further Reading' section at the end of this brief.





## Multi-stakeholder fora (MSFs)

MSFs are probably the single most powerful way of enabling integration in the management of any natural resource. MSFs are carefully moderated spaces for stakeholder deliberation and decision-making around a vision. MSFs have significant additional benefits revolving around fairness, inclusion, empowerment, equality and equitability. They also represent a centre into which new knowledge can be developed, introduced and deliberated. The successful coordination of MSFs requires high levels of adaptivity (see below) and 'soft skills' (for example, facilitation, mediation, negotiation and convening).

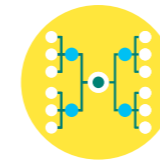
To be effective, MSFs must have purpose – a reason for existing – and one way of providing this is to ensure that they have decision-making powers. This might mean having government stakeholders included – although we do not see this as a prerequisite. An MSF's decisions might be followed through by local institutions, or through decisions to pursue certain activities. While all MSFs can make decisions at some level, *relevant* decisions are those that can affect the landscape system's behaviour.

How MSFs are created and run, and the purposes they fulfil depend on the needs of the intervention and the context within which it is being implemented. Having several MSFs can be positive, given the merits of having many different teams making sense of problems, system dynamics, processing new knowledge and co-creating strategies.



## Common vision

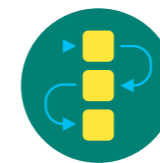
For us, a vision is an ideal future state. The purpose of this vision is to enable the formation of a compelling and inspiring place to *act from*.<sup>5</sup> A vision ideally describes what future relations between stakeholders will look like; and should also consider where the MSF is located in this arrangement. If adversarial stakeholders are able to agree on a common vision, the intervention will have made considerable strides. The vision will almost certainly change during the course of implementation, and participants will be challenged to revisit and reimagine their vision.



## Institutionalization

This term refers to whether or not a project's processes are incorporated in a landscape's governance institutions. Where this happens, the likelihood of project sustainability is significantly increased.

It should be noted that 'governance' is not the monopoly of government. Effective governance usually refers to the processes and practices of oversight, decision making and moderation of relationships between authority (formal and customary) and constituents that produces desired outcomes (i.e. well-being or stability). Hence, the adoption of project processes into local social institutions is very important. Social institutions are "enduring regularities of human action in situations structured by rules, norms, and shared strategies."<sup>6</sup> In this sense, they are patterns of human behaviour within the social-ecological system, as well as being systems in and of themselves. If new ways of doing things are institutionalized, this can indicate new system behaviours.



## Iterative and adaptive management

In complex systems, levels of predictability and guarantee are low. Generally speaking, high levels of project rigidity and inflexibility reduce our ability to navigate complexity, which in turn, limits the ability for change to emerge. As a consequence, we must navigate such systems adaptively.

Drawing on Hilborn et al.<sup>7</sup> 'adaptive management' refers to:

- The extent to which actions are reversible: the idea is to try something new and if this does not work, an ability to reverse course is necessary.
- Whether the system can be understood by small space and small time-scale experimentation: the action of 'trying something new' is an experiment. Every such action, whether it succeeds or fails, tells us something about the complex system in which we operate, which in turn contributes to our learning. Such 'experiments' should be small and of relatively short duration: we do not want to waste resources and we do want to ensure that our experiments do not yield unintended consequences.

- Whether the rate of learning about the system is rapid enough to provide useful information about subsequent decisions: what is learned about the system needs to be incorporated into implementation. Typically, this yields cyclical implementation profiles, in which regular review of intervention progress, successes and failures results in course adjustments.

Implementing in this way, an intervention progressively improves its ability to generate outcomes (behavioural changes) *during the course of implementation* – in response to failure and success, as well as the experience of engaging with the system of which it is a part.

Once a project has established a vision, it will necessarily have to design the strategies that it will employ for achieving it. Once it detects that a strategy is veering the project away from the vision, the project needs to pause and reconsider: either the vision is unobtainable and needs to change; or an alternative strategy needs to be identified.



## Technical solutions and tools

There are a wide variety of tools that can be brought to bear in land-scape management, from those addressing the state of the resource base, others to assess whether or not an intervention is having an impact, or those that can be used as useful methods and ways to enable cooperation amongst stakeholders. It is important to note, however, that tools *are a means to an end* and not an end in themselves.

Tools and associated approaches can play an important knowledge gathering and sharing role, supporting MSFs with new (technical) knowledge to monitor system changes, and the likely causes and future consequences of trends. These inputs are a complement to other forms of knowledge, in particular that knowledge gained about system dynamics through an intervention's networks.

## Suggested reading

**Minang PA, van Noordwijk M, Freeman OE, Mbow C, de Leeuw J and Catacutan D (Eds). 2015.** Climate-smart landscapes: multifunctionality in practice. Nairobi: World Agroforestry Centre, <https://apps.worldagroforestry.org/downloads/Publications/PDFS/B17753.pdf>

**Reed J, Ickowitz A, Chervier C, Djoudi H, Moombe K, Ros-Tonen M, Yanou M, Yuliani L and Sunderland T. 2020.** Integrated landscape approaches in the tropics: A brief stock-take. *Land Use Policy* 99: 104822. [doi.org/10.1016/j.landusepol.2020.104822](https://doi.org/10.1016/j.landusepol.2020.104822).

**Reed J, Sunderland T and Ros-Tonen M (Eds). 2020.** Operationalizing integrated landscape approaches in the tropics. Bogor: Centre for International Forestry Research, [cifer.org/publications/pdf\\_files/Books/2020-COLANDS-Reed.pdf](https://cifer.org/publications/pdf_files/Books/2020-COLANDS-Reed.pdf).

**Sayer J, Sunderland T, Ghazoul J, Pfund JL, Sheil D, Meijaard E, Venter M, Boedhihartono AK, Day M, Garcia C, van Oosten C and Buck LE. 2013.** Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the National Academy of Sciences* 110 (21): 8349–8356. [doi.org/10.1073/pnas.1210595110](https://doi.org/10.1073/pnas.1210595110).

**Hauck J, Stein C, Schiffer E and Vandewalle M. 2015.** Seeing the forest and the trees: Facilitating participatory network planning in environmental governance. *Global Environmental Change* 35: 400–410. [doi.org/10.1016/j.gloenvcha.2015.09.022](https://doi.org/10.1016/j.gloenvcha.2015.09.022)

**Lelea, M.A.; Roba, G.M.; Christinck, A. and Kaufmann, B. 2014.** Methodologies for stakeholder analysis: for application in transdisciplinary research projects focusing on actors in food supply chains. Witzhausen: German Institute for Tropical and Subtropical Agriculture, [reload-globe.net/cms/attachments/article/56/Lelea\\_et\\_al\\_\(2014\)\\_StakeholderGuide\\_final\\_web.pdf](https://reload-globe.net/cms/attachments/article/56/Lelea_et_al_(2014)_StakeholderGuide_final_web.pdf)

**Schiffer, E. 2007.** The Power Mapping Tool: A Method for the Empirical Research of Power Relations. 00703. IFPRI Discussion Paper. Washington D.C.: International Food Policy Research Institute, [ageconsearch.umn.edu/bitstream/42410/2/IFPRIDP00703.pdf](https://ageconsearch.umn.edu/bitstream/42410/2/IFPRIDP00703.pdf).

## Other guides in this series

For more information or downloads of other guides in this evolving series, see [landscapesfuture.org/landscapes-in-practice](https://landscapesfuture.org/landscapes-in-practice).

1. For example, Malekpour S. et al. 2023. What scientists need to do to accelerate progress on the SDGs. *Nature* 621 (7978): 250–54. <https://doi.org/10.1038/d41586-023-02808-x>.
2. Scherr SJ, Shames S and Friedman R. 2013. Defining Integrated Landscape Management for policy makers. Ecoagriculture Policy Focus No. 10. Washington D.C.: Ecoagriculture Partners. [https://www.un.org/esa/ffd/wp-content/uploads/sites/2/2015/10/IntegratedLandscapeManagementforPolicymakers\\_Brief\\_Final\\_Oct24\\_2013\\_smallfile.pdf](https://www.un.org/esa/ffd/wp-content/uploads/sites/2/2015/10/IntegratedLandscapeManagementforPolicymakers_Brief_Final_Oct24_2013_smallfile.pdf).
3. Sayer J et al. 2013. Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the National Academy of Sciences* 110, no. 21: 8349–56. <http://doi.org/10.1073/pnas.1210595110>.
4. Engle NL and Lemos MC. 2010. Unpacking governance: Building adaptive capacity to climate change of river basins in Brazil. *Global Environmental Change* 20(1): 4–13. <http://doi.org/10.1016/j.gloenvcha.2009.07.001>.
5. Based on Culen J. 2019. How to create a transformative vision. *Living Inside Out* blog. <https://juliaculen.com/2019/08/09/how-to-create-a-transformative-vision/>.
6. Crawford SES and Ostrom E. 1995. A grammar of institutions. *American Political Science Review* 89 (3): 582–600. <https://doi.org/10.2307/2082975>.
7. Hilborn R et al. 1995. Sustainable exploitation of renewable resources. *Annual Review of Ecology and Systematics* 26 (1): 45–67. <https://doi.org/10.1146/annurev.es.26.110195.000401>.

### PHOTOS

**Cover:** Integration at the LFF Global Summit. *Photo by Dominique le Roux/CIFOR-ICRAF.*

**Page 4:** 3-D map of Ghana's Atiwa landscape created by stakeholders in the EU-funded Governing Multifunctioning Landscapes project. *Photo by Dominique le Roux/CIFOR-ICRAF.*

**Page 6:** Community members, farmers and WCS wildlife biologists and project members are represented on an MSF in the LFF Our Tonle Sap project in Cambodia. *Photo by Khalil Walji/CIFOR-ICRAF.*

At a meeting of community and government representatives in Zimbabwe's Gonarezhou landscape, Lemson Betha illustrates his facilitation skills and simple tools during a discussion around the ingredients of resilience central to the common vision agreed upon by that landscape's stakeholders. *Photo by Dominique le Roux/CIFOR-ICRAF.*

