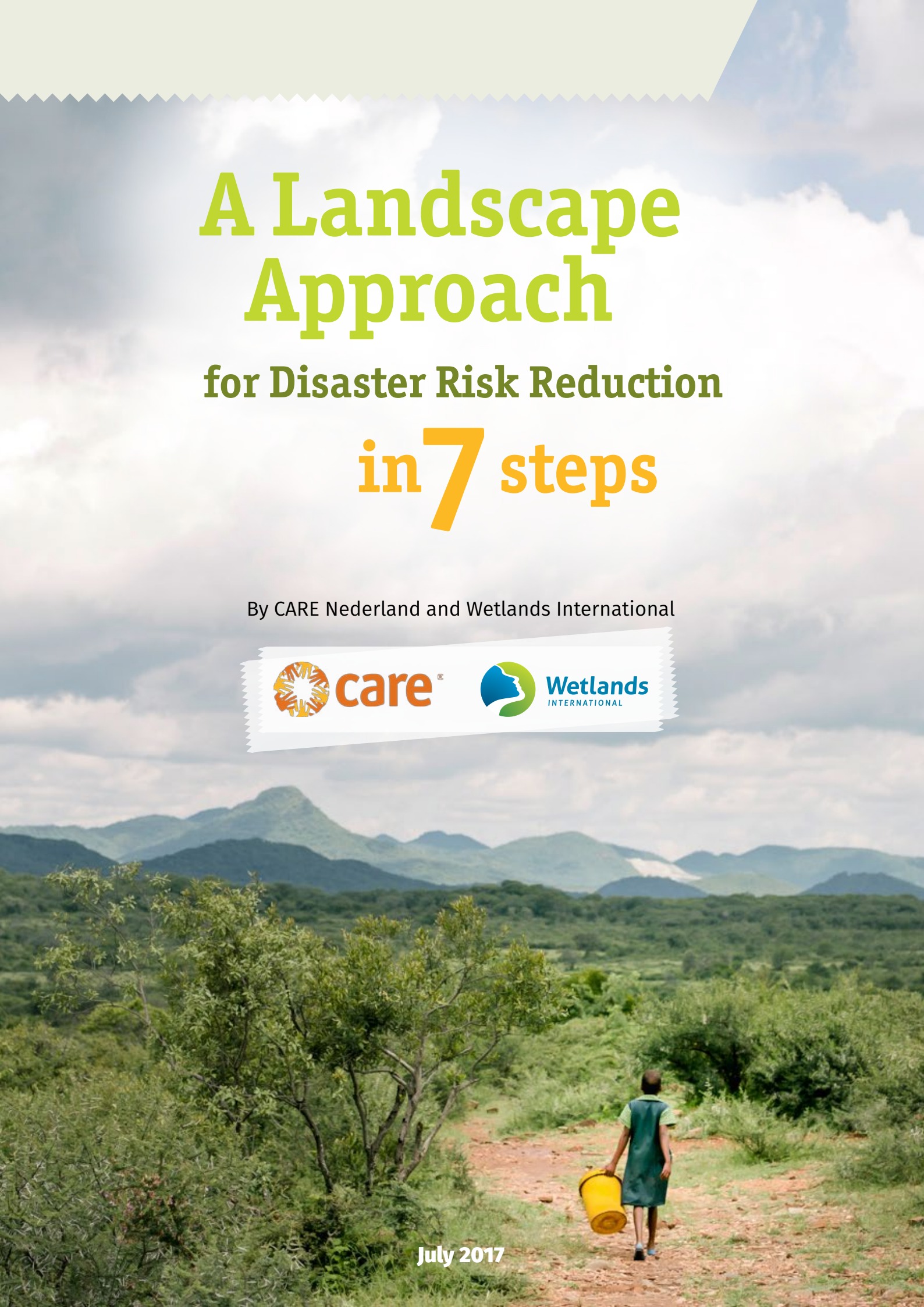
# A Landscape Approach

## for Disaster Risk Reduction

## in 7 steps

By CARE Nederland and Wetlands International



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# Introduction

**The use of a landscape approach, although not new, is gaining prominence as an approach to effectively reduce disaster risk, adapt to climate change and enhance community resilience. Based on the experience of CARE and Wetlands International in the Partners for Resilience alliance, and on best practices developed by other experts, this paper synthesises the main characteristics of the landscape approach and suggests seven steps when adopting a landscape approach. Although this paper focuses specifically on disaster risk reduction to help increase community resilience, the landscape approach is applicable to other types of programming.**

# Contents

# 1 What is the Landscape Approach?

**The landscape approach is an interdisciplinary, cross-sectoral and holistic approach. For disaster risk reduction purposes, the approach facilitates an inclusive and participatory learning process for shared risk understanding and risk intervention scenario planning. An inclusive and participatory process allows for more innovative and integrated, and therefore more impactful, solutions to risk (e.g. ecosystem-based or hybrid measures and optimised initiatives on water governance as part of disaster risk management strategies and investments). Applying the landscape approach helps to overcome barriers by sector and contributes to effective risk management by connecting all stakeholders involved, starting with the communities at risk in the landscape.**

Some of the main characteristics of the landscape approach:

- It places **communities at the centre,** especially the poor and vulnerable, whose lives and livelihoods are increasingly under threat from disasters, the impacts of degraded ecosystems and climate change.

- It takes into account **all actors** - either contributing to or impacted by disaster risk - and factors that influence this risk, such as the status of ecosystems, land and water use, infrastructure, and climate change. These actors and factors often reside or originate outside the community facing the disaster risk.

- It examines the **entire landscape in which risks originate and manifest themselves** and the many interactions and interdependencies between ecosystems and human socioeconomic systems. This approach focuses on the catchment upstream of the target community as the defining geographic area of interest, but also recognises the area downstream to avoid unintended consequences of planned interventions.

- In most cases, it includes an **analysis of the hydrology** (groundwater and surface water) and how this affects the community. This inclusion is important when one considers more than 90% of natural hazards are water related[1].

- It integrates **ecosystem management and restoration** into disaster risk reduction. Ecosystems such as wetlands can help to absorb shocks and long-term changes, and support livelihoods of the most vulnerable people. These factors are central to achieving resilience. An equal focus should be placed on ecosystem provisioning services (which directly support livelihoods) and on sustaining their regulating and supporting services (which affect drivers of risk).

- It manages **trade-offs:** There are often trade-offs between building resilient ecosystems, implementing broader development interventions and enhancing livelihoods. Development efforts in the landscape approach go hand in hand with the sustainable management of ecosystems, involving actors across sectors and the wider landscape. The landscape approach actively seeks synergies between different types of interventions, avoiding trade-offs and preventing unintended negative (downstream) impacts.

- By identifying solutions that are robust enough to deal with uncertainty, it is **flexible to future changes** in the risk landscape. Disaster risk in a landscape will evolve due to climate change and other factors and dynamics, such as geo-ecological processes, social rules, economic trends, and development patterns. It is important to recognise climate change as an aggravating factor that increases disaster risk and uncertainty in a landscape. Accordingly, carrying out an analysis of climate change impacts is part of every landscape-scale assessment. Interventions based on this approach include climate change adaptation elements.

- The landscape approach demands for a **long-term perspective** (10-20 years) to ensure lasting impact. Key for creating acceptance, fostering ownership and a willingness to continue to invest in progress made, are the establishment of self-sustaining multi-stakeholder platforms, communities who experience actual changes in livelihoods and ecosystems, and the reduction in disaster risk. In most cases, a programmatic approach involving more than one project is needed to make a difference in a landscape.

**Box 1**

# What is a landscape?

A 'landscape' is a flexible concept without a clearly defined spatial entity or physical space[2]. It includes natural features of the landscape, infrastructure, stakeholders and external forces that affect the physical area. A landscape can be defined as:

*"a socio-ecological system that consists of a mosaic of natural and/or human-modified ecosystems, with a characteristic configuration of topography, vegetation, land [and water] use, and settlements that is influenced by the ecological, historical, economic and cultural processes and activities of the area".*[3]

## Layers and external factors shape the landscape

The boundaries and size of a landscape for a successful landscape approach implementation, depend on two landscape layers and external factors surrounding the landscape.

*Figure 1: Landscape, layers and external factors*[4]

Landscapes are the result of interactions between geo-ecological processes (Layer 1), social rules, stakeholder actions, and economic activities (Layer 2). The two layers create a landscape and shape how ecosystems and stakeholders interact and relate to one another. Both layers, as well as external factors, are dynamic. Disaster risk in a landscape will change over time.

### Layer 1: Geo-ecological layer

- Water: how does the water behave in the landscape (upstream and downstream)?
- Soil: what are the different types of soil and soil properties in the landscape?
- Ecosystems: what species of flora and fauna exist and what services do the ecosystems provide?
- Climate setting: what is the general climatological context and how does this influence the ecological processes in the landscape?

### Layer 2: Socio-economic layer

- Social: all relevant stakeholders who impact or have been impacted by disaster risk in the geo-ecological landscape. These actors, who are often diverse and have diverging interests, make land-use decisions that affect other land-use decisions. It is crucial to understand the networks, trends in technology, land ownership, and social rules and regulations in a landscape.
- Economic: the markets, livelihoods and economic activities, investment and development patterns, infrastructure and the utilisation of ecosystem services in a landscape.

### External factors

- Global consumer preferences, globalisation processes, global trade agreements, and direct foreign investments can shape how a landscape is used[5] and can form an external impact on disaster risk.

# 2 Seven Steps of the Landscape Approach

**The landscape approach can be broken down into seven steps. These steps form an iterative process: they are not in strict temporal order, can take place simultaneously and can be revisited. In principle, the first two steps are carried out internally by the organisation seeking to increase resilience in a given area, together with (local) experts and representatives. These steps form the basis of future steps and inform the organisation on how best to proceed with the landscape approach. From Step 3 onwards, local actors need to take the lead to actively and collaboratively influence the process of the landscape approach - possibly facilitated by the organisation that initiated the process.**

The seven steps of the landscape approach:

1. Carry out an initial assessment of the risk landscape.
2. Conduct an in-depth stakeholder analysis and power mapping.
3. Stimulate multi-stakeholder processes and create coalitions of the willing.
4. Conduct a collaborative, in-depth problem and solution analysis.
5. Carry out collaborative (action) planning.
6. Organise collaborative implementation.
7. Promote adaptive management.

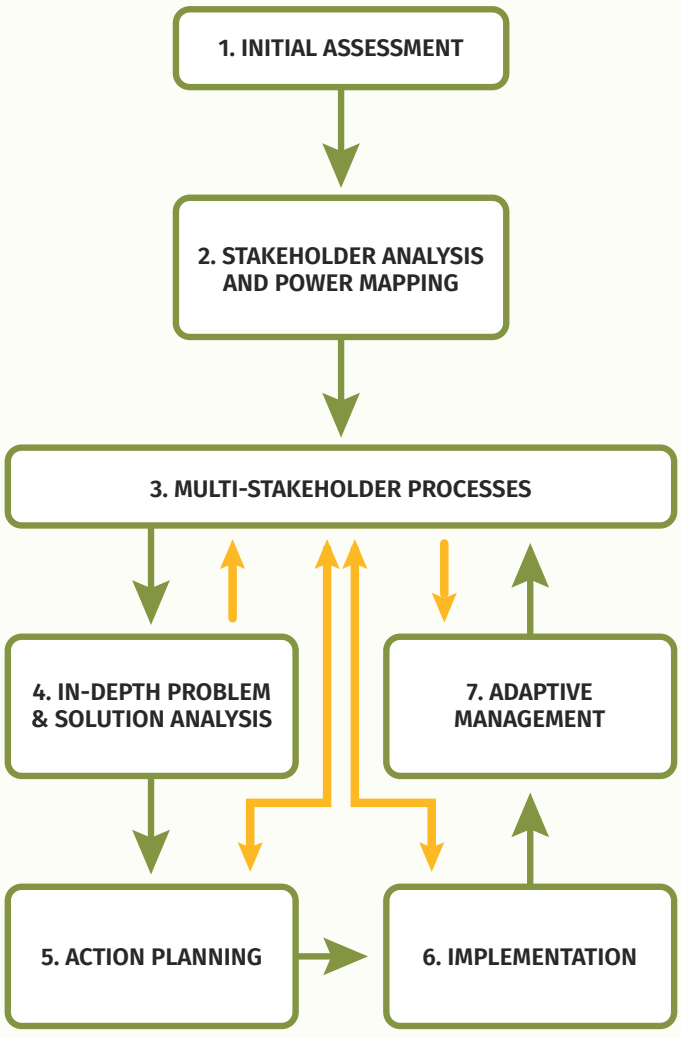



*Figure 2: Visualisation of the seven steps*

## The Landscape Approach and CARE's Integrated Risk Management Framework

This paper discusses the Landscape Approach for disaster risk reduction and climate change adaptation using the Integrated Risk Management framework of CARE Nederland[6]. The three most important framework elements are 1) drivers of risk, 2) communities' capacities and assets, and 3) the enabling environment (Figure 3). The landscape approach takes all three elements into account; each of the seven steps refers to these elements.

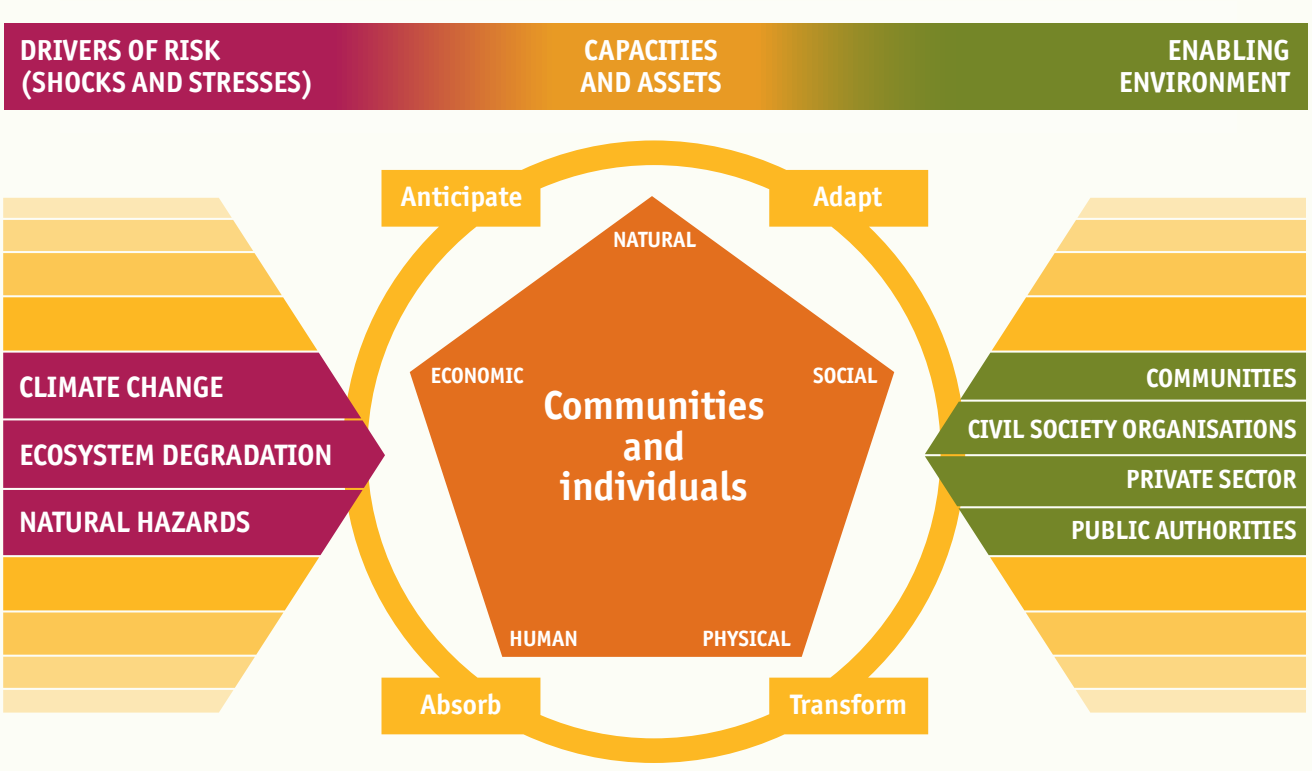



*Figure 3: CARE's Integrated Risk Management (IRM) framework for increasing community resilience*

# Step 1 Carry out an initial assessment of the risk landscape

## Actions:

- Find common concerns as an entry point.
- Understand drivers of risk, capacities and assets of communities and the wider social and natural environment.
- Understand the hydrology (when disaster risks are water related).
- Define the spatial boundaries of the risk landscape.
- Conduct organisational self assessment.
- Decide whether or not to adopt a landscape approach (Box 2).

## Why?

The information collected in the initial assessment will help determine the basic outlines of a possible programme, the root causes to address, the vulnerabilities and the surrounding environment, the scale of landscape activities, realistic targets, and which experts and stakeholders to involve. Ultimately, this step will help decide whether or not to adopt a landscape approach.

## How?

The starting point of the initial assessment is to find a common concern or, in other words, a problem that needs solving in a landscape (e.g. flood risk).[7] Risks that are shared and acknowledged by multiple communities and other stakeholders should be identified. When the common concern has been determined, the landscape assessment moves on from there. This assessment includes ascertaining why and where disasters occur, where disasters originate and what impact they have on people, ecosystems and economies. The assessment also includes a hydrological assessment (in the case of water-related disasters) in combination with soil and vegetation analysis as described in Box 1, to help understand how these interact and are influenced by livelihood activities. Once the common concerns, disasters, hydrology and land use have been mapped, the assessment should also consider the socioeconomic setting of the landscape, taking into account all actors and (external) factors which experience impact or are impacting on disaster risk. This step aims to develop a general sense of the socioeconomic layer of the landscape. The actors and factors will be analysed in more detail in Step 2. Based on this, the broad spatial boundaries of the landscape can be defined.

Finally, the implementing organisation should analyse its strengths and weaknesses vis-à-vis the information collected (Box 2). Which expertise should be organised so that risks can be addressed effectively (Box 3)? Next, the spatial scales for the management of risks are defined: is a landscape approach the most suitable approach given the identified root causes, the context and the organisation's strengths and weaknesses? The spatial scales should be broad enough to address the root causes of disaster risk and to deliver multiple functions to stakeholders with different interests[8], and sufficiently small to make implementation feasible. The size of a landscape can therefore vary from a small and local area (e.g. community or watershed) to an entire river basin.

### Points to consider

Conducting the initial assessment on a landscape scale can be demanding and time consuming. Nevertheless, this assessment is a sound investment as it forms the basis for the remaining steps of the landscape approach. It enables the initiating organisation to plan more effectively and identify interventions and strategies that can be used to convince donors to adopt a more long-term perspective. Also, a long-term landscape strategy allows the intervening organisation to seek funding from different donors to commit to a particular area for a longer period. When conducting the initial assessment, it is important to note that the needs of communities are not always in line with the initiating organisation's perception of the communities' needs; it is important to ensure that different (risk) perceptions are understood and taken into account.

### Tools to use

- Climate Vulnerability and Capacity Analysis

## Box 2

### Is a landscape approach the best way forward? The importance of context and the initiating organisation's strengths and weaknesses.

It is important to acknowledge that a landscape approach may not always be the most effective approach; it may be too time consuming, too costly or simply not appropriate. In a conflict context, it might be impossible to align stakeholders and effectively work together at a landscape level. In another context, it may be possible to adequately address a risk without taking the larger landscape into account. Contextualisation is crucial through an initial assessment covering the whole landscape and determining the root causes of disaster risk.

The initiating organisation should consider its strengths and weaknesses, the type of project, available funding, partners who are willing to contribute, and available in-house expertise. Based on this SWOT analysis and the initial assessment, the optimal scale of intervention and realistic accomplishments in a landscape can be defined. It may be sufficient to incorporate only certain aspects of the landscape approach into the design of a project.

**Note: The scale of the initial assessments may not necessarily be the same scale of the actual interventions.**

## Box 3

### How to organise your team

Using the landscape approach implies working in partnership, as needs likely supersede the capacities and expertise of a single organisation. Based on the outcomes of the organisational SWOT analysis (see Box 2), partnering up with experts in conservation, climate change, gender, agriculture, or in other fields – these may be peers, but also academic institutions, the private sector and government bodies – may need to be considered.

Working with a multi-disciplinary team can be challenging, even when everyone agrees on a mutual concern and overarching approach. Experts and practitioners tend to stick to their different objectives, language and perspectives, continuing to work within their own 'silos', which might hamper the collaborative process[9]. It is therefore essential (but also challenging) to get the right level of support/ownership from stakeholders, especially from government bodies and large corporates.

Local stakeholders should be in the lead from the outset. The organisation should therefore be flexible and open-minded. In an ideal situation, the multi-stakeholder process is organised in such a way that the implementing organisation takes on a secretary/facilitating role, while government officials or village chiefs chair the process. This approach will help increase ownership and allow government officials to be the face of success, while the organisation can assist, convene and influence from the sidelines. This is only useful if the government takes the needs of the vulnerable community to heart.

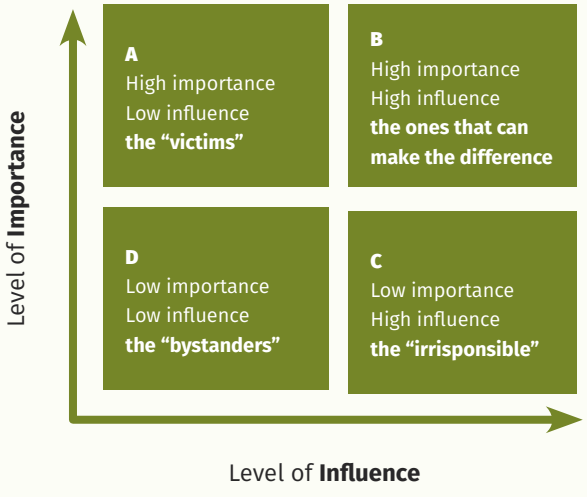
# Step 2 Conduct an in-depth stakeholder analysis and power mapping

## Actions:

- Analyse all stakeholders who are in any way related to the disaster risk.
- Conduct a power mapping.
- Pay attention to the gender dimension.
- Identify entry points and motivations to join the process per key stakeholder.
- Develop a business case per key stakeholder.

## Why?

A landscape approach builds upon multi-stakeholder processes, involving actors with diverging interests, impacts and positions of power. For this reason, it is crucial to understand different motivations and entry points before stakeholders can effectively be brought together. The initiating organisation carries out this stakeholder analysis before actually engaging the stakeholders into the process. Actors can vary from marginalised local communities, smallholder farmers, civil society or farmer organisations, to private companies, local and national government authorities, as well as NGOs active in the area. This step also aims to explore if landscape initiatives already exist and who currently engages in them and for what reason.[10]




## How?

Identify relevant stakeholders according to their relation to the disaster risk faced by the community – they are either impacted by a disaster risk and/or contribute to it. Stakeholders have already been identified during the initial assessment. In Step 2, the stakeholder analysis provides more detailed information, including attitudes, interests, values, cultures, perceptions, power relations, and entry points for acting in the landscape (see Figure 4 for a helpful matrix to analyse stakeholder relevance and influence). A capacity and vulnerability assessment explores vulnerabilities of community members and other stakeholders and identifies which capacities can be strengthened. Furthermore, the spatial relations among the different land users are mapped by analysing how the land use by one actor can be a driver of risk for the livelihood or business strategy of another. Subsequently, it is important to analyse the (external) social, political (e.g. government restrictions or subsidies), economic and institutional factors that influence stakeholders and disaster risk, and how these factors may influence the process. Taking the gender dimension into consideration is an important aspect of this step. This is done by investigating how men and women are differently affected by disaster risk and ensuring the inclusion of women in the multi-stakeholder process.

Ideally, this step results in a business case for each stakeholder and states why they should engage in the landscape initiative and what their benefits will be (e.g. lower disaster risk, higher production, greater public support, renewal of license).

### Tools to use

- Power Cube
- Venn Diagram (page 41)
- Climate Vulnerability and Capacity Analysis
- Importance/ influence matrix (fig. 4)

*Figure 4: Importance/ Influence Matrix* [11]

# Step 3 Stimulate multi-stakeholder processes and create coalitions of the willing

## Actions:

- Build on existing initiatives to create ownership and sustainable outcomes.
- Involve as many stakeholders as possible from the outset (a coalition of the willing) and ensure involvement of remaining relevant stakeholders over time.
- Create space to discuss different perspectives.
- Agree on the core problem/risk.
- Strengthen stakeholder capacity if necessary.

## Why?

Actors across the landscape have to be brought together for collaboration to solve problems on a landscape scale. An essential element of a landscape approach is the involvement of all relevant stakeholders in decision making through a transparent and accountable multi-stakeholder process. This process forms the basis for sustainable outcomes. In this step, it is important for people to communicate with one another and to agree on a core problem from multiple perspectives. This process includes the involvement of communities and external contributors to drivers of risk or the enabling environment, and stakeholders who can play a role in building assets and capacities of the communities at risk.

**Box 4**

### The case of the landscape coalition in the Ethiopian Central Rift Valley[12]

Wetlands International and IDH - the sustainable trade initiative, are supporting an Ethiopian landscape coalition of public, private and civil society organisations (CSOs) in the Central Rift Valley of Ethiopia. This coalition was formed through a rapid mapping of the relevant stakeholders, and convening them on shared issues of concern: the over-usage of water leading to the disappearance of key wetlands and the degradation of surrounding areas. The coalition consists of stakeholders with a business case to engage in landscape interventions and policy level dialogues to improve soil and water management, as well as livelihoods in the region. The coalition is chaired by the Rift Valley Lakes Basin Authority and includes the large horticulturalist companies, smallholder and fishermen unions, various levels of government, line agencies and knowledge institutes.

Some elements were crucial for the successful establishment of the landscape coalition:

- a commissioned scoping report and other analyses on the current state of the environment in the region were presented by local knowledge institutes, CSOs and consultants, to help build the business case for joining the coalition.
- Wetlands International and IDH slowly built trust and collaboration among stakeholders in the first year of the programme through bilateral meetings with individual stakeholders/partners, frequent stakeholder coalition meetings, joint development of activities (i.e. smaller scale 'quick win' projects), as well as regular communications to all stakeholders.

## How?

First, a multi-stakeholder process should build upon existing initiatives (e.g. platforms, networks, roundtables) or evolve bottom-up to help foster ownership. The multi-stakeholder process allows for information sharing among the actors, the discussion of different perspectives and, most importantly, acknowledgement of and agreement on a common problem. The shared (disaster) risk(s) among stakeholders form an entry point for engagement. Stakeholders create a list of the various problems that they want to put forward for discussion; subsequently, stakeholders agree on a set of the main problems. These problems can be selected depending on their urgency, existing opportunities and willingness of stakeholders to invest time, money or knowledge.[13]

The inclusion of all relevant stakeholders is critical throughout the course of the landscape approach. Unwilling or excluded (powerful) stakeholders can pose serious challenges to the success of the programme. Because it is often not feasible to engage all significant stakeholders at the outset, the process should start with those who are interested (a coalition of the willing) with a strategy in place to ensure non-committed stakeholders will join as the process develops. Strategy elements to help create potential added value for (future) stakeholders include success, influence and visibility.

### Points to consider

Besides identifying the best entry point for all actors, it can also be challenging to engage in constructive collaboration leading to successful outcomes. The multi-stakeholder process is meant to provide a platform where all stakeholders can contribute equally and where no voice remains unheard. However, bringing different actors together can easily lead to finger pointing, especially when acknowledging the core problem. Unequal power-relations and lack of trust between the actors can pose threats to the success of the landscape approach. For example, local community members may not feel comfortable sharing their thoughts in front of powerful business representatives or government authorities. The use of Community Score Card processes can help mitigate these challenges.

There are also other barriers to participation. Stakeholders may lack the capacity to understand or implement concepts, and may be unable to attend meetings due to lack of time, resources or language barriers. The local community often experiences barriers. Key is to foster community empowerment, for example by strengthening or establishing community-based organisations, before starting participatory decision-making processes.[14] Building multi-stakeholder processes can take a long time and demands skilled facilitators who can build trust and partnerships. In general, the formation phase of the multi-stakeholder platform cannot be rushed, and if the ideas and outcomes are not truly owned by all actors, it will prove ineffective.

### Tools to use

- Risk Mapping (Participatory 3D Modelling)
- Community Score Card
- Conveners' Guide for Building Landscape Coalitions
- Multi-Stakeholder Partnerships (MSP) Guide

# Step 4 Conduct a collaborative in-depth, problem and solution analysis

## Actions:

- Identify root causes of issues of mutual concern.
- Create an open and respectful dialogue while exploring stakeholders' roles in relation to the core problems identified.
- Recognise and use information/practices from multiple sources including traditional, local and scientific sources.
- Identify possible solutions to problems identified.

## Why?

An in-depth problem analysis is needed before suitable intervention actions can be identified. After agreeing on the common concern and establishing a collective will to tackle this, it is now time to explore the origin of the acknowledged problem, and stakeholders' potential to contribute to its solution. It is important to understand all processes and correlations to the core problem and to be aware of potential synergies and trade-offs that might occur when implementing interventions.

## How?

This step revisits elements of Steps 1 and 2 with the involvement of all stakeholders. Elements include: assessing the two landscape layers and external factors (Box 1), mapping common concerns, disasters, hydrology and land use, the socioeconomic setting of the landscape, and all actors who contribute to or are impacted by disaster risk.

It is important to identify the root causes of common problems without assigning blame. By adhering to simple facts and describing what is happening objectively, people's trust remains. Visible landscape conditions are a good starting point for discussion. For example, deforestation is visible and has been scientifically proven to cause erosion; all actors will find it easier to agree upon than less visible conditions. At this stage, the process benefits from valuable input and findings from (scientific) experts. Also, it is important to consider indigenous knowledge about changes in the landscape. Various stakeholders, especially indigenous people, will have different explanations for certain aspects of their landscape.[15] Different perspectives and understandings are not necessarily problematic as long as all stakeholders can agree on a problem they want to address and on an acceptable course of action. The outcome of this step is an improved and shared understanding of the drivers of risks, an increased awareness of landscape conditions, corresponding challenges and opportunities within the landscape, an overview of possible solutions and ideally, the interventions necessary to reduce the disaster risk. Based on this, maps can be produced that explain the drivers and trends of disaster risk, as well as maps that describe the interventions and where they will be most effective.

### Tools to use

- Landscape and History Mapping (Page 59)
- Problem and solution tree
- Pressure and Release (PAR) model

# Step 5 Carry out collaborative (action) planning

## Actions:

- Develop landscape scenarios.
- Agree on tasks, responsibilities and communication strategies.
- Keep funding in mind.
- Divide the landscape into smaller and more manageable units to monitor risks better.

## Why?

Bringing together all actors – either contributing to or impacted by disaster risk – facilitates better planning of the future landscape, and better management of the stakeholder collaborative interventions. By ensuring all relevant stakeholders are part of the process of identifying solutions, their sense of ownership can be kept as high as possible.

## How?

This step uses landscape scenarios to discuss and negotiate visions, goals and responsibilities.[16] The scenarios are drawn on landscape 'dream' maps to visualise how different land uses can be integrated and to help develop a clear idea of what people want to achieve and, most importantly, how they aim to achieve this. These maps, which can also be used at later stages, are useful visual tools. Based on these scenarios, the stakeholders can identify and agree on concrete intervention ideas that address the drivers of risk, enhance communities' capacities and assets and ideally also create or strengthen an enabling environment. These interventions are then ranked based on their costs and benefits, direct and indirect implications and impacts, and the trade-offs and synergies between interventions. Also, it is important to take into account the financing aspect: how can funding be mobilised for specific interventions? If it is not possible to develop solutions or activities for all problems identified, a plan must be drawn up to garner resources or external support.

With the identification of priority interventions, the stakeholders can determine opportunities for cooperation and collaboration, and occasions for collaborative learning. This step includes the distribution of responsibilities and the design of strategies on how activities can be aligned, which resources each actor should bring in, and how implementation will be coordinated. Each of these aspects of action planning should be translated into concrete coordination strategies that state how stakeholders will work together and how they will be held accountable.

It is key to divide the landscape into smaller landscape units (geographical zonation), to be in a position to adequately identify and ultimately implement area-specific risk reduction interventions. For example, smaller landscape units could comprise communities who face risks from similar hazards. These smaller units should still be large enough to tackle the root causes of risk and to support strategies which can accommodate different land uses, ownership patterns, private and public land, ecosystems and rural settlements and management objectives[17]. Having these smaller landscape units enables determining, for example, where to set aside areas for conservation, where to invest in terrace building or where to build a dyke. These sites may well be located outside of the target community's territory, upstream in the catchment. Tailor-made interventions, which specifically target these sites, can subsequently be defined.

### Points to consider

- Ensure all relevant stakeholders are involved in decision making.
- Manage trade offs.
- Do no harm; what are the potential negative consequences of the actions planned?
- In addition to the focus on livelihoods and ecosystems, landscape approach interventions go hand in hand with conventional disaster preparedness, response and recovery measures (such as the establishment of early warning systems or provision of emergency training), and climate change adaptation.

### Tools to use

- Well-being assessment (Page 10)
- Vision development (Page 19)
- Participatory Scenario Planning

# Step 6 Organise collaborative implementation

## Actions:

- Implement interventions aimed at addressing the drivers of risk, enhancing the capacities and assets of communities, and strengthening the enabling environment.
- Focus on securing some quick wins at the outset of the implementation phase.
- Link long-term risk reduction goals to socio-economic benefits.
- Make use of synergies while avoiding trade-offs and negative impacts.
- Promote ownership and gradually hand over responsibilities to the enabling environment.

## Why?

By ensuring the involvement of all stakeholders in the implementation phase, and at different levels, cultivates synergies and helps manage trade-offs. Commitment creates ownership that in turn facilitates the eventual hand-over at the end of the process. Interventions in a landscape approach for risk reduction should address the drivers of risk, enhance the capacities and assets of communities and strengthen the enabling environment while striking a balance between livelihoods and ecosystems. Quick wins should be planned accordingly to gain momentum, increase the buy in of stakeholders and help attract investment[18] while long-term risk reduction goals should be planned to go hand in hand with socio-economic benefits.

## How?

The focus at the outset of the implementation phase should be on securing some quick wins, for example by rewarding more sustainable practices, introducing more climate resilient crops, introducing rainwater harvesting, or establishing an early warning system. These interventions are ideally small and low-cost; have a disaster risk reduction (DRR), climate change adaptation (CCA) or ecosystem management and restoration (EMR) dimension; and can be implemented by the stakeholders. Also, interventions should have concrete and direct benefits for people to help motivate them for longer-term interventions with no immediate direct benefits.

In parallel to the quick-win interventions, high impact measures need to be implemented to achieve increased resilience within the landscape sustainably. Examples include introducing biodiversity conservation practices such as ecological corridors; or establishing mechanisms which provide incentives and support collaborative investments by public, private and civic sectors for restoration of ecosystem services, and integrated planning and management[19]. These measures have a long-term focus and are preferably linked to socioeconomic benefits, for example, when trees are planted as part of an erosion control programme, stakeholders are simultaneously incentivised to protect the trees and area. It is important that interventions capitalise on synergies with other interventions as much as possible while avoiding trade-offs and unintended negative (downstream) impacts.

Stakeholder ownership of the implementation process should be promoted by stimulating stakeholders' participation as driver of change, highlighting their achievements and by reminding them of the set goals and agreements. This ownership is crucial to ensure that landscape-scale efforts will continue once the facilitating organisation has left. The facilitating organisation should therefore gradually hand over responsibilities to actors in the enabling environment. Depending on the needs, this includes the organisation of capacity-building training to enable autonomous functioning. Training can deal with how to raise funds, how to coordinate among public agencies, how to work across scales and sectors[20], or how to make landscape approaches part of government budgeting. Ensuring inclusion of the interventions in relevant policies and sustaining financial flows by inclusion in budgets and securing value chains is essential.

During the entire implementation phase, regular and well-facilitated meetings should be held among the stakeholders to discuss progress and possible difficulties. There should be sufficient flexibility in plans for adaptations. For accountability purposes, it is key for stakeholders to adhere to the communication strategies and the accountability systems formulated in the planning phase. Also, maintaining strong but adaptive leadership is essential.

### Tools to use

- Community Score Card
- The Biorights approach

# Step 7 Promote adaptive management

## Actions:

- Develop indicators tracking changes in the drivers of risk, the capacities and assets of communities and the enabling environment.
- Involve research institutes in monitoring and evaluation (M&E).
- Use M&E outcomes to improve landscape management continually.
- Ensure flexible management of projects or programmes.

## Why?

Adaptive management is crucial to deal with the complexity and (in part) unpredictability of increasing resilience at landscape level through a multi-stakeholder approach. Progress and effects of interventions need to be monitored and evaluated to adapt landscape management and to improve landscape planning and intervention strategies as the process develops. A unique aspect of monitoring and evaluation in the landscape approach is the assessment of change in resilience over time. Indicators include: the evolvement of the landscape; the change in rules and development of actors; the direct and indirect effects of interventions; the extent to which synergies have been taken advantage of, and trade-offs have been minimised; the resilience of one landscape in relation to another; the effectiveness of the landscape approach in relation to (changed) outside processes and how to deal with these changes. All these aspects relate to the drivers of risk, to the capacities and assets of communities and to the enabling environment, and should, therefore, be assessed along these elements.

## How?

Monitoring and evaluation at a landscape level can be challenging because of the large number of actors involved, the different scales at which interventions are implemented, and the cross-sectoral and inter-disciplinary nature of the approach in general. Nevertheless, M&E can be carried out effectively, by breaking the process down into projects that are easier to manage and monitor. The development of an indicator framework, based on the three dimensions of the IRM Framework, or the four dimensions identified by Reed to manage social and environmental issues[21] is recommended for this purpose. These dimensions encompass:

- Environmental protection and restoration (drivers of risk).
- Sustainable production and livelihoods security (capacities and assets).
- Institutional capacity and governance (enabling environment).

Ultimately, the progress of field implementation, the impact on disaster risk, stakeholder support or development, and the implementation of commonly agreed upon policies and plans must be monitored based on the vision developed by the stakeholders. It may be useful to involve research institutes in the monitoring and evaluation of the landscape approach. The M&E outcomes should be communicated to all relevant stakeholders to keep them informed and to help maintain momentum. These results should also be used to adapt landscape management plans and to design alternative strategies for collaborative action.

### Points to consider

Dealing with outside processes with potential impacts for a landscape approach is a challenge that needs to be considered. New disaster risks not considered in the initial assessment may arise, or landscape interventions may not lead to the expected results. The development of contingency plans and the promotion of adaptive management help to deal with unexpected circumstances as they arise. It is important to consider that landscape approaches may also have a positive or negative effect on other landscapes. Although tracking these impacts may prove challenging, and often goes beyond the scope of most projects or programmes, taking these potential impacts into consideration and involving external partners or research institutes to monitor them is highly recommended. Their involvement may result in interesting and useful insights.

### Tools to use

- Landscape Change Monitoring Tool - *depending on your need, Wetlands International or an expert consultancy/ knowledge institute can help you in design and implemention*
- Outcome Mapping

# 3 Summary

**Step 1** **CARRY OUT AN INITIAL ASSESSMENT**

- Find common concerns
- Understand drivers of risk, capacities and assets of communities and their enabling environment
- Conduct organisational self assessment

**Step 2** **CONDUCT AN IN-DEPTH STAKEHOLDER**

- Stakeholder analysis
- Explore gender dimension

**Step 3** **STIMULATE MULTI-STAKEHOLDER PROCESSES**

- Build on existing initiatives
- Create a coalition of the willing
- Agree on the core problem

**Step 4** **CONDUCT A COLLABORATIVE, IN-DEPTH**

- Identify root causes
- Explore stakeholders' roles in relation to the core problems
- Include traditional, local and scientific knowledge

**Step 5** **CARRY OUT COLLABORATIVE**

- Develop landscape scenarios
- Agree on tasks, responsibilities and communication strategies

**Step 6** **ORGANISE COLLABORATIVE IMPLEMENTATION**

- Implement interventions that address drivers of risk, capacities and assets of communities, and the enabling environment
- Secure quick wins
- Link long-term risk reduction goals to socio-economic

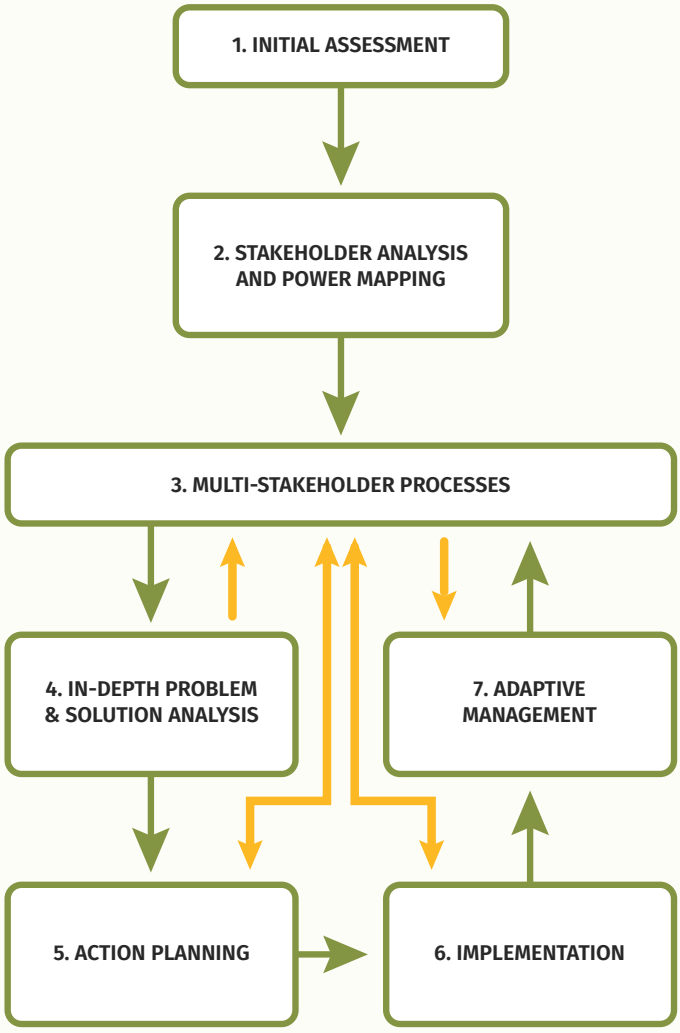
**Step 7** **PROMOTE ADAPTIVE MANAGEMENT**

- Track changes in drivers of risk, capacities and assets of communities and enabling environment
- Involve research institutes in M&E
- Use M&E outcomes to improve landscape management
- Ensure flexible project management

**A landscape approach is an interdisciplinary, cross-sectoral and holistic approach to help overcome barriers by sector and contribute to effective risk management by connecting all stakeholders involved, starting with the communities at risk in the landscape.**

Main characteristics of the landscape approach:

- It places **communities at the centre**
- It takes into account **all actors**
- It examines the **entire landscape in which risks originate and manifest themselves**
- It includes an **analysis of the hydrology**
- It integrates **ecosystem management and restoration**
- It manages **trade-offs**
- It is **flexible to future changes**
- It demands for a **long-term perspective**



# 4 The way forward

This paper is the result of research carried out by Carlotta Weibl and Koen Kieft for their bachelor thesis at Van Hall Larenstein University of Applied Sciences, commissioned by CARE in collaboration with Wetlands International. Please submit your comments, questions and experiences to: Wouter Bokdam, wbokdam@carenederland.org, Bart Weijs, weijs@carenederland.org, or Merijn van Leeuwen, merijn.vanleeuwen@wetlands.org

# 5 Further reading

- **CARE Nederland: The Integrated Risk Management Approach explained**
  CARE explains how conventional Disaster Risk Reduction approaches can be enhanced by integrating Climate Change Adaptation and Ecosystem Management and Restoration. The resulting approach is called 'Integrated Risk Management' and forms the basis on which the current paper on the landscape approach for reducing disaster risk was developed.

- **IDH and EcoAgriculture Partners: Public-Private-Civic Partnerships for Sustainable Landscapes: A Practical Guide for Conveners**
  This publication represents the current 'state-of-the-art' for convening landscape partnerships. It provides practical tips and tricks on how to involve businesses and all relevant stakeholders during the different steps of the approach.

- **IUCN: The Protected Landscape Approach: Linking Nature, Culture and Community**
  IUCN introduces the protected landscape approach and demonstrates its relevance to the conservation challenges facing protected areas. It is rich in case studies from around the world which illustrate the values and benefits of the protected landscape approach and demonstrate the adaptation of this approach in different contexts.

- **Kusters et al.: Participatory planning, monitoring and evaluation of multi-stakeholder platforms in integrated landscape initiatives**
  This article proposes a general framework for planning, monitoring and evaluation of multi-stakeholder platforms, and places emphasis on learning. This article can be used to guide participatory assessments to help generate relevant information for planning, adaptive management and evaluation.

- **Landscapes for People, Food and Nature: Reducing Risk: Landscape Approaches to Sustainable Sourcing**
  This document investigates business involvement in landscape approaches. It focuses specifically on the advantages for agribusinesses in joining landscape initiatives and reviews the benefits and trade-offs of doing so.

- **PBL (Netherlands Environmental Assessment Agency): The landscape approach: The concept, its potential and policy options for integrated sustainable landscape management**
  PBL explores the landscape approach concept to expand knowledge and understanding of the success factors, barriers and stakeholders that influence inclusive and sustainable development on a landscape level.

- **Sayer et al.: Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses**
  Sayer and colleagues provide ten summary principles to support implementation of a landscape approach emphasising adaptive management, stakeholder involvement and multiple objectives. It also discusses how these principles differ from more traditional sectoral and project-based approaches.

- **Tropenbos International: Climate-smart landscapes and the landscape approach: An exploration of the concepts and their practical implications**
  This report focuses on the following questions: What is a climate-smart landscape? What does the landscape approach mean in practice? How can a landscape approach be implemented? And, how do we know if it works?

- **Wetlands International: Downstream Voices**
  Wetlands International makes a case for addressing ecosystem degradation as one of the root causes of risk and vulnerability and for opting for ecosystem-based solutions as a way to reduce disaster risk and build community resilience.

- **WWF: Landscape Elements: Steps to Achieving Integrated Landscape Management**
  Based on the five elements of a landscape approach identified in 'The Little Sustainable Landscapes Book', this paper describes indicators for measuring progress under each element and identifies some tools to help put ideas into action.

# 6 Notes

[1] Vervest, M.J., & van Leeuwen, M. (2017). *Why landscapes & ecosystems matter to DRR.* [PowerPoint] (available upon request)

[2] Kusters, K. (2015). *Climate-smart landscapes and the landscape approach: An exploration of the concepts and their practical implications.* Wageningen: Tropenbos International.

[3] See previous note.

[4] van Oosten, C. (no date). *Where product meets place.* Page 14. [PowerPoint]. Retrieved from: http://www.landgovernance.org/assets/Cora-van-Oosten.pdf

[5] van Oosten, C. (2015, June 11). *The landscape puzzle: An introduction to the landscape approach.* [Video file]. Retrieved from: https://www.youtube.com/watch?v=fB5BiKCerF0&t=13s

[6] CARE Nederland: The Integrated Risk Management Approach explained, 2017

[7] Sayer, J., Sunderland, T., Ghazoul, J., Pfund, J. L., Sheil, D., Meijaard, E., Venter, M., Boedhihartono, A.K., Day, M., Garcia, C., van Oosten, C., & Buck, L.E. (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.

[8] Heiner, K., Buck, L., Gross, L., Hart, A., & Stam, N. (2017). Public-P*rivate-Civic Partnerships for Sustainable Landscapes: A practical Guide for Conveners.* EcoAgriculture Partners and IDH, the Sustainable Trade Initiative.

[9] Reed, J., van Vianen, J., Deakin, E.L., Barlow, J., & Sutherland, T. (2016). *Integrated landscape approaches to managing social and environmental issues in the tropics: learning from the past to guide the future.* Global Change Biology, 22, 2540–2554, doi: 10.1111/gcb.13284

[10] Heiner, K., Buck, L., Gross, L., Hart, A., & Stam, N. (2017). *Public-Private-Civic Partnerships for Sustainable Landscapes: A practical Guide for Conveners.* EcoAgriculture Partners and IDH, the Sustainable Trade Initiative.

[11] See previous note.

[12] Case study taken from: Heiner, K., Buck, L., Gross, L., Hart, A., & Stam, N. (2017). *Public-Private-Civic Partnerships for Sustainable Landscapes: A practical Guide for Conveners.* EcoAgriculture Partners and IDH, the Sustainable Trade Initiative.

[13] Heiner, K., Buck, L., Gross, L., Hart, A., & Stam, N. (2017). Public-Private-Civic Partnerships for Sustainable Landscapes: A practical Guide for Conveners. EcoAgriculture Partners and IDH, the Sustainable Trade Initiative.

[14] Reed, J., van Vianen, J., Deakin, E.L., Barlow, J., & Sutherland, T. (2016). *Integrated landscape approaches to managing social and environmental issues in the tropics: learning from the past to guide the future.* Global Change Biology, 22, 2540–2554, doi: 10.1111/gcb.13284

[15] Heiner, K., Buck, L., Gross, L., Hart, A., & Stam, N. (2017). *Public-Private-Civic Partnerships for Sustainable Landscapes: A practical Guide for Conveners.* EcoAgriculture Partners and IDH, the Sustainable Trade Initiative.

[16] See previous note.

[17] Brown, J., Mitchell, N., & Beresford, M. (Eds.) (2004). *The Protected Landscape Approach: Linking Nature, Culture and Community.* Gland, Switzerland and Cambridge, UK: IUCN.

[18] Heiner, K., Buck, L., Gross, L., Hart, A., & Stam, N. (2017). *Public-Private-Civic Partnerships for Sustainable Landscapes: A practical Guide for Conveners.* EcoAgriculture Partners and IDH, the Sustainable Trade Initiative.

[19] See previous note.

[20] Chatterton, P., Ledecq, T., & Dudley, N. (2016). L*andscape Elements: Steps to achieving Integrated Landscape Management.* Publisher: WWF.

[21] Based on the four dimensions (environmental protection and restoration, sustainable production, institutional capacity/governance, and livelihoods security) suggested by Reed, J., van Vianen, J., Deakin, E.L., Barlow, J., & Sutherland, T. (2016). *Integrated landscape approaches to managing social and environmental issues in the tropics: learning from the past to guide the future.* Global Change Biology, 22, 2540–2554, doi: 10.1111/gcb.13284

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