



PBL Netherlands Environmental
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THE LANDSCAPE APPROACH

The concept, its potential and policy options for
integrated sustainable landscape management

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The landscape approach

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MAIN FINDINGS

1 The landscape approach

Growing demand for land, water and natural resources and human-induced climate change put an increasing pressure on nature. The negative effects of these issues are most prominent in developing countries. Over the past decades, the landscape approach has been put forward as a possible decision support solution for several development issues (often referred to as competing claims) that converge on a landscape level. The landscape approach aims to integrate the objectives of different stakeholders at landscape level, in order to establish long-term sustainable growth. The pursued objectives are those of sustained economic and social development, combined with local biodiversity conservation. Thus, landscape approaches could lead to improved cross-sectoral decisions that are better than the sum of actor- and sector-specific solutions. Driven by the surge of interest and commitment to landscape level initiatives by international organizations like FAO and CGIAR institutes and the Dutch government, this report describes our exploration of the landscape approach concept. It was intended to expand our knowledge and understanding of the success factors, barriers and stakeholders that influence inclusive and sustainable development on a landscape level.

Lessons learned from past and present-day landscape approaches

Traditionally, landscape thinking involved a top-down perspective with a focus on government land-use planning for biodiversity conservation, leaving little attention for local communities. Currently, often a more bottom-up approach is used, based on the involvement of all relevant stakeholders. However, smallholder farmers (including labourers) and private sector actors, until now, have been underrepresented in landscape initiatives. This could be improved by knowledge transfer from science to smallholders and local governments in combination with capacity building, both essential for local stakeholder involvement. Translating research outcomes and policy information into a language businesses and investment funds can relate to could increase their interest in these initiatives. Finally, it is increasingly acknowledged that the success of achieving landscape-level sustainable development can only be measured and enhanced by setting up monitoring frameworks with a broad array of representative indicators. Monitoring, therefore, is an essential element in landscape approaches.

Integrating biodiversity into stakeholder interests is a challenge when primary interests concern profits and people

For this study, information was compiled from the literature and interviews, which revealed that the practical integration of all the different stakeholder objectives in a landscape approach is not easy. Landscape approaches are often dominated by drivers or stakeholders from a single sustainability domain – either people, planet, or profit – with the risk that some

objectives receive less attention than others. This can be the case for biodiversity conservation. Incentives to conserve ecosystem services, such as the provision of timber or food, may be beneficial from a profit perspective, with direct benefits for stakeholders. Introducing market mechanisms could improve visualisation of business interests and support the financial basis for landscape approaches. But biodiversity conservation that goes beyond ecosystem services incorporated in value chains is more challenging. It is often characterised by an unequal distribution of costs and benefits; farmers who invest in biodiversity conservation often bear a disproportionately large share of the costs, while enjoying a much smaller share of the societal benefits. This often makes broad biodiversity conservation initiatives financially unfeasible, and traditional business models need to be adjusted.

Governments play an important steering, facilitating and supervising role

The Dutch Government applies different types of measures in its development cooperation; some are people-oriented, while others are profit- or planet-oriented. Landscape approaches now receive renewed attention, as they offer potential for the inclusion of green growth initiatives. In general governments play an important role in maintaining the balance between people, planet and profit objectives within a certain landscape; especially when it comes to safeguarding public objectives, such as biodiversity conservation, which have no direct economic value for stakeholders. Implementation and enforcement of sustainability standards for the production and trade of products can stimulate businesses to take more sustainability issues into account. In addition, compensation mechanisms, such as payment for ecosystem services (PES) or reducing emissions from deforestation and forest degradation (REDD), may facilitate cost sharing for biodiversity conservation measures. Additionally, long-term government commitment is necessary to facilitate sustainable and resilient landscapes and to ensure long-term stakeholder commitment. Governments will have to design and use landscape-level monitoring frameworks that indicate progress; especially for public targets.

Improve integration of Dutch policies on international development in support of integrated landscape approaches

A broader Dutch government perspective on landscape approaches is needed: these approaches are now implemented on the basis of economic landscape value, but could also be successful with respect to another specific value: the sustainable management of land, water and biodiversity. Finally, an overarching international agenda on upscaling landscape initiatives should be established by the concerned Dutch ministries to strengthen cooperation and increase effectiveness of for example the African Landscapes Action Plan, the IDH Sustainable Land and Water Program and Dutch contributions to the Global Landscape Forum.

1.1 Introduction

The significance of landscape approaches for sustainable development

A growing world population and a related growing demand for food and other resources puts an ever-increasing pressure on natural resources and climate. In order to ensure long-term growth, the exploitation of natural systems in which local farmers, multinationals and other stakeholders operate needs to become fully sustainable. Competing claims from a large variety of stakeholders converge on a landscape level. When individually addressed, the approaches taken to reach these goals could have negative trade-offs. The idea of landscape approaches is to find cross-sectoral solutions as this will lead to synergies that are better than the sum of sector-specific solutions (Holmgren, 2013a). By integrating the objectives of

different stakeholders into landscape management plans, a solution may be found for competing claims on a landscape level.

The landscape approach aims to contribute to sustainable development by supporting economic and social development combined with local biodiversity conservation, in which biodiversity is regarded as a basic element for sustainable growth. A key element of present-day landscape approaches is the involvement of stakeholders in decision-making on land use. By involving stakeholders from all concerned interest groups, a land-use strategy may be developed that takes into account the objectives of each stakeholder group, minimising costs and maximising benefits for each, while recognising certain trade-offs.

Objective and scope of this study

In this study, information from the literature and interviews with NGOs, research institutes, businesses and Dutch government bodies was used to develop a view on the rationale behind present-day landscape approaches, the factors that determine their success, the roles and incentives of various stakeholders and the policy instruments that are necessary to reach several sustainability targets. The focus was on the following areas:

- **The position of biodiversity in landscape approaches.** Historically, biodiversity conservation has been a difficult objective to achieve, among sustainability initiatives, as it is traditionally regarded as competing with livelihood and economic objectives (Chan et al. 2007). The landscape approach, in theory, could provide the right elements for supporting a management and collaboration system that incorporates biodiversity conservation without losing sight of other needs of landscape stakeholders. This study describes the position of biodiversity and ecosystem services in landscapes as an integrated part of stakeholder objectives. Biodiversity conservation, in this respect, covers the broad sense of the word: safeguarding the provision of ecosystem services, preventing soil degradation and water loss, and conserving biodiversity that may not be of direct relevance to production.
- **Applicability of landscape approaches in developing countries.** Issues regarding food, water and resource shortages and competing claims for land are most prominent and expected to increase in developing countries (FAO 2012a; UN 2009). Specific focus, therefore, was directed towards the applicability of landscape approaches in developing countries.
- **Dutch policies on development cooperation.** This study focuses on the implications of landscape approaches for Dutch policies on international development and possible landscape synergies that can be established via specific policy measures by the Dutch Government.

1.2 Definition and scale of landscapes

Over time, the interaction between people and nature within landscapes has evolved. Derived from landscape ecology, a landscape, as a system, was defined as a land unit with ecologically homogeneous characteristics (Zonneveld 1989). Driven by physical geographical determinism, humans and society were considered part of a certain landscape, but their activities were considered to be guided (and limited) by the natural conditions and boundaries of that physical landscape (van der Wusten and de Pater 1996). Thus, the definition and scale of a landscape was largely dependent on its geophysical boundaries. With increasing globalisation, technological development and the integration of people in global supply chains, landscapes today increasingly are seen as the spatial scale on which many different stakeholders, from global to local level, need to cooperate. Balancing competing interests and risks also needs to take place on these levels (Brasser 2012; Scherr

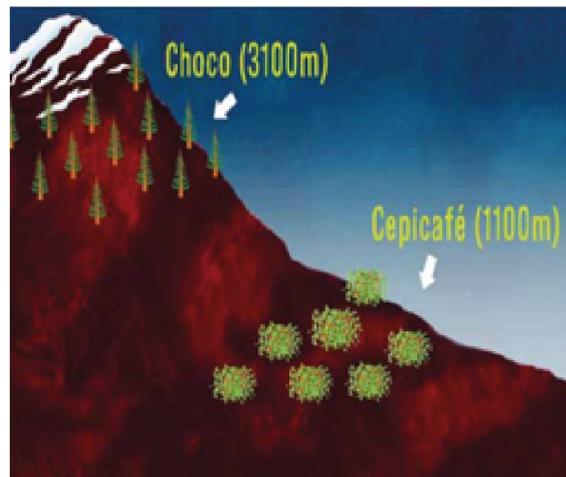
et al. 2012). Thus, the view on landscapes developed from a perspective of geophysical boundaries in which landscapes were led by processes of nature, towards that of a physical space in which not only nature, but also actors and supply chains play a decisive role.

Three scales for landscape approaches

In theory, the scale of a landscape is defined by its geophysical boundaries. For a landscape approach, however, landscape boundaries also depend on social and governance factors that determine the potential effectiveness of such an approach. According to Brassler (Brassler 2012) and Buck (Buck et al. 2006) the scale for landscape approaches is determined by an issue that is commonly acknowledged by different stakeholders in a certain area.

Box 1.1: Sierra de Piura, Peru

An example of a successful integrated landscape project built on synergistic elements is that of the reforestation programme of a highland forest in Sierra de Piura, Peru. Café Direct, a British coffee producer of fair trade coffee and tea, together with cooperative Cépicafé, initiated a project to assist local smallholders in restoring the highland forest which had been affected by climate change, resulting in low land water flow. By reforesting the degraded areas, starting at an altitude of 3200m above the town of Choco, local people who would depend on subsistence agriculture received an additional source of income by managing the tree nurseries. Once these nurseries were established, carbon credits were sold on the condition that 10% of the income would be invested in forest management. This ultimately led to successful restoration of the forest and water flow to the production site and improved livelihood conditions for local communities (www.cafedirect.co.uk; (ProClimate 2014).



Schematic drawing of forest and coffee plantation situated at Sierra de Piura (source: Bance et al. 2012).

By increasing awareness about the importance of tackling this shared issue (e.g. via knowledge transfer or capacity building), the boundaries of such an area could move outward, thus increasing the scale of the landscape for which a landscape approach could be effective. The actual effectiveness of such an approach is also limited by governmental restrictions or national borders. Thus, the scale at which a landscape approach could be successfully implemented depends on: 1. Geophysical boundaries; 2. Boundaries of social or stakeholder incentives; and 3. Government restrictions and administrative borders. The last two landscape scales can be expanded via knowledge transfer, capacity building and financial support; thus ensuring the effectiveness of a landscape approach to reach beyond the geophysical boundaries landscape.

1.3 Development of landscape planning and lessons learned from past initiatives

Approaches on landscape level are not new. Past landscape initiatives have shown that integration of different stakeholder objectives is not easy (Chan et al. 2007). Traditional landscape thinking involved a top-down perspective with a focus on government land-use planning for biodiversity conservation, leaving little attention for local communities. Over the

past two decades, this view developed towards a more bottom-up, multi-stakeholder perspective in which the objectives of all stakeholders in a landscape are taken into account in decision making. Focusing no longer on top-down implemented goals, the integrated landscape approach became a method of simultaneously addressing economic, social and ecological issues by stimulating different stakeholders to work together and become aware of the benefits of improvement of landscape sustainability (Milder et al. 2014). This created the necessary commitment of stakeholders to the integrated objectives.

Overview of the stakeholders and objectives pursued in landscape approaches

In the PPP scheme

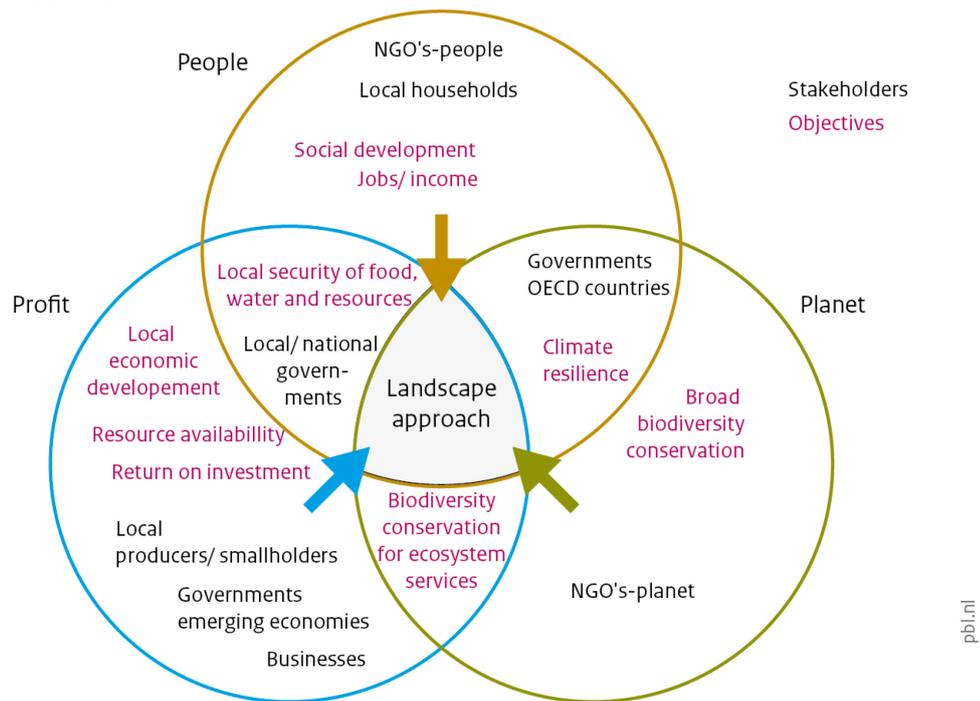


Figure 1.1: Overview of the different positions of stakeholders, based on their primary interests, and the different objectives pursued in integrated landscape approaches positioned within the PPP scheme.

Current integrated landscape approaches claim to address issues at all three domains of sustainability: people, planet and profit (PBL 2008). Therefore, landscape approaches, theoretically, aim to cover the centre of the classic triple P scheme (Figure 1). The practical embodiment of such approaches may however deviate from this central position in the triple P scheme, depending on the objectives of involved stakeholders and feasibility of a well balanced landscape approach in specific situations.

Lessons learned from past landscape approaches

Some important lessons were learned from past landscape approaches, the greatest of which is arguably the importance of the involvement of all relevant stakeholders. Two categories of stakeholders that until recently have been underrepresented in landscape initiatives are smallholder farmers and private sector representatives. NGOs, governments and businesses increasingly acknowledge the importance of empowering smallholders, a traditionally weak stakeholder group, in order to strengthen broad societal support for landscape approaches and provide smallholders with the means to use more efficient and sustainable production methods, thus increasing and securing the global supply of food and resources. Companies increasingly recognise their impact and dependence on the landscape, and governments and

NGOs also recognise this impact (both positive and negative). In addition, companies are one of the potential sources of funding for interventions to manage the landscape in a more sustainable manner. Another lesson is the notion that knowledge transfer to smallholders and local governments in combination with capacity building is essential to get local stakeholders involved. In addition, the scientific world should increase their sharing of knowledge with businesses and governments to steer decision-making. Finally, past initiatives have shown that better monitoring and evaluation is needed in order to document and steer the effectiveness of landscape approaches.

1.4 Designing shared solutions in a landscape approach

Different drivers for participation in landscape approaches can be identified according to the primary objectives of different stakeholders as shown in the triple P scheme (Figure 1). The main goal of a successful, integrated landscape approach would be to bring together all objectives and stakeholders, and, given the landscape characteristics, design and agree on a common theory of change in which shared long-term landscape goals are formulated. Although with more stakeholders involved, the process of implementing a landscape approach could become more complex, it would also increase the possibility to design an inclusive theory of change with broad social support, thus improving the chances for a successful landscape approach on a longer term and a larger scale (see the example of Kagera in the box below).

Box 1.2: Kagera Transboundary Agro-ecosystem Management Programme

The Kagera Transboundary Agro-ecosystem Management Programme aims to demonstrate that involving a large number of stakeholders in a landscape approach is complicated, but offers good opportunities when such collaboration is established. Covering areas in Burundi, Rwanda, Tanzania and Uganda, the Kagera river basin forms an important source of livelihood security and economic activity for a large number of stakeholders, including local farmers, local governments and large (international) businesses. The Kagera project aims to bring together these stakeholders by combining existing land management initiatives in the area through conflict resolution, knowledge sharing, identification of measures to improve tenure security and harmonising local governments' sectoral plans. Thus far, the project has established broad stakeholder collaboration and support for sustainability initiatives in the landscape. This could lead to both local and global benefits in terms of restoration of degraded lands, climate change adaptation and mitigation, protection of international waters, biodiversity conservation, empowerment of local communities, increased food security and improved agricultural production (FAO 2014a).



View of the Kagera river basin

Individual stakeholders have individual interests

Interviews and the literature on past and current landscape approaches have shown that these are often dominated by drivers or stakeholders from a specific – people, planet, or

profit – perspective. For example, in an analysis of 73 integrated landscape initiatives in Africa, Milder et al. (Milder *et al.* 2012) discovered that especially people- and planet-related objectives were often an entry point for such initiatives. A frequently mentioned challenge in these initiatives was that of accessing continuous funding for scaling up initiatives and strengthening market access. These challenges were mainly related to an absence of private-sector (profit-driven) involvement in landscape initiatives (Milder *et al.* 2012).

Challenges regarding people-oriented drivers

Approaches dominated by people-oriented drivers put a strong focus on the cooperation of smallholders. The strength of such a focus is that it improves their position relative to other, often more powerful, stakeholders, such as large NGOs, governments and businesses. An example is Community Based Natural Resource Management (Bond *et al.* 2006), an approach that aims to achieve smallholder objectives in a sustainable way. However, if smallholders are unable to adopt a vision on long-term sustainable land use – due to insufficient financial capacity or to governance limitations – they are often inclined to concentrate their efforts on short-term benefits or on safeguarding the provision of only those ecosystem services that are of direct interest to them. In the long run, this could be detrimental to landscape resilience and broad biodiversity conservation.

Challenges regarding planet-oriented drivers

A specific challenge of planet-driven approaches is their sometimes top-down character of implementation, reducing the possibilities for stakeholder involvement in decision-making. An example is the Loess Plateau Watershed Rehabilitation Project in China. Though proven effective in ecosystem restoration and improving local livelihoods at certain locations, the project has also been criticised for being implemented as a 'one size fits all' solution, without taking local social and cultural variations into consideration (Soltz *et al.* 2013). Another example is the High Conservation Value Approach. This approach aims to conserve high value nature areas in collaboration with stakeholders, while improving smallholder livelihoods and agricultural production. Though, theoretically, this approach offers good possibilities for inclusive green growth, the practical embodiment of the approach is characterised by certain challenges regarding stakeholder involvement. In West Kalimantan, for example, this approach was insufficiently supported by smallholders and businesses. Businesses focused only on minimal biodiversity conservation, while the objectives of smallholders were largely ignored (Colchester *et al.* 2014).

Challenges regarding profit-oriented drivers

Similarly, profit-oriented approaches, although they offer great possibilities for financing landscape approaches, involve specific 'blind spots', too. Investors may keep a short-term perspective on land-use management or are mainly focused on safeguarding the provision of certain ecosystem services instead of broad biodiversity conservation (Ferwerda 2012). An example is the Beira Agricultural Growth Corridor (BAGC) initiative in Mozambique, a project aimed at sustainably improving the efficiency and output of agricultural production and livelihood improvement of local farmers (InfraCo 2010). Though effectively improving production in that area, the project did not incorporate broad biodiversity conservation into the business model; there was only a specific focus on conservation needed for safeguarding water availability and soil quality for agricultural production.

Strengths and challenges of different perspectives in landscape approaches

Landscape approaches, although they aim to cover each of the three people, planet and profit domains, tend to be dominated by one of them. This represents a risk of certain objectives receiving priority over others; each perspective offers strengths for certain synergies, but there are specific challenges in expanding each perspective to an approach that integrates all landscape objectives. Therefore, each perspective needs a specific focus on addressing such challenges and ensuring the integration of the broad diversity of stakeholder interests in a landscape. Table 1 gives an overview of the main strengths and challenges of people-, planet-, and profit-dominated approaches and the required actions to address specific challenges.

The role of governments

Governments play an important role in the success of landscape approaches. Organising the process of land-use planning, securing land tenure and defining environmental regulations are all government responsibilities. This is especially true when it comes to safeguarding common goods, such as biodiversity with no direct economic value for stakeholders. Financing or safeguarding these biodiversity elements remains a challenge in landscape approaches. By implementing (and enforcing) sustainability standards for the production and import of products from developing countries, western governments can force their businesses to make production more sustainable. Financial arrangements are necessary to overcome unfair distribution of costs and benefits. National governments and international organisations like the United Nations (UN) and NGOs (i.e. IUCN, WWF) can support and complement businesses in their sustainability ambitions by setting up compensation mechanisms, such as Payment for Ecosystem Services (PES) and Reducing Emissions from Deforestation and forest Degradation (REDD and REDD+) initiatives, or by negotiating mutual agreements via International Corporate Social Responsibility conventions (ICSR/IMVO) or Green Deals. Additionally, promoting the certification of landscapes instead of individual products could help stimulate stakeholders to broaden their ambitions and focus from individual sustainable supply chains or farms to sustainable landscapes, which offer local possibilities for combining functions. Furthermore, certification of landscapes may reduce the large variety in certificates that complicates decision-making for consumers today.

Long-term and consistent government support is essential for creating the necessary confidence among stakeholders to invest in more sustainable land-use methods. This challenges governments to adopt long-term perspectives on land-use management and long-term financial and policy commitment.

Table 1.1: characteristics of people-, planet- and profit-dominated approaches and actions to address the challenges within each perspective.

	Perspective		
	People	Planet	Profit
Stakeholders	NGOs, smallholders, International organisations UN	NGOs, international organisations UN	Businesses, international organisations (as trade partners), smallholders
Main objectives	Improvement in local livelihoods Food security Income and employment	Conservation of nature, biodiversity and ecosystem services	Stimulate economic development Strengthen the position of businesses
Strengths	Involvement of smallholders Direct local effects	Biodiversity conservation in the broad sense of the word is targeted and valued.	Businesses generate income and drive change In case of a long-term perspective, good possibilities for financing landscape approaches International market access
Challenges	Limitations due to lacking technological knowledge and capacity and limited financing Absence of powerful stakeholders, leading to government restrictions and limited private sector financing	Limited stakeholder involvement in biodiversity conservation if awareness of the benefits is lacking Interest of investors may be limited to the short-term provision of certain ecosystem services, instead of long-term overall biodiversity conservation	Short-term perspective of investors Possibly limited attention for people and biodiversity not directly relevant for production
Actions to address challenges	NGOs/governments: Provide technological knowledge transfer combined with capacity building NGOs/smallholders: Involve local and national governments in order to obtain the necessary long-term support for landscape initiatives (e.g. via secure land tenure) NGOs/governments/businesses: Support smallholder organisations NGOs/governments/smallholders: Focus on involving businesses that adopt long-term land-use perspectives (family owned companies, pension funds).	Research institutes/NGOs: Share knowledge on the benefits of biodiversity conservation and on sustainable land-use practices Governments: Make investments in biodiversity conservation easier via financing mechanisms Governments/NGOs: Focus on involving businesses that adopt long-term land-use perspectives (family owned companies, pension funds)	Research institutes/NGOs/governments: Facilitate knowledge transfer and CSR agreements to increase business awareness and incentives for participation in landscape approaches Governments: Make investments in biodiversity conservation easier via financing mechanisms

1.5 Smallholder empowerment via farmers' organisations

The position of smallholders, who, traditionally, are less powerful stakeholders, could be at risk if other stakeholders dominate the process of decision-making within a certain landscape approach. Smallholder positions can be strengthened via secure land tenure and the establishment of farmers' organisations. Land tenure is largely dependent on local and national government efforts. Other stakeholders can only indirectly influence land tenure, which makes this a solution that is often not easy to reach. Farmers' organisations, however, can be directly supported by many different stakeholders (businesses, NGOs and UN FAO).

Farmers' organisations, such as associations and cooperatives, can help smallholders organise themselves in establishing more efficient and larger scale production methods, which enables higher yields and higher product security. This could lead to improved livelihoods, better food security and economic development, locally, and greater security of supply for businesses.

1.6 The challenge of integrating the biodiversity objective

Many objectives that play a role in landscape approaches (e.g. economic development, income, social development, food security) directly involve one or more stakeholders and are therefore generally well safeguarded in multi-stakeholder dialogues. This is different for biodiversity, in particular the biodiversity that is not directly relevant for production. The benefits of such biodiversity conservation do not flow back directly to those who have invested in it. Forest management is a good example; the conservation of forests prevents CO₂ emissions, soil degradation and erosion, and ensures a stable water supply. These benefits affect an entire watershed and even have positive global effects, in terms of climate change mitigation. The local stakeholders who invest in sustainable forest management, however, only partially benefit from this, when factoring in investment costs and/or missed income (e.g. short-term gains from lucrative timber production). These could easily outweigh the global and public benefits.

A role for governments in organising financial flows for biodiversity conservation

International organisations from the UN and institutions such as the World Bank should support biodiversity initiatives by implementing compensation mechanisms to share the costs of biodiversity conservation, especially in cases where the benefits are not clear or do not reach stakeholders directly. Combined with land tenure secured by national governments (creating a level playing field) and the transfer of knowledge about long-term effects of biodiversity conservation, this could lower the threshold for smallholders to adopt more sustainable production methods (FAO 2012b; Tropenbos International 2014).

Broad biodiversity conservation as part of risk mitigation

Certain ecosystem services may be more easy to conserve, such as provisioning ecosystem services in the form of crops or some forest products. Investments by stakeholders in these services provide them with direct benefits. However, in order to create resilient landscapes as a basis for sustainable development, sometimes more is needed than just the conservation of certain financially valuable ecosystem services. Identifying related ecosystem services is a way of creating synergies.

For the conservation of a broader level of biodiversity, it is essential that the costs and benefits are shared equally. Cooperation of stakeholders is a precondition for achieving this. A specific benefit of landscape approaches is the fact that they enable stakeholders to mitigate the risks related to biodiversity losses beyond their farm or plant level. Once stakeholders realise that they share similar risks, they may consider sharing the costs of mitigation. Creating awareness on the value of biodiversity may stimulate such cooperation and convince stakeholders of the importance of biodiversity conservation; for instance, for the long-term availability of natural resources. In this functional view on biodiversity, the landscape approach could become interesting for other investors, as well; with the growing scarcity of resilient production areas, companies with a long-term perspective on resource security and returns on investment will become increasingly interested in creating sustainable landscapes. This means that the landscape approach is not only interesting in

terms of development aid, but may also form a basis for profitable long-term investments in inclusive green growth projects, where broad conservation of biodiversity and sustainable use of ecosystem services is key.

1.7 Monitoring and evaluation

The success of achieving sustainable development on a landscape level can only be determined on the basis of effective monitoring of indicators representative of the different domains. Monitoring can help to maintain the balance between people, planet and profit objectives, and to ensure that all landscape issues are addressed. Monitoring the effects of landscape approaches on development and biodiversity conservation, therefore, should be a standard element in landscape approaches. Monitoring is key to evaluate the effects of landscape approaches and make them known to the public. Furthermore, monitoring provides the ability to make targeted adjustments to landscape projects that do not lead to the desired effects. Additionally, monitoring is becoming more and more important among businesses for claiming results and impacts, thus providing a basis for public accountability.

Result areas and example indicators for monitoring the effects of landscape approaches

In the PPP scheme

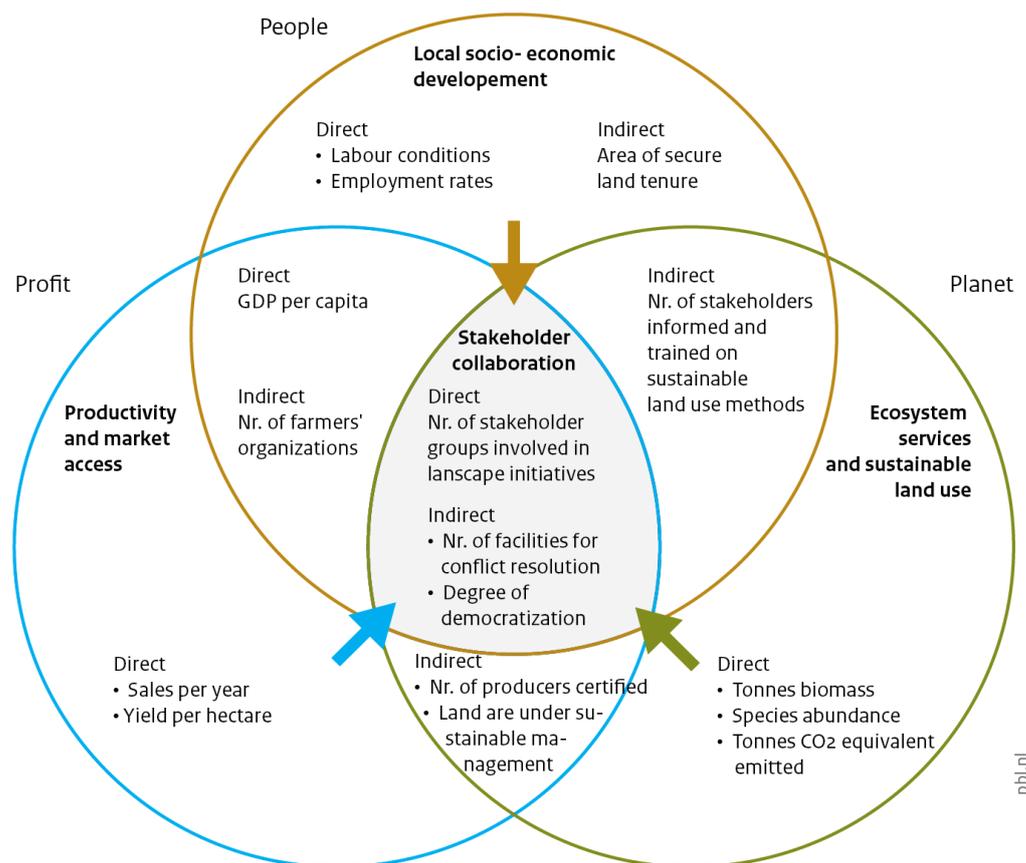


Figure 1.2: Result areas and example indicators for monitoring the direct and indirect effects of landscape approaches

Input for monitoring may provide information on the direct effects of interventions, or, in case direct effects are difficult to measure, monitoring can be applied to collect data on indirect effects. Organisations such as CIFOR and IDH are already working on monitoring frameworks that are specifically designed to measure the effects of landscape approaches.

The result areas and indicators mentioned by CIFOR, IDH and Kessler et al. (Holmgren 2012; IDH 2011; Kessler *et al.* 2012) were used to define relevant indicators for the three domains of landscape approach: people, planet and profit. Four result areas were defined: 'ecosystem services and sustainable land use' in the planet spectrum, 'local socio-economic development' in the people spectrum, 'productivity and market access' in the profit spectrum' and finally, 'stakeholder collaboration' in the centre of the triple P scheme, forming the basis for successful landscape approaches. Figure 2 shows these result areas divided over the triple P scheme, together with examples of relevant direct and indirect indicators for success.

1.8 Dutch policies on international development

The Dutch Ministries of Foreign Affairs (BZ), Economic Affairs (EZ) and Infrastructure and the Environment (IenM) have already implemented or are supporting a number of projects in which the landscape approach is applied. The most prominent ones are the new Sustainable Land and Water Program (SLWP, part of the Ministry of BZ supported IDH Sustainable Trade Initiative), the Verified Conservation Areas approach (VCA), promoted by The Ministry of IenM. The Ministry of EZ has several projects emerging from the "Uitvoeringsagenda Natuurlijk Kapitaal (UNK)" (implementation agenda on natural capital), such as a number of pilot projects in Africa and Brazil and a recent co-organized conference (Nairobi, Kenya, July 2014) that resulted in "the African landscapes action plan" containing strategies to promote widespread implementation of the landscape approach in policies, businesses and science across Africa.

Maintain a broad perspective beyond direct business interests

The Dutch Government applies different types of measures for development cooperation; some are people-oriented, others are profit-oriented or planet-oriented. The existing landscape projects aim to involve (often Dutch) businesses that have an interest in the specific landscape in which the project is carried out. The analysis presented in this report indicates that this type of approach involves a risk of certain landscapes being excluded, namely those that without a direct economic value to (Dutch) businesses, which may lead to certain people and planet objectives not receiving adequate attention. The Dutch Government, as the promoter of public interests, could adopt a broader perspective on the landscape approach and also implement it in landscapes that have little or no direct relevance for the Dutch economy, but where biodiversity conservation is vital or where the incentives for becoming more sustainable are already present.

Facilitating cooperation and clustering budgets

Another main finding is that more cooperation is required between the three Dutch ministries that have international development goals. Instead of each implementing separate projects with different departmental targets, an overarching international integrated agenda on development and biodiversity could be established, combining the ambitions of the three ministries regarding landscape approaches. This would enable the available knowledge in this area to be clustered and amplified. Furthermore, an international agenda would enable the available budgets for landscape approaches to be combined and possibly be implemented more efficiently.

FULL RESULTS

2 Introduction

2.1 Background

A growing world population and a related growing demand for food and other resources puts an ever-increasing pressure on natural resources and climate. In order to ensure long-term growth, the exploitation of natural systems in which farmers, multinationals and other stakeholders operate needs to become fully sustainable. Biodiversity conservation forms an essential part of addressing such challenges, as it stands at the basis of maintaining healthy and resilient ecosystems, necessary for sustainable provision of ecosystem services and securing adequate fresh water availability. In addition, resilient ecosystems form an essential factor for climate change resilience and mitigation.

Global trends converging on a landscape level

With an expected world population increase of 30% by 2050 and globally changing diets, food demand is expected to rise with 60% in the next 40 years (FAO 2012a). The major part of this population increase will take place in Asia (50% of total increase) and Africa (30% of total increase) (UN 2009). This change is combined with increasing urbanisation and changing diets which include an increasing amount of livestock products in those areas. Figure 2.1 shows what effects a dietary change alone has on production needs in Africa. Combining this with the expected population increase, the demand for food and other resources will increase dramatically above current production levels.

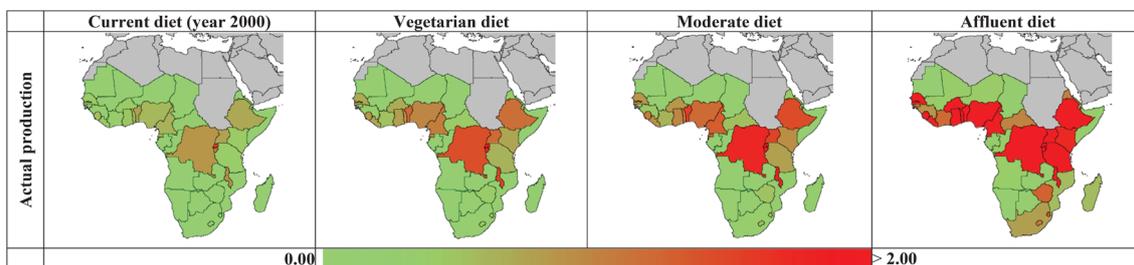


Figure 2.1: Cropland requirements at actual production levels per country and with different diets, expressed as fraction of available agricultural land (Arets et al. 2011).

Meeting this demand with current production methods will inevitably lead to further deforestation, increased water shortages, and ever-increasing competing claims for land, water and other resources (Arets et al. 2011). For example, global demand for freshwater is expected to exceed supply by 40% in 2030 (Kissinger et al. 2013). This will inevitably lead to further expansion of agriculture, often at the cost of natural ecosystems (Leadley et al. 2010; ten Brink et al. 2010). These developments provide an alarming picture for the future of biodiversity - especially developing countries, where the major part of these developments is expected to take place. Only an overall sustainable system can be a solution for these issues, a system in which higher production yields, economic development and improved social conditions can be achieved together with biodiversity conservation. This requires actors of different sectors to work together on a landscape level (FAO 2012a; Scherr and McNeely 2008).

The significance of landscape approaches for sustainable development

Stakeholders have varying goals within the landscape they are operating in. When individually addressed, the approaches taken to reach these goals could have negative reciprocal impacts or trade-offs, as land-based sectors are generally not inclined to seek solutions beyond sectoral borders and beyond their own economic activity, sectoral territories and government structures (Holmgren 2013a). Furthermore, several studies on supply chains and agricultural practices have indicated that sustainability initiatives limited to the supply chain or farm level do not have the desired range to effectuate a long-term improvement: negative effects beyond the reach of these initiatives (unsustainable operations outside of a supply chain, plantation or farm) continue to enforce ecosystem and landscape degradation (Brussaard *et al.* 2010; de Man *et al.* 2014; FAO 2014b; van Oorschot *et al.* 2013). There is a growing sense that actors outside the reach of supply chain or farm level sustainability initiatives need to become involved as well in order to achieve long-term resource security and biodiversity conservation at higher geographical scales (FAO 2012a; Scherr and McNeely 2008; Waarts *et al.* 2013).

The idea behind landscape approaches is that finding cross-sectoral solutions will lead to synergies that are better than the sum of sector-specific solutions (Holmgren 2013a). A specific benefit of landscape approaches is the fact that they enable stakeholders to mitigate risks beyond their farm or plant level. These are mainly water, biodiversity, climate and community risks that require the involvement of other stakeholders. In short, the landscape approach aims to contribute to sustainable development by supporting economic and social development combined with local conservation of biodiversity, in which biodiversity is regarded as a basic element for sustainable growth. A key element of landscape approaches is the involvement of stakeholders in decision making on land use within a landscape. By involving stakeholders, a land-use strategy can be developed in which the objectives of each stakeholder are met without significantly interfering with the objectives of other stakeholders.

2.2 Problem definition

Over the past few years the landscape approach has received much attention from researchers, in particular regarding its usefulness as a means to support sustainable development in developing countries (Brasser 2012; FAO 2012a; Kissinger *et al.* 2013; Scherr and McNeely 2008). Though cases have been described where the landscape approach was implemented successfully (CREM 2011; Kissinger *et al.* 2013; Milder *et al.* 2014), a clear view on the rationale behind the historical development and present day successes of landscape approaches is still lacking, as well as an overview of the ways in which different actors can be stimulated to take part in landscape initiatives and the way in which national and international policy can play a role in making landscape initiatives successful.

2.3 Objective

The objective of this study is to develop a view on the rationale behind the success of present day landscape approaches, especially regarding the way biodiversity is positioned, and to determine what role different stakeholders play and how policy can facilitate landscape approaches, in particular Dutch policy on international development cooperation.

In order to reach these goals, the following set of sub questions has been identified:

1. What are important principles of the landscape approach? What advantages can this approach offer to local stakeholders, development of a region and to companies)?
2. What lessons can be learned from landscape-oriented approaches in the past? What were success factors and barriers? Are there landscape transcending effects?
3. What are currently the different views on the landscape approach?
4. What role do biodiversity and ecosystem services play in landscape initiatives?
5. Which role and motivation do different stakeholders have when it comes to landscape initiatives and what are incentives for participation?
6. What governance and financial contexts are necessary to facilitate landscape initiatives?
7. Which role can national and international policy play in making landscape approaches successful?
8. What are the effects of current Dutch policy measures in development aid? Is there room for improvement?

Scope of the research

- **The position of biodiversity in landscape approaches.** Historically, biodiversity conservation has been a difficult objective to reach within sustainability initiatives, as it is traditionally regarded as competing with livelihood and economic objectives (Chan *et al.* 2007; Milder *et al.* 2014). The landscape approach could theoretically provide the right elements for supporting a management and collaboration system that incorporates biodiversity conservation without losing sight of other needs of stakeholders in a landscape. This study describes the position of biodiversity and ecosystem services in a landscape as an integrated part of stakeholder objectives. biodiversity conservation in this respect covers the broad sense of the word: safeguarding provision of ecosystem services, preventing soil degradation and water loss, and conserving biodiversity that might not be of direct relevance for production. To establish an equal sharing of the costs and benefits of broad biodiversity conservation, cooperation of multiple stakeholders and long-term sustainable land-use management is required. The landscape approach provides these possibilities as both stakeholder involvement and a long-term focus form an important basis of the approach. Another reason for this focus on biodiversity is that integration of biodiversity considerations in sectoral policies is seen as an important area of further development (PBL 2014a).
- **Applicability of landscape approaches in developing countries.** Issues regarding food, water and resource shortages and competing claims for land are most prominent and expected to increase in developing countries (FAO 2012a; UN 2009). A specific focus was therefore put on the applicability of landscape approaches for developing countries.
- **Applicability for the Dutch Government.** In this report there will be a focus on the implications of the landscape approach for Dutch policies on international development and the possible landscape synergies that can be established via specific policy measures of the Dutch Government. Additionally, a general overview of governance recommendations (applicable for all types of stakeholders) will be given as well.
- **Theory/practice.** This report discusses both the theoretical framework of the landscape approach and its implementation and possible boundaries in practice.

2.4 Approach

In order to get a clear picture of the concept 'landscape approach', the different views and drivers that are related to this approach and its success factors and barriers, a literature study was done on, supplemented with interviews with NGOs, research institutes, businesses and government bodies. The following organisations were interviewed:

Science

- African Studies Centre/Wageningen University
- Commonland Foundation
- Tropenbos International
- Utrecht University

Supply chain

- Agriterra
- Avance-PMC
- FloraHolland
- Solidaridad

Policy

- Beagle Sustainable Solutions
- Dutch Ministry of Economic Affairs
- Dutch Ministry of Foreign Affairs
- Dutch Ministry of Infrastructure and the Environment
- EcoAgriculture Partners
- DG DEVCO, European Commission
- The Sustainable Trade Initiative (IDH)
- IUCN

The insights retrieved from the interviews have been used as a guidance for the focus of our research and the set-up of this report. In addition, some specific lessons discussed in the interviews are mentioned in this report. In such cases, we refer to the concerning interview in the text.

In addition, the existing policy programs of the Dutch Government on international and sustainable development were evaluated in terms of stated goals, approaches and programs implemented to reach these goals and the extent to which these policies are sufficient and improvement is possible.

Case study

In addition to literature study and interviews, a case study is being done together with Plansup in order to show how the theoretical framework presented in this report can be applied in practice. This sub project concerns a case study on West Kalimantan, an area that has been researched by PBL before (internal report PBL 2014b). West Kalimantan is characterised by an increasing oil palm production market and decreasing biodiversity. Unilever is a large buyer in this area.

The West Kalimantan case study consists of four steps:

1. Performing an inventory of current socio-economic development and development goals at West Kalimantan and possible sustainability improvements in the region.
2. Creating a landscape map in which relevant land-use aspects are layered. These include regional spatial planning, concession areas, protected areas, land-use rights, biodiversity (MSA), forest cover, production suitability. Finally, these layers will be combined to find the key areas characterised by competing land-use claims.
3. The competing claims map, which contains relevant indicators for this area, will be used in combination with a business as usual and an inclusive green growth scenario to 2020, both developed from stakeholder input at the 2013 PBL workshop in West Kalimantan, to identify landscape level challenges, synergies and trade-offs.

4. Finally, the results will be used to determine a set of policy recommendations for the Dutch Government to support integrated landscape management in West Kalimantan.

The results of this case study are described in a separate document, and are available in an online mapping tool.

2.5 Reading guide

- **Chapter 3:** Gives an overview of the concept of the landscape approach, the development of this approach in the recent years and the added value of the landscape approach today.
- **Chapter 4:** Gives an overview of the sustainability domains - people, planet and profit - concept applied to landscape approaches. The characteristics of these perspectives and the possibilities for addressing specific barriers in each domain are discussed. Additionally, the position of biodiversity within these perspectives is evaluated, as well as the possibilities for integrating biodiversity into landscape approaches.
- **Chapter 5:** Gives an overview of stakeholder incentives for participation in integrated landscape initiatives, possible barriers and solutions to improve involvement and reach synergetic solutions. Overview of financing structures and governance actions to support landscape approaches.
- **Chapter 6:** Discusses an analysis of policies and programs of the Dutch Government on international cooperation and sustainable development ambitions.
- **Chapter 7:** Conclusions and recommendations.

3 The landscape approach: concept, objectives, lessons learned

3.1 Introduction

Development initiatives focusing on a landscape level are not new. Landscape thinking has developed and changed over the past decades and has had various characteristics, depending on the specific approaches and focus of initiating organisations. This can be explained by the different views on a 'landscape' and the different priorities that organisations have had over time, a variety that is still present in landscape thinking today. This chapter goes into the various characteristics of landscape approaches and the development of the landscape approach over time. In addition, an analysis of literature on case studies was done to get an overview of the lessons learned regarding past landscape-oriented approaches.

3.2 The evolving concept of landscapes

3.2.1 What is a landscape?

In order to define what a 'landscape approach' really entails, a clear definition of the term 'landscape' is required. What are the characteristics of a landscape, which are the key elements and what surface area should we consider?

Currently, the Landscapes for People, Food and Nature (LPFN) initiative has identified over 80 terms and definitions that address landscapes. Over time the interaction of people and nature in landscapes has evolved. Derived from landscape ecology science landscapes as a system were defined as land units that have ecologically homogeneous characteristics (Zonneveld 1989). These characteristics include the land form, soil and vegetation and their interaction with climate. Driven by physical geographic determinism, humans and society were considered part of a landscape, but their activities were considered to be guided (and limited) by the natural conditions and boundaries of the physical landscape (van der Wusten and de Pater 1996). The introduction of administrative boundaries created a new perspective on landscapes, often combined with spatial planning ambitions of national governments, where humans tried to optimise the use of natural resources available in landscapes. By means of a land unit survey or land evaluation various disciplines were combined to create an integrated view on a landscape. Commonly this resulted in combined or individual maps of the landscape characteristics and could help to identify the most suitable potential land uses (Zonneveld 1989). With increasing globalisation and the integration of people in global

production supply chains landscapes are today more and more seen as the spatial scale where many different stakeholders from global to local level need to cooperate, and balancing of competing interests and risk needs to happen (Brasser 2012; Scherr *et al.* 2012). Thus, the view on landscapes developed from a perspective of geophysical boundaries in which landscapes were led by processes of nature, towards a perspective of a physical space in which not only nature, but also actors and supply chains play a decisive role.

The FAO currently defines the landscape as 'the concrete and characteristic products of the interaction between human societies and culture with the natural environment', and distinguishes three key elements of a landscape: structure: the interactions between environmental features, land-use patterns and manmade objects; functions: the functions of ecosystems for farmers and society, such as provision of ecosystem services and recreational functions; and value: the value that society places on landscapes (e.g. the value for resource supply, but also cultural and recreational value) and the costs of maintaining or enhancing these landscape characteristics (FAO 2012a; Jongman *et al.* 2004). According to the FAO (2012a), a clear characteristic of a landscape is its interaction with human actions. The way in which different stakeholders prioritise the different elements in a landscape determines their perspective on a landscape approach. For example, if high priority is given to landscape value, there will likely be a strong focus on biodiversity conservation. Or if priority is given to landscape functions, there could be a high focus on trade benefits, thus on that part of biodiversity that provides ecosystem goods and services.

Landscape size depends on situation and stakeholders

What area should we consider when talking about landscape approaches? Peter Holmgren, CIFOR's Director General, defines landscapes based on two basic parameters: geographic extent and governance (Holmgren 2013b). He maintains a broad view on the term landscape, and argues that landscape size could vary from small, local areas to the whole earth as one landscape.

In this study, we take on a less broad perspective on landscape, as the practical applicability of landscape approaches most likely does not extend as far as may theoretically be possible. We define landscape scale based on three aspects. Theoretically, landscape scale is defined by geophysical boundaries. For a landscape approach, however, landscape boundaries also depend on social and governance factors that determine the potential effectiveness of a landscape approach. According to Brasser (Brasser 2012) and Buck (Buck *et al.* 2006) landscape scale for landscape approaches is determined by a shared issue that is commonly acknowledged by different stakeholders in an area. Thus, a landscape could be for example one community. By increasing awareness on the importance of tackling this shared issue (e.g. via knowledge transfer or capacity building), the boundaries of the area in which the issue is acknowledged could be moved outward, thus increasing the scale of the landscape in which a landscape approach could be potentially effective. The actual effectiveness of a landscape approach is furthermore limited by governmental restrictions or country boundaries. Thus, ultimately the landscape scale in which a landscape approach can be successfully implemented depends on: 1. Geophysical boundaries; 2. Social or stakeholder incentive boundaries; and 3. Government and country boundaries. The latter two landscape scales can be expanded via knowledge transfer, capacity building and financial support, thus ensuring the effectiveness of a landscape approach to reach further within the geophysical landscape.

It becomes clear that possible results that can be achieved from a landscape approach will increase when stakeholder-related borders are shifted outward, covering a larger area within a geophysical landscape. This requires an increase of stakeholder involvement.

In certain situations, it can be advisable to consider landscape borders that go beyond geophysical borders. For instance when external effects that influence a geophysical area need to be addressed, or when a government decides to implement country-wide policies (extending geophysical borders) that positively or negatively affect sustainability.

3.2.2 Principles of the landscape approach

The CBD (CBD 2004) defines the landscape approach as “a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way”. This is characterised by integrating economic, social and ecological goals for development. According to Sayer *et al.* (2012) a universal strategy for inclusive green growth on a landscape level does not exist. Though general aspects of a landscape approach can be agreed upon, the details or focus of different landscape approaches vary. The way in which people, organisation or institutions view a landscape approach depends on their personal objectives and considerations for initiating a landscape approach.

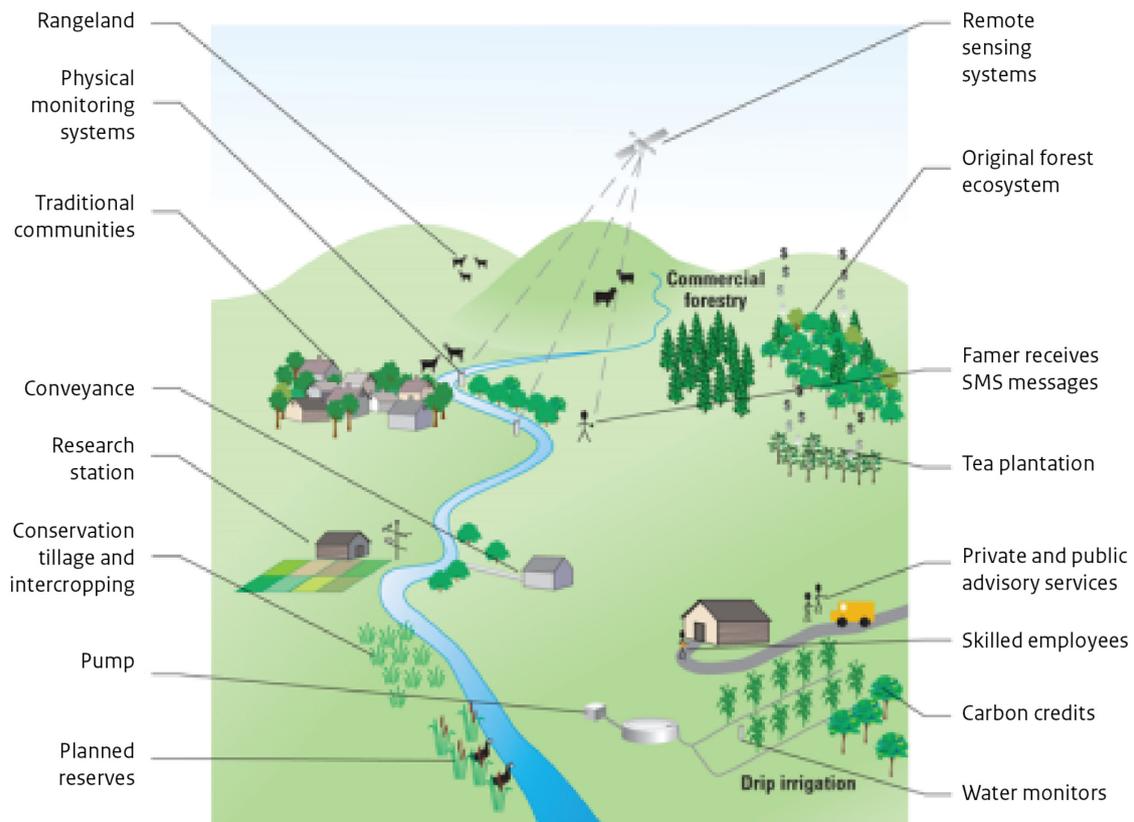
The landscape approach: connecting spatial planning and multi-stakeholder objectives

By identifying the many different terms and definitions for landscape approaches, Scherr *et al.* (2013) have clearly illustrated the large variety in views on the landscape approach. In general, though, landscape approaches have in common that they are all based on the notion that single-objective, sectoral or farm level approaches are not sufficient to achieve sustainable land use on a larger scale or in the long term (EcoAgriculture 2012; FAO 2012a; Scherr and McNeely 2008). A landscape approach aims to go beyond the limited reach of sectors or individual farms by integrating objectives regarding different ecosystem services and human activities.

An important characteristic of landscape approaches is the evident role of spatial planning: the geophysical landscape forms an essential basis for the approach. In addition, and in this respect current landscape approaches are different from some spatial approaches with a conservational aim implemented in the past, the landscape approach aims to connect the spatial characteristics of landscapes to specific objectives of stakeholders. In addition, a clear sustainability perspective is kept in mind: the objectives of stakeholders are met as far as they stay within the limits of sustainability. The landscape approach therefore differs from some other types of multi-stakeholder decision making in which a management structure is sought that focuses primarily on meeting the objectives of stakeholders, without taking into account sustainability limitations. The basic principle of landscape management plans based on an integrated landscape approach is that they take into account the objectives of different stakeholders, but also ensure to maintain overall sustainability of the landscape and ecosystems.

In a landscape approach the interaction between providers/managers and users of biodiversity would be made visible to enable spatial planning (Figure 3.1). In an ideal landscape all stakeholders would have access to the same information, knowledge and technology for making optimal decisions on land use and be able to monitor the effects and progress, and institutions would create a level playing field for all parties involved.

A resilient climate-smart integrated landscape using the ecosystem services nature provides



Source: The World Bank, World Development Report 2010

Figure 3.1: A resilient, climate-smart agricultural landscape using the ecosystem services nature provides, would enable farmers to use new technologies, techniques to maximise yields and allow land managers to protect natural systems, with natural habitats integrated into agriculturally productive landscapes (source: World Bank 2010).

Scherr *et al.* (2012) have defined three key features of sustainable (production) landscapes: Climate-smart practices at a landscape level; diversity of land use across the landscape; and management of land-use interactions at a landscape scale. Here we discuss why these three elements are essential for integrated landscape approaches:

Climate-smart practices at a landscape level

Long-term landscape sustainability requires efficient management of water, soil nutrients and other resources at a landscape level. Some organisations believe that a transition towards using modern technologies is the key to increasing efficiency of smallholders (Agriterria 2013). Others seek the solution at a combination of more natural methods of production (referred to in literature as climate-smart agriculture or eco-agriculture), such as permacultures, minimal tillage farming or farming with perennials or agroforestry (Bélair *et al.* 2010; de Man and Verweij 2011; Scherr and McNeely 2008; Scherr *et al.* 2012). In order for climate-smart initiatives to be successful, management of ecosystem services on a landscape scale is necessary. Single, farm level initiatives aimed at increasing efficiency of resource use will not lead to long-term climate resilience or resource security unless similar systems are adopted at a larger scale.

Diversity of land use across the landscape

In order to improve landscape resilience, biodiversity needs to be protected. For a long time it was thought that this necessity was in direct conflict with the ongoing trend of expansion and intensification of agriculture. However, as the need for biodiversity conservation is becoming more and more pressing for the sake of future food and resources security, more biodiversity-friendly (in some cases more traditional) methods for agricultural production are being considered. Large scale monocultures have shown to have a destructive effect on ecosystem resilience (IIED 2013): the key to maintaining and improving resilience at a landscape level is to bring diversity of land uses within a landscape, creating so-called mosaic landscapes (IIED 2013; Scherr and McNeely 2008). In these mosaic landscapes, three basic types of land use occur: intensive agriculture, extensive agriculture or a variety of crops, and conservation areas. An important benefit of such landscape diversity is, besides biodiversity and soil conservation and security of fresh water supply, a diversification of the income options for smallholders (Harvey *et al.* 2014). Besides incomes from agriculture, farmers could obtain additional incomes from for example forest products (de Man and Verweij 2011). The proportion in which these three land-use types should occur in a certain landscape depends on the specific economic, social and ecological characteristics of a landscape and on the priorities of stakeholders. The spatial planning of mosaic landscapes is therefore highly debated upon (Brasser *et al.* 2014; Ewers *et al.* 2009; Hobbs *et al.* 2008; RELU 2012).

Management of land-use interactions at a landscape scale

One of the major lessons that were learned from past integrated landscape initiatives is the importance of stakeholder involvement in landscape initiatives. In order to reach not only ecological goals, but economic and social goals as well, it is important to map the key issues and objectives that stakeholders in the landscape deal with and adhere to an integrated management plan in which these topics are addressed. Combined with clear monitoring systems, active management of land-use interactions can help reduce conflicts and convince stakeholders to participate (Scherr *et al.* 2012). The FAO additionally emphasises that the success of landscape scale initiatives on improving resource management and efficiency depends strongly on the local context of smallholders: their incentive to participate in initiatives based on integrated landscape approaches makes all the difference to the success of such initiatives (FAO 2012a).

3.3 Development of the landscape approach: lessons learned

3.3.1 Development of landscape thinking

Rural development and regional planning approaches have a long history with a varying degree of success. In both the agricultural and conservation domain the focus on top-down (sectoral) blue print policies gradually shifted towards a more integrated bottom up approach that simultaneously addresses conservation, food security and livelihood needs at both the landscape and single farm level (Ellis and Biggs 2001; Milder *et al.* 2014).

Varying results of past initiatives

From around the 1990s onwards, when western international development organisations became more and more aware of the importance of integrated land-use initiatives, the landscape approach became prominent in development initiatives (Ellis and Biggs 2001;

Milder *et al.* 2014; Sayer *et al.* 2012). The general view on the landscape-oriented approaches has changed during these years. Until around the year 2000, these approaches were strongly connected with biodiversity conservation as a major objective (Chan *et al.* 2007; Milder *et al.* 2014; Sayer *et al.* 2012; Van Tulder 2010; WWF 2002). Examples of such approaches are 'Integrated Conservation and Development Projects' (1985-2000) (Milder *et al.* 2014; Pfund 2010) and 'Landscape Ecology' (1980s) (Turner 1989). People and society received little attention in those early approaches. This one-sided view has led many projects to fail and has resulted in scepticism towards landscape initiatives at that time (Chan *et al.* 2007; Sayer *et al.* 2012). Furthermore, some early initiatives, such as 'Integrated Natural Resource Management', failed because they were too complex and at the time difficult to implement and evaluate (Milder *et al.* 2014).

Increasing stakeholder involvement in the 21st century

The start of the 21st century marks a shift to a more pragmatic view on sustainable development in which partnerships between stakeholders received a central role (Van Tulder 2010). Two developments in western society's awareness explain this shift. First, people became aware of the fact that the complexity of development issues and the difficulty of effectively addressing them had thus far been underestimated. Second, the western world began to understand that international development did not necessarily need to be based on western principles or the western development pattern of the past centuries. Countries such as China and India had shown that development was perfectly possible with different models and without the help of western development aid (Van Tulder 2010). These two trends in development thinking led to the notion that involvement of stakeholders and integrated approaches were needed instead of single-issue, top-down approaches. This new paradigm led to a new level of thinking on integrated landscape management. Focusing no longer on top-down implemented biodiversity goals, the integrated landscape approach now became a method to address economic, social and ecological issues by stimulating different stakeholders to work together and become aware of the benefits of improvement of landscape sustainability (Milder *et al.* 2014). WWF was one of the first organisations to implement these ideas in their approaches, which they referred to as Community Based Natural Resource Management. Though implemented at a smaller scale than would be desired for a landscape approach, these were some of the first initiatives that were based on local stakeholder involvement in decision making and integration of multiple objectives (Bond *et al.* 2006).

3.3.2 Lessons learned from recent landscape initiatives

There has been a vast increase of studies on landscape approaches in the past few years (e.g. CREM 2011; FAO 2012a; Kissinger *et al.* 2013; Milder *et al.* 2014), many of which reflecting on previous landscape initiatives and possible improvements for future initiatives. A few key lessons were learned from experiences with past landscape and sustainability initiatives, which largely relate to the involvement and empowerment of stakeholders and monitoring effects of initiatives.

Multi-stakeholder processes

As was mentioned before, one of the major lessons learned was the fact that the success of landscape approaches remains limited if not all relevant stakeholders are involved and willing to make a change (Brasser 2012; Chan *et al.* 2007; Milder *et al.* 2014; van den Berg and Biesbrouck 2000). To increase the potential success of landscape approaches, in particular in the long term, a level playing field is necessary in which all stakeholders are heard and can gain the confidence that is necessary for taking the step to invest in more sustainable land or water use options. As local smallholders play a crucial role in the success or failure of an integrated landscape approach, these stakeholders should be given a proportionally large say in decision making (Sayer *et al.* 2012). Governments maintain an important role too, in

strengthening other stakeholders' confidence by providing long-term support through policies or financing (Ferwerda 2012; Parker McKeown *et al.* 2013).

Multi-objective orientation in which biodiversity receives adequate attention

Multi-stakeholder processes enable the development of integrated approaches that aim to reach multiple objectives for sustainable international development. As biodiversity stands at the basis of sustainable and resilient landscapes, it is inevitable for biodiversity conservation to become an integrated part of other objectives at a landscape level (FAO 2012a; Scherr and McNeely 2008). Thus, though conservation is no longer the single objective of integrated landscape management, the landscape approach is still a very promising method to bring biodiversity to the attention to stakeholders and to effectively address degradation issues.

Involvement of businesses and supply chains

Another development of the past years is the growing notion that businesses are not sufficiently involved in development programs (Ferwerda 2012; Vollaard *et al.* 2012). In a study on 87 different integrated landscape initiatives in Africa, Milder *et al.* (2014) discovered that in only 14% of these cases businesses were involved. According to Milder *et al.* (2014), this participation gap between businesses and other stakeholders could inhibit the possibilities to use integrated landscape initiatives for strengthening market linkages. Another risk is that with leaving out businesses, landscape initiatives are lacking the powerful stakeholders that are sometimes necessary to counter weak governments (Milder *et al.* 2014). A positive development is the fact that among businesses, the awareness is growing that investing in landscape scale sustainability is beneficial in terms of financial and resource security (Solidaridad 2014). Utrecht University and the Commonland Foundation advocate to increase the role of businesses and investors who are front runners in terms of landscape sustainability and to use the successes of those businesses as examples for others (M. van Kuijk and P. Verweij, personal communication, April 24, 2014; W. Ferwerda, personal communication, April 14, 2014).

Empowering smallholders in farmers' organisations

In order to increase the possibilities for smallholder farmers to participate in landscape initiatives at a level playing field, farmers' organisations (associations and cooperatives) have proven to be effective at some cases. Such organisations help smallholders to gain a stronger position towards multinationals and governments. In addition, farmers' organisations are not only beneficial for local communities in developing countries, but they have also shown to be valuable partners for international businesses: local farmers' associations and cooperatives can stimulate local investments in technological development and efficient agricultural practices, which means higher yields and higher product security for businesses, as well as higher incomes for local producers. Organisations such as Agriterra aims to strengthen these farmers' organisations once they have been established. Agriterra focuses on larger organisations and offers support by strengthening the existing investment plans and federative structures of those organisations in order to assist member associations in their entrepreneurial ambitions and strengthen their advocacy. This is done in cooperation with large (international) businesses (Agriterra 2013; FloraHolland 2013). Avance-PMC, a Dutch consultancy company which assists financiers in their sustainability ambitions, emphasises the importance of such organisations to be strategically set up in order to have a lasting effect and build trust among smallholders. Farmers' organisations need to be built on a basis of mutual confidence between members of a community or sector (E. Kroese and M. Martinez, personal communication, May 26, 2014).

Knowledge transfer and capacity building

Another lesson learned from past initiatives is that knowledge transfer and capacity building on a local level is essential when involving smallholders, local governments and local NGOs (Jones 2007; Tropenbos International 2014). Local stakeholders need to be educated on the importance of biodiversity conservation and sustainable production in order to be convinced to switch to more ecosystem-friendly production methods. In addition, capacity building is required to provide smallholders with the required means (financial, technological) for switching to more sustainable methods.

More recently, it has been argued that there is a knowledge gap between the scientific world on one side and businesses and governments on the other. There are two factors that explain this. Firstly, governments and businesses are not sufficiently involved in scientific research projects (M. van Kuijk and P. Verweij, personal communication, April 24, 2014). Secondly, scientific data that could be of interest to governments or businesses is often presented overly complex and not adjusted to government or business language (Ferwerda 2012). These factors prevent proper involvement and decision making by governments and businesses when it comes to landscape approaches (M. van Kuijk and P. Verweij, personal communication, April 24, 2014; R. Zagt, personal communication, April 17, 2014). Recently there have been increasing efforts to bring science closer together with businesses and governments (e.g. Volvaard *et al.* 2012), but in this area there is still room for improvement.

Monitoring and evaluation of programme effects

Even though monitoring seems an obvious step in a planning process, still more effort should be made to effectively monitor the actual results of implemented landscape initiatives (M. van Kuijk and P. Verweij, personal communication, April 24, 2014). The effects of such initiatives have so far not been sufficiently mapped. Several organisations advocate to increase government and other investments in monitoring and evaluation, as indeed this is the only way to discover how effective certain initiatives are and at what points a programme should be adjusted in order to increase its success (Buck *et al.* 2006; de Haas *et al.* 2012; Seufert and Suárez 2012). Additionally, monitoring is also becoming a more important instrument for claiming results and impacts, and thus providing a basis for public accountability (Solidaridad 2014).

3.4 Why a landscape approach?

In what way can landscape approaches provide added benefit to reaching international development goals and, perhaps more importantly, why would landscape approaches be more successful these days than they were in the past? Here we describe a few factors that explain why the time is right for integrated landscape thinking.

3.4.1 The benefits of a landscape approach

Landscape approaches generate cross-sectoral synergies

NGOs, governments, businesses and local communities have varying goals when it comes to sustainable development, including: economic development, job and income generation, social development, food and resource security, strengthening supply chains and business relations, climate/ecosystem resilience and biodiversity conservation. When individually addressed, the approaches taken to reach these goals could have negative reciprocal impacts or trade-offs. An integrated landscape approach should prevent these impediments by bringing about such synergies that lead to reaching multiple goals without severely counteracting individual objectives. For example, instead of regarding agricultural production increase and conservation of biodiversity as two opposing targets, integrated landscape management is used to combine agricultural intensification with climate-smart practices and

efficient water management. Such integrated methods can work towards production increase while at the same time reaching biodiversity targets.

Specific advantages for biodiversity: sharing costs and benefits

A specific benefit of landscape approaches is the fact that they enable stakeholders to mitigate risks beyond their farm or plant level. These are mainly water, biodiversity, climate and community risks that require the involvement of other stakeholders, especially the ones confronted with the same risk. Once stakeholders realise that they share similar risks, they can consider to share the costs of mitigation (A. Brassler, personal communication, April 14, 2014). NGOs and research institutes in the forestry sector, in particular CIFOR, were some of the first to recognise the importance of this benefit: forest conservation could have many benefits for various stakeholders, but might be cost-ineffective for direct forest managers. Trying to share the cost and benefits more equally among stakeholders could make this economically more interesting for all stakeholders. To reach such a level of cooperation, local stakeholders in the landscape need to be aware of and acknowledge the value of forests for long-term production security and improvement of local livelihoods. This emphasises the necessity of an approach that focuses not only on sustainable forestry, but also on issues on a broader level, such as education, poverty alleviation and sustainability of supply chains (CIFOR 2012; Tropenbos International 2014). In addition, large scale landscape approaches enhance the field-level benefits of biodiversity or climate mitigation efforts (Scherr *et al.* 2012).

3.4.2 Recent developments increase the potential for success

It has become clear that landscape thinking has changed character considerably in the past decades and important lessons were learned from previous initiatives. Because the current view on landscape approaches involves the participation of stakeholders and integration of different objectives people have within a landscape, there is a higher chance of landscape approaches being broadly supported, thus increasing the possible success of such approaches. In addition, two other developments of the past few years have increased the potential success of these initiatives compared to earlier approaches:

- Development of new eco-friendly agricultural systems, which facilitate the switch to more environmentally friendly production (LPFN, 2012). Developments in modern technology have provided improved methods for eco-friendly production, such as precision methods for fertiliser application, irrigation and pesticides, and closed off systems that enable the reuse of water and fertilisers, leading to significant decrease in the demand of these resources (EcoAgriculture 2012) (G. Kok, personal communication, May 8, 2014). In addition, there is increased attention for maintaining or reintroducing traditional biodiversity-friendly production methods (EcoAgriculture 2012; Tittonell 2013).
- Development of new techniques that enable more systematic monitoring, and thus better landscape management (EcoAgriculture 2012). For example remote sensing and GIS tools. Organisations such as the World Resources Institute (WRI) and SarVision use these tools to map changes in land use and several other aspects that define ecosystem quality and resilience. The WRI displays these changes in the Global Forest Watch map. Their goal with publishing data on forest management and degradation is to encourage the improvement of forest management. Using satellite technology, open data and crowdsourcing, GFW is able to provide reliable and up-to-date information on the condition of forests worldwide (see www.globalforestwatch.org).

3.4.3 Landscape approach integrates objectives of different stakeholders

In short, the landscape approach is a promising method to integrate the different objectives of different stakeholders to create a sustainable system of landscape management from which all stakeholders can profit.

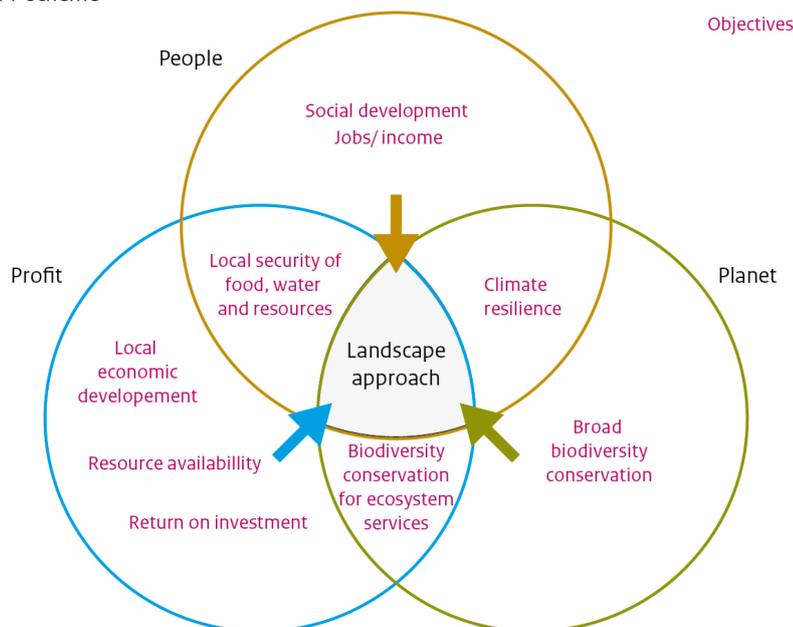
To achieve this there are three dimensions to be considered in developing a sustainable landscape approach (FAO 2012a; Scherr et al. 2013; World Bank 2014):

- **Horizontal:** spatially optimising, across different decision makers, the management of various sectors that depend on natural capital: agriculture, livestock, forestry, fisheries and nature conservation, to ensure that across the landscape synergies are taken advantage of and trade-offs are minimised;
- **Vertical:** taking into account the external drivers, such as higher-level institutions (land tenure), policies (subsidies on energy or green technologies), markets (including financial institutions) and supply chains (prices of agricultural products and consumer demand), climate, and technology. These influence the diverse sectoral activities within the landscape and might change the relationships between them, but could also provide opportunities;
- **Time:** ensuring that inclusive green growth is achieved through built-in, inclusive, well-informed decision-making processes that will respond quickly to internal and external changes to the landscape, and ensuring that decision-making is based on long-term sustainability goals.

When translating these dimensions into a triple P point of view (see Figure 3.2), one could say that theoretically landscape approaches aim for the centre of the scheme, at the point where objectives with regard to People, Planet and Profit come together. In the following chapters, we will discuss the different views there are on integrated landscape approaches and what is needed to get stakeholders involved in creating an integrated plan for landscape management.

Overview of the objectives pursued in landscape approaches

In the PPP scheme



Source: PBL

Figure 3.2: Overview of the different positions of objectives on a landscape level positioned within the PPP scheme.

3.5 Conclusions

Landscape thinking has changed considerably over the years. Until two decades ago, landscape-based initiatives were primarily top-down oriented and focused on biodiversity conservation. Local incentives were not taken into account, and communities were lacking the awareness to understand the necessity to get actively involved in landscape sustainability. The current view on integrated landscape initiatives tries to integrate all objectives and involve stakeholders in the process of landscape management. Besides involving local smallholders, currently increasing attention is drawn to the involvement of businesses, a stakeholder group which seems to be lagging behind when it comes to participation in landscape approaches. Other important factors for success of landscape approaches are effective knowledge transfer towards smallholders and local governments and between the scientific world and businesses/government institutes; capacity building; and clear monitoring and evaluation of results. The landscape approach can offer major benefits for sustainable international development, and could be implemented for a broad set of goals covering the three domains of the classical people-, planet- and profit scheme.

4 Current use of the landscape approach

4.1 Introduction

In the previous chapter an overview was given of the different views on landscapes, the development of the landscape approach over the past decades and the lessons learned from previous landscape initiatives. As was concluded, the landscape approach is nowadays viewed from a different perspective in comparison with landscape thinking some 20 years ago. Yet, one single view on a landscape approach cannot be defined, as this view is based on the variety of goals of the stakeholders that develop the approach and on their ideas on best practices. Different drivers for participation in landscape approaches can be identified according to the primary objectives of different stakeholders as shown in the triple P scheme (Figure 2.2). The main goal of a successful integrated landscape approach would be to bring together all objectives and stakeholders and, given the landscape characteristics, design and agree on a common theory of change in which the shared long-term landscape goals are formulated. With more stakeholders involved, the process of implementing a landscape approach could become more complex too. However, increasing the number of involved stakeholders would also increase the possibility to design an inclusive theory of change with broad social support, thus improving the chances for a successful landscape approach in a longer term and on a larger scale. In order to assess whether landscape approaches can really accomplish their goal of inclusive sustainable landscape development this chapter discusses the three PPP drivers in landscape approaches individually in terms of their characteristics, strengths, weaknesses and the possible actions to address the specific challenges related to each of them.

4.1.1 Individual stakeholders operate from individual interests

From the interviews and literature on past and current landscape approaches it was found that a landscape approach is however often dominated by drivers or stakeholders from a specific people-, planet-, or profit perspective. For example, in an analysis of 73 integrated landscape initiatives in Africa, Milder *et al.* (Milder *et al.* 2012) discovered that especially people- and planet- objectives were often an entry point for such initiatives. A frequently mentioned challenge in these initiatives was accessing continuous funding for scaling up initiatives and strengthening market access. These challenges were mainly related to absence of private sector (profit-driven) involvement in landscape initiatives (Milder *et al.* 2012).

4.2 People-based drivers

Approaches dominated by people-oriented drivers put a strong focus on the cooperation of smallholders. A strength of such a focus on smallholder involvement is the improvement of their position relative to other often more powerful stakeholders such as large NGOs, governments or businesses. An example is Community Based Natural Resource Management (Bond *et al.* 2006), an approach that aims to reach smallholder objectives in a sustainable way. However, if smallholders are (either due to lacking (financial) capacity or governance

limitations) not able to adopt a vision on long-term sustainable land use, they will be inclined to strive for short-term benefits or safeguarding the provision of only those ecosystem services that are of direct interest to them. In the long run, this could be detrimental for landscape resilience and broad biodiversity conservation.

4.2.1 Characteristics

Goals	The primary goals in approaches based on a people perspective are improving social and livelihood conditions and securing the availability of food and resources at a local level. Biodiversity conservation and climate resilience are intermediate goals that could be aimed at in order to reach the main goals, but only in case there is awareness on the benefits of biodiversity conservation.
Stakeholders	The most important stakeholders are smallholders, NGOs with a social focus (sometimes supported by UN organisations) and local governments. Businesses and international organisations can be involved by these stakeholders for financial support.
Incentives	The starting point in people-based approaches could be a community- or larger scale problem that is recognised by a group of local stakeholders. In addition, there should be awareness on the necessity to work together to tackle this problem. People-based approaches could also be an initiative of NGOs or local governments in order to improve local conditions or avoid conflicts. WWF has done many projects with a community viewpoint in mind (e.g. Bond <i>et al.</i> 2006; Jones 2007; Wirbelaeur <i>et al.</i> 2007). Other organisations that use elements of this community landscape view are Beagle Solutions and the Commonland Foundation (Brasser 2012; Ferwerda 2012).
Landscape size	Landscape size varies considerably depending on the nature of the issue and the type of stakeholder that initiates a landscape approach. Approaches based on community issues can take place in relatively small landscapes. In that case the primary landscape borders might be based on a geophysical landscape, but the effective borders will be based on community borders: the borders are defined by the stakeholders that have an aim to commonly address a specific issue (A. Brasser, personal communication, April 14, 2014). In case of a national government initiative the landscape borders can be country- or region-wide.
Bottom-up/top-down	Though this approach might generally be seen as a bottom-up approach, there can be some top-down elements. For example in ecosystem restoration projects where a national or local government facilitates restoration through long-term policy and in some cases investment (Ferwerda 2012).
Biodiversity	Biodiversity conservation is taken into consideration in case ecosystem services form a basis for livelihood and economic development, especially when a longer term planning is considered. Biodiversity conservation at a broader scale, however, is generally not seen as a priority (IFAD 2008).

4.2.2 Strengths of people-based approaches

- **Direct positive impacts at a local level.** These approaches are generally based on a close connection with local communities, which increases the chances of positive impacts directly leading to improved livelihoods locally (Milder *et al.* 2014).

- **Low threshold for local stakeholder involvement.** As this view has a strong focus on improving living conditions for local stakeholders, these stakeholders will potentially be more inclined to get involved in sustainability initiatives.
- **Community level successes increase awareness in surrounding areas.** Success of approaches implemented by local stakeholders on a community level can be an incentive for surrounding communities to adopt similar approaches. Available knowledge can easily be transferred and the incentive for change could be high in case of strong inter-communal relationships.
- **Level playing field.** As stakeholders working from people-based drivers generally focus on inclusion of less powerful stakeholders in integrated landscape processes, this offers good conditions for creating a level playing field for stakeholders. For example, the many local uses of seemingly idle land can be made clear to other stakeholders, preventing such land taken away from local farmers and handed to large investors (Karlsson-Vinkhuyzen *et al.* 2014; Zoomers 2011).

4.2.3 Potential challenges

- **Insufficient government support.** Initiatives at a community level could be hampered in case of a weak or opposing local or national government: either by creating a lack of trust within the community or by implementing policies that make community scale cooperation or land-use changes impossible (IFAD 2008; Milder *et al.* 2014).
- **Absence of secure land tenure.** Land tenure is another aspect where local and national governments are often failing. Absence of secure land tenure affects stakeholders' possibilities to invest in long-term sustainable land-use methods due to insecurity about future land-use possibilities and ownership. The negative effects of insecure land tenure are particularly prominent among the most vulnerable stakeholder groups, such as women, and could lead to a reduction in agricultural productivity (Place 2009).
- **Lack of involvement of businesses and international investors.** While focusing on involvement of local stakeholders, businesses could be, purposely or accidentally, left outside an integrated landscape project. There is a risk of missed opportunities when it comes to inclusion of economic valuation of nature and investments from a business perspective. Furthermore, without private sector involvement a powerful stakeholder is missing, which could hamper the final success of a landscape approach (Milder *et al.* 2014).
- **Lack of means to switch to more sustainable methods.** Smallholders generally lack the means (knowledge, technology, long-term investment) to switch to sustainable production methods. In addition, the costs of biodiversity conservation are usually not equally divided, and the stakeholders paying for biodiversity conservation are not always the ones benefiting the most from the resulting improved supply of ecosystem services.
- **Little attention for biodiversity.** Considering the main aims related to people-based drivers, broad scale biodiversity conservation might not be seen as an important factor to local stakeholders, as this requires long-term management plans (IFAD 2008). Though there could be willingness to switch to more sustainable agricultural practices, when driven by increasing global demand for food, fuel and fibre, local rural communities with low income (mostly subsistence farmers) could be forced to use inefficient agricultural methods with relatively high ecosystem impacts in order to reach short-term yield increases. This tendency is related to smallholders' difficulty to adopt long-term land-use plans due to absence of land tenure (insecurity of future land use), a lack of knowledge on long-term biodiversity effects of high-impact production methods or a lack of means to switch to more sustainable production methods.

4.2.4 How to overcome these challenges

Involve governments, but maintain a level playing field

Involve local and national governments in order to get the necessary (long term) support for landscape initiatives. At the same time, government involvement should not lead to top-down implementation of land management initiatives: local stakeholders should be involved in the decision making process in order to establish widely supported landscape management plans. Governments should take care not to implement a policy framework that is too rigid: policies should be tailored to the specific requirements in a landscape or community.

Additionally, governments should make sure to prevent sectoral policies from counteracting each other by stimulating interdepartmental agreement and alignment of policies. Law enforcement is another important requirement. This will help to generate long-term stability for stakeholders, and prevents land grabbing, free riding and illegal use of ecosystem services in protected areas.

National governments and UN organisations should furthermore support biodiversity initiatives by implementing compensation mechanisms to share the costs of biodiversity conservation, especially in cases where the benefits are not clear or do not reach stakeholders directly. Combined with land tenure and knowledge on long-term effects this could lower the threshold for smallholders to adopt more sustainable production methods (FAO 2012b; Tropenbos International 2014).

Support secure land tenure

One important aspect of local and national government support is to provide clear agreements on land and property rights. Secure land tenure will strengthen the ability and capacity of smallholders to adopt a more long-term perspective on sustainable land management. When implementing land tenure systems, governments should ensure vulnerable stakeholder groups to equally share in land and property rights. Research has shown that a key problem for women's development is their tenure insecurity (Place 2009). Furthermore, it was found that women, in case they have secure access to land and other assets, tend to spend a higher share of their income on food and education of children (Quisumbing and Maluccio 1999). Thus land tenure can be a powerful tool not only for strengthening small holder capacities, but also for addressing gender issues and improving living conditions for children.

Focus on awareness and capacity building

Through transfer of knowledge to local stakeholders and governments, these stakeholder groups can be convinced to adopt a more long-term perspective on development. Knowledge transfer should be combined with capacity building: financial and technological support is needed to provide smallholders with the necessary means for sustainable farming (Tropenbos International 2014).

Join forces in smallholder organisations

Smallholders join forces by working together, for example through a farmer association or cooperative, in order to have a stronger position in case a local or national government does not support or opposes their initiatives. Furthermore, organising smallholders will help them to create more equal and stronger trade relations with large businesses (Agritertra 2013).

Increase participation of businesses and international investors

Involvement of powerful stakeholders, such as businesses, NGOs and UN organisations can help communities to create a more successful integrated plan for landscape management. This could be necessary in case of weak local governments (Milder *et al.* 2014). Inviting businesses to invest in landscape initiatives could also lead to stronger trade relations and

better local incomes and employment. In addition, participation of powerful stakeholders could give local people the confidence to invest in long-term sustainability measures.

4.3 Planet-based drivers

A specific challenge of planet-driven approaches is their sometimes top-down character of implementation, reducing the possibilities for stakeholder involvement in decision making. An example is the Loess Plateau Watershed Rehabilitation Project in China. Though proven effective in ecosystem restoration and improving local livelihoods at certain areas, the project has also been criticised for being implemented as a 'one size fits all' solution, without taking into consideration local social and cultural variations (Soltz *et al.* 2013). Another example is the High Conservation Value Approach. This approach aims to conserve high value nature areas in collaboration with stakeholders, while at the same time improving smallholder livelihoods and agricultural production. Though theoretically this approach offers good possibilities for inclusive green growth, the practical embodiment of the approach is characterised with certain challenges regarding stakeholder involvement. In West Kalimantan, for example, this approach was insufficiently supported by smallholders and businesses. Businesses focused only on minimal biodiversity conservation, while the objectives of smallholders were largely ignored (Colchester *et al.* 2014).

4.3.1 Characteristics

Goals The main goal driving this perspective is the conservation of biodiversity and ecosystem services. On a landscape level this can be done in various ways. The extremes are on the one hand a strict separation of land-use functions, such as (intensive) agriculture and conservation of protected areas (IUCN) or High Conservation Value Areas (HCVA, used in forestry certification systems). On the other hand interweaving of these functions in an ecological sustainable way, could increase biodiversity and ecosystem services in agricultural fields and surrounding areas, but can increase the potential risk of a lower agricultural output volume, possibly affecting goals of the other two perspectives. Which variant has the best outcome for biodiversity has been much debated upon.

Stakeholders Approaches that focus on conserving local biodiversity are interesting for NGOs with a planet focus (e.g. WWF, IUCN). They can be supported by UN organisations in their role of supporting globally agreed targets on conserving and reducing the loss of biodiversity. When other stakeholders, such as local farmers and international businesses become more aware of the value of ecosystem services (or the loss of them), these could become interested in a planet perspective as well.

Incentives The most important incentives in this perspective are biodiversity and ecosystem conservation and climate change mitigation. A threatened biodiversity hotspot could be designated as a formal protected area by national governments and international mandated organisations (e.g. UN). Functional biodiversity can be protected from unsustainable use by setting up financial mechanisms, such as PES, REDD or carbon credit markets.

Landscape size This largely depends on the ecosystem that is the subject of investigation, and can therefore range from very small and organised, less than 10 km², such as a watershed/valley or many of the example restoration projects highlighted on the website of the Commonland Foundation, to those that are very large, such as the WWF Heart of Borneo project covering 230,000 km²

	across three international boundaries containing six provinces (WWF 2014).
Bottom-up/top-down	The incentives identified are most often top-down spatial planning directives and instruments. More bottom-up initiatives could emerge in case awareness among smallholders grows or businesses implement approaches based on smallholder involvement.
Biodiversity	Conservation of biodiversity and ecosystem services has top priority in this perspective.

4.3.2 Strengths of planet-based approaches

- **Protecting biodiversity with no direct function for production.** This perspective puts biodiversity central in its broadest sense. NGOs and governments working from this perspective focus on the protection of both ecosystem services and broad global biodiversity which may have no direct function for production.
- **Valuation of biodiversity and use of ecosystem services.** Biodiversity and ecosystem services are generally considered public goods. The costs of biodiversity loss are rarely valued and thus usually unknown to stakeholders. Besides, the costs and benefits of conservation of biodiversity and ecosystem services usually do not end up at the same stakeholder, potentially causing tension or conflicts between for example indigenous populations and internationally operating businesses. In a sustainable landscape approach this could be made visible. This is supported by financial incentives from the Global Environment Facility (GEF), Payments for Environmental Services (PES) and the Reducing Emissions from Deforestation and forest Degradation (REDD) initiative.
- **Success in case of good government support.** A strong influential government can be beneficial for biodiversity when this government has a specific biodiversity aim. In such cases it is important that other (weaker) stakeholders are involved in the decision making on land-use management. An interesting example is the Loess Plateau Watershed Rehabilitation Project in China (see photo below). The World Bank's International Development Association, together with the Chinese Government, implemented a 20-year management plan to restore 3.5 million hectares of a degraded loess landscape covering some of the poorest areas in China. The major successes in terms of ecosystem restoration, increase of biodiversity, improved water availability, poverty reduction and income growth have inspired the Chinese Government to copy this tactic of long-term landscape management and restore more degraded landscapes all over the country (Ferwerda 2012). However, though this project has proven to be effective in ecosystem restoration and improving local livelihoods at certain areas, it has also been criticised for being implemented as a 'one size fits all' solution, without taking into consideration local social and cultural variations: better stakeholder collaboration in decision making would increase the changes to success (Soltz *et al.* 2013).

4.3.3 Potential challenges

- **Historical challenge.** The first generation of landscape oriented "integrated conservation and development projects" (ICDPs) included some landscape scale projects. However, the ICDP paradigm has been criticised for having weak logical models and lacking local participation. In addition, improvements to agricultural production and food security were rarely included as major objectives of ICDPs (Milder *et al.* 2014). Because of its apparent connections to deforestation and land degradation, agriculture was, and sometimes still is, more commonly viewed as a conservation threat to be mitigated.
- **Ineffective top-down approaches.** In case of a top-down implementation of policies in which smallholders are not involved, there is a risk of lacking incentive

among smallholders who do not commit to the regulations established by the government (Ervin *et al.* 2010). This can be seen in some cases of traditional nature conservation, where protected areas are converted into plantations and farmland by large businesses and local farmers. (Hutan *et al.* 2011). A dramatic example is the expansion of the palm oil and timber sectors in Indonesia, with 40% of the country's forest cover having already disappeared by 2000 and illegal logging accounting for 70% of total timber production (Barber *et al.* 2012).

- **Insufficient private sector involvement.** Businesses, especially the ones with a short-term focus regarding returns on investment, are difficult to involve in planet-oriented landscape approaches that require long-term investments in order to get a result. Furthermore, businesses are traditionally seen as a threat to biodiversity and may therefore not be asked by other stakeholders to participate in landscape approaches.
- **Difficulty in valuation of ecosystem goods and services.** In many cases no clear biodiversity values are present, or the distribution of costs and benefits is not equally divided among stakeholders. Unless instruments for benefit transfer are in place, this could make stakeholder involvement difficult.



Photo 4.1: The difference between the start of the Loess Plateau Watershed Rehabilitation Project in 1995 (above) and the results after 14 years, in 2009 (below) (photo credit: Kosima Weber Liu, EEMP).

4.3.4 How to overcome these challenges

Integrate biodiversity and ecosystem services

Bring together national action plans on biodiversity conservation, desertification and climate change and make them part of agricultural strategies. The Kagera Transboundary Agro-ecosystem Management Programme has demonstrated that involving a large number of stakeholders in a landscape approach is complicated, but offers good opportunities when such collaboration is established. Covering areas in Burundi, Rwanda, Tanzania and Uganda, the Kagera river basin forms an important source of livelihood security and economic activity for a large number of stakeholders, including local farmers, local governments and large (international) businesses (FAO 2014a). The Kagera project aims to bring together these stakeholders by combining existing land management initiatives in the area. Thus far, the project has established broad stakeholder collaboration and support for sustainability initiatives in the landscape. This could lead to both local and global benefits in terms of restoration of degraded lands, climate change adaptation and mitigation, protection of international waters, biodiversity conservation, empowerment of local communities, increased food security and improved agricultural production (FAO 2014a).

Facilitate knowledge sharing and stakeholder collaboration

Governments and NGOs could increase stakeholder incentive to participate in landscape approaches by sharing knowledge on the benefits of biodiversity conservation and on sustainable land-use practices. In addition, stakeholder collaboration could be improved by setting up facilities for conflict resolution. The Kagera project for example aims to empower the local communities and stimulate the adoption of improved sustainable management of land and water resources via conflict resolution, knowledge sharing, identification of measures to improve tenure security and harmonising sectoral plans (FAO 2014a).

Improving the efficiency of financial mechanisms such as PES

Make investment in biodiversity conservation easier and more mainstream by improving the efficiency of financing mechanisms that could compensate these investments. Governments can steer this by removing perverse subsidies, setting up a robust monitoring framework, applying performance based payments and scaling up these financial schemes to a landscape or country level. The effectiveness of financial incentives such as Payments for Environmental or Ecosystem Services (PES) could also be increased by clearly defined property rights. Bundling or layering of multiple ecosystem services provides more opportunities to increase the synergy of such programs in the landscape and across sectors (OECD 2010).

Increase potential for involving the private sector

Solve business limitations to involvement in planet-oriented landscape approaches by focusing on businesses that adopt long-term perspectives (family owned companies, pension funds) and stressing the value of ecosystem services via social, safety and income aspects (Ferwerda 2012).

4.4 Profit-based drivers

Similarly, profit-oriented approaches, though offering great possibilities for financing landscape approaches, involve specific 'blind spots' too. Investors may keep a short-term perspective on land-use management or are mainly focused on safeguarding the provision of certain ecosystem services instead of broad biodiversity conservation (Ferwerda 2012). An

example is the Beira Agricultural Growth Corridor (BAGC) initiative in Mozambique, a project aimed at sustainably improving the efficiency and output of agricultural production and livelihood improvement of local farmers (InfraCo 2010). Though effectively improving production in that area, the project did not incorporate broad biodiversity conservation into the business model: there was only a specific focus on conservation needed for safeguarding water availability and soil quality for agricultural production.

4.4.1 Characteristics

Goals	The main goals driving the profit perspective are to achieve broad economic development (local, national and international), increase the private sector return of investment and to secure the long-term resource base of businesses operating in (international) supply chains.
Stakeholders	The main stakeholders identified are local or international businesses, local farmers/households involved in a supply chain production process and local/national governments.
Incentives	The landscape characteristics offer natural resources that are of interest for commercial exploitation (mining, forestry) or is (or can be made via conversion) suitable for food production, where producers generally have a particular interest in the cultivation of cash crops, such as coffee, cacao, palm oil or even aquaculture and fisheries.
Landscape size	Usually the landscape size is based on the area where cash crops, such as coffee, cacao or palm oil are cultivated, where the people directly involved in the supply chain live and work and the surrounding natural area that is influenced by land-use claims from nearby commercial exploitation.
Bottom-up/top-down	A combination of top-down government policies for economic growth and trade, and bottom-up landscape characteristics that attract businesses operations.
Biodiversity	Usually only functional biodiversity with obvious benefits is taken into consideration, and only in the case stakeholders adopt a long-term perspective on returns on investment.

4.4.2 Strengths of profit-based approaches

- **Focus on return on investment.** In case of investment, funding does not need to be based on insecure donor aid or temporal project budgets, but can be based on returns on a longer term investment strategy from which both local stakeholders and investors benefit.
- **Securing a long-term resource base.** When international businesses are focusing on securing a long-term resource base for their production they are more often prepared to invest in sustainable management of natural resources and to involve the interests of more (local) stakeholders in their strategic decisions.
- **Ability to involve stakeholders outside the physical landscape.** Via international supply chains innovative solutions for arranging projects promoting long-term inclusive green growth can be found. For example the incentive of Café Direct (global business) in combining up-slope reforestation carbon credits to improve the quality of coffee harvests from lower level smallholder plantations in the Sierra de Piura, Peru (ProClimate 2014).
- **Positive effects from certification.** Driven by consumer demands, the increase of certified supply chains and products can have positive effects on both local farm level livelihood and biodiversity awareness and conservation.

4.4.3 Potential challenges

- **Too much emphasis on short-term benefits.** There is a risk of investors being focused on short-term rather than long-term returns on investment (Ferwerda 2012). This could impair the possibilities for involving them in long-term sustainable landscape management.
- **Insufficient attention for biodiversity.** When producers and investors aim for short-term economic growth or improvement of business opportunities without keeping in mind the value of ecosystem services, there is a significant risk of biodiversity not taken into account. The most important reason for biodiversity not incorporated into cost-benefit analyses is the fact that the benefits of biodiversity conservation usually do not flow back directly to those who have invested in it. Thus, the costs that individual stakeholders make generally do not outweigh the benefits that these stakeholders receive (Pagiola *et al.* 1998).
- **Insufficient attention for people and for biodiversity not directly involved in production.** The - often undocumented - traditional rights of indigenous populations and biodiversity not directly necessary for production might be overlooked by large supply chain actors who are unaware of these characteristics in a landscape or do not regard them as valuable. Such a perspective on indigenous populations and biodiversity is often aggravated by short-term gain aims, national government concession policies or ethnic tensions (EcoAgriculture 2012; Place 2009; Tiftonell 2013).

4.4.4 How to overcome these challenges

Supporting long-term stability for investments

Similar to what is being done for large infrastructure projects (e.g. the Dutch delta works) governments should provide a stable long-term vision and support for landscape approaches. This enables the private sector, especially smaller businesses, to also make long-term investment plans. Furthermore, as building trust among the various stakeholders is often a long-term process, security of government support will increase the potential success of stakeholder involvement initiatives.

Improving the efficiency of financial mechanisms such as PES

The incentive to invest in biodiversity conservation can be increased by improving the efficiency of financing mechanisms that could compensate these investments.

Scaling up farm level certification effects

NGOs and governments should focus on achieving successful up-scaling of supply chain certification at the farm level toward targeting a wider scope which covers an entire landscape. The inclusion of a broad biodiversity conservation aim, the value of ecosystem services and the protection of indigenous population rights are factors that should be taken into account when considering landscape certification.

Promote greening of businesses and increase awareness

In order to achieve sustainable growth governments and society should urge businesses to improve the sustainability of their production. Through increasing awareness, efficient regulations, financial incentives and agreements on Corporate Social Responsibility between governments, businesses and civil society organisations, collective action can be taken towards strengthening sustainability ambitions and creating level playing fields within sectors and between stakeholders. Governments offer support via consistent policies, capacity building, taking away possible regulatory barriers and up-scaling existing initiatives.

Improve multi-stakeholder processes

Multi-stakeholder processes enable the development of integrated approaches that aim to reach multiple objectives for sustainable international development. To increase the potential success of landscape approaches, in particular in the long term, a level playing field is necessary in which all stakeholders are heard. In addition, governments and NGOs should build the trust that is necessary for taking the step to invest in more sustainable practices regarding the use of land or water resources.

4.5 Biodiversity in landscape approaches

In people- and profit dominated perspectives biodiversity is at risk of not receiving sufficient attention. There are a number of factors that explain this, relating to the facts that biodiversity is a common good and that its conservation requires long-term commitment in order to get a result.

4.5.1 Biodiversity: a common good

Products that are publicly available and rivalrous by nature are defined as common-pool resources (Ostrom 2005). According to Ostrom (2005) such resources, besides serving the provision of public goods, are characterised by problems of free riding and overharvesting. Many objectives that play a role in landscape approaches (e.g. economic development, income, social development, food security, etc.) directly involve one or more stakeholders in a landscape and are therefore generally well safeguarded in multi-stakeholder dialogues. This is different for biodiversity, in particular that part of biodiversity that has no direct relevance for production. The benefits of such biodiversity conservation do not flow back directly to those who have invested in it. Indeed, farmers who invest in biodiversity conservation often bear a disproportionately large share of the costs, while enjoying a much smaller fraction of the benefits (Pagiola *et al.* 1998). Forest management is a good example: conservation of forests prevents CO₂ emissions, soil degradation and water loss. These benefits affect an entire watershed and even have positive effects globally in terms of climate change mitigation. The local stakeholders investing in forest management, however, only partially benefit from this, while having to count in investments or missed income (e.g. short-term gains from lucrative timber production) that could easily outweigh these global and public benefits.

The part of biodiversity that involves ecosystem services is often easier to conserve: this might also comprise provisioning ecosystem services, such as crops or some forest products. Investment in these services do lead to direct benefits to their owners. However, in order to create resilient landscapes as a basis for sustainable development, more is needed than just the conservation of certain economically valuable ecosystem services.

For the conservation of a broader level of biodiversity it is essential to equally share the costs and benefits of biodiversity conservation. Cooperation of stakeholders is a key condition for achieving this. Creating awareness on the (financial) value of biodiversity can help stimulate such cooperation and convince stakeholders of the importance of biodiversity conservation, for instance for long-term availability of natural resources. In this functional view on biodiversity, the landscape approach could become interesting for investors as well: with the growing scarcity of resilient production areas, companies with a long-term perspective on resource security and return on investments will become increasingly interested in creating sustainable landscapes. This means that the landscape approach is not only interesting in terms of development aid, the approach can also form a basis for profitable investment projects. Biodiversity concerns may also have to be brought in by representatives that take a conservation view on specific biodiversity elements.

4.5.2 Biodiversity as an intermediate goal requiring long-term commitment

Biodiversity conservation is a sub goal to many stakeholders and is usually aimed at reinforcing the success of primary goals (e.g. income generation and security of supply) in the long term. Because biodiversity is often not a primary goal and also requires a long-term perspective, the relevance for biodiversity as an objective within integrated land-use management is not always as clear or important to stakeholders as other goals. Even if long-term benefits of biodiversity conservation are acknowledged by stakeholders, many factors hamper their incentive to invest in long-term sustainable land use. An important limiting factor is insecure land tenure (Place 2009). Other factors could be government policies that stimulate investments in short-term or unsustainable methods to increase production, for example subsidies on pesticides or policies that promote agricultural area expansion over increasing efficiency of production (Pagiola *et al.* 1998).

4.5.3 Synergies and trade-offs within landscape approaches

Biodiversity conservation can have long-term positive effects on many objectives within the landscape approach. Despite these possible synergies, many people- and profit-related objectives have a risk of counteracting with biodiversity conservation if there is no incentive to collectively address biodiversity issues and to adopt a long-term perspective on sustainable landscape management. Regarding biodiversity and ecosystem services as a public good could trigger stakeholders to focus on reaching their individual objectives at the expense of the availability of natural resources (Ostrom 2005; Pagiola *et al.* 1998).

Ideally the landscape approach should provide solutions for objectives on the people, planet and profit side and thus be beneficial for all relevant stakeholders. However, as stakeholders have different objectives when it comes to implementing a landscape approach, they look at landscape approaches differently. Individual stakeholders may be too focused on a single or a set of objectives and lose sight of other relevant goals. For example, if businesses are too much focused on financial returns on investments, this could be at the expense of livelihood and income generation possibilities of local communities. There can be synergies as well. Biodiversity conservation, for example, has positive effects on a number of other goals. These include security of food, water and energy, security of resource supply for businesses, climate resilience, businesses' license to operate, and economic development and, with safeguarding provision of ecosystem services, income creation in the long term. A major drawback, however, is the fact that many people- and profit-related objectives have a risk of counteracting with biodiversity objectives, especially in case knowledge is lacking and a focus on short-term improvements is applied. While biodiversity, when conserved properly, could form a positive factor in reaching goals, such as climate resilience and resource availability. Small holders could profit from this directly via the ecosystem services that a well-managed ecosystem has to offer. To illustrate, an estimated 80% of people in the developing world depend on non-wood forest products (de Man and Verweij 2011). With a total reported value of USD 4.7 billion, and an estimated even higher value including undocumented non-wood forest products, these form an essential part of smallholder livelihoods. Conservation of biodiversity for such ecosystem services has a direct effect on local livelihood improvement.

4.5.4 The role of governments in biodiversity conservation

As biodiversity is a public good and needs long-term commitment, stakeholders with a specific aim for biodiversity conservation, such as large international NGOs (WWF, IUCN) and governments, play an important role in reaching this goal. This explains why biodiversity conservation has traditionally been characterised by top-down approaches: the initiators (NGOs and governments) had the incentive, the power and the resources to implement biodiversity conservation programs. Involvement of small holders and businesses was difficult because of a lack of strong incentive for biodiversity conservation. Lessons learned

from previous initiatives offer solutions for improving stakeholder involvement, which include increasing awareness, transfer of knowledge and technology and offering financial support for investment in sustainable land use. Still, governments need to maintain an important role in securing the involvement of biodiversity as a goal in landscape approaches. Governments have the responsibility to safeguard the quality of public goods, such as clean air, climate resilience, and also biodiversity conservation. By financing biodiversity conservation initiatives, offering compensation for those who invest in biodiversity conservation, providing secure land tenure, setting standards and enforcing the laws on sustainable land use, governments can take away key barriers for businesses and small holders in their ambition to use more sustainable land-use methods.

4.6 How to measure effectiveness

The success of achieving landscape level sustainable development can only be determined based on the effective monitoring of representative indicators. Effective monitoring frameworks are as yet still in development. Important questions are what to measure, how to measure and how to keep monitoring frameworks affordable but at the same time effective for measuring the diversity of indicators that characterise landscape approaches.

4.6.1 Limitations to current monitoring frameworks

A number of recent studies on the impacts of multi-stakeholder and sustainability initiatives have revealed that solid impact studies on the effects of sustainability initiatives are scarce (Kessler *et al.* 2012; Van Kuijk *et al.* 2009; WWF 2010). Furthermore, the available studies show that effects on social and economic development are not uniform, varying from positive to neutral and sometimes even negative effects (Kessler *et al.* 2012; Van Kuijk *et al.* 2009). This could be related to the various circumstances in which sustainability initiatives are implemented, but also to a lack of systematic collection of data on biodiversity management (Van Kuijk *et al.* 2009; WWF 2010). A study of Kessler *et al.* (2012) on the social and economic effects of sustainability initiatives in tropical agro-commodity chains revealed that, though monitoring is done by many organisations, existing monitoring frameworks are generally limited to collecting qualitative information, requiring expert opinion to discuss possible positive effects. Another difficulty with monitoring effects on sustainable land use is that there is often no baseline with which results can be compared: it is hardly possible to conclude from monitoring results if effects would have been different (worse or better) if such an approach had not been implemented.

4.6.2 Requirements for a monitoring framework for landscape approaches

Various organisations (LPFN, CIFOR, FAO, IDH, Avance, Aidenvironment) have set up frameworks for assessing progress and impacts of projects and business operations. It is stressed that besides monitoring the progress of projects (e.g. the number of people informed, trained, hectares under management), monitoring frameworks should also include impacts, such as conserved biodiversity, productivity of agriculture, above and below soil carbon storage, changes in income, empowerment and social equity.

Qualitative and quantitative data

Inputs for monitoring can be categorised as:

- **Qualitative information.** Qualitative information could be used for creating awareness by setting up inclusive green growth narratives, organise capacity building, engage people and technology transfer. In this case the results are the expected effects of sustainability standards on certain development aspects in the region. These effects are part of a theory of change that assumes that if more

farmers meet up with sustainability standards, a better effect on economy, local livelihoods, social development and biodiversity can be expected (Kessler *et al.* 2012).

- **Socio-economic census and statistics.** This category involves both qualitative and quantitative data and includes general indicators in income, health, education. Quantitative indicators could be GDP or the number of stakeholders that has access to education. Qualitative data could be the number of facilities for conflict application/resolution, indicators for vulnerability or empowerment of stakeholders or expected indirect effects of interventions on poverty reduction (Kessler *et al.* 2012).
- **Quantitative (participatory) mapping and remote sensing data.** Creating maps of ecosystems, spatial planning/land use and indigenous population rights. Remote sensing of deforestation via satellite imagery (as is for example being done by the World Resources Institute (WRI)/Global Forest Watch) (Sumarga and Hein 2014; E. Kroese and M. Martinez, personal communication, May 26, 2014).

Direct and indirect effects

Inputs for monitoring can give information on direct effects of interventions or, in case direct effects are difficult to measure, monitoring can be applied to collect data on indirect effects. Direct effects involve the quantitative data on socio-economic development levels and mapping and remote sensing data. Indirect effects are effects that do not directly relate to the effectiveness of sustainability approaches, but give a strong indication towards the level and direction of the direct effects. Indirect effects could be monitored in case direct effects of landscape approaches are difficult to measure (R. Zagt, personal communication, April 17, 2014). Such data can be used to support inclusive green growth narratives or hypotheses on the effectiveness of implemented landscape approaches. An indicator in that category is for example the number and quality of facilities for conflict resolution. If adequate conflict resolution can be provided in a landscape, it is likely that this will encourage stakeholder involvement. After all, solving conflicts will give stakeholders the possibility to build trust and strengthen cooperation. Another indirect effect could be the number of stakeholders trained in sustainable land-use methods (W. Ferwerda, personal communication, April 14, 2014). It is likely that a higher number of trained stakeholders will result in a higher number of stakeholders implementing sustainable land-use methods in practice. A higher number of stakeholders could also harm the potential success of a project, as it will be more complex.

4.6.3 Monitoring indicators

Organisations such as CIFOR and IDH are already working on monitoring frameworks specifically designed for measuring the effects of landscape approaches. IDH, for example, aims to create a monitoring framework for its new Sustainable Land and Water Program, with certain indicators applicable to all landscapes, but other indicators that can be adjusted to landscape-specific contexts, thus ensuring the implementation of a monitoring framework that is fitted to every context (M. van Gool, personal communication, May 22, 2014).

People, planet and profit indicators

The result areas mentioned by CIFOR, the existing IDH monitoring and evaluation framework and the broad set of indicators described by Kessler *et al.* (Holmgren 2012; IDH 2011; Kessler *et al.* 2012) were used to define relevant indicators for the three areas of landscape approach aims: people, planet and profit. Four result areas were defined: 'ecosystem services and sustainable land use' in the planet spectrum, 'local socio-economic development' in the people spectrum, 'productivity and market access' in the profit spectrum' and finally, 'stakeholder collaboration' in the centre of the triple P scheme, forming a basis for successful landscape approaches in general. Figure 4.1 shows these result areas divided over the triple P scheme, together with examples of relevant direct and indirect indicators for success.

Result areas and example indicators for monitoring the effects of landscape approaches

In the PPP scheme

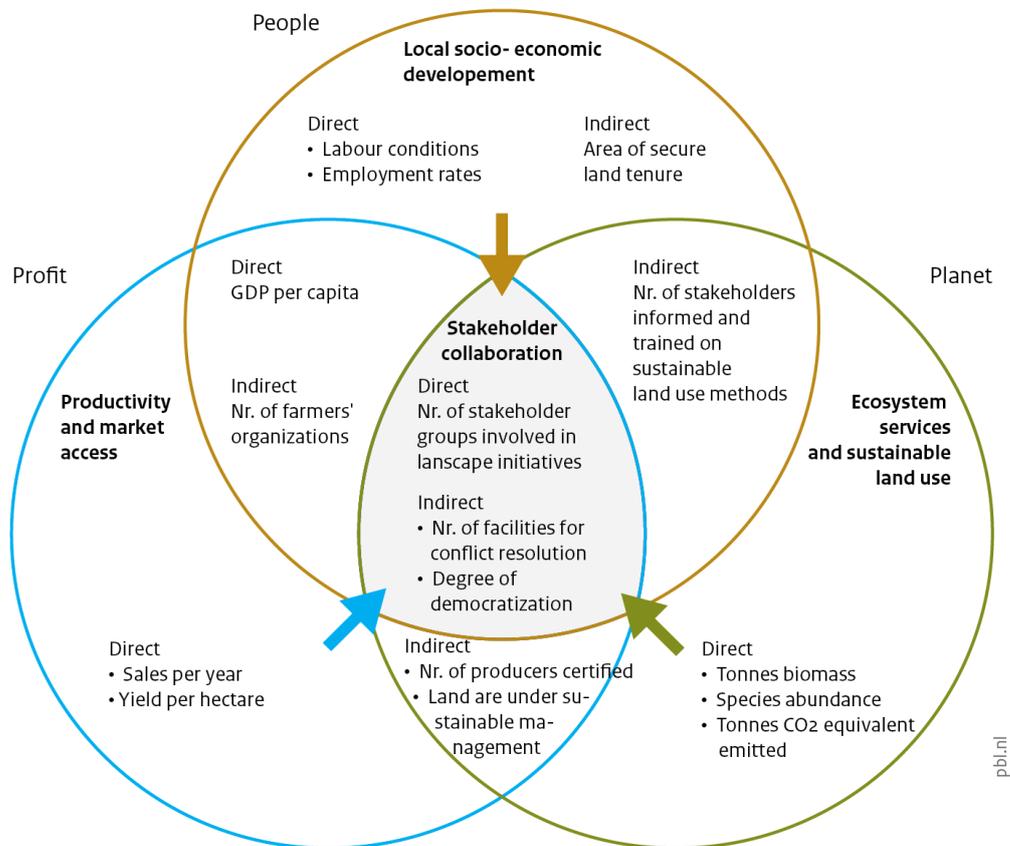


Figure 4.1: Result areas and example indicators for monitoring the direct and indirect effects of landscape approaches.

4.6.4 The role of stakeholders in monitoring

Governments, businesses and NGOs all have significant roles in organising and providing the information needed for monitoring stable and representative indicators to create time-series and benchmarks for development. Monitoring does not only serve to measure the effectiveness of sustainability programs, it can also help the initiators of such programs to make targeted adjustments if programs do not prove effective. For businesses, an important benefit of monitoring is the ability it gives to claim and show the impacts of businesses' sustainability efforts, thus connecting positive sustainability impacts directly to a brand name. Governments have an important responsibility in mainstreaming monitoring in sustainability projects. For example by giving the right example to businesses and NGOs and implementing standard monitoring schemes in their own approaches. In addition, governments could set boundary conditions to subsidies given to NGOs and businesses, requiring those stakeholders to implement monitoring schemes as well. Finally, governments could set monitoring standards for internationally operating businesses, for example by obliging businesses to provide yearly GRI reports.

4.7 Conclusions

From the interviews and literature on past and current landscape approaches it was found that a landscape approach is often dominated by drivers or stakeholders from a specific people-, planet-, or profit perspective. In this chapter, these perspectives were individually discussed. In both people- and profit-based perspectives biodiversity, being a common good, is at risk of not receiving sufficient attention. Because the costs and benefits of biodiversity conservation are naturally not equally shared among stakeholders, investments in biodiversity conservation by individual stakeholder are often not cost-efficient. NGOs and research institutes could play an important role here in creating awareness among governments (international, national and local), businesses and local stakeholders on the benefits of biodiversity conservation, thus increasing incentive to invest in biodiversity conservation. Furthermore, compensation mechanisms, such as PES and REDD+ could help to attain a more equal share of the costs and benefits of biodiversity conservation. Knowledge transfer and capacity building are conditions for success in all perspectives, as they help stakeholders to become aware of the benefits of landscape approaches and increases their incentive and ability to participate and invest in such initiatives. Secure land tenure on a community or farmland level is additionally required to strengthen smallholders' capacity.

For those initiating a landscape approach, be it governments, NGOs, businesses or smallholders, it is important to not lose sight of those landscape goals that are not of a direct interest to them. Depending on the perspective from which a landscape approach is applied, goals at risk could be biodiversity conservation, stakeholder involvement or smallholder empowerment. Governments play an important role in making sure all objectives are being addressed within a landscape approach. In order to find a balance in the triple P scheme, continuous monitoring and evaluation of the effects of an approach is necessary.

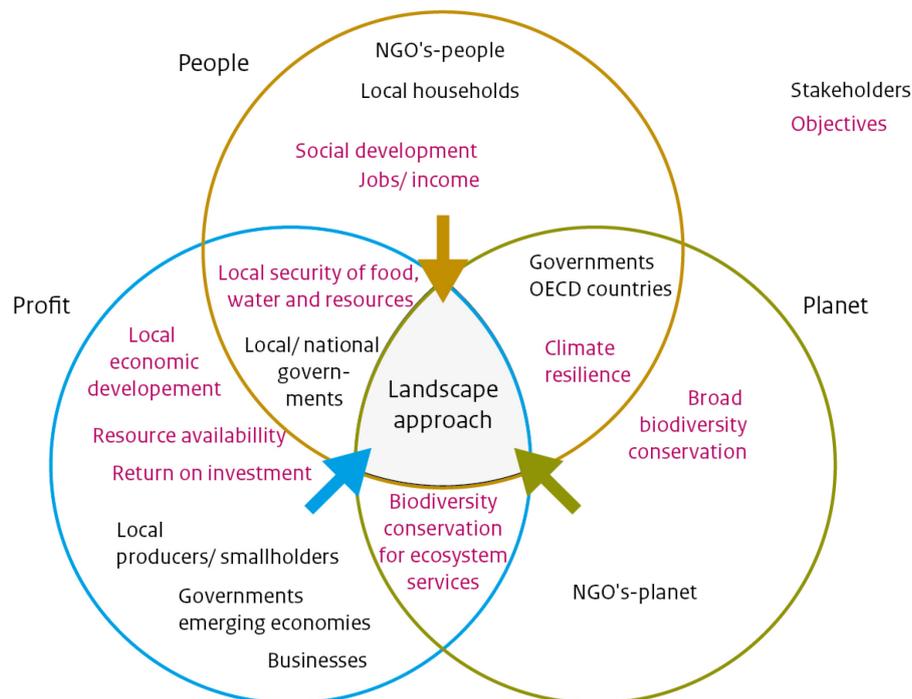
5 Actors, supporting policy instruments and financial structures

5.1 Introduction

Chapter 3 illustrated how different perspective or organisational drivers regarding the landscape approach are associated with different ideas on the roles of stakeholders. Stakeholders each have their own incentives to take part in landscape approaches and can be divided over the triple P scheme in accordance with their objectives, as shown in Figure 5.1.

Overview of the stakeholders and objectives pursued in landscape approaches

In the PPP scheme



Source: PBL

Figure 5.1: Overview of the different positions of stakeholders and objectives on a landscape level positioned within the PPP scheme.

In this chapter these different stakeholders will be discussed more in-depth in terms of their possible incentives for taking part in landscape approaches, the most important barriers that prevent or hamper involvement and the enabling factors that are required for the participation of each of these stakeholder groups.

Based on these findings, the elements will be identified that are necessary on a governance and financial level in order to stimulate multi-stakeholder landscape initiatives.

5.2 Actors

5.2.1 Smallholders, farmers, local producers

Incentives for involvement in landscape initiatives

Rural communities can very diverse in population and activities, but in developing countries they are often characterised by low incomes, a low degree of development and mostly subsistence farmers, who have few alternatives to using inefficient, extensive agricultural methods with relatively high ecosystem impacts (e.g. slash and burn agriculture) (K. Blokland, personal communication, April 17, 2014). These stakeholders generally lack (financial) resources for making a change towards using more sustainable production methods. A landscape approach in which businesses, NGOs and governments support the transition to sustainable production methods, could lower the threshold for smallholders to become more sustainable and maintain a long-term perspective, and could foster the transfer of required knowledge and technology to local producers. The most important benefits that local smallholders could get from a landscape approach are higher incomes, improvement of living conditions, resource and food security and social development.

Incentive for change as a basis for involvement

Like any other actor, smallholders will only be interested in participating in landscape initiatives if there is a clear incentive for change. This can be a community or larger scale issue which is perceived by the community as a problem that they need to solve; or it can be the presence of a regulatory or stakeholder-related trigger, for example government regulations, a risk reducing threshold (subsidies/investments) or a positive example given by other farmers. If there is no incentive for change among smallholders, they will not be inclined to get involved in landscape initiatives, in spite of the possible long-term benefits (J. M. Dros and F. Hubeek, personal communication, May 8, 2014).

Possible barriers

A lack of incentive for change can be a major barrier for local stakeholders to get involved in sustainability initiatives on a landscape level. This barrier is often related to one of the following issues:

- Smallholders often lack the knowledge and the resources to invest in more sustainable agriculture options.
- Many smallholders do not own land and property rights enforced by their government. Absence of clear land tenure involves a high risk of smallholders not being heard or acknowledged in case of land acquisitions. A consequence is that smallholders live in uncertainty regarding the use of their land, which heavily limits their ability to make long-term land-management or sustainability plans (Place 2009). As landscape approaches require long-term commitment, absence of land tenure can be a serious limiting factor to involvement of smallholders.
- Sometimes smallholders, driven by increasing demand, feel the need to expand their agricultural area in order to obtain short-term production increases, which is often done at the expense of forest and nature areas (IIED 2013). As a result, the impact on biodiversity increases and land reserves for agricultural activity decrease;
- Some policies and regulations complicate the possibility for adopting traditional biodiversity-friendly production methods, including certain sustainability policies (see for example the developments in seed regulations by the Colombian Government, which have been detrimental to traditional farmers (Grain 2013));

- Individual smallholders often have little power in supply chains in comparison with businesses and governments.

Solutions

Solutions to the abovementioned barriers are largely focused on increasing smallholders' awareness and their ability to participate in landscape initiatives, and strengthening their position in relation to other stakeholders. These solutions include:

- Transfer of knowledge by NGOs and (international) governments to smallholders in order to create awareness on long-term benefits and to ensure the necessary agricultural knowledge is obtained for adopting sustainable farming methods;
- Provision of other capacity building instruments, for example supply of technological equipment necessary for an efficiency increase in production. This can be done by governments, NGOs or businesses;
- National and regional government support in the form of implementation of more effective land-use planning and improvement of land tenure security.
- International, national and local government support in terms of policy, subsidies and development aid.
- Provision of offsetting subsidies and financing from governments, businesses or NGOs, in order to enable smallholders to overcome possible lower yields in the first years after implementation of sustainable land-use methods;
- Building on existing trust relations between local stakeholders and NGOs. For example, initiators of a landscape approach (often governments or NGOs) could work with a convener (which can be the NGO that is already situated in the area) to build trust and bring together stakeholders (IDH 2013);
- Support from governments, NGOs and businesses in the empowerment of smallholders in farmers' organisations. These will strengthen smallholders' position against powerful stakeholders. Farmers' organisations provide, among other benefits, bargaining power, access to new and larger markets and better opportunities to respond to changing market trends and demands (Jara and Satgar 2008).

Two-way benefits of involving smallholders in landscape initiatives

The benefit of involving smallholders in a landscape approach is not only beneficial for smallholders themselves. For other stakeholders, the important added value of smallholders is their traditional knowledge on land use and agriculture (Tittonell 2013). There are many examples of smallholder communities whose production is characterised by good land and water management and a diversity of crop production (Bélair *et al.* 2010; CREM 2011; EcoAgriculture 2012; Kissinger *et al.* 2013). Unfortunately, these practices are rapidly disappearing with the arrival of modern technology. In some cases modern technology can offer a solution to ensuring long-term production, but in other cases this could lead to ecosystem degradation. Take for example the Arvari Basin in Rajasthan, India, where modern production techniques were used until a severe drought in the 1980's diminished the chances on livelihood security dramatically due to crop failure, soil erosion and watershed degradation. A community-led watershed restoration programme was initiated, based on bringing back the johads, a traditional indigenous technology to collect water. The results were overwhelming: groundwater levels were restored, forest growth improved and production and livelihood security increased significantly (EcoAgriculture 2012). Governments, businesses, NGOs and research institutes can learn from smallholders by researching and documenting biodiversity-friendly traditional farming practices and implementing these methods in landscape management plans if possible.

5.2.2 The private sector

Incentives for involvement in landscape initiatives

Large multi-national businesses base decision-making largely on return on investment, exit strategy and risk management. Increasing consumer awareness and demand for sustainable products in western countries has led these businesses to invest in development of sustainable products and to create business models for the future that take into account an expected increase in the demand for sustainable products (Vollaard *et al.* 2012; G. Kok, personal communication, May 8, 2014). The effects of these measures however are overruled by developments elsewhere in the world: increasing prosperity in countries such as China, India and Brazil leads to a global increase in demand for animal products, fibre and other products that do not apply sustainability requirements. Yet also businesses in these economies are increasingly becoming aware of the advantages of sustainable production (Solidaridad 2014).

Secure a long-term resource supply

Businesses benefit from high production yields and long-term security of supply. This requires efficient production methods and maintenance of ecosystem resilience. Though biodiversity is not a main priority for businesses, businesses are becoming aware of the fact that biodiversity is needed to ensure resource supply in the long term. Intensive agriculture, characterised by monocultures, often comes with a high risk of ecosystem degradation (IIED 2013). By combining efforts on biodiversity conservation, efficient agriculture and improvement of living conditions and agricultural knowledge on a local level, businesses can bring about security of supply and economic benefits in the long term (IDH 2013; Scherr *et al.* 2013; Schoneveld 2013). Additionally, the costs of investing in building trust with local producers and improving biodiversity at an already existing production site could outweigh the costs of shifting a whole supply chain to lower cost areas (E. Kroese and M. Martinez, personal communication, May 26, 2014).

Increase potential for scaling up production

Another incentive for businesses to participate in landscape approaches is to strengthen connections with local stakeholders (Brasser 2012). Due to increasing demand for food and other products globally, businesses cannot keep depending solely on large producers: the input from smallholders is needed to meet the demand. Individual smallholders, however, often cannot deliver at a constant supply rate due to the small scale of their farms and often inefficient production methods. Strengthening cooperation relationships with smallholders via the establishment of farmers' organisations, in combination with transfer of knowledge and technology for improving production efficiency will not only increase smallholder loyalty towards businesses, but also increases security of supply and possibly production yields as a result of improved production methods (Agriterria 2013; Brasser 2012; Solidaridad 2014).

License to produce: the role of consumers

Increasing consumer demand for sustainable products pushes companies to invest in sustainability options. As the demand for such products is only expected to rise in the future, businesses will need to shift to sustainable production methods on an increasingly larger scale in order to remain their license to produce. A growing number of companies is becoming aware of this trend and tries to anticipate to expected future changes in demand (PUMA 2011; Vollaard *et al.* 2012; G. Kok, personal communication, May 8, 2014). Consumer awareness does not only guide companies. In turn, leading businesses in the field of sustainability increase awareness among consumers and thus encourage the increase of consumer demand for sustainable products. Agriterria and Utrecht University (K. Blokland, personal communication, April 17, 2014; M. van Kuijk and P. Verweij, personal communication, April 24, 2014) advocate to increase the role of such companies: give them

the means to present the successes of their sustainability initiatives in order to further boost consumer awareness.

Possible barriers

According to several research institutes and NGOs, businesses are not being involved in integrated landscape initiatives to a sufficient degree (Brasser *et al.* 2014; Ferwerda 2012; Milder *et al.* 2014; Solidaridad 2014). The Commonland Foundation (Ferwerda 2012)

mentions five main barriers that prevent businesses to invest in landscape approaches:

- Silo thinking: stakeholders working in isolation. For example, businesses focus mainly on production chains. Without involvement of governments or NGOs businesses might not become aware of the added value of investing in cross sectoral sustainability approaches.
- Lack of long-term thinking among businesses. Businesses tend to look at short-term financial returns. Investments in landscape sustainability, however, generally lead to financial benefits in the long term, which are not always recognised or valued by businesses. Governments should also lead by example.
- Poor understanding of the economic value of ecosystems. This is related to the fact that knowledge available at research institutes does not reach businesses: there is a large gap between business and science (also recognised by Utrecht University: M. van Kuijk and P. Verweij, personal communication, April 24, 2014).
- Local communities continue an existing, destructive pattern. As stated before, this pattern is maintained partly because of a lack of knowledge and partly because local communities lack the necessary resources to invest in sustainability or efficiency. Additionally, new technologies introduced by businesses are sometimes too complex and require too large an adjustment of smallholders, which reduces smallholder incentive to commit to using these technologies and hampers effectiveness, in the long run (G. Kok, personal communication, May 8, 2014).
- Solutions are often presented overly complex and stakeholders often speak from very different point of views, which might make it difficult for stakeholders to understand each other.

Solutions

Businesses are becoming increasingly aware of the necessity of resilient production landscapes for long-term resource security. Therefore, willingness to invest in sustainable production chains is increasing. The barriers to business involvement can be successfully addressed via the following methods:

- Stimulate holistic thinking among businesses and other stakeholders (Ferwerda 2012). Calculate the actual costs and benefits of landscape use from the viewpoint of the world as a closed system, for example through TEEB studies (TEEB 2010). In this way, businesses are made aware of the value of biodiversity and ecosystem services and are stimulated to switch from silo thinking to systemic thinking.
- Clarify the value (monetary and other) of ecosystem services in a specific landscape to all stakeholders in that landscape, including those from the private sector. Combine this with multi-stakeholder discussions on alternative future scenarios, taking into account projected climate change, continued or reduced deforestation, possible interventions jointly agreed by the stakeholders etc. Jointly observe and discuss the costs and benefits of these alternative scenarios for each of the key stakeholders. This then forms the basis of a jointly agreed integrated land management plan for the landscape. This is the line of thinking of the Sustainable Land and Water Program of IDH, as currently under development (M. van Gool, personal communication, May 22, 2014).
- Stimulate businesses to incorporate the value of natural capital into their cost-benefit analyses. PUMA has made a great attempt to do this (PUMA 2011).
- To bypass short-term thinking and bureaucratic and political decision-making among businesses, NGOs or governments should focus on involving businesses and impact

investment funds that have more long term plans, for example family owned companies and pension funds (W. Ferwerda, personal communication, April 14, 2014).

- Break the destructive production patterns of smallholders, for example through certification or offering the prospect of better incomes (e.g. via subsidies or financial compensation from governments or businesses) (Ferwerda 2012; Waarts *et al.* 2013).
- Close the knowledge gap between the scientific world and businesses by making knowledge more accessible for businesses (e.g. through the Dutch 'Helpdesk Bedrijfsleven en Biodiversiteit' (Business and Biodiversity) of CREM and Nijenrode: www.bedrijfslevenenbiodiversiteit.nl), inviting businesses to take part in research programs and using an understandable language to show businesses the positive effects of integrated sustainable landscape management (M. van Kuijk and P. Verweij, personal communication, April 24, 2014). For example by filming the effects or giving business a platform to show their successful sustainability initiatives (Vollaard *et al.* 2012).
- Use benchmarking to stimulate businesses to become more sustainable (M. van Kuijk and P. Verweij, personal communication, April 24, 2014). The Global Reporting Initiative (GRI) for example encourages businesses to make sustainability reporting standard practice. Results of the past years have shown that sustainability reporting has shifted from a pioneering phase towards becoming mainstream (GRI 2011).
- Focus on gradual technological improvement and production increase. Governments should make sure that new technologies are implemented gradually and adjusted to the local situation, so that local producers have the chance to get used to changes in agricultural practices.

5.2.3 NGOs

Incentives for involvement in landscape initiatives

NGOs, often with support of donor governments, have traditionally been the initiators of landscape-based development projects (e.g. WWF, IUCN). In general, NGOs recognise the added value of working towards integrated goals on sustainable development and will be inclined to participate in landscape initiatives. The incentives for participation vary depending on the specific objectives of NGOs. An important (and traditional) incentive for NGOs is the possibility that landscape approaches offer to include biodiversity as an objective and to adopt a long-term focus on ecosystem and climate resilience (Ferwerda 2012; Petersen and Huntley 2005). In addition, NGOs regard the landscape approach as an effective method to stimulate multi-stakeholder dialogues (Ecosystem Alliance 2012).

Barriers for involvement

The effectiveness of NGO participation in landscape approaches is largely related to their donor driven nature and reluctance to cooperate with other (powerful) stakeholders.

- Not all NGOs are willing to work together with stakeholders, such as businesses, large farmers or governments (Ulleberg 2009; J. M. Dros and F. Hubeek, personal communication, May 8, 2014), though this attitude was more common in the 1970s and 1980s than it is today (Van Tulder 2010). Nowadays, there is generally more readiness for cooperation among stakeholders, including NGOs. Still, involvement of the business sector is currently not as mainstream as desired and requires further encouragement, as was clearly shown by the case study assessment of Milder *et al.* (2014).
- Also between NGOs there are large differences regarding perceived best practices for sustainable development, especially between local and international NGOs (Agg 2006). This could lead to conflicts about approaches and goals when it comes to implementing landscape initiatives locally. A lack of trust between local and international NGOs and between NGOs and other stakeholders (impairing for

example local acceptance of foreign organisations) could form a serious obstacle in the success of landscape approaches.

- Another limiting factor, related to NGOs' reluctance to involve investors, is that NGO projects are often donor driven (Ferwerda 2012; Milder *et al.* 2014). The long-term success of such projects is often uncertain, as projects are sometimes ended at an early stage when subsidies are not continued.

Solutions: share knowledge with NGOs and increase awareness on the benefits of multi-stakeholder processes

In order to increase the effectiveness of their participation, NGOs need to become aware of the importance of an integrated landscape approach in which all stakeholders have the possibility to participate. Knowledge transfer by research institutes to local NGOs and the establishment of round tables, such as for palm oil, where all involved stakeholders can discuss their issues and reach consensus on the measures to be taken. In addition, long-term stability of a project can be ensured if research institutes and governments can convince NGOs to rely more on financial input of investors.

5.2.4 Local and national governments

Incentives for involvement in landscape initiatives

Local and national governments benefit from participating in landscape initiatives in a number of ways, including direct or indirect financial returns of government investments (e.g. via taxes after successful business involvement or saved costs as a result of climate mitigation); country-wide economic development; security of fresh water supply, security of food and resources; and climate resilience (Kissinger 2014; Pfund 2010; Scherr *et al.* 2013). In addition, local and national governments have an incentive to support initiatives that reduce the risk of conflicts, which relates to increasing employment and incomes and stimulating education and social development. In addition, the support of multi-stakeholder decision-making could also be potentially effective reducing the risk of conflicts.

Possible barriers

- Local and national governments tend to have a short-term focus when it comes to financial returns. This encourages them to invest in production technologies that lead to direct economic benefits, but could be harmful in the long term, with regard to biodiversity, ecosystem resilience, resource supply, and finally, economic development (G. Kok, personal communication, May 8, 2014).
- Some local and national governments, sometimes while trying to comply with international standards on sustainability, implement limiting laws and regulations which make the implementation of landscape initiatives difficult (H. van Dijk, personal communication, May 19, 2014). For example the earlier mentioned seed regulations implemented by the Colombian Government. The aim was to increase the total share of internationally accepted sustainable products. Local farmers, however, saw themselves forced to abandon their traditional biodiversity-friendly land-use methods in which they grew a large variety of crops. Many of those crops did not meet international standards but due to their variety contributed to climate change resilience and biodiversity. These smallholders either shifted to intensive (and destructive) monocultures or, if they could not afford this investment, lost their income from agriculture entirely (Grain 2013). In addition, some governments prohibit smallholders to organise themselves in associations or cooperatives, which could also compromise the position of smallholders (G. Kok, personal communication, May 8, 2014).

Solutions

- Knowledge transfer from NGOs, international research organisations, UN organisations and businesses to national and local governments in order to create awareness on the long-term benefits of biodiversity conservation and provide the necessary agricultural knowledge for sustainable farming;
- Local and national governments should be supported in creating enabling conditions and good governance contexts for integrated sustainable landscape management. E.g. through the development of a level playing field and involvement of civil society in decision making (R. Zagt, personal communication, April 17, 2014). In addition, local and national governments should be stimulated to be flexible with the implementation of regulations and standards and adjust these to specific situations or areas, while maintaining a level playing field (H. van Dijk, personal communication, May 19, 2014).
- UN, Dutch Government, NGOs and businesses should convince local and national governments of the importance of a level playing field when it comes to landscape level decision making. A level playing field also involves providing disincentives to actors who operate illegally through, e.g., law enforcement (R. Zagt, personal communication, April 17, 2014). In addition, convincing local and national governments to support empowerment of smallholders through farmers' organisations will boost the establishment of a level playing field even further.

5.2.5 International institutions

Incentives for involvement in landscape initiatives

International institutions, such as the UN, the World Bank and CGIAR research institutes, and developed country governments have quite varying incentives for participating in integrated landscape management projects. Traditionally, western governments initiated or supported landscape approaches with the aim of biodiversity conservation and later climate change mitigation (Milder *et al.* 2014). As currently the involvement of local stakeholders and the 'people' side of international development has gained ground in integrated landscape thinking, other important incentives for international organisations and western governments to participate nowadays are to increase social development, local (equity of) incomes and employment, country level economic development (IDH 2013), or interest in transboundary projects, such as the Nile basin initiative (Sadoff and Grey 2002).

Financial incentives

Additionally, OECD country governments have an interest in boosting trade relations and strengthening the position of international businesses operating in developing countries (IDH 2013). For emerging international economies, this financial return would be an important reason to participate in integrated landscape initiatives. Governments with a larger focus on improving local and national conditions in developing countries are more inclined to attempt to combine profit with biodiversity and development goals.

Possible barriers

- Competition with developed country governments that aim for short-term profits complicates inclusive development based on a long-term perspective (G. Kok, personal communication, May 8, 2014). Technologies that lead to long-term sustainability and economic growth are often more expensive, which triggers governments of developing countries to opt for collaboration with those governments that have a more short-term focus.
- Landscape transcending effects of international policies could reduce the success of integrated landscape initiatives. For example, the EU standard for biofuels has led farmers in developing countries to increase palm oil production. Sustainable production, however, does not increase if plantations have options to shift

unsustainable production entirely towards the Chinese and other Asian markets, while remaining certified palm oil goes to the “sustainable” biofuel market in Europe (R. Zagt, personal communication, April 17, 2014).

Solutions

Emerging economies have an important role in boosting integrated sustainable development in developing countries. If emerging economies do not increase their focus on more sustainable production methods, the initiatives of other countries will not lead to any large scale or long-term results with regard to sustainability and biodiversity conservation. A positive development is the increasing interest of countries such as China and Indonesia in sustainability initiatives (an example is the collaboration between WWF and Chinese banks to involve China’s financial sector in sustainable development (Eckstein 2008)). Those countries, according to Solidaridad (J. M. Dros and F. Hubeek, personal communication, May 8, 2014), also want to be taken seriously by western countries and have therefore an aim to adopt a CSR policy. Therefore besides financial gains, also reputational considerations and security of supply issues are becoming more important in their decision making as well. The awareness on climate, biodiversity and sustainability issues and possible solutions is growing in those countries (M. van Gool, personal communication, May 22, 2014). To further increase this awareness, knowledge sharing and transfer can be an effective method. Furthermore, involving emerging economies in participating in landscape initiatives with expected financial returns can increase their incentive to join in.

In order to make landscape initiatives financially more attractive, biodiversity valuation studies such as TEEB can be used to incorporate the costs and benefits of biodiversity and ecosystem services in business models (TEEB 2010). In addition, compensation mechanisms, such as REDD+ and PES, can be implemented in order to equally share the costs and benefits of biodiversity conservation.

5.3 Financing integrated landscape management

We have discussed which incentives different stakeholders have to participate in landscape initiatives and how possible barriers can be overcome. Good governance and viable financing structures form an essential basis for proper involvement of all stakeholders. In this section, we discuss the financing options there are and the missed opportunities when it comes to investment. Furthermore we will discuss what governance actions are needed to support landscape initiatives.

5.3.1 Involving investors: landscape as a profitable business

Results from literature study and interviews implicate that there is a lot of unused potential from investors when it comes to financing landscape approaches. Governments and NGOs should seek to increase participation of investors who are interested in taking part in landscape approaches. The most interesting landscapes for investors are the ones that have high potential on returns in the form of cash, increasing cost efficiency, fulfilling the demand of sustainable products, or reputation (Brasser 2012; Ferwerda 2012). Ferwerda (Ferwerda 2012) argues that integrated landscape initiatives should no longer be viewed from a development aid perspective. Instead, landscape approaches should be based on a business case of financial returns on investment in the long term, ensuring integrated landscape initiatives to become self-sustaining after time. Such a view on landscapes has some major benefits over relying solely on donor funds:

- Involving investors in landscape initiatives increases the potential scope of integrated landscape management: there is simply more money to spend on integrated landscape initiatives.

- Whereas donor aid has a risk of (unexpectedly) running out when governments decrease development aid funds or shift their focus and subsidies towards different topics or areas, this risk is lower when it comes to investments of the private sector. After all, investors expect a return on their investments, either financial or reputational, and will therefore establish a longer term support if they aim for benefits from landscape approaches (Ferwerda 2012).
- By encouraging investors to invest in landscape initiatives, the entire way of thinking about international development can be changed: development aid is no longer seen as a means for smallholders or local governments to (passively) receive money from UN programmes or NGOs, instead development aid can be based on financial structures with a two-way benefit: developing countries receive the means to facilitate development, while investors have the prospect of financial returns (Ferwerda 2012).

5.3.2 Support investment by increasing the role of stakeholders

Until recently landscapes have not been interesting investment objects for investors. However, this view is subject to change: investors are starting to pay more attention to landscape investment opportunities, especially when it comes to farmland, ever since awareness has grown on the fact that fertile farmland is an increasingly rare resource. Recently, EcoAgriculture Partners have performed an extensive case study research on financing strategies for landscape approaches (Clarvis 2014). According to them, the main factors that make investors hesitant to invest in integrated landscape approaches are high investment costs, long payback periods, and requirement of specialised knowledge that investors are often lacking. Nevertheless, the continuous increase in demand for agricultural and forest products has made investment in landscapes financially a more viable option today. Most of the abovementioned drawbacks to landscape investment can be addressed by increasing the role of other stakeholders, as mentioned earlier in this chapter:

Support initiatives by long-term government commitment

High initial investment costs and a long payback period both result in higher risks for investors due to uncertainty about what might happen in the future. One important way to reduce this risk is to support these initiatives with long-term government policies and commitment (Ferwerda 2012). Either in the form of policies that allow an organisation or community to implement and maintain a landscape scale initiative and/or by vouching for (part of) the financial risk that investors are taking. This will lower the threshold for investors to take the step to financing landscape approaches.

Close the knowledge gap between the scientific world and investors

Research institutes should increase the exchange of scientific information towards investors and use a language that they can understand. Furthermore, involving investors in research projects is another way to help these stakeholders to strengthen their knowledge base and steer their decision making with regard to investing in landscape approaches.

5.3.3 Leveraging integrated finance

Another way of increasing the effectiveness of integrated landscape finance is to combine different available financing schemes. Stimulating cooperation between investors (which can be done by governments or NGOs) can help increasing the incentive to combine investments. Kissinger (2014) advocates therefore to increase the role of Development Finance Institutions (DFIs). A good example of leveraging integrated finance via involvement of DFIs is the World Bank's Biodiversity and Watershed Conservation and Restoration Project in Espírito Santo, Brazil (Kissinger 2014). Here, the World Bank implemented a multi-functional financial package focused on biodiversity conservation and long-term economic development in both public and private sectors. The leadership role of the World Bank made it possible to incorporate smaller (sectoral) initiatives and investments into this larger package and

increase the overall effectiveness of the project. Another example are CSR partnerships created between the Dutch Government, Dutch businesses and local businesses in production landscapes, which lead to joint investments in improving CSR practices locally (Kessler and de Koning 2013).

5.3.4 The role of climate and biodiversity financing mechanisms

Not all landscape initiatives can count on investor involvement: investors will only be interested in those landscapes that bring some sort of return. Smallholders cannot shift to more sustainable production methods on their own, as they generally lack the knowledge and means to do so. In addition, the costs and benefits of biodiversity conservation are often not equally divided. For example: forest conservation to safeguard biodiversity and water availability will be costly for a forest manager. The benefits, however, will spread out over the landscape that the forest is part of, and will go to those stakeholders that profit from increased ecosystem resilience and water availability. In order to stimulate equal cost-benefit sharing, certain financing and compensation mechanisms can be implemented to bring about the potential and incentive among smallholders to work together towards conservation of biodiversity.

Payment for ecosystem services

The concept of payment for ecosystem services (PES) is based on the idea that those stakeholders that benefit from ecosystem and biodiversity conservation initiatives pay for the ecosystem services they use to those who bear the costs of ensuring the secure supply of these services. Most current PES schemes have been locally implemented, usually on the scale of watersheds. There are a few national (usually forest conservation) and international (e.g. bio-carbon markets) PES schemes (Gutman and Davidson 2007). Thus so far the effectiveness of PES schemes has been limited, partly due to the fact that PES schemes have not yet been implemented at a large scale on national and international levels. Locally however, PES initiatives have shown improvements in terms of biodiversity conservation, investment in securing ecosystem services and increased local capacity to increase sustainable production (Gutman and Davidson 2007). Besides increasing efficiency of PES schemes through implementation on a larger (national, international) scale, efficiency of local PES schemes can be improved via spatial targeting and safeguarding land and property rights (de Man and Verweij 2011; Wünscher *et al.* 2008).

Regulatory carbon markets, REDD and REDD+

The Kyoto Protocol has led to an increase in regulated carbon trading around the world. Though the share of bio-carbon is as yet relatively small, bio-carbon markets are expected to increase (Gutman and Davidson 2007). Reducing Emissions from Deforestation and forest Degradation (REDD and REDD+) schemes are the most prominent ones focusing on increasing carbon storage through forest conservation and restoration. If the implementation of such schemes can be boosted through post Kyoto negotiations, this could significantly increase the available finance for conservation and restoration of forest and other protected areas (Gutman and Davidson 2007).

Voluntary guidelines

In addition to regulatory guidelines, voluntary guidelines play an important role in boosting sustainable international development as well. Voluntary guidelines receive increasing attention from businesses for reasons of reputation and license to produce.

Voluntary carbon markets: the example of Sierra de Piura, Peru

Alongside the regulatory carbon market, the voluntary carbon market is expected to grow as well, considering the growing demand for sustainable products. An example of a successful landscape project is the reforestation programme of a highland forest in Sierra de Piura,

Peru. This forest was characterised by increasing deforestation due to climate change impacts and a resulting reduced water supply to coffee plantations in lower areas. Café Direct, a British coffee producer of fair trade coffee and tea and the cooperative Cépicafé initiated a project to assist local smallholders in restoring the highland forest. By reforesting the degraded areas, starting at an altitude of 3200m above the town of Choco, local people who depended on subsistence agriculture received an additional source of income by managing the tree nurseries (see Figure 5.2). Once these nurseries were established, carbon credits were sold on the condition that 10% of the income would be invested in forest management. This ultimately led to successful restoration of the forest and water flow to the production site and improved livelihood conditions of local communities. For this project Café Direct won the 2011 ProClimate challenge in the category of coffee. Additional investments of ProClimate have increased this success even further (ProClimate 2014; www.cafedirect.co.uk).

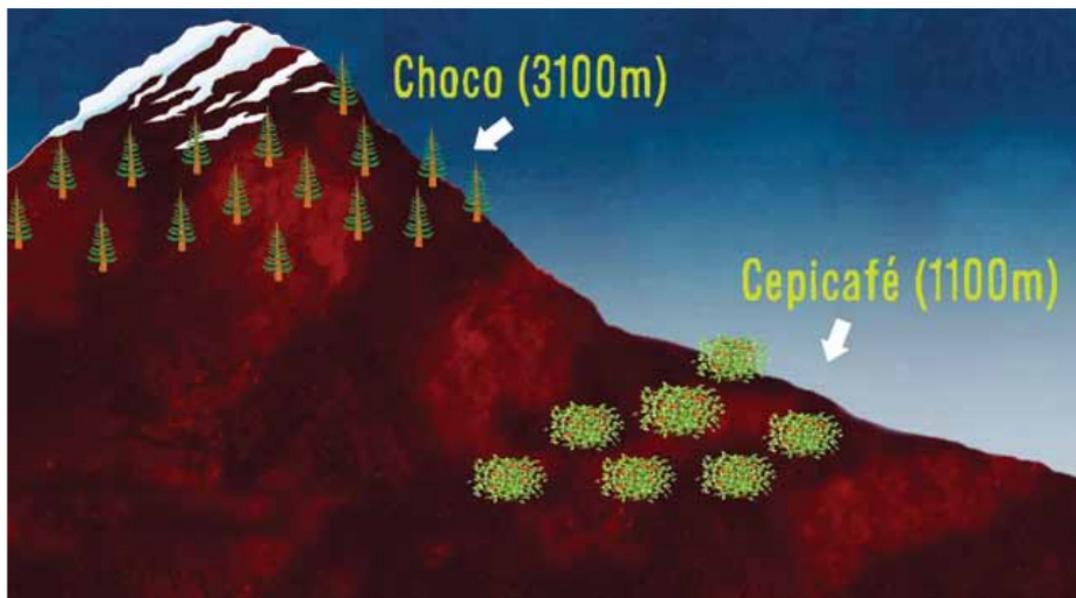


Figure 5.2: schematic drawing of forest and coffee plantation situated at Sierra de Piura (source: Bance et al. 2012).

International Corporate Social Responsibility (ICSR): incorporate landscape-level standards
 The internationally acknowledged OECD Guidelines for Multinational Enterprises set the standards for international businesses operating in developing countries and emerging economies. Observance of these guidelines is voluntary in principle. However, countries can decide to regulate certain guidelines via national law or international commitments (OECD 2011). If organisations violate these guidelines, they can be held accountable. Nevertheless, violation of guidelines is not uncommon and is a consequence of various factors which businesses often cannot solve alone (SER 2014). Via International Corporate Social Responsibility conventions (ICSR/IMVO) governments support businesses in their ambition to meet the international guidelines on CSR. Through agreements between governments, businesses and civil society organisations, collective action can be taken towards increasing sustainability and CSR within specific sectors. Governments offer support via consistent policy, capacity building, taking away possible regulatory barriers and up-scaling existing initiatives. Businesses in turn commit to established agreements and report on their performance (SER 2014).

The number one policy of the OECD guidelines towards enterprises is that they should 'contribute to economic, environmental and social progress with a view to achieving sustainable development' (OECD 2011). These aims are consistent with the aims of

landscape approaches. However, the individual guidelines formulated by the OECD remain limited to the level of individual enterprises. For example, environmental guidelines aim to reduce the environmental performance of individual enterprises. However, if a landscape view is taken into account, the environmental performance of individual business should be viewed in the light of overall environmental sustainability of a landscape. This sustainability depends on the total of environmental footprints of all actors in that landscape. This means that a landscape approach could theoretically require individual businesses to aim for a higher ambition in certain sustainability areas (e.g. water or forest management) that would according to the guidelines be strictly necessary. Incorporation of landscape-level standards in these guidelines would be advisable in order to make them more effective for landscape approaches and to encourage businesses to adopt a broader, landscape-wide perspective on sustainability.

Certification: certify landscapes instead of individual products

Certification is a widely accepted method to encourage businesses and producers to invest in the sustainability of their production and the supply chain they are working in. There are, however, a few major drawbacks to certification:

- Though investment in certification is usually not an issue for larger companies, the threshold for smallholders to shift to certified production is often (too) high due to high investment costs and standards that are sometimes difficult to meet (Leibel 2011; Waarts *et al.* 2013). It has been argued that many smallholders switching to certified production did not gain from this in terms of higher incomes, as the increase in profit usually barely covered the certification fee. Rather than the premium, implementation of better agricultural practices leading to structural higher yields and income should be the driver for sustainable production (Brasser 2012; Brasser *et al.* 2014).
- Certification is based on voluntary participation. Though an increasing number of businesses invests in certification, there will always be businesses (potentially those responsible for the highest environmental impacts) who are unwilling to make this investment (Steering Committee of the State-of-Knowledge Assessment of Standards and Certification 2012).
- Certification is done at a business or farm level. Thus, individual producers in a landscape invest in their own share of biodiversity conservation necessary for obtaining a certificate. This could lead to fragmentation of nature conservation and thus inefficient conservation within the landscape as a whole (N. Visser, personal communication, July 30, 2014).
- At the moment there is a large variety of certificates around, which needlessly complicates decision making for consumers (Waarts *et al.* 2013).

To make things easier for smallholders, as well as for consumers, it is argued that instead of certifying individual products or sectors, there should be a system of landscape certification, or landscape labelling (Ghazoul *et al.* 2009). This will not only help to make biodiversity conservation initiatives more effective, it also enables smallholders who are unable to meet certain sustainability requirements on their own, to compensate for these by focusing stronger on other sustainability ambitions. Such a label could be used for any kind of product, facilitating decision making for consumers. To further lower the threshold for smallholders and other businesses, a levelled labelling system should be implemented, in which producers can grow in terms of their sustainability achievements (G. Kok, personal communication, May 8, 2014).

5.3.5 Short-term versus long-term financing schemes

In the short term, the abovementioned financial schemes could boost the implementation of integrated landscape initiatives. However, the overall and long-term effectiveness of such instruments is criticised. According to some, the effects of PES and REDD(+) schemes, for example, are extremely limited because of relatively low investments per hectare: the

revenues from these financing schemes do not outweigh the opportunity cost of forfeited production (J. M. Dros and F. Hubeek, personal communication, May 8, 2014; (Brasser *et al.* 2014; de Man and Verweij 2011). Regarding long-term perspectives, some organisations believe that landscapes should not be dependent on grant finance, but instead they should become self-sustaining, including tax- and subsidy schemes embedded in national and local policy (Ferwerda 2012; J. M. Dros and F. Hubeek, personal communication, May 8, 2014).

5.4 Governance requirements for integrated landscape management

Involving investors is one aspect of increasing the potential success of landscape approaches. In addition, established financial structures for landscape development should be supported by an enabling governance context. As we have noticed in the preceding part of this chapter, the success of landscape initiatives highly depends on the capacity and willingness of local stakeholders to invest in landscape sustainability, as well as the willingness of investors to get involved. Governance systems should be focused on the participation of these stakeholders and on policy efficiency.

5.4.1 Overview of governance requirements for successful integrated landscape management

Literature review and interviews have resulted in the collection of a broad set of actions that should ideally be taken to increase the potential success of landscape approaches. The table below gives an overview of these actions and a description of the effects on people, planet and profit levels. This concerns an overview of the theoretical success factors in landscape approaches. In practice, in most landscapes it will be impossible to implement all the actions described here. However, judging from the degree to which these actions can be effectively implemented, one could decide to what extent a landscape approach could be successful and thus determine if it makes sense to implement a landscape approach in a specific landscape.

The icons in the 'Effect' column represent the area (people, planet, profit) in which this effect will be most evident. The icons stand for:

-  Planet
-  People
-  Profit

-  People/Planet
-  Profit/Planet
-  People/Profit
-  Triple P

Action	How	By whom	For whom	Effect
Strengthen the position of smallholders				
Create clear and secure land tenure systems	Map and register land use and land and property rights (part of spatial planning, see below). If possible, implement a cadastral system. Provide proper enforcement in case of unlawful land use.	Local/national governments, support by NGOs and international institutions, UN	Smallholders	 Longer term focus on land management and security of resource supply.  Strengthened incentive and capacity to adopt more sustainable production methods.

Action	How	By whom	For whom	Effect
Support capacity building and transfer of technology and knowledge	Support education of smallholders and knowledge transfer to local/national governments. Gradually transfer new technologies to farms, communities and farmers' organisations, and provide materials and financial means necessary for changing production methods.	NGOs, businesses, governments	Smallholders	 Increased awareness among local/national governments and smallholders on the benefits and necessity of biodiversity conservation.  Strengthened incentive and capacity to adopt more sustainable production methods.
Encourage smallholders to form farmers' organisations	Provide necessary knowledge, bring together smallholders.	NGOs, local governments, businesses	Smallholders	 Increased share of knowledge among smallholders.  Strengthened position of smallholders against powerful stakeholders.  Increased capacity to participate in sustainability initiatives.
Facilitate multi-stakeholder processes				
Support discussion, negotiation and transparency among stakeholders	Use independent conveners to build trust and bring together stakeholders and assist in constructing financial arrangements.	NGOs, governments	All stakeholders	 More trust among stakeholders and broader support for landscape initiatives  Better possibilities for combining and leveraging of investments.  Level playing field for stakeholders.
Close knowledge gap between scientific world and governments/businesses	Involve businesses in research projects. Encourage different ministries to strengthen cooperation and combine existing knowledge bases.	Research institutes, governments, NGOs	Governments, businesses	 Increased incentive among businesses to invest in landscape initiatives  Improved and better targeted government regulation and standards
Encourage cooperation between investors and other stakeholders	Increase the role of Development Finance Institutions (DFIs). Stimulate creative partnerships between stakeholder platforms and banks.	NGOs, governments, businesses	All stakeholders	 More and better investment opportunities.  Increased effectiveness of investments.

Action	How	By whom	For whom	Effect
Support investment and financing schemes				
Support investments through subsidies, funds and guidelines	Payment for ecosystem services, REDD+ investments, and other subsidies provided for specific programs of themes.	Governments, NGOs	NGOs, businesses, smallholders	 Lower threshold to adopt sustainable production methods.  Evenly distributed costs and benefits of biodiversity conservation among stakeholders.
Encourage clustering of financial flows	Encourage investors to strengthen cooperation with other investors in the landscape.	Governments, investors	NGOs, businesses, smallholders	 Increased effectiveness of investments.  Stronger business, NGO and smallholder incentive and capacity for participation in landscape initiatives.
Encourage mainstreaming biodiversity in business models	Use TEEB studies to incorporate costs and benefits of biodiversity conservation in business plans. Use bench-marking and give front runners in sustainable development a platform to show their results and encourage others.	Governments, research institutes, NGOs	Smallholders, NGOs, businesses	 Increased business incentive to participate in landscape initiatives.  Increased business knowledge on financial benefits of mainstreaming biodiversity.
Provide proper government support and enforcement				
Implement clear standards, combined with proper enforcement	Implement investment standards and encourage commitment to voluntary guidelines via international CSR agreements and certification standards	Governments	Businesses, smallholders	 Level playing field for stakeholders.  Stronger stakeholder incentive for investment in sustainability and biodiversity conservation.
Ensure long-term government support	Strengthen stakeholder confidence by offering long-term support through policies/funds etc.	Governments	NGOs, businesses, smallholders	 Strengthened stakeholder confidence.  Increased incentive to change production methods.

Mapping and monitoring as a basis					
Support proper spatial planning initiatives	Provide local and national governments of developing countries with the necessary knowledge and technology (GIS, remote sensing) to implement spatial planning on a large scale.	Governments, NGOs, Research institutes	Local/national governments	 	<p>Improved local government possibility to plan landscape management and model long-term landscape effects of policy measures.</p> <p>Improved local government possibility to monitor land-use changes and apply proper law enforcement.</p>
Reflect on and steer policies and development projects through monitoring and evaluation	Implement a universal monitoring scheme that can be adjusted according to specific situations. Determine indicators in advance.	Governments, NGOs, Research institutes, businesses, investors	All stakeholders	  	<p>Increased knowledge on good practices.</p> <p>Increased effectiveness of investments.</p> <p>Increased awareness on effects of biodiversity conservation and sustainable production initiatives.</p>

5.4.2 Limitations to landscape approaches

The landscape approach may not be the best approach to take in every situation. One should keep in mind the practical applicability of landscape approaches in different social and governance contexts in landscapes. The landscape approach involves establishing multi-stakeholder collaborations and broad land-use plans, which can be a time-consuming, costly and sometimes impossible venture. There could be landscapes in which governance or stakeholder incentive is of such character that an integrated multi-stakeholder approach at landscape level will simply not gain a foothold. For example situations where governments are extremely restrictive (e.g. by prohibiting the establishment of farmers' organisations) or where businesses have no incentive to adopt a long-term vision on landscape sustainability. In such cases, where the pre-conditions for successful landscape approaches are absent, it might be wiser to find a different area in which the landscape approach has better chances of success. Finally, it is up to the people who work in those landscapes and are well aware of the governance and social contexts to make a proper assessment in deciding whether or not to implement a landscape approach.

Business limitations

Business incentive can be decisive in determining whether or not to implement a landscape approach. If Businesses do not show an incentive for long-term commitment to a production area, they may not be interested in participating in landscape approaches (Kissinger *et al.* 2013). Also, sustainable land use is not the only way for businesses to safeguard security of supply. Some companies use diversification of sourcing areas as a strategy to cope with the impact of climate change. These companies effectively secure long-term resource supply, but may be less inclined to invest in the resilience of their sourcing areas (Kissinger *et al.* 2013). This reduces their incentive to participate in landscape approaches, which means that

perhaps a different approach (less based on multi-stakeholder collaboration) could be more effective.

Government limitations

In practice, existing governance contexts are often far from ideal. In the case of lacking governance or restrictive regulations, implementation of landscape initiatives can become very difficult, if not impossible. As smallholders, being the most vulnerable of all stakeholders when working individually, are usually the ones most affected by the negative impacts of ineffective governance systems, there might be more chance for success when smallholders organise themselves in an association or cooperative.

Keep in mind a broader perspective

African Studies Centre warns governments not to exclude 'difficult' areas altogether in their sustainability ambition (H. van Dijk, personal communication, May 19, 2014). Avoiding landscapes with low potential for stakeholder cooperation or politically unstable areas could lead to an increase of discontentment in such areas, potentially increasing political instability. Governments should try to invest in those landscapes in which a positive effect of landscape approaches is expected, but at the same time development aid should be allocated to those areas that fall outside the scope of landscape approaches.

5.5 Conclusions

There is a trend of increasing stakeholder readiness to participate in integrated landscape initiatives. Incentives for involvement include food and resource security, improving local livelihoods, increasing productivity, increasing market access, biodiversity conservation, economic development, social development, returns on investment in biodiversity conservation, improving reputation, meeting (future) demand for sustainable products. Barriers for involvement are mainly related to lack of knowledge and awareness, lack of means to switch to more sustainable production methods, limitations due to regulatory or land tenure constraints, lack of long-term perspectives and long-term support of governments and financiers, and lack of trust between stakeholders. Knowledge transfer is essential for raising awareness on the multiple and joint benefits of landscape sustainability. This includes informing stakeholders on the actual costs and benefits of (good) landscape use and the added value of multi-stakeholder approaches. For smallholders, capacity building is essential in order to provide them with the means to shift to more sustainable land-use practices. Long-term government support and a long-term vision of businesses increases the potential success of landscape initiatives. Finally, initiatives based on a landscape approach should not solely be seen as development aid projects running on donor funding. Instead, landscape approaches should, when possible, be based on a business case of (financial) returns on investment in the long term, ensuring integrated landscape initiatives to become self-sustaining in time. Care should however be taken not to exclude certain difficult landscapes where the long-term societal return on investment could easily outweigh the short-term gains of focusing only on high economic potential landscapes.

6 Analysis of Dutch policy on sustainable development

6.1 Introduction

Three departments of the Dutch Government play a role in achieving goals on sustainable international development. These are the Ministries of Foreign Affairs (BZ), Economic Affairs (EZ) and Infrastructure and the Environment (IenM). Here, as a first step towards a potential more robust future analysis, each department is described in terms of their international development goals and the budgets allocated to these goals. As overall budget allocation might not be a clear reflection of the actual actions taken to reach specific development and biodiversity goals, the overviews of budget allocations only serve as an indication. It is impossible to tell what effects are reached in practice with these budget and to what extent a budget for a specific theme has positive effects on other themes or goals as well. Therefore, this chapter will conclude with an overview of the different development programs in place that are relevant when it comes to landscape approaches. These programs will be discussed in terms of their strengths and weaknesses. Finally, they will be viewed in the light of the overall development aid and biodiversity ambitions of the Dutch Government.

6.2 The Dutch Ministry of Foreign Affairs (BZ)

6.2.1 Policy targets

The Ministry of BZ has documented their most recent aims regarding international development in the 2013 note by Minister Ploumen of Foreign Trade and International Development on development aid, trade and investments (Ministry of Foreign Affairs 2013b). In this strategy paper, three types of country relationships are described on which development policy is focused:

- **Aid relationships:** relationships with (post)conflict countries and fragile nations that lack the institutional capacity to fight poverty on their own. The Dutch Government helps by combining poverty alleviation initiatives with activities focused on safety and diplomacy. Countries with which the Netherlands have an aid relationship are Afghanistan, Burundi, Mali, Yemen, Rwanda, South Sudan and the Palestinian Territories.
- **Transition relationships:** relationships with countries with which the Netherlands have both aid and trade relationships. As the trade relationship with those countries strengthens, the necessity for poverty alleviation reduces over time, and trade can receive more attention. Important countries in this category are currently Bangladesh, Benin, Ethiopia, Ghana, Indonesia, Mozambique and Uganda.
- **Trade relationships:** relationships with countries with which the Netherlands have a trade and investment relation. Activities within this category aim for improvement of the success of Dutch businesses abroad. The Dutch focus is concentrated in relationships with Australia, Belgium, Brazil, Canada, China, Colombia, Germany,

France, the Gulf States, India, Iraq, Japan, Malaysia, Mexico, Nigeria, the Ukraine, Poland, Romania, Russia, Singapore, Turkey, Vietnam, the United Kingdom, the United States, South Africa and South Korea.

Ploumen's note focuses on three main goals:

- Eradication of extreme hunger and poverty within one generation;
- Sustainable inclusive growth around the world;
- Prosperity of Dutch businesses abroad.

6.2.2 Analysis of policies and budgets

- An analysis of the Ministry of BZ's budget on international development (Ministry of Foreign Affairs 2013a) reveals that the budget allocations fits in well with the goals mentioned in Ploumen's note: There is a large focus on people-oriented aims, such as social development (35% of the total budget of almost 2.8 billion euros on international trade and development cooperation), peace and safety for development (25% of the total budget on international trade and development cooperation), food security and drinking water provision. Another 35% of the total budget on international trade and development cooperation is allocated to sustainable trade and investments.
- No budget is directly allocated to biodiversity conservation. Part of the water management budget could possibly indirectly have a positive influence on biodiversity, as well as some targets on sustainable use of natural resources and climate resilience. However, judging from the budget report the main focus regarding climate seems to be on climate change mitigation (CO₂ reduction) instead of biodiversity conservation or ecosystem resilience (Ministry of Foreign Affairs 2013a).
- Monitoring is not mentioned in the budget report, though known to be part of individual programs. For example, the Ministry of BZ finances the new Sustainable Land and Water Program, part of The Sustainable Trade Initiative (IDH). An important part of this programme is creating a universal monitoring framework.

6.3 The Dutch Ministry of Economic Affairs (EZ)

6.3.1 Policy targets

In the implementation agenda on natural capital (Uitvoeringsagenda Natuurlijk Kapitaal) of the Ministry of EZ, biodiversity receives much attention. With programmes such as the Green Development Initiatives and Platform BEE (Business, Economy and Ecology) the Ministry of EZ aims to scale up initiatives on biodiversity conservation and sustainable use of land and resources from a company level to a broader (landscape) level. The Ministry of EZ states to work closely together with the Ministry of IenM in reaching the goals on natural capital conservation. The main goals as described in the 'Uitvoeringsagenda Natuurlijk Kapitaal' (Ministry of Economic Affairs 2013a) are:

- Protection nature on a landscape level in production areas of agricultural resources;
- Restoring degraded land ecosystems;
- Bringing biodiversity and food production into balance;
- Encouraging Dutch businesses to assess the value of natural capital;
- Increasing awareness on biodiversity.

From this implementation agenda several pilot projects have emerged in Africa and Brazil, focused on cacao production areas. The Ministry of EZ also co-organized a recent conference (Nairobi, Kenya, July 2014) that resulted in "the African landscapes action plan" containing 19 action strategies to promote widespread implementation of the landscape approach across Africa in six focal areas: policy, governance, business, finance, research and capacity development (LPFN, 2014).

In addition, the Ministry of EZ states in its budget report that in terms of international agriculture, the aim is to increase food security by doubling production while halving the use of resources (Ministry of Economic Affairs 2013b).

6.3.2 Analysis of policies and budgets

- Judging from the budget report, projects on strengthening the international economic position of the Netherlands and on innovation are almost entirely focused on Europe and developed countries with which the Netherlands have a strong trade relationship (Ministry of Economic Affairs 2013b). There are some exceptions, which include the programme 'Natuurlijk Ondernemen en Green Deals' (part of Platform BEE) and EZ's pilot programs on implementing the landscape approach in developing countries (N. Visser, personal communication, July 30, 2014).
- EZ has many goals on biodiversity conservation, and shows this in the budget allocation as well: 0.4 million euros go directly to international biodiversity. Another 1.9 million euros are allocated to sustainable food systems, and 8.3 million euros to international sustainable entrepreneurship and green deals. Compared to the total international development budget of BZ (2.8 billion euros), however, these budgets are extremely small.
- Other than BZ, EZ does mention monitoring as a main target in their budget report. For example, TEEB studies are part of the Sustainable Entrepreneurship and Green Deals programme. EZ states that monitoring schemes are implemented in order to track international goals on nature conservation and to serve international reports on nature and biodiversity (Ministry of Economic Affairs 2013b).

6.4 The Dutch Ministry of Infrastructure and the Environment (IenM)

6.4.1 Policy targets

Though the Dutch Ministry of IenM mainly focuses on national issues related to spatial planning, nature and environment, two relevant international goals were mentioned in the budget report of 2014 (Ministry of Infrastructure and the Environment 2013):

- Climate change mitigation;
- Sustainability: boost the transition to a sustainable economy by stimulating responsible resource use and strengthening natural capital resilience.

6.4.2 Analysis of policies and budgets

- the Ministry of IenM defines clear international and development goals regarding climate and sustainability. In the budget report, however, it is hard to distinguish which part of the allocated budget goes to these goals and which part is spent on national targets. The water programme, 'Partners for Water' (an HGIS/BZ supported initiative) is one of the few more clearly described international programs, though this programme covers both international development and national/European projects (Ministry of Infrastructure and the Environment 2013).
- In the budget report there is a large focus on climate change mitigation, with CO₂ reduction as the most important aim. Within that aim national and European goals receive most attention (Ministry of Infrastructure and the Environment 2013). With regard to the sustainability goals, these too are largely focused on national and European level innovation initiatives and natural capital protection on a national level.
- Though according to the 'Uitvoeringsagenda Natuurlijk Kapitaal' the Ministries of EZ and IenM are working together on international biodiversity issues, the Ministry of IenM has no budget allocated directly to international biodiversity.

- Though not described in the budget report, specific international development programs are being supported by the Ministry of IenM, which include VCA (Verified Conservation Areas) and IRP (International Resource Panel). It is not clear from the budget allocation how these programs are financed and what the sizes of the budgets are.

6.5 Relevant existing programs for integrated landscape management

As stated before, an overall budget allocation might not reflect the actual actions taken to reach specific development and biodiversity goals. Part of the budgets on international sustainable development go to large organisations, such as the United Nations, and are not always labelled. Therefore there is little clarity on the actual effects of Dutch money on international development. In order to get a better idea of what the Dutch Government is doing to reach goals at a landscape level, an analysis was done of programs relevant for integrated landscape management which have been implemented or are supported by the Dutch Government. An overview of these programs, their areas of focus, strengths and weaknesses is given in the table below. Some of these programs are single-issue ones, but there are also a number of initiatives based on the principles of the landscape approach.

6.5.1 Overview of international development programs

Programme / initiative	Supporting department	Description	Strengths	Weaknesses	Sources
Trade and Biodiversity			 	 	
IDH/SLWP (inception phase) (Sustainable Trade Initiative/ Sustainable Land and Water Program)	Foreign Affairs	Aims to support integrated land management in 6 landscapes that are sourcing areas for one or more agri commodities, by facilitating multi-stakeholder processes . Ultimate aim of the programme is to develop financially viable governance models for integrated land management.	<ul style="list-style-type: none"> ▪ Active involvement of private sector in multi-stakeholder landscape initiatives. ▪ Incorporates valuation of ecosystem services into business models. ▪ Facilitates multi-stakeholders meetings and joint scenario development. 	<ul style="list-style-type: none"> ▪ Focus on landscapes that are sourcing areas for one or more commodities and where private sector actors are interested in landscape approaches. Areas that fall outside this range do not fit into this programme. 	(Ministry of Foreign Affairs 2013b) (IDH 2013) (see also: http://www.idhsustainabletrade.com/)

VCA (Verified Conservation Areas) / GDI (Green Development Initiative)	Infrastructure and the Environment	Aims to develop a market place for integrated landscape management by improving accountability and transparency of baselines, measures and outcomes, and inviting businesses to invest.	<ul style="list-style-type: none"> ▪ Involves businesses in landscape initiatives. ▪ Stimulates incorporation of biodiversity conservation into business models. 	<ul style="list-style-type: none"> ▪ Focus on areas that are of interest to financiers. Areas that fall outside this interest range may not fit in this programme. ▪ Possible focus on only biodiversity conservation functional for investors. 	(GDI 2013) (see also: http://v-c-a.org/ or http://gdi.earthmind.net)
Pilot projects Africa/Brazil	Economic Affairs	Aims to restore degraded ecosystems and set up biodiversity-friendly agricultural practices in landscapes which could have a (future) relevance to Dutch markets.	<ul style="list-style-type: none"> ▪ Involves businesses in landscape initiatives. ▪ Facilitates multi-stakeholders consultations. 	<ul style="list-style-type: none"> ▪ Focus on areas that are of interest to financiers. Areas that fall outside this interest range may not fit in this programme. ▪ Possible focus on only biodiversity conservation functional for investors. 	(Ministry of Economic Affairs 2013a)
Commonland Foundation	Infrastructure and the Environment/ Economic Affairs	Stimulates initiatives based on long-term planning and business investment on ecosystem restoration, leading to value increase of a landscape.	<ul style="list-style-type: none"> ▪ Involves businesses in landscape initiatives. ▪ Stimulates incorporation of biodiversity conservation into business models. 	<ul style="list-style-type: none"> ▪ Focus on areas that are of interest to financiers. Areas that fall outside this interest range may not fit in this programme. 	(Ferwerda 2012)

Local economic development / international trade relations					
EPA (Economic Partnership Agreements)	Foreign Affairs (via European Commission)	Agreements between the EU and African, Caribbean and Pacific (ACP) regions aimed at promoting trade, sustainable growth and poverty reduction.	<ul style="list-style-type: none"> ▪ Tries to improve trade relations by focusing on economic development in producing countries 	<ul style="list-style-type: none"> ▪ So far no evident results have been reached regarding local economic growth ▪ Little/no focus on biodiversity conservation 	(Ministry of Foreign Affairs 2013b)
Equity for Africa	Foreign Affairs (together with FMO)	Provides knowledge, technology and loans for local farmers in developing countries	<ul style="list-style-type: none"> ▪ Reduces the barrier for smallholders to invest in sustainability initiatives 	<ul style="list-style-type: none"> ▪ Little/no focus on biodiversity conservation ▪ Little attention for international trade relations 	(Ministry of Foreign Affairs 2013b)
Dutch Good Growth Fund	Foreign Affairs	Supports investments in emerging economies that prioritise social relevance and sustainability.	<ul style="list-style-type: none"> ▪ Supports stakeholder involvement ▪ Supports sustainability of supply chains ▪ Supports business investments 	<ul style="list-style-type: none"> ▪ Little/no direct focus on biodiversity ▪ Does not support projects for developing economies 	(Ministry of Foreign Affairs 2013b)
Platform BEE (Biodiversity, Ecosystems and Economy)	Economic Affairs	Supports sustainable growth by bringing together businesses with nature- and development organisations	<ul style="list-style-type: none"> ▪ Stakeholder involvement ▪ Supports business investments 	<ul style="list-style-type: none"> ▪ Risk of narrow focus on ecosystem services within biodiversity conservation aims. 	(Ministry of Economic Affairs 2013a)
Land tenure					
ILC (International Land Coalition)	Foreign Affairs	Alliance of civil society and intergovernmental organisations seeking to legally secure land and property rights	<ul style="list-style-type: none"> ▪ Involvement of civil society ▪ With establishing proper land tenure, provides a good basis for landscape initiatives 	<ul style="list-style-type: none"> ▪ Forms only a basis for landscape initiatives. In order to properly include biodiversity, awareness and capacity building is needed. 	(Ministry of Foreign Affairs 2013b)

Several Land governance projects	Economic Affairs	Several projects stimulated by EZ to improve knowledge on land governance and increase availability of land and property rights	<ul style="list-style-type: none"> ▪ Closes knowledge gap between science and government ▪ With establishing proper land tenure, provides a good basis for landscape initiatives 	<ul style="list-style-type: none"> ▪ Forms only a basis for landscape initiatives. In order to properly include biodiversity, awareness and capacity building is needed. 	(Ministry of Economic Affairs 2014)
Food and resource security					
IRP (International Resource Panel)	Infrastructure and the Environment	Aims to develop holistic approaches to the development of global resources based on scientific research.	<ul style="list-style-type: none"> ▪ Closes knowledge gap between scientific world and governments. 	<ul style="list-style-type: none"> ▪ Little support of actual projects in the field ▪ Risk of narrow focus on ecosystem services within biodiversity conservation aims. 	(See: http://www.unep.org/resourcpanel/)

6.5.2 Discussion on Dutch international development programs

Programs aiming for integrated landscape management already exist...

The Dutch Ministries of Foreign Affairs (BZ), Economic Affairs (EZ) and Infrastructure and the Environment (IenM) have already implemented or are supporting a number of projects in which the landscape approach is applied. The most prominent ones are the new Sustainable Land and Water Program (SLWP, part of the Ministry of BZ supported IDH), the Verified Conservation Areas approach (VCA), promoted by the Ministry of IenM, and a number of pilots in Africa and Brazil supported by the Ministry of EZ. Most of these programs have been established within the past ten years, which shows that there is increasing awareness within the Dutch Government on integrating goals on international sustainable development. Furthermore, a significant overlap between these programs was found in terms of goals and approaches. All three departments are clearly trying to incorporate the principles of the landscape approach in these (pilot) projects.

...but more interconnection is required...

In interviews with the ministries and the Commonland Foundation it was noted that cooperation between the Ministries of BZ, EZ and IenM with regard to international development is perceived as insufficient. The same goes for cooperation between the abovementioned landscape initiatives. Instead of each implementing separate projects with different departmental targets, an overarching international integrated agenda on development and biodiversity should be established in which the ambitions of the three ministries regarding landscape approaches can be combined. An important advantage of such a step is the possibility to combine the available knowledge on integrated landscape management. Experts involved in individual programs can now form a knowledge platform, exchange information and ideas and reduce possible knowledge gaps between the scientific world and different governmental departments. Furthermore, an international agenda enables the available budgets for landscape approaches to be combined and possibly implemented more efficiently.

Creating trust and a level playing field is essential for proper cooperation between ministries and landscape initiatives. Besides facilitating such cooperation, the government can offer additional support by showing long-term commitment via budgets, policies and national and international standards.

...as well as rethinking budgets...

Judging from the budget reports of the Ministries of BZ, EZ and IenM, Dutch budgets for international development cooperation are for a large part allocated to people- and profit-goals (local social and economic development, strengthening the international market position of Dutch businesses: (Ministry of Economic Affairs 2013b; Ministry of Foreign Affairs 2013a; Ministry of Infrastructure and the Environment 2013). Planet-oriented goals could be at risk of not being adequately addressed via these budgets. It is advised therefore to impose boundary conditions to the allocation of the existing budgets on people- and profit-goals, thus enabling the inclusion of goals such as (functional and other) biodiversity in these budgets. This will make sure that these large budgets can also be applied for a more integrated approach to development issues.

...and a broader overall scope for international development via landscape approaches

The Dutch Government applies different types of measures for development cooperation, some are people-oriented, some profit-oriented and some planet-oriented. The existing landscape projects are mainly implemented from a profit-perspective, and aim to involve (Dutch) businesses that have an interest in the landscape in which the project is carried out. This type of approach involves a risk of certain landscapes being excluded, namely those landscapes that do not have a direct economic value to (Dutch) businesses, and certain people- and planet- objectives not receiving adequate attention. The Dutch Government, as promoter of public interests, could adopt a broader perspective on the landscape approach and also implement the landscape approach in areas that might not have economic relevance, but also landscapes in which for example biodiversity conservation is vital or landscapes in which the incentives for becoming more sustainable are already present.

Restrictions regarding international cooperation on landscape approaches

A limitation in international cooperation on landscape approaches is the fact that governments have their own, sometimes opposing, objectives regarding the use of natural resources. Often, short-term financial returns are prioritised over long-term biodiversity conservation. As states have their sovereign rights to the use of natural resources, international conventions on issues such as biodiversity or social development cannot be endorsed by law. Though international conventions, such as the CBD, are to a certain level effective in working towards more sustainable landscapes, it will be difficult to establish agreements in which all relevant stakeholders commit to aiming for integrated, sustainable landscape management. The Dutch Government could still make a difference, however, by showing the successes of their integrated landscape initiatives and serving as an example for other governments.

6.6 Conclusions

The Dutch Government applies different types of measures for development cooperation, some are people-oriented, some profit-oriented and some planet-oriented. Overall budget allocations of the Ministries of Foreign Affairs, Economic Affairs and Infrastructure and the Environment on international cooperation indicate limited attention for international biodiversity conservation. Though existing landscape-level initiatives supported by the government do include biodiversity conservation in their overall objectives, the focus on

economic goals in all of these approaches involves the risk of conservation attempts primarily being targeted at biodiversity or ecosystem services that are valuable for businesses (either for financial or reputational considerations). The Dutch Government, as promoter of public interests, could adopt a broader perspective on the landscape approach and also implement the landscape approach in areas that might not have economic relevance, but also landscapes in which for example biodiversity conservation is vital or landscapes in which the incentives for becoming more sustainable are already present. Furthermore, there is a perceived lack of alignment between the Ministries of BZ, EZ and IenM on reaching international development goals. The establishment of an overarching international agenda on development and biodiversity could help to strengthen cooperation, and to combine existing landscape initiatives, budgets and knowledge on landscape approaches.

In addition, boundary conditions should be applied to the allocation of the existing large budgets on people- and profit- goals, thus enabling the inclusion of goals such as (functional and other) biodiversity in these budgets. This will make sure that these large budgets can also be applied for a more integrated approach to development issues.

7 Conclusions and recommendations

7.1 Conclusions

7.1.1 Concept of the integrated landscape approach

- Landscape thinking has changed over the years from a top-down, hierarchical focus on land-use planning and conservation in the 1970s/1980s to a multi-stakeholder, multi-objective approach today.
- The landscape approach can offer major benefits for sustainable international development and inclusive green growth, and could be implemented for a broad set of goals, including biodiversity.
- The landscape approach can be viewed from different perspectives. Depending on the focus and priorities of stakeholders, landscape oriented initiatives can be characterised as people-, planet- or profit-driven, or a combination of those.
- For those initiating a landscape approach it is important to not lose sight of those landscape goals that are not of direct interest to them, in order to ensure a synergy between sustainability domains. In order to find a balance in the triple P scheme, continuous monitoring and evaluation of the effects of an approach is desirable.
- Governments play an important regulatory role in ensuring the establishment of fully integrated landscape approaches. By implementing (and enforcing) sustainability standards for the production and import of products from developing countries, governments can force businesses to make their production more sustainable. Additionally, governments can support businesses in their sustainability ambitions by closing mutual agreements via International Corporate Social Responsibility conventions (ICSR/IMVO) or green deals.

7.1.2 Implications for biodiversity

- When landscape approaches are people- or profit-driven, broad biodiversity conservation, often a common good, is at risk of being overlooked. This is related to the unequal distribution of costs and benefits of biodiversity conservation.
- Creating awareness among governments (international, national and local), businesses and local stakeholders is the key to increasing readiness to incorporate biodiversity objectives in landscape approaches, together with capacity building and land tenure security on a community/farm land level.
- Financial arrangements, such as Payment for Ecosystem Services (PES) or Reducing Emissions from Deforestation and forest Degradation (REDD and REDD+), are necessary to overcome unfair distribution of costs and benefits.

7.1.3 Stakeholder involvement and governance context

- There is an ongoing trend of increasing stakeholder readiness to participate in integrated landscape initiatives. Recently it is increasingly being acknowledged that businesses should be more involved in landscape approaches, as they can make financing of landscape approaches possible. Therefore opportunities are missed in terms of financing landscape approaches and the possibility for businesses to act as

powerful stakeholders that can stimulate other stakeholders to participate in landscape approaches.

- Incentives for stakeholder involvement include food and resource security, improving local livelihoods, increasing productivity, increasing market access, biodiversity conservation, economic development, social development, returns on investment in biodiversity conservation, improving reputation, meeting (future) demand for sustainable products.
- Barriers for stakeholder involvement are mainly related to differences in objectives, lack of knowledge and awareness, lack of means to switch to more sustainable production methods, limitations due to regulatory and land tenure constraints, short-term perspectives, lack of long-term support of governments and financiers, and lack of trust between stakeholders.
- Knowledge transfer is a condition for success in landscape approaches, as it helps stakeholders to become aware of the benefits of landscape approaches and increases their incentive and ability to participate and invest in such initiatives. This includes informing stakeholders on the actual costs and benefits of (good) landscape use and knowledge on the added value of multi-stakeholder approaches.
- For smallholders, capacity building is essential in order to provide them with the means to shift to more sustainable land-use practices. Furthermore, smallholder empowerment can be facilitated via farmer's organisations.
- Long-term government support and long-term vision of businesses increases the potential success of landscape initiatives and could support transparency and accountability of landscape projects.
- Initiatives based on a landscape approach should not solely be seen as development aid projects running on donor funding. Instead, landscape approaches should, when possible, be based on a business case of (financial returns on investment) in the long term, ensuring integrated landscape initiatives to become self-sustaining in time. At the same time, care should be taken not to exclude certain landscapes: a return on investment is desirable, but not a necessary condition for landscape approaches.

7.1.4 Dutch policies

- The Dutch Ministries of Foreign Affairs, Economic Affairs and Infrastructure and the Environment already support projects that are based on the idea of landscape approaches. The most prominent ones are the Sustainable Land and Water Program (SLWP, part of IDH), the Verified Conservation Areas approach (VCA) and a number of pilots in Africa and Brazil supported by Economic Affairs.
- These projects are generally based on involving (often Dutch) businesses that have an interest in the landscape in which the project is carried out. This approach involves a risk of certain landscapes being excluded, namely those landscapes that do not have a direct economic value to businesses.
- The Dutch Government, as promoter of public interests, could adopt a broader perspective on the landscape approach and also implement the landscape approach in areas with little economic relevance.
- In order to make landscape initiatives more effective, more cooperation between the Ministries of BZ, EZ and IenM and between the landscape initiatives these departments are supporting would be desirable.
- Furthermore, a broader perspective is needed on the allocation of budgets. Ministries should aim to include additional goals when allocating trade- and people- oriented budgets.

7.2 Recommendations

7.2.1 Dutch Government

Broaden the policy focus via integrated objectives and efficiently allocated budgets

- **Strengthen cooperation by combining multiple objectives and existing landscape initiatives in an overarching international agenda:** Cooperation between the departments of Foreign Affairs, Economic Affairs and Infrastructure and the Environment could be strengthened via an overarching international agenda on sustainable development and biodiversity in which all three departments are represented. The relevant programs that focus on integrated landscape management could then be combined.
- **Set boundary conditions for business- and people-oriented budgets:** Current business- and people-oriented budgets could be reviewed and boundary conditions set for the allocation of these budgets: make sure that they are only spent on initiatives which incorporate ambitions on biodiversity and other relevant goals.
- **Maintain a broad and long-term focus when selecting landscapes:** Be careful with the selection of areas for integrated landscape management. Make sure to get a well-balanced total selection of landscapes, in which not only economically relevant landscapes are targeted, but programs for other relevant landscapes are implemented as well.
- **Support sustainability initiatives through long-term policy and financial support and set an example:** Show long-term commitment as a government by fixing budgets for the long term and implementing long-term supporting policies. Set an example by adopting a fully sustainably government purchasing policy.

Strengthen cooperation with other stakeholders

- **Reduce the gap between science and government:** An important advantage of establishing an overarching international agenda is the possibility of combining available knowledge on integrated landscape management. Experts involved in individual programs can now form a knowledge platform, exchange information and ideas and reduce possible knowledge gaps between the scientific world and different governmental departments. Additionally, research institutes could be involved in establishing integrated landscape management plans for developing countries. A good step in this direction has already been taken by involving knowledge partners such as EcoAgriculture in the IDH programme and the the Ministry of EZ supported landscape pilots in Africa and Brazil.
- **Support businesses by implementing regulatory standards, but allow gradual improvement:** Implement clear standards in order to create a level playing field for businesses and to force those businesses that would not commit to voluntary guidelines to invest in sustainability. Introduce investment rules, codes of conduct and demands on import. However, enable gradual improvement to give business that are behind in terms of supply chain sustainability the time to adapt: provide certificates to those producers and businesses that show a continuous ambition to improve, even if the sustainability level of their products is initially below the desired end result.
- **Facilitate private sectors' sustainability efforts via existing landscape approaches:** Make the benefits of involvement in landscape initiatives, such as IDH, VCA and the the Ministry of EZ pilot projects, known to businesses and invite them to take part in such initiatives. This increases business involvement and could support the expansion of existing landscape initiatives and establishment of new landscape initiatives.
- **Steer consumer choices:** Steer consumer choices by providing transparent information and setting higher sustainability standards. Landscape certification could

be a way to simplify the current certification system and make consumer choices easier.

Support smallholder capacity building

- **Support land tenure in developing countries:** Convince local and national governments to implement safe and fair land tenure systems that ensure empowerment of smallholders. Depending on the relevance or effectiveness in a certain area, provide local and national governments with technologies to build cadastral networks. Continue successful projects with this aim (e.g. some Ministry of EZ projects) and try to link these to the ILC to find synergies.
- **Support and strengthen local capacities:** Work together with NGOs and businesses to transfer knowledge and technology to smallholders. Provide financial support to enable smallholders to take the step to use more sustainable land-use practices.

Increase effectiveness of programs via monitoring and evaluation schemes

Establish a monitoring framework to keep track of the results of implemented programs. This enables the government to evaluate the effect of programs and take targeted action in case a programme needs to be revised to increase effectiveness. Another reason for implementing a monitoring framework is that it offers the possibility to keep a better eye on biodiversity and other goals on which there might not be a primary focus.

7.2.2 Private sector

Strengthen cooperation with other stakeholders

- **Increase government support by closing ICSR agreements or Green Deals:** In the context of the 'energetic society', businesses are invited to increase their own initiative when it comes to product sustainability. Via ICSR agreements or Green Deals businesses can show their commitment to becoming more sustainable and get additional government support. This could increase business transparency and strengthens businesses' license to produce.
- **Work together with research institutes and NGOs to improve knowledge base and possibilities to present results to consumers and other businesses:** Seek possibilities for cooperation with research institutes and NGOs, e.g. by setting up research projects together, thus increasing the knowledge base on landscape approaches and the benefits of biodiversity conservation.
- **Work together with local/national governments to create enabling conditions for landscape approaches:** Encourage and assist local and national governments to solve potential problems in a landscape and create enabling conditions for all stakeholders in the landscape to participate in integrated landscape management.

Support smallholder capacity building

- **Facilitate the establishment of local farmers' organisations and provide knowledge and technology:** Farmers' associations and cooperatives are not only beneficial to smallholders, they provide considerable advantages for international businesses as well, an important one of which is improved security of supply. Businesses are advised to invest in the establishment of farmers' organisations and combine this with knowledge and technology transfer. When cooperating with such organisations, provided knowledge and technology reaches a large number of smallholders and could lead to fast increases of production efficiency.
- **Focus on gradual technological improvement and production increase:** Make sure new technologies are implemented gradually, so local producers have the time to get used to changes in agricultural methods. In addition, adapt technologies to the local context, for example by building on indigenous knowledge. Think carefully

about how new technologies will be received, what local people really need and in what way a Dutch technology can be adjusted to local circumstances in developing countries. Research institutes can offer support in these considerations.

Create a business case for landscape approaches by incorporating the value of natural capital into cost-benefit analyses

Use available scientific knowledge to incorporate the value of natural capital into cost-benefit analyses, thus mainstreaming biodiversity into the business model and increasing awareness on the potential benefits of integrated landscape management. This is not only beneficial for the reputation of the business, but could also lead to higher financial returns as a better long-term planning on resource supply is possible.

7.2.3 Science

Strengthen cooperation with governments and businesses

Scientific data that could be of interest to governments or businesses is often presented overly complex and not adjusted to government or business language. Research institutes should increase the exchange of scientific information towards investors and use a language that they can understand.

Amplify collaboration with international, national and local governments. For example by inviting them to work shops and seeking their participation in research projects. The same goes for businesses: businesses have an interest in increasing their knowledge base on efficient (biodiversity-friendly) production. Connect to this interest by inviting businesses to participate in research projects on integrated landscape management.

Conduct further research on increasing the effectiveness of landscape approaches

- **Increase knowledge base on traditional farming methods and mosaic landscapes:** More research is needed on the possibilities to include traditional farming methods in extensive agricultural practices. Also agricultural production based on mosaic landscapes and crop rotation requires more attention, as the characteristics of these production methods have not yet been properly mapped and compared to the large amount of knowledge on single-crop farming.
- **Increase knowledge base on long-term global effects biodiversity and ecosystem services loss:** Develop methods to adequately map ecosystem services and the impact of biodiversity and ecosystem services availability on the livelihood of local stakeholders.
- **Stakeholder involvement:** More research is required on the key factors that enable successful stakeholder involvement in integrated landscape initiatives. Furthermore, better understanding is required on how to overcome barriers regarding stakeholder involvement.
- **Certification of landscapes:** Investigate how landscape certificates should be developed and implemented and which regulatory systems should be coupled to this. In addition, evaluate the possibilities to implement a levelled certification system in order to lower the threshold of participation for smallholders.

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8.1 Literature

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8.2 Interviews

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| ▪ André Brasser, Beagle Sustainable Solutions | 14-4-2014 |
| ▪ André Liebaert, DG DEVCO, European Commission | 15-5-2014 |
| ▪ Arthur Eijs, IenM, DGMI | 10-7-2014 |
| ▪ Edith Kroese and Mario Martinez, Avance-PMC | 26-5-2014 |
| ▪ Gijs Kok, FloraHolland | 8-5-2014 |
| ▪ Han van Dijk, African Studies Centre/Wageningen University | 19-5-2014 |
| ▪ Henk Simons and Heleen van den Hombergh, IUCN | 14-4-2014 |
| ▪ Jan Maarten Dros and Francisca Hubeek, Solidaridad | 8-5-2014 |
| ▪ Kees Blokland, Agriterra | 17-4-2014 |
| ▪ Marijke van Kuijk and Pita Verweij, Utrecht University | 24-4-2014 |
| ▪ Miriam van Gool, The Sustainable Trade Initiative (IDH) | 22-5-2014 |
| ▪ Nico Visser, EZ, DGNR | 30-7-2014 |
| ▪ Omer van Renterghem, BZ, DGIS | 21-5-2014 |
| ▪ Roderick Zagt, Tropenbos International | 17-4-2014 |
| ▪ Sara Scherr, EcoAgriculture Partners | 22-5-2014 |
| ▪ Willem Ferwerda, Commonland Foundation | 14-4-2014 |

8.3 Websites

Café Direct

www.cafedirect.co.uk

Economic Partnership Agreements

<http://ec.europa.eu/trade/policy/countries-and-regions/development/economic-partnerships/>

Global Forest Watch

www.globalforestwatch.org

Helpdesk Bedrijfsleven en Biodiversiteit

<http://www.bedrijfslevenenbiodiversiteit.nl/>

IDH (Sustainable Trade Initiative)

<http://www.idhsustainabletrade.com/>

International Resources Panel

<http://www.unep.org/resourcepanel/>

Verified Conservation Areas

<http://v-c-a.org/> or <http://qdi.earthmind.net>