



Towards productive landscapes — a synthesis

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In many parts of the tropics, landscapes are subject to unprecedented changes. Populations are growing, roads, dams and cities are being built, the climate is changing, and the demand for resources is increasing. A diversity of local, regional and global stakeholders claim a share of land and resources. Landscapes must fulfil an increasing number of functions to satisfy a broader range of stakeholders holding divergent interests. In many cases, this leads to conflict and unsustainable land use. Large areas of land lie idle, or fulfil only a fraction of their potential functions, while outsiders grab productive lands to convert them into monofunctional landscapes.

Degradation and loss of productivity affected 24% of the global land area and more than 1.5 billion people from 1983 to 2003 (Bai et al. 2008) – this is in addition to the area that was degraded and not recovering prior to that date. The World Resources Institute estimates that more than two billion hectares worldwide “offer opportunities for restoration” (Potapov, Laestadius and Minnemeyer 2011). In sum, there is a great need to manage these lands effectively and efficiently, and to combine various functions for as wide a range of actors and interests as possible within landscapes.

Concepts of integrated landscape management, or landscape approaches, have been widely embraced during recent years as a response to these challenges. Researchers, decision-makers and landscape users have come to realize that many landscapes are multifunctional, dynamic and continuously evolving under the influence of political, market, social and environmental factors. There is increasing awareness that landscape components such as forests and farms are highly interdependent. The area of mosaic landscapes where trees and forests are interspersed with permanent or semi-permanent agricultural uses is increasing.¹ There is a growing recognition that policies directed purely at forests, or purely at agriculture, have a limited ability to sustainably manage agro-forestry landscapes, and to bring together local and global needs. Integrated and holistic approaches are needed.

Reconciling stakeholders’ varying or even conflicting views and aspirations, and achieving a landscape that is productive for as many stakeholders as possible, is the goal of

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landscape governance. Whereas conceptually much progress has been made in understanding integrated landscape governance and management, more work is needed to put it into practice. This issue of *ETFRN News* paints a picture of the experiences and evidence gathered by practitioners from around the world in achieving and managing productive landscapes using landscape approaches. Contributors outline the successes as well as the challenges. The articles address landscape planning and management, landscape restoration, community involvement and private-sector roles at the nexus of agriculture, forests and biodiversity in mosaic landscapes, and place this in a context of climate change.

Jointly, the articles explore the following issues:

- the role of forests in mosaic landscapes;
- governance arrangements at the landscape scale and experiences with them; and
- key factors contributing to success in landscape management.

Landscapes

What exactly is a “landscape” is a matter of perspective. The European Landscape Convention (2000) — the only international policy framework that specifically concerns landscapes — defines a landscape as “... an area, as perceived by people, whose character is the result of the action and interaction of nature and/or human factors.” This definition acknowledges that all stakeholders have their own view of the landscape, and pursue their own objectives within it or outside it. Since these perspectives obviously differ, the boundaries of a landscape must be flexible. Often, landscapes are formulated around a specific problem (land degradation, poverty, illegal logging) or opportunity (REDD+). It is the context — who are the stakeholders, what are the institutional and administrative mandates and how are landscape elements functionally related — that determines the boundary.

For the purpose of this *ETFRN News*, we define productive landscapes as being capable of providing not just agricultural or forestry products, but a wide range of products and (ecosystem) services and fulfilling the social, economic and environmental requirements and aspirations of present and future generations at the local, national and global level.² Intensified agriculture, small-scale agro-industrial wood production, small-scale logging, water capture and storage, culture and religion, ecosystem restoration, biodiversity conservation, beauty and carbon storage are local and global aspects that combine in these productive landscapes.

Landscape approaches

Achieving productive landscapes calls for a landscape approach. A landscape approach seeks to better understand and recognize the interconnections between various land uses and stakeholders by integrating them in a joint management process (Global Landscapes Forum 2014). The landscape approach is closely related to and builds on a series of concepts in rural development and research that developed over the past 30 to 40 years. Integrated conservation and development programmes, integrated watershed management, and the ecosystem approach are just a few of the precursors of the landscape

approach. Over time, people (the users of the landscapes) have moved centre stage at the expense of more technically oriented approaches (Henkemans 2008). The substantive innovations of the landscape approach have been the recognition of the need to address the complex interactions between various spatial scales, and the need to embrace the full complexity of human institutions and behaviours (Sayer et al. 2013).

Even though *landscape approach* lacks a precise definition, there is "...strong consensus on what it means, and also on its power and potential for tackling some of the most crucial [...] issues of our times..." (Sunderland 2014). The response to the call for contributions to this issue revealed a variety of interpretations of the landscape approach, and of motivations to engage with it. In some cases, the landscape — and hence, the landscape approach — addresses anything with a spatial component. Many authors stress the component of collective action, or of neighbourly interactions, and the role of local stakeholders in influencing their own future. Recognizing the need for sectors such as forestry and agriculture to work together is another part of the landscape approach (Holmgren 2013). Both commodity farmers and conservationists feel that the "landscape" starts where their ability to address and influence actors and the environment stops, which is more or less at the border of the farm and protected area, respectively. In those cases the landscape approach is seen as converging with governance.

Within this range of interpretations, common elements emerge. A fundamental assumption underlying landscape approaches is that it is possible to align local and global interests, short-term and long-term interests and public and private interests. Finding solutions requires collaborative decision making, adequate representation of interests that need to be addressed in the landscape, a deep understanding of the landscape and of the relations between its various components, continuous learning and adaptation, and institutions that go beyond sectoral interests. These features are embodied in the Principles for Forest and Landscape Restoration (Sayer et al. 2013), which emphasize ten features of collaborative decision making to enhance local livelihoods and reconcile competing land uses (Table 1). Scherr, Shames and Friedman (2013) operationalize landscape approaches in the following terms:

- shared or agreed management for multiple objectives;
- field practices that provide multiple benefits;
- spatial arrangement of landscape features designed to maximize synergies;
- collaborative community-based decision-making and action; and
- policies and markets that incentivize synergies.

Table 1. The ten principles of forest and landscape restoration

1. Continual learning and adaptive management	6. Negotiated and transparent change logic
2. Common concern entry point	7. Clarification of rights and responsibilities
3. Multiple scales	8. Participatory and user-friendly monitoring
4. Multifunctionality	9. Resilience
5. Multiple stakeholders	10. Strengthened stakeholder capacity

Based on: Sayer et al. 2013

Overview of the articles

Section 1 introduces two concepts that shape scholarship and debate on landscapes. Kusters (1.1) outlines the sharing-versus-sparing debate, which represents two dominant but contrasting schools of thought for reconciling the objectives of food security, rural development and biodiversity conservation. Landscape approaches seek such reconciliation, but it makes a big difference to people and landscapes whether this is done by separating production and conservation functions in the landscape (sparing) or by combining them (sharing). Van Noordwijk and Sunderland (1.2) delve into the forest transition curve, which describes how nations move through a phase of deforestation as they develop, followed by a period of stabilization, and then an increase in forest area as they reach a certain level of wealth. Van Noordwijk and Sunderland introduce a series of six key questions that jointly assist stakeholders in developing collective responses to landscape problems.

Section 2 gives examples of large-scale and long-lasting programmes that support stakeholders in jointly addressing problems in the landscape. FAO's Forest and Landscape Restoration Mechanism (2.1) provides a facilitating, knowledge sharing and piloting approach, while the long-running International Model Forest Network highlights how knowledge generation and exchange across multiple scales have successfully fostered multi-stakeholder governance arrangements (2.2). The COMDEKS project (2.3) focuses on how to engage communities in landscape projects, and describes methods to translate this engagement into setting priorities and taking collaborative action.

Sections 3 and 4 explore multi-functional landscape management. The cases in Section 3 share complex land-use situations: many actors, many different land uses, and a wealth of social, cultural and political histories. Examples of bottom-up or community-driven approaches (3.5; 3.7; 3.8) are found, as are more top-down or governmental (3.1; 3.6) approaches.

The articles in Section 4 cover much of the same ground, with a stronger emphasis on forests and trees, and on forest landscape restoration. They range from relatively small scale, as in examples of Analog Forestry (4.1), to the scale of a large jurisdiction (4.4, in Rio Grande do Sul, Brazil). Unlike the articles in Section 3, the examples often deal with situations in which land tenure is secure, such as plantations (4.2; 4.4; 4.6; 4.8), individual land properties (4.9; 4.10), or secured as part of the project (4.7). The articles focus on the need to fit certain land-use activities into the wider landscape and gain support and legitimacy among local stakeholders.

Section 5 addresses some of the cross-cutting issues which are critical to implementing landscape approaches: strategies to mobilize finance and investment (5.1; 5.2), certification (5.3), and incorporating cultural landscape visions (5.4), High Conservation Values (5.5) and social safeguards (5.6) in governance and planning processes.

Diversity of contributions

In all, the cases presented cover 21 countries, from Asia (9 cases), South America (9), Africa (7), Central America and the Caribbean (6), and Europe (1). Brazilian and Indonesian cases dominate, with five experiences using landscape approaches. They cover aspects of forestry, agriculture, pastoralism, tourism, conservation and energy. And although landscape approaches by definition are multi-stakeholder, in most studies, one stakeholder takes the lead. NGOs are often seen to be the project initiator: a grassroots NGO as in article 3.8 (Flores, Indonesia), or an international NGO as in 3.3 and 4.1. A private company is usually in the lead where plantations and their role in landscape development are involved; e.g., 4.2 and 4.6. Government-initiated landscape programmes with donor support are also represented, with cases from Ethiopia (3.1 and 3.6); the remainder is made up of programmes initiated by technical experts or researchers.

What these cases show is that landscapes have flexible boundaries defined by the issues at hand. In the cases presented, landscapes vary from tiny (three cases describe experiences in areas smaller than 100 ha) to very large. Eight cases describe landscape initiatives that extend over more than 100,000 ha and affect thousands of people (e.g., article 3.6 from Ethiopia, with 194,000 households in a landscape covering 180,000 ha).

The role of trees and forests in landscapes

Van Noordwijk and Sunderland (1.2) review the current state of knowledge regarding the dynamic forest-agriculture interface, as well as policies and practical ways to influence the extent of tree cover in agricultural land. They interpret the forest transition model in not just temporal but also spatial and institutional terms, and use it to summarize information about deforestation, reforestation and the role of forests and trees in mosaic landscapes worldwide. Although they suggest that the positive and negative consequences of increasing tree cover are well understood, the question of whether forest and tree-rich landscapes are more effective in achieving the triple objectives of food security, climate stability and conservation is hard to answer based on the contributions in this issue. The articles provide practical support for the view that such landscapes compare favourably with those that are degraded by overgrazing and erosion, but there is no systematic evidence, and no specific instruments and tools, to assess how different forest and tree-rich landscapes compare with each other.

Rationales for trees in the landscape

There is a strong convergence of ecological, environmental and cultural rationales to retain and increase tree cover in tropical landscapes. This provides many reasons for landscape programmes to increase tree cover, as do rural livelihoods and economic development, based on the practical value of trees and forests for timber, for fruits, fodder, feed and fibre, and for stabilizing slopes and riverbanks, pollination and pest control. Many articles provide examples and rationales for planting trees, woodlots and forests as a component of integrated agroforestry strategies. Analog Forestry (4.1) goes the furthest in aligning development and conservation interests by restoring a full complement of forest functions that mimic the original forest structure with useful

species. Requirements imposed by the Brazilian Forest Code to protect riparian belts on private properties are made acceptable to smallholders by integrating these areas with the production of yerba mate (4.10). The large-scale development of forest plantations may be driven by economic motives, but is justified by important environmental co-benefits of forests, such as restoring degraded areas, storing carbon, protecting biodiversity and bringing benefits for local people in the form of employment and business opportunities (e.g., 4.2 and 4.4). Erosion and siltation of watercourses and lakes is countered by the planting of trees in 3.1 and 3.5–3.8; soil quality is restored by trees in 4.4, 4.5 and 4.9.

Conservation organizations and protected area managers provide a slightly different rationale for considering forests and trees at the landscape level: to increase the effectiveness of protected areas by the development of forested corridors in the landscape. Corridors increase landscape resilience by favouring the movement of plants and animals and reducing the risk of inbreeding and local extinction in isolated forests and parks. Rather than a sharing strategy, this can be interpreted as the optimization of a sparing strategy, whereby conservation (in protected areas) and development (outside the protected areas) are functionally separated, and corridors are integrated into rural landscapes as much as possible. Examples are provided in 2.2, 3.3, and 4.1. The opposite approach is to manage landscape conversion for plantations in such a way that corridors and connectivity are maintained, for example, by identifying and protecting High Conservation Value (HCV) areas. Purwanto et al. (5.5) conclude that even though HCV assessment is an appropriate instrument, isolated HCV identification in separate management units fails to achieve connectivity at a landscape level. Articles 4.2 and 4.6 describe how corridors of native vegetation are part of the design of sustainable plantations at a large scale, while article 5.2 shows the financial challenges of realizing corridors in soy landscapes.

Local and global functions of forests

It remains a question whether the integration of forests and trees into multifunctional mosaic landscapes — as exemplified in the articles in this issue — will be sufficient to safeguard all the functions of forests. Even well-managed, intensely used forests that are integrated into landscapes will still be degraded forests with at most moderate biodiversity (Alkemade et al. 2009) compared with the primary forests that contain much of the world's biodiversity. To some extent, this is also true of the carbon storage function of forests, which is much greater in old-growth forests than in degraded forests. The regional hydrological function of forests, whereby water from forest evapotranspiration drives rainfall in distant regions, is another example of a function that is potentially performed better by large forest blocks than by mosaic landscapes.

Institutional arrangements in the landscape

Several authors (e.g., 2.2) stress that good governance is the basis of successful landscape approaches. It is less clear to what extent integrated landscape management can and should be achieved within existing governance frameworks, or whether it is possible and desirable for stakeholders to work around formal governance structures and design

flexible solutions tailored to their specific needs. The articles in this *ETFRN News* provide examples of both strategies.

Some authors advocate a jurisdictional approach (3.1; 5.3); Rodrigues de Aquino and Griffin (3.1) state that only jurisdictions can make the policy decisions that are needed, at the scale that is needed, and with the mandate that is needed. Others stress the strength of multi-stakeholder collaboration and organization, and the capacity of new institutions to organize and represent grassroots participation in decision making around specific problems. This does not exclude local and central governments, but instead engages them in flexible arrangements. It also removes the dynamics generated by short-term political imperatives (and of government staff turnover) from the long-term horizon of landscape decision making and management (3.8).

The lessons learned by two large programmes that have embraced landscape approaches provide important insights. Based on experiences with the COMDEKS project, Salvemini and Remple conclude that effective governance of production landscapes calls for representation of multiple stakeholders within an integrated landscape plan. This does not necessarily require the establishment of formal state institutions at the landscape level; mechanisms that create connections and communities of interest across the landscape may be more effective (2.3). The Model Forest approach (2.2) provides such a mechanism: Model Forests put in place an operational environment in which choices and trade-offs are discussed by the stakeholders affected by land-use decisions. Based on these experiences, Ho et al. (2.2) advise that such a governance environment should focus on creating a forum for exploring issues at multiple scales and negotiating creative solutions, rather than directly addressing land ownership or administration. Yet, many landscape management experiences described in this issue do consider tenure as a critical issue and assert that changing it is a condition for improving landscape management; for instance, in securing the supply of wood fuel in Madagascar (4.7).

Widyanto et al. (3.8) describe the gradual evolution of bottom-up landscape-level institutional arrangements in Flores, Indonesia, and highlight their potential to involve stakeholders in decision making. At the same time, the authors recognize that informal and flexible arrangements may suffer the same challenges of equitable representation and participation faced by formal institutions, and that re-inventing governance may even lead to further marginalization of vulnerable groups.

Enforcement and sanctioning of agreements is crucial to the effective implementation of any arrangement, whether it involves landscape planning and management-based mechanisms or market- or incentive-based mechanisms (5.1). Flexible informal arrangements may lack the legitimacy and mandate to enforce agreements (according to 3.1), although Deichert, Krämer and Schöning (3.6) describe how this is possible within informal institutions: user groups who collaboratively manage watersheds monitor, ensure compliance with the rules and fine rule-breakers.

Defining success in landscape approaches

What are the benefits of integrated landscape management as described in this issue? Few articles operate a systematic framework against which to assess results (3.3; 3.5; and 4.7 are exceptions), yet together the articles describe a wide range of benefits to stakeholders that contribute to our understanding of the benefits and impacts of landscape approaches.

As landscape approaches seek to bridge global and local interests, and public and private ones, it is relevant to examine how authors express the benefits of their projects, and whether they do that in integrated and holistic terms. Authors were not requested to systematically inventory benefits, but this overview highlights benefits considered important by authors (Table 2).

Table 2. Overview of benefits of landscape management cited by authors

Private benefits	increased income
	higher agricultural production
	more diversified sources of income
	reduction of time spent on tasks
	improved food security
Collective environmental benefits	reduced degradation
	better ecosystem functioning
	better conservation of biodiversity
Collective social and economic benefits	better collaboration between stakeholders
	better collaboration and planning by government
	improved recognition of stakeholders and their issues by government
	additional business opportunities
	a more explicit understanding of trade-offs

The benefits that are most frequently mentioned are those that accrue to individual stakeholders as a result of better resource management. Increased income was listed in seven articles, but likely applies to more cases. Often, when these benefits are mentioned it is in association with vulnerable groups such as poor people, landless people or women, rather than with stakeholders in the entire landscape: more equity in participation and benefit sharing is a stated objective of many initiatives.

Benefits at the level of the community, the landscape or the government (Table 2, second and third sections) are much less frequently mentioned. A single case mentions “a more explicit understanding of trade-offs” (Dewi et al., 3.2) as a benefit in a project of land-use scenarios that requires explicit modelling of these trade-offs. These types of benefits are at the heart of the landscape approach as it seeks to navigate and negotiate such trade-offs.

Truly large-scale (regional to global) and public benefits are rarely mentioned, which may be understandable given their characteristics and intractability. Global concerns (loss of biodiversity, climate change) often provide the rationale for starting an initiative (4.8; 5.1), so the dearth of references to these related benefits in the articles is remarkable.

A framework for assessing success

Some authors note the lack of a framework to assess the outcomes of landscape interventions. Deichert, Krämer and Schöning (3.6), for example, note that “there is a lack of clarity about actual outcomes, and how to achieve and measure them in terms of social, ecological, economic and climate change benefits.” The authors blame this on insufficient harmonization of interventions among development partners, but truly adaptive landscape management should engage all actors in monitoring and evaluation of their efforts. Article 2.3 shows how a systematic set of indicators helps stakeholders in identifying issues in the landscape and prioritizing action.

In fact, most initiatives covered in this issue seem to assess success at two levels. The first is quantitative, in terms of short-term and private benefits to a subset of stakeholders (vulnerable groups such as poor people, landless people or women). In many respects, this bypasses a landscape vision of issues, which also seeks to address public, long term and large-scale interests. The second, more qualitative, benefit that seems to be most valued in landscape initiatives — but is not mentioned explicitly by authors — is social cohesion, or sense of community. Increased collaboration between stakeholders in the landscape unleashes energy, learning and ingenuity to solve problems and undertake collective action. This seems to be the essence of the landscape approach that emerges from these articles — even if it may not be clearly related to the actual challenges that need to be solved.

Contributing factors

The articles provide insights to the factors that contribute to the success of integrated landscape management efforts. In many cases, these can be linked to the ten principles for forest and landscape restoration formulated by Sayer et al. (2013) and summarized in Table 1. Below, a few aspects are highlighted; the articles identify many more enabling factors for landscape approaches.

A common concern entry point

The key feature of the articles in Section 3 is the collective sense of urgency provided by serious landscape problems. In all cases, a significant problem — climate change (3.1–3.3), serious land degradation (3.1; 3.4–3.6), loss of productivity (3.3), water shortage or pollution (3.4; 3.8), or loss of forests and biodiversity (3.8) — provides an impetus for local stakeholders and external actors to get together, negotiate and agree on collective action. This contrasts with cases where a dominant, resource-secure and financially and technically competent land user – e.g., in 4.2, 4.4, 4.6, 4.8 and 5.2, is associated with industrial-scale plantations for timber, soy or oil palm. In these cases, the landscape approach does not take the form of a process for collaborative decision making, but for

increasing the legitimacy of land use and providing positive social and environmental benefits in the wider landscape.

Multiple stakeholders

The participation and involvement of stakeholders is key, not only as beneficiaries, but as primary decision makers (2.3; 3.4). In most articles, the term *stakeholders* is practically understood as local stakeholders; this is linked to an agenda of equity, power and social justice (e.g., 5.6). Social cohesion and dynamism of stakeholder groups and landscape users in general, and trust between stakeholders (especially between government and local stakeholders) are cited as important factors contributing to the success of landscape approaches. Equally important are those mechanisms that safeguard the participation of the most vulnerable groups: women, ethnic minorities and landless people (2.3; 3.5; 5.6). Land-use planning is a suitable entry point for stakeholders in decision making, as shown by Dewi et al. (2.3). A focus on local actors raises the question of how and to what extent the legitimate stakes and interests of non-local stakeholders are being represented in landscape-wide decision-making processes. These non-local stakeholders include beneficiaries of global goods, distant consumers such as urbanites, and (central) governments, among others.

These “outsiders” in landscapes often play simultaneous roles of participants and arbiters. In the case of donors or international community representatives, they may represent the interests of regional or global stakeholders who have a stake in the landscape, which they express in the form of financial and technical assistance or payments for goods and services. They may also operate as impartial facilitators who catalyze collaboration and action among local stakeholders. These functions are not always compatible, but they are frequently combined – for instance, in REDD+ projects. The use of funds to express a voice in landscape decisions clearly illustrates the dual role that exists for external actors, and the tension that this creates between local and external interests in the landscape. Madrid and Deschamps (3.4) make the point that instruments such as REDD+ and PES, while useful and necessary to finance activities in the landscape or facilitate stakeholder collaboration, should emphasize co-responsibility rather than impose outsiders’ views on local problems.

Supply chains present a somewhat different approach to landscapes – they can be seen as mechanisms that make external consumers stakeholders in effective landscape management through their link with landscape users (suppliers). Supply chains are increasingly used to provide market incentives for better landscape governance and management. Responsible supply chains thrive on good governance, sustainable practices and balanced stakeholder interaction within landscapes; they can also catalyze the emergence and functioning of such mechanisms, as shown in articles 3.3, 4.2, 4.6, 4.8 and 5.2. Some authors highlight the limitations of a supply-chain approach to landscapes, and feel that governments should set and enforce acceptable baseline levels for sustainability (4.8). Buyers of commodities are flexible in their choice of suppliers and sourcing areas. They can impose high standards in order to comply with sustainability standards, but this works

well for landscapes only if buyers are able to bring their suppliers along in a process of improvement. From a landscape perspective, there is no benefit to achieving a “green” supply chain by excluding poorly performing suppliers from a supply chain, or by leaving the area in order to satisfy buying needs elsewhere. An example is provided in 4.2, where owners of properties that were deforested after 1994 are excluded from a forest restoration programme in order to safeguard FSC certification. This approach does not bring back forests on deforested lands.

Bridging scales by linking short-term income with long-term benefits

Many articles stress the importance of demonstrating immediate and tangible benefits to local stakeholders in landscape projects (e.g., 4.3), and of linking short-term income to long-term benefits (3.5; 3.6; and 4.5). Madrid and Deschamps (3.4) recommend that project proponents “tailor actions to various scales, always considering how to take advantage of objectives and strategies developed at other scales.” Van Noordwijk and Sunderland (1.2) caution against the “direct” translation of global objectives (e.g., climate change mitigation) to local objectives (e.g., planting trees). Local actions should appeal to local perceptions of problems and contribute to local livelihoods, but they should be designed in such a way that they also help achieve goals formulated at different scales.

Tenure and resource security

Resource security emerges as a key factor in landscape approaches. Resource insecurity favours short-term land-use practices that are inappropriate. Even though secure access to resources does not guarantee longer-term management visions and sustainable practices (e.g., Busch and Ferretti-Gallon 2014), it is difficult to envisage how sustainability can be achieved without it. As previously noted, the issues in landscapes dominated by large-scale private properties are very different from those in landscapes where tenure is contested and unclear. According to Silva (4.2), “With the tools available for [addressing] environmental impacts, there should be little reason for plantation forestry to cause ecosystem degradation,” implying that tenure provides the security to solve the managerial constraints to sustainable land use (leaving many other issues to be addressed). Many articles describe how tenure security contributes to sustainable land-use practices in complex, smallholder-dominated mosaic landscapes (e.g., 3.4; 3.5; 3.6; 4.7).

Enabling environment

Many articles touch on the importance of an enabling environment for landscape approaches. This can take the form of an adequate legislative basis that recognizes participatory approaches (4.3) or a governance model that is representative, participatory, transparent and accountable, and promotes collaboration among stakeholders (2.2). Approaches that connect various sectors and institutions (2.1; 2.3), or link supply chains and local land users (3.3; 4.8) also contribute to an enabling environment.

Supporting landscape approaches

Notwithstanding the dilemmas associated with the involvement of outsiders in landscapes, outside support — including that provided through supply chains — is critical to the success of many landscape initiatives. Table 3 lists factors beyond finance and investment that outsiders and external actors contributed to landscape initiatives in the articles.

Funding and investment capital can cover the up-front costs of collaborative decision making and integrated landscape management; this can come from public sources (3.1) and private sources (3.3). McGuire (2.1) describes the Forest and Landscape Restoration Mechanism, which is set up to support and facilitate landscape processes. Public sources such as REDD+ (3.1) and official development assistance (3.5) are generally used to improve enabling conditions for integrated landscape management. It is unclear whether business models exist to entice private investors into financing integrated management at a landscape scale. The private sector, in principle, can generate large investments that contribute to restoring landscape productivity (commodities), but this does not automatically equate to investment in integrated, multi-functional landscapes — and this may not be the private sector's prime responsibility. It can, for example, invest the price premiums generated in markets for sustainable products (e.g., cocoa 3.3, soy in 5.2) or in voluntary carbon markets (4.5) in improving the enabling conditions for integrated management. Article 5.2, however, seems to conclude that it is not productive to look to the supply chain alone for financing mechanisms that offset the cost of biodiversity conservation. Articles 5.1 and 5.2 examine how various sources and forms of external financing can be combined and mobilized to offset costs to local stakeholders and finance investments in alternative land-use practices.

Table 3. Outside support provided to landscape initiatives

Technical assistance (e.g., developing woodlots, extensive ground works, reorganizing value chain, technical tools)	3.2, 4.7
Capacity building	numerous articles, and specifically in 4.9
Support to group formation and social organization	3.3; 3.6; 3.8; and several others
Awareness creation	3.6

Conclusions

The essence of landscape approaches that emerges from this issue is social cohesion: the sense of community and empowerment that is found in achieving mutual understanding and collective decision making. The catalyst for local stakeholders and external actors to come together is often a significant environmental problem that is grave enough to require negotiated solutions that create better outcomes for everyone. Stimulus and support from external actors in the form of finance and independent facilitation is usually needed to make this happen.

Landscape approaches tend to lead to a process whereby long-term, usually environmental, benefits are tied to the delivery of private local benefits. An important assumption is that there are combinations of short-term actions and incentives that provide these long-term and/or global benefits. However, to what extent will restoration of forest patches, or the establishment of corridors and other mitigating actions resulting from landscape negotiation lead to substantial impacts on environmental problems at scales beyond the landscape? To what extent will improvements in agricultural practices lead to food security at this scale? A similar problem of scale also exists within landscapes. Landscapes are more than the sum of their components – there are also interactions to be managed. This suggests that some action must address social and environmental landscape features that are not directly linked to private interests: diversity, connectivity, equity, governance and others.

Other challenges are how to institutionalize the flexible arrangements that emerge and how to deal with non-local stakeholders. What options exist to formalize negotiated outcomes in governance frameworks that have the legitimacy and mandate to enable implementation, monitoring and enforcement of decisions? In initiatives that are essentially local, what is the best way to represent the interests and concerns from scale levels beyond the landscape? And how can these be expressed without being perceived as top down interests overriding local issues — by means of voice, vote or dollars?

The practical experiences described in the articles in this issue provide room for optimism – for landscapes and for the contribution of forests and trees in securing the livelihoods of the people who inhabit them. There is a continued need for people engaged in landscape approaches to put their experiences together, compare them and look for general patterns that explain why certain approaches work and others fail. Many questions need to be answered. A clear language is needed to communicate about landscapes and landscape approaches, and to simultaneously help efforts to monitor and evaluate landscapes. Fortunately, there are many instances where foresters, farmers, pastoralists and other land users have taken charge and are jointly shaping the landscape they inhabit. This helps the global community to address the challenges of climate change, biodiversity loss and food insecurity.

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Endnotes

1. More than 1 billion hectares, or almost half of the agricultural land in the world, has tree cover of more than 10 percent; about 7% (167 million ha) of land classified as agricultural has even more than 50% tree cover (Zomer et al. 2014).
2. Organizations and researchers use a range of terms and concepts that more or less overlap with *productive landscapes* and fall within the scope of the current *ETFRN News*: sustainable landscapes, climate-smart landscapes; resilient landscapes; eco-agriculture landscapes and many others. See also Scherr, Shames and Friedman 2013 for a review of terms.

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