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Public Policy Guidelines for Integrated Landscape Management

Landscapes for People, Food and Nature

ecoagriculturepartners

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About the Landscapes for People, Food and Nature Initiative

The Landscapes for People, Food and Nature Initiative is an international collaborative initiative of knowledge sharing, dialogue and action to support integrated landscape management in order to achieve three simultaneous goals: improved food production, ecosystem conservation, and sustainable livelihoods.

About EcoAgriculture Partners

EcoAgriculture Partners is a pioneering non-profit organization that advances the practice of integrated landscape management and the policies to support it. From critical analysis of policies, markets, and land use practices, they generate innovative research, tools and methodologies that help landscape managers and policymakers create and sustain integrated agricultural landscapes worldwide. EcoAgriculture Partners serves as the global secretariat for the Landscapes for People, Food and Nature Iniatitive. Visit ecoagriculture.org for more information.

Front and back cover image: Autumn in the Awatere Valley, Marlborough, New Zealand, 13 April 2007, by Phillip Capper.

Executive Summary

Conventional policy approaches that assume land can have one priority objective while 'trading-off' other objectives are no longer viable in much of the world.

In recent years, greater understanding of the scale and complexity of drivers of unsustainable resource use has led to a wide variety of global initiatives and targets, including the Sustainable Development Goals (SDGs) that seek to achieve sustainable landscapes. 'Sustainable landscapes' can be defined broadly as landscapes that can meet the needs of the present, without compromising the ability of future generations to meet their own needs, by ensuring synergies among economic, social and environmental goals and minimizing trade-offs where these objectives compete. Integrated Landscape Management (ILM), which involves voluntary collaboration among multiple stakeholders from different sectors and social groups, is a process for achieving sustainable landscapes and inclusive rural transformation.

However, national and sub-national policies to support the enabling conditions for ILM are lacking in most areas of the world. Sectorally-siloed government planning and decision-making processes often hinder territorially-oriented development that seeks to achieve multiple, cross-sectoral objectives. Furthermore, negotiation processes that meaningfully involve multiple stakeholders at a landscape scale are not being sufficiently supported by business-as-usual policy. Finally, counterproductive fiscal and policy incentives continue to lead to unsustainable resource management at a landscape scale.

To support ILM more strategically, policymakers and government agencies will need to use their full complement of tools. We have identified eight categories of actions that governments at various levels can take to support ILM. These include:

Incorporate sustainable landscape vision into strategies and policies.

A high-level vision can help to mediate traditional conflicts between economic growth and conservation interests which can be a substantial impediment to ILM. Governments can act by first creating a strong shared vision of the multiple goals of sustainable landscapes and then embedding that landscape vision into relevant jurisdictional strategies.

Harmonize sectoral plans to incorporate multiple goals of sustainable landscapes.

Institutional and policy harmonization is necessary at the national level and sub-national levels to help eliminate unintended negative interactions that arise when multiple sectoral plans are implemented independently of each other and to help policymakers recognize potential synergies at a landscape scale. Governments can take steps to improve this harmonization by aligning objectives, budgets and capacities across agencies responsible for different sectors and facilitating and rewarding inter-agency coordination and collaboration. Where there are trans-boundary landscapes, national governments can also work to harmonize programs and policies.

Empower civil society in building landscape partnerships.

ILM needs multi-stakeholder platforms to serve as locally-legitimate bodies to negotiate conflicts and tradeoffs between stakeholders, identify opportunities for synergistic action, and determine the most appropriate spatial-targeting and sequencing of investments. A central challenge to developing and sustaining these platforms is the ability of relevant stakeholders, particularly the less powerful ones, to have an effective voice within them. Effective public policy to support local decision-making will shift decision-making power to the local level while also empowering relevant stakeholders to participate in these local decision-making processes.

Recognize land and resource rights and responsibilities negotiated at the landscape scale.

Both the form of land and natural resource rights, which govern who can benefit from those resources, and the security of those rights, which provides the assurance that those rights can be upheld, are important in landscape-scale planning and management. The optimal form of ownership, access, use and other rights, as well as rights to enjoy ecosystem services from the landscape, may vary considerably depending on the landscape context. Governments can play an important role in recognizing and enforcing locally-legitimate systems of rights and responsibilities. In places where stakeholders do not have clear and secure rights, they need to ensure mechanisms for fair conflict resolution.

Develop a regulatory framework that enables collaborative landscape action.

The regulatory framework not only needs to be supportive of sustainable land use broadly, it should also be enforceable and well-coordinated at the landscape-scale. To accomplish this, governments can work to ensure land use zoning and planning reflects agreed landscape goals. Governments can also develop performance-based regulations that consider landscape-scale interactions; provide the mandate, resources and capacities to implement and enforce laws and regulations; and coordinate regulations across sectors at a landscape scale.

Participate directly in landscape partnerships.

While ILM can occasionally arise with minimal participation by government agencies, in most cases they play a variety of important roles in such partnerships. They may be conveners or facilitators of these partnership platforms, though those roles are also commonly played by civil society, or an international organization. As partners, government actors can play other roles, such as hosting stakeholder meetings, helping identify and engage key stakeholders, bridging inputs from public agencies, advising on policy options, using their outreach mechanisms to raise public awareness, and legitimizing and strengthening support for the multi-stakeholder platform. In some cases, government actors can also help resolve conflict between stakeholders.

Incentivize integrated landscape investments through policy and public finance.

Landscape initiatives often face difficulties attracting supportive investments, steering existing financing to activities aligned with their landscape action plans, and aggregating investment opportunities. Government actors can help to overcome these challenges by supporting joint investment planning among stakeholders, developing market and trade rules supportive of landscape-scale action, mobilizing private demand for ecosystem services, developing fiscal and tax policy to incentivize landscape investments, developing screening criteria for landscape investments, allocating public revenues for integrated landscape programs, and influencing donor priorities and investments.

Build the knowledge and technical capacity to implement ILM.

Planning and managing at a landscape scale requires a unique body of knowledge and technical capacity. To support this process, governments can develop and disseminate spatial information, generate and disseminate information on sustainable production systems, build the capacities of managers to lead and facilitate collaborative processes, and develop metrics that measure multiple outcomes.

Applying these policy guidelines can put a country or sub-national jurisdiction on the path to creating a more supportive policy environment for ILM. Simultaneously, it can help them meet internationally agreed targets, including those focused on sustainable agriculture production, poverty alleviation, food security, climate, biodiversity, and landscape restoration.

Governments or interested stakeholders can help to lay a foundation for policy that supports ILM by taking three steps: 1) forming multi-stakeholder learning and advocacy working groups on ILM at national and sub-national levels, where appropriate, which include government and non-government actors; 2) reviewing the existing policy framework and enabling environment for ILM; and 3) convening a landscape policy dialogue to identify key actions that government can take to better support ILM.

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1 Sustainable landscape management as a policy priority

The need for sustainable landscapes

Rising populations and economic demand are putting ever-growing pressure on natural resources (ELD Initiative 2015). Some estimate that by 2050, under business-as-usual scenarios, 60 percent more food will be required worldwide to feed a growing world population compared to 2005, and production will need to be doubled in developing countries (Bruinsma 2009). Furthermore, changing diets will likely increase the land requirements for food production (Kastner et al. 2011). At the same time, degraded ecosystems and climate change threaten to reduce agricultural productivity (Nelleman 2009). Water scarcity will affect 54 countries, home to nearly 40 percent of the world's projected population (UNEP 2008; Hoegh-Guldberg et al. 2015). Species survival is ever more dependent on habitats in production landscapes that are under threat (Buck et al. 2007; McNeely and Scherr 2003). Furthermore, rural poverty persists throughout the world: as of 2013 more than 767 million people (10.7 percent of the world's population) live in poverty, of which 80 percent live in rural areas (World Bank 2016). Land users and managers at all levels face the challenge of increasing food production while supporting crucial ecosystem services and promoting sustainable economic growth. Conventional policy approaches that assume particular lands have one priority objective and 'trade-off' other objectives are no longer viable in much of the world.

'Sustainable landscapes' can be defined broadly as landscapes that can meet the needs of the present, without compromising the ability of future generations to meet their own needs by ensuring synergies and minimizing trade-offs among economic, social and environmental goals where these objectives compete (Denier et al. 2015). Sustainably managed landscapes will become increasingly important in the future as they become the life rafts for the world's economies and ecosystems. Among other roles, they must produce nutritious and profitable crops and livestock for

food and energy (in the context of climate change); ensure water availability for households, farms, businesses and ecosystems; provide biodiversity for stable ecosystems, crop pollination and tourism; and support broad-based livelihoods and employment. Land use must also play a growing role in mitigating climate change through carbon sequestration and reducing emissions of various greenhouse gases.

In recent years, there has been greater understanding of the scale and complexity of drivers of unsustainable resource use, as well as the socioeconomic and ecological interdependencies across land uses and users. This has led to a wide variety of global initiatives and targets that, while taking different entry points, all seek to achieve sustainable landscapes that can meet many or all of these needs. United Nations member states will be expected to use the Sustainable Development Goals (SDGs) to frame their policy agendas over the next 15 years, and landscape approaches could be an effective means of implementing a majority of the SDGs (Thaxton et al. 2015). Under the United Nations Framework Convention on Climate Change, many countries have made mitigation commitments within the agriculture and forestry sectors as components of their Intended Nationally Determined Contributions (INDCs) (Minang et al. 2015). In the New York Declaration on Forests, governments and multinational commodities producers joined together in a pledge to eliminate deforestation from commodity supply chains by 2030. Under the Bonn Challenge for landscape restoration countries, companies, institutions and individuals have committed to restore 150 million hectares of degraded lands by 2020 including through agroforestry, smallholder agriculture, and strategic agricultural productivity enhancement opportunities (IUCN 2016a; IUCN 2016b).

Integrated landscape management as a means to achieve sustainable landscapes

Past efforts to meet ambitious, land-related objectives for increasing agricultural production, environmental protection or rural development have been difficult to achieve when they are approached through narrowly-defined sectoral entry points (Sayer et al. 2013). Stakeholders are more successful when they seek out synergies among land uses and take a spatial approach to landscape planning (Scherr and McNeely 2007). These approaches to achieving sustainable landscapes that prioritize collaboration among multiple stakeholders are often referred to collectively as ‘integrated landscape management’ (ILM) (Denier et al. 2015; Scherr, Shames, Friedman 2012; LPFN 2012a).

ILM is a way of managing the landscape that involves collaboration among multiple stakeholders from different sectors and social groups with the purpose of achieving sustainable landscapes. It can take a wide array of forms depending on the governance structure, size and scope, number and types of stakeholders involved (e.g., producer and community organizations, private companies, civil society, government agencies) and the intensity of cooperation. In some cases, there may be simply information sharing and consultation, in others there are more formal arrangements with shared decision-making and joint implementation of activities (Denier et al. 2015).

While ILM is not easy nor a universal solution, there is growing recognition in national and sub-national policies that coordinated action at a landscape scale is needed to resolve many of these challenges (LPFN 2012a; LPFN 2012b). Rwanda, for example, has made a national commitment, as part of the Bonn Challenge, to restore 2 million hectares of degraded land in landscapes with the hope of improving rural livelihoods (FAO 2016). In Central America, heads of state of eight countries are implementing an area-based approach to rural development in 29 landscapes that supports participatory regional plans that address agriculture, environment, health, human development and climate change in an integrated way (IIAC 2012). In 2015, the African Union New Partnership for Africa's Development (NEPAD) launched the African Resilient Landscapes Initiative (ARLI) to ensure the integrity, resilience, restoration and sustainable management of landscapes throughout the region (WB 2015). In Australia, the National Landcare Programme has emerged to support community-driven landscape initiatives through partnerships among federal and state governments, corporations and local communities that work together to advance environmental outcomes and agricultural productivity (Landcare Australia 2015).

The Global Environment Facility (GEF)'s 6th Replenishment is investing in integrated approaches at scale to address challenges of food security, biodiversity, land degradation, sustainable commodity production and climate, responding to evidence of positive impacts in the GEF-5 project cycle (Bakarr et al. 2013). International companies have begun joining more landscape partnerships to meet business priorities for sustainable sourcing and shared investment risks (Kissinger et al. 2013). Numerous international public, private and civic organizations, with diverse entry points, are reframing their work in terms of integrated landscape management.

Integrated landscape initiatives are emerging in response to accelerating pressure on resources. A series of continental surveys undertaken

by EcoAgriculture, CATIE, the World Agroforestry Centre, Bioversity International, and HERCULES, under the auspices of the Landscapes for People, Food and Nature Initiative (LPFN), has documented 428 such initiatives in sub-Saharan Africa, Latin America and the Caribbean, South and Southeast Asia, and Europe (Milder et al. 2014; Estrada-Carmona et al. 2014; Zanzanaini et al. 2015; García-Martín 2016).

The goals, approach, and organization of this paper

Despite some innovative cases, national and sub-national policy to support the enabling conditions for ILM is lacking in most areas of the world, and when ILM succeeds it often does so despite the policy context, not because of it. As more and more policymakers are mandated to deliver sustainable landscapes, an in-depth consideration of ILM-supportive policy actions will help them achieve their integrated goals.

Insights and recommendations in this paper draw on a broad range of experience reported by members of the policy working group of the Landscapes for People, Food and Nature Initiative, leaders of ILM initiatives, landscape leader-policymaker dialogues in East Africa (Shames and Heiner 2014), and an emergent literature on the enabling policy environment for a variety of related topics, including sustainable land management (GM, 2009), forest and landscape restoration (IUCN and WRI 2014), land policy (FAO 2012; AUC-ECA-AfDB Consortium 2010; UN-HABITAT 2007; UN-HABITAT, 2008), agroforestry (Buttoud 2013), territorial development (OECD/FAO/UNCDF 2016), watershed management (Darghouth et al. 2008), landscape governance (Kozar et al. 2014), and 'green growth' in agri-commodity landscapes (Scherr et al. 2015), among others.

This paper is targeted to national and sub-national policymakers who are seeking to understand how to improve the policy environment for ILM in their respective jurisdictions. Section 2 describes the major barriers to successful ILM posed by current public policies. Section 3 presents eight key guidelines for policy to support ILM. The paper concludes with a discussion of steps forward to lay a foundation for ILM-supportive policy.

2 Policy barriers to integrated landscape management

One practical way to demonstrate the policy challenge for ILM is to consider the underlying barriers that make ILM so difficult to achieve. These include sectoral siloes, the complexity of landscape negotiation processes, and counterproductive fiscal and policy incentives.

Sectorally-siloed government planning and decision-making

Most government administrations are organized according to individual sectors (e.g., agriculture, environment, rural development, water, etc.) and jurisdictions. This is a significant barrier for landscapes in which stakeholders seek to achieve multiple, cross-sectoral objectives and that do not conform to administrative boundaries. For example, in Kenya, although there are several bodies that are charged with inter-sectoral coordination at the national level (i.e., the Agricultural Sector Coordination Unit, the Inter-Ministerial Coordination Committee, etc.), coordination is often limited in practice due to sectoral budgeting processes that promote competition rather than cooperation across sectors. This often results in overlapping, uncoordinated programs within the same area (Heiner et al. 2016).

Similarly, often following decentralization, there is a lack of clarity around the roles and responsibilities of government agencies at different levels. In Peru, for example, the agricultural offices at both the national and regional levels have key powers related to land classification and titling, while territorial planning processes are controlled by the Ministry of the Environment at the cabinet level, which often leads to conflict and stalled implementation (Larson and Ravikumar 2016).

Limitations on landscape negotiation processes

While the benefits of the multi-stakeholder principles of ILM are increasingly recognized in many countries, they are often not sufficiently supported by business-as-usual policy. The private actions of individuals, civic organizations and companies are critically important to achieving sustainable landscapes.

However, these stakeholders need to act with the participation, or at least passive support of, local, provincial, and/or national governments if they are to achieve their potential scale and scope. ILM processes often emerge in response to multi-dimensional challenges that governments have not been organized to address. Landscape action plans reached as part of a multi-stakeholder negotiation process may not be compliant with rigid, sectorally-developed regulations or economic development plans.

Additionally, rural farming communities are often under-represented in policy forums, and local organizations are poorly integrated into ecosystem planning (Scherr et al. 2008). Without additional support, these stakeholders may lack the capacity and voice to participate effectively in key landscape decision-making processes.

Counterproductive fiscal and policy incentives for land and resource management

Public investment and management incentives often do not favor ILM. For individual farmers or operations, environmentally degrading practices may be more profitable in the short term than more sustainable ones. They may also lack access to the financial resources to make the transition to sustainable techniques even if they are interested in doing so. Furthermore, land managers and businesses often do not have the technical capacity to change their land management practices.

At a national and state level, policy incentives and public investment priorities generally promote specific sectoral objectives, even if these—or the design of the investments—contradict objectives in other sectors in the same landscape. Unsustainable investments receive more public support than sustainable ones. In many cases, neither governments nor other champions of ILM have the capacity to overcome these barriers to effectively attract and coordinate investments that would be supportive of ILM (Shames et al. 2014).

In the following section we offer guidelines for policymakers and government institutions which could help them overcome these barriers.

3 Proposed policy guidelines for integrated landscape management

To support ILM more strategically, policymakers and government agencies will need to use their full complement of tools and cooperate across sectors and levels of government.

In order to achieve sustainable landscapes government will need to aim for the following goals:

- Articulate a policy vision for integrated, inclusive, and place-based approaches to development.
- Support the formation of landscape-scale, multi-stakeholder decision making processes.
- Address improper or incomplete laws and regulations.
- Shift prevailing incentives for action by famers, companies and investors.
- Improve the quality and availability of information and knowledge for stakeholders so that they can manage their landscapes for multiple objectives.

To accomplish these goals, governments will need to revise their mental models, sectoral priorities and institutional structures. Policymakers must rethink the level at which policy decisions should be made. Issues usually addressed at the national level may be more appropriate for a district or municipality. Local governments will need to work more closely with one another across borders. Additionally, in some cases, this shift will require governments to acquire new capacities in the development and facilitation of multi-stakeholder partnerships and cross-sectoral coordination.

We have identified eight categories of actions that governments at various levels can take to support ILM. In this section, we describe the rationale for each, as well as potential actions available to implement them and examples of successes.

Figure 1. Eight policy guidelines for integrated landscape management

Incorporate a sustainable landscape vision into strategies and policies

Harmonize sectoral plans to incorporate multiple goals of sustainable landscapes

Empower civil society in landscape partnerships

Recognize land and resource rights and responsibilities negotiated at landscape scale

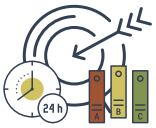
Develop a regulatory framework that enables collaborative landscape action

Participate in or convene landscape partnerships

Incentivize integrated landscape investments through policy & public finance

Build the knowledge and technical capacity to implement integrated landscape management

Incorporate a sustainable landscape vision into strategies and policies



Governments can integrate a sustainable landscape pathway into national goals, norms, strategies and policies. A first step is to **create a strong, shared vision of the multiple goals of sustainable landscapes** that is endorsed by relevant stakeholders inside and outside of government. This **vision can then be embedded in governmental strategies** for green growth, food security, employment, climate, biodiversity conservation, and landscape restoration, or integrated into agricultural, environmental, climate or regional development strategies to achieve the SDGs.

A high-level vision can help to mediate traditional conflicts between economic growth and conservation interests which can be a substantial impediment to ILM. To track the achievement of these goals, governments could identify and track the progress of initiatives so that they can report their contributions to sub-national, national and international commitments.

For example, Ethiopia made a commitment to pursue the global Bonn Challenge for forest landscape restoration (along with 38 other countries) as part of its broader planning for sustainable development. The country has already advanced restoration on 15 million hectares of degraded land and created six million jobs through its efforts (Sizer et al. 2015).

This type of visioning can also take place at a sub-national level. After being put on a national blacklist due to high deforestation, the Sao Felix Do Xingu Municipality in Brazil adopted a Pact for the End of Illegal Deforestation in August 2011 as part of a state-wide 'Green Municipalities' program. Adopting the Pact helped to promote the registration of private land in the rural registry, the adoption of more sustainable cattle production practices, the implementation of improved environmental management plans by indigenous communities, and the production of shade grown coffee. These efforts contributed to an 85 percent reduction in deforestation in 2014 (from the 1999-2008 average) (Hovani 2015).

Harmonize sectoral plans to incorporate multiple goals of sustainable landscapes

Within the framework of a supportive policy vision, governments at all levels can work to build coherence across agencies that play roles in agriculture and natural resource management, governance and economic development. This institutional and policy coordination is necessary at

the national level, as well as at sub-national, jurisdictional and landscape levels. It can help to eliminate unintended negative interactions that arise in landscapes when multiple sectoral plans are implemented independently of each other. Meanwhile, cross-sectoral collaboration can help policymakers recognize potential synergies and achieve multiple objectives at landscape scale.

Governments can move agencies towards greater coordination by working to **align objectives, budgets, and capacities across agencies responsible for different sectors.** They will need to combat a 'trade-off' mentality which assumes that alignment across agencies weakens the ability of each agency to achieve its core mandate. The phenomenon is exacerbated by staff who may view multi-agency planning as a bureaucratic burden, as well as by donors who are reluctant to engage in multi-sectoral programs that might compromise short-term indicators of success in a specific sector. Governments can help by **facilitating, funding and rewarding inter-agency coordination and collaboration**, sharing examples of documented synergies between sectors, and reinforcing the importance of cross-sectoral priorities. Dialogue processes that facilitate discussions across sectors and between institutions can help to familiarize key actors with each other's issues. For example, in Turkana County, Kenya, the StakeHolder Approach to Risk-informed and Evidence-based Decision-making (SHARED) process developed by the World Agroforestry Centre helped to facilitate collaboration among policymakers and a more inclusive and inter-sectoral decision-making process around the development of its annual County Integrated Development Plan (Neely et al. 2015).

A good example of government efforts to harmonize donor contributions and facilitate cross-sectoral dialogue is Ethiopia's national Sustainable Land Management (SLM) program. It seeks to reduce land degradation in agricultural landscapes and improve the agricultural productivity of smallholder farmers by applying a watershed development approach. Ethiopia's Ministry of Agriculture, with the support of the World Bank, Germany and other funders, established an institutional platform to ensure the vertical steering of program implementation and the horizontal coordination of stakeholders to harmonize SLM investments. SLM steering committees on national, sub-national and district levels harmonize SLM activities among federal agencies, and technical committees operating on the same levels support capacity building and include representatives from government, civil society, and development agencies. This is complemented by community-level watershed teams, comprising local representatives from government and civil society (WB 2008).

This type of harmonization can also occur across national governments. In the Kailash Sacred Landscape in the central Himalaya, the governments of China, India and Nepal came together with local communities to harmonize their diverse management approaches and objectives for the land surrounding Mount Kailash. Several frameworks and strategies were developed to guide long-term cooperation, and through a collaborative planning process they have agreed to five overarching objectives, which have also been linked to national plans in each country (Wallrapp 2015).

Empower civil society in landscape partnerships

To succeed, ILM needs multi-stakeholder platforms to serve as locally-legitimate bodies to negotiate conflicts and tradeoffs between stakeholders, identify opportunities for synergistic action, and determine the most appropriate spatial-targeting and sequencing of investments. A central challenge to developing and sustaining these platforms is the ability of relevant stakeholders, particularly the less powerful ones, to have a meaningful voice within them. Effective public policy to support local decision making will **strengthen local-level decision-making power** while also **empowering relevant stakeholders to participate in these local decision-making processes.**

In many countries, a foundation for local empowerment is being created through a process of decentralization of natural resource management responsibility. Under the right conditions, the devolution of control towards a more local level creates an institutional basis for more popular and participatory management and use of natural and other public resources (Ribot 2002). At the same time, regional, provincial, and district governments often have substantially different priorities, resources, capacities and decision-making processes to those of national governments, and these differences must be addressed.

Even when power is decentralized from national to local levels, ILM still needs a platform of planning and negotiation among stakeholders and transparent governance rules to ensure that decisions are made in a manner that is both representative of the views of all stakeholders and that local decision-makers can be held accountable for those decisions (Ribot 2002; Scherr et al. 2012). A critical challenge for decision-making processes is a lack of capacity for community based organizations and local farmers' groups to effectively participate (Scherr 2014). This is an area where governments can encourage greater participation of groups that may otherwise be underrepresented, and strengthen their capacities for negotiation.

Thailand provides an example of linking decentralization efforts and empowerment of local stakeholders to engage in natural resource decision-making. The Thai government has introduced policy reforms to improve decentralized natural resource management in watersheds, which resulted in the establishment and empowerment of more than 8,000 Tambon Administrative Organizations (TAOs) and an emergence of other civil society groups. TAOs can raise local revenues, issue local regulations, and formulate and carry out development planning and implementation. While they have faced resource constraints, they have managed to improve upstream-downstream linkages within the watersheds when working in partnership with civil society organizations. The Thai government is also currently developing a new national framework to better link these local watershed organizations to national policy and planning processes (Havemann et al. 2015).

Recognize land and resource rights and responsibilities negotiated at landscape scale

Both the form of land and natural resource rights, which govern who can benefit from resources, and the security of those rights, which provides the assurance that rights can be upheld, are important in landscape-scale planning and management. Inappropriate, unclear, and insecure land and resource rights are a significant threat to sustainable resource use (Agrawal et al. 2014; Flintan et al. 2013), investment decision-making (McCarthy et al. 2011; Reid et al. 2012; Stringer et al. 2012), and collaboration at a landscape scale (Pagiola et al. 2008; Wunder, 2008). Most land, water and forest resources involve a 'bundle' of rights, by which different people may have different rights regarding ownership, management, sale, land use change, access, and harvest.

Moreover there are often formal or traditional responsibilities associated with land that legitimize those rights. Others in the landscape may also have rights to be protected from damage resulting from resource management practices (e.g., flooding), or to the ecosystem services generated by the land or its management (e.g., clean water and air). Informal values, norms and rules around these rights change over time. With changing political power of various stakeholders formal government rules are also pressured to change. ILM may provide a platform for more systematic consideration and negotiation over these rights.

The optimal form of ownership, access, use and other rights, as well as rights of others to benefit from ecosystem services produced in the landscape, may vary considerably depending on the landscape context. Governments at all levels can play an important role in supporting ILM by **recognizing and enforcing locally-legitimate rights systems** that are appropriate within a given landscape context and agreed upon by landscape stakeholders. In some cases, this may require making national tenure systems more flexible to allow for locally-negotiated bylaws or to allow for adaptation to changing environmental conditions, like the shifting boundaries of a protected area in response to climate change. Contingent rights based on compliance with stewardship agreements may also be an option in some places. Mechanisms can be put in place to ensure access to resources by the landless, as was done in the Tigray, Ethiopia watershed restoration programs where landless who helped in restoration activities were given rights to graze their livestock in restored areas (Sutter, et al. 2012).

Additionally, where stakeholders do not have clear and secure rights, the government can help to **ensure fair conflict resolution and grievance mechanisms are in place** to resolve issues of overlapping rights. For example, the governor of Central Kalimantan is leading a pioneering mapping initiative and issued a provincial regulation in 2009 that provides increased recognition of the rights of local communities, especially those with customary or traditional land claims. The land mapping was designed to be carried out collaboratively between civil society organizations and the local government, which would help to prevent mismatches in land classification between the central and local governments and indigenous peoples. However, implementation progress has stalled due to ongoing administrative disputes (Havemann and Kusumajaya 2015).

Develop a regulatory framework that enables collaborative landscape action

Governments establish and enforce the 'rules of the game' that underlie the sustainable production and resource management that is the foundation of ILM. The regulatory framework not only needs to be supportive of sustainable land use broadly, it also needs to be enforceable and well-coordinated at the landscape-scale.

Sustainable landscapes also need **land use zoning and planning to reflect common landscape goals.** Conventional zoning approaches that seek to conserve ecosystem services by restricting land use in specific areas often need to be modified to recognize the multi-functionality of land

use. Shaping regulations that respect local priorities, innovations and informal agreements, rather than relying solely on technical analyses, can greatly facilitate regulatory enforcement. For example, in critical upland watersheds of Thailand, strict government regulations on farming were challenged by farmers and community organizations. Research by the World Agroforestry Centre evaluated different land use options being considered in the negotiations, and concluded that a combination of annual crops, agroforestry, and permanent forest cover in specific critical areas would be sufficient to prevent soil erosion and flooding downstream in the landscape. The land use rules were modified, with benefits for both conservation and agricultural incomes (Thomas et al. 2003).

Governments may also choose to **develop performance-based regulations that achieve landscape-scale goals** as opposed to requiring standard management practices on individual farms. In the case of Brazil's Forest Code (2012), revisions allowed for the transfer of land set aside for conservation through the Environmental Reserve Quota (CRA) program which could improve landscape-scale objectives. Prior to the revision, the Forest Code required each landowner to set aside a certain percentage (from 20 to 80 percent) of their land for conservation, which unintentionally resulted in fragmented natural habitats and agricultural inefficiencies. However, with the revised regulations, landowners can pool their required set-aside areas into larger conservation areas. While the impacts of the program are just beginning to be observed, this type of legal revision could lead to more effective and efficient use of land at a landscape scale (May et al. 2015; WEF 2016). Other approaches informed by landscape goals might include simplifying regulatory rules and costs for environmentally-friendly companies and requiring environmental offsets for development activities and investments.

Moreover, these laws and regulations must be **harmonized and coordinated across sectors at a landscape scale.** The Florida Ranchlands Environmental Services Project (FRESP), for example, sparked improved regulatory harmonization across a range of state and federal agencies to support both agriculture and environmental quality goals. Following decades of government agencies sometimes working at cross-purposes to manage competing needs, in 2005 the Florida Department of Agriculture and Consumer Services, South Florida Water Management District, and Florida Department of Environmental Protection collaborated with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), local ranchers, the World Wildlife Fund, and scientists, to pilot FRESP (CBD 2007). Through improved regulatory harmonization among government agencies, FRESP successfully supported rancher livelihoods,

prevented ranch conversion to urban development, improved water stewardship, and provided cost savings relative to previous efforts (CBD 2007).

In addition to ensuring that the laws and regulations are appropriate, **government agencies need the mandate, resources and capacity to implement and enforce them.** In cases where government ability or legitimacy is lacking, non-governmental institutions may be able to play a role in encouraging community self-enforcement.

Participate directly in landscape partnerships

While ILM sometimes arises in response to the absence of effective government action, more than 86 percent of multi-stakeholder landscape partnerships documented in the LPFN continental reviews involve local, state and/or national government agencies as partners in some way (Milder et al. 2014; Estrada-Carmona et al. 2014; Zanzanaini et al. 2015; García-Martín 2016).

In most cases, a civil society organization serves as the primary convener of landscape partnerships, which often cross jurisdictional boundaries. But government agencies can be **active partners and play critical roles in supporting the process of stakeholder collaboration.** They may host stakeholder meetings, help identify and engage key stakeholders, bridge inputs from public agencies, advise on policy options, use their outreach mechanisms to raise public awareness, and legitimize and strengthen support for the multi-stakeholder platform. In some cases, government actors can **facilitate resolution of conflicts between stakeholders.** The box on the following page describes the various ways in which the Government of Kenya is supporting landscape partnerships.

Government actors can also **serve as conveners of these partnership platforms.** In these cases, its role establishing institutional platforms for stakeholder collaboration across administrative boundaries and sectors is essential to the development of ILM. For example, under the Sage-Grouse Initiative, the USDA NRCS is convening a diverse group of state fish and wildlife agencies, scientific institutions, non-profit organizations, corporations, and other conservation partners to collaborate on the conservation of large-scale sagebrush landscapes in eleven states in the western U.S. (USDA NRCS 2012). In Mato Grosso, Brazil, the state government is convening a multi-sector jurisdictional landscape initiative to reduce deforestation across the state (Earth Innovation Institute 2016).

Government roles in landscape partnerships in Kenya

The Government of Kenya's varied roles in on-going integrated landscape initiatives highlight the diverse ways the public sector can participate in landscape partnerships. In the case of the Lari Landscape initiative, the public sector is an active participant and attends planning meetings, provides extension for sustainable practices, liaises with other partners, and helps to develop supportive policies, but the Kijabe Environment Volunteers, a local, non-governmental environmental organization, actually convenes the multi-stakeholder partnership.

Conversely, in the Lake Naivasha Basin, the Office of the Prime Minister (formerly), in partnership with several horticulture and floriculture companies, created the Imarisha Naivasha Management Board in 2011 to manage the coordination of watershed restoration activities. The Imarisha Naivasha Board, which is composed of representatives from various stakeholder groups in the basin, including public, private and civil society organizations, is housed in Ministry of Environment and Natural Resources and funded largely through public-private partnerships.

Finally, integrated landscape management has even become institutionalized within some of the Kenyan Government structures. For example, the Kenya Water Towers Agency (KWTA) was established with the mandate to manage critical water towers, which are important water catchment areas, using an integrated landscape approach. KWTA is currently developing overarching strategic management plans for each water tower and conducting a valuation of the ecosystem services provided by the water towers that it hopes will guide private sector investment (Heiner et al. 2016).

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Incentivize integrated landscape investments through policy and public finance

Integrated landscape investments are designed to consider the environmental, economic and social context beyond a single land management unit. They are informed by, or coordinated with, other stakeholders operating within a landscape, usually through a multi-stakeholder planning and management process. The central challenges for landscape groups are to attract new supportive investments; to steer existing financing to activities aligned with the landscape action plans; and to aggregate investment opportunities so that actors who tend to finance very large investments can engage (Shames and Scherr 2015). Governments can promote the landscape investment planning and financial coordination required for integrated landscape investments, and also help to attract them, in a variety of ways.

First, government agencies can **support joint investment planning among stakeholders at a landscape scale.** They can contribute to these processes by coordinating their own sectoral public funding programs and increasing funding for integrated programs. This will require improving inter-governmental communication and collaboration, increasing understanding of the interlinkages among investments required to achieve sustainable landscapes, and modifications in budgeting processes.

Government can also promote market innovations and trade rules supportive of landscape-scale action, including through collaboration in development of product certification systems and public procurement policies. In China, for example, national and local policies support the development of food labeling and certification schemes to demarcate 'green' foods that are grown in a more environmentally-friendly manner, as well as 'famous' products from specific geographic origins. These standards and labels help products, like Pu'er tea from the Yunnan Province, garner more revenue, thereby incentivizing integrated landscape management. Since 2008, the 'Green Procurement' policy has required all levels of government to prioritize purchasing tea labeled as 'green', which further promotes the development of a market for these environmentally-friendly products (Guo et al. 2008).

Governments can play important roles in **developing payments for ecosystem services (PES) schemes.** PES is a tool for ensuring that land stewards who maintain an ecosystem's ability to provide services are compensated for their efforts. For PES to contribute to landscape-scale

outcomes, incentives must be designed not only promote the adoption of sustainable practices on individual farms, forests or wetlands, but also to stimulate coordinated action across a landscape. Within these schemes the public sector can serve as a direct buyer of ecosystem services, regulator of the market, and/or as an enabler for private sector actors to become involved (Scherr and Bennet 2011). For example, the Chinese government served as a direct buyer of ecosystem services in its Grain-for-Green Program, which aims to stop soil erosion and siltation into the Yangtze and Huanghe Rivers. The government did this by asking farmers to stop farming on steeply sloped lands, and in exchange for grain provisions and cash subsidies, restore these areas to forested land. The program's total budget is approximately USD 43 billion and covers almost 23 million hectares (Gee 2006).

Fiscal and tax policy can also be used to incentivize integrated landscape investments. A policy that provides tax breaks on agricultural products that come from sustainably managed landscapes, for example, would help to incentivize the development of ILM in those areas.

Additionally, governments can ensure investments are consistent with agreed landscape plans by **developing and enforcing investment screening criteria** to be applied by private or public investors to screen out investments that would be harmful to a particular landscape. With these screens in place, projects seeking financing are more likely to be able to obtain it—or to receive better financing terms—if they fulfill criteria related to social and environmental performance. An example of the impact of these kinds of standards is the International Finance Corporation's (IFC's) sustainability standards for direct foreign investments, which it uses to identify areas where potential investments could be exposed to environmental and social risks (IFC 2012). In the Green Prosperity Project (GP) of the Millennium Challenge Account, Indonesia requires grant recipients to use a Landscape-Lifescape analysis that ensures project implementation will occur within the context of other relevant stakeholders, plans and actions within a given landscape (MCA-Indonesia 2015).

Public revenues of national, sub-national, or local governments can be **allocated to integrated landscape investments** in a variety of ways. They can be used to fund or co-fund projects such as restoring degraded public lands or improving irrigation systems to increase water use efficiency. They can encourage on-farm investments implemented by private land managers by providing low-interest credit or otherwise sharing costs. Public funds can also support the functioning of multi-stakeholder

landscape platforms. Government agencies can develop public-private partnerships that support landscape investments, and also provide loan guarantees and other mechanisms to de-risk private investments in sustainable landscapes. Because ILM is an important strategy for implementing the SDGs, national ILM investment plans could be an important means of directing SDG-support funds.

Lastly, national governments can **influence the flow of private investor and donor funding by promoting landscape-scale plans.** For example, in line with the African Resilient Landscapes Initiative, national governments in Africa are developing country strategies for ILM, which help target donor financing to priority investments identified in multi-objective landscape plans (WB 2015).

Build the knowledge and technical capacity to implement ILM

Planning and managing at a landscape scale requires a unique body of knowledge and technical capacity, and policy needs to support its development and dissemination. First, **spatial information**, such as maps of important areas for biodiversity, agriculture and hydrology, as well as local socio-economic data that can be linked to them, are essential to plan strategically for a multi-functional landscape that capitalizes on the synergies between different land uses and balances stakeholder priorities. Acquiring quality local data sets can be challenging, and governments could play an increased role in developing and disseminating this knowledge. For example, the Government of Indonesia passed the One Map Policy in 2014 as a means of alleviating disagreements and competing land claims that resulted from the use of different, sectorally-focused maps by individual agencies. The initiative is leading to the creation of one standard base map with accurate and up-to-date geospatial information, which can be used to develop and consolidate spatial plans in each of the provinces (Salim 2014).

Furthermore, landscape managers need the capacities to use this information for integrated planning to achieve multiple sectoral objectives depending on the same resource base. These include the ability to collect and interpret baseline data, conduct assessments, simulate and measure cause-and-effect relationships, and monitor changes in land use, as well as assess public, private and civic finance and investment. In the Philippines, local governments often lack the capacity and expertise to formulate comprehensive spatial plans themselves, and are sometimes reluctant to adopt externally-developed plans. To address these issues,

the Housing and Land Use Regulatory Board, in partnership with other national and local organizations and GIZ, developed an approach called enhanced Comprehensive Land Use Planning (eCLUP), which contains process descriptions, guide books, training tools, and measurement instruments. Local planners and facilitators have already used the eCLUP approach in over 100 municipalities (Lange and Hack 2015).

The adoption of ILM also requires **information and capacity on sustainable production systems.** Research is needed to support innovative farming systems that improve ecosystem dynamics, utilize new varieties of crops, and enhance biodiversity conservation. Public expenditure on interdisciplinary research that models the interaction between ecosystems functioning, agricultural production and human development at a landscape scale is important for supporting informed stakeholder negotiation around landscape stewardship and management. Subsequently, using available research and technology, governments can support knowledge hubs and provide direct or indirect technical assistance to land managers and businesses to help implement more sustainable practices in specific locations, as well as **build the capacities of landscape managers to lead and facilitate collaborative multi-stakeholder processes.**

Finally, in order to monitor and evaluate the impacts of changes at a landscape scale, **metrics that measure multiple outcomes**, including agricultural, environmental and livelihoods outcomes, across broad scales are also needed (Sayer et al. 2016; Scherr et al. 2012). There is currently a lack of quantitative evidence about how different management practices impact yields, biodiversity conservation, ecosystem services, climate change mitigation and adaptation (Harvey et al. 2013), and multi-dimensional metrics are needed to evaluate those diverse outcomes. These metrics must also feedback into local decision-making processes, so that as circumstances change, the management of the landscape can adapt.

TABLE 1. Actions to achieve eight policy guidelines to support ILM

Policy Guidelines	Actions
Incorporate sustainable landscape thinking into strategies and policies	• Create a strong policy vision • Embed landscape vision in national strategies
Harmonize sectoral plans to incorporate multiple goals of sustainable landscapes	• Align objectives, budgets, and capacities across agencies responsible for different sectors • Facilitate, fund and reward inter-agency coordination and collaboration • Harmonize programs and policies across national governments
Empower civil society to build landscape partnerships	• Strengthen local-level decision-making power • Empower relevant stakeholder to participate in local decision-making processes
Recognize land and resource rights and responsibilities negotiated at landscape scale	• Recognize and enforce locally-legitimate rights systems • Ensure fair conflict resolution and grievance mechanisms
Develop a regulatory framework that enables collaborative landscape action	• Ensure land use zoning and planning reflects agreed landscape goals • Develop performance-based regulations that consider landscape-scale interactions • Harmonize and coordinate regulations across sectors at a landscape scale • Ensure the mandate, resources and capacities to implement and enforce laws and regulations
Participate directly in landscape partnerships	• Serve as an active partner in landscape partnerships • Play critical roles in supporting the process of stakeholder collaboration • Serve as a facilitator to help resolve conflict between stakeholders • Serve as conveners of landscape partnership platforms
Incentivize integrated landscape investments through policy and public finance	• Support joint investment planning among stakeholders • Develop market and trade rules supportive of landscape-scale action • Develop payment for ecosystem services schemes • Develop fiscal and tax policy to incentivize landscape investments • Develop screening criteria for landscape investments • Allocate public revenues for integrated landscape programs • Influence the flow of private investor and donor funding
Build the knowledge and technical capacity to implement ILM	• Develop and disseminate spatial information • Generate information and build capacities on sustainable production systems • Build capacities of managers to lead and facilitate collaborative processes • Develop metrics that measure multiple outcomes

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4 Building the foundation for ILM-supportive policy

Implementing these policy guidelines can put a country or sub-national jurisdiction on the path to creating a more supportive policy environment for ILM. Simultaneously, it can help them meet internationally agreed targets for the SDGs, including agricultural sustainability, food security, climate, biodiversity, and landscape restoration.

Members of the Landscapes for People, Food and Nature Initiative are developing more detailed guidance on action steps that governments can take in order to implement these guidelines in a variety of socio-economic and political contexts. Meanwhile, there are general steps that any government (at any level) or interested stakeholder can take in order to lay a foundation for policy that supports ILM. These build on elements first described in the LPFN white paper on using landscape partnerships to advance the Sustainable Development Goals (Thaxton, et al. 2015).

Form a multi-stakeholder learning and advocacy working group on ILM

The working group would draw together actors across sectors, including agriculture, water, climate and forests, that all recognize the need for ILM in order to meet their objectives. The working group would include not only relevant government actors, but also representatives from integrated landscape initiatives throughout the country, and could be formed at national or sub-national levels. A first step for the working groups—before engaging in any policy analysis or advocacy—would be to identify and take stock of existing integrated landscape initiatives in the country. Representatives of these initiatives could be approached to join the group.

In some cases, these working groups may need to be newly formed. In other situations, strong cross-sectoral land use platforms may already exist using slightly different framings, such as 'sustainable land management,' 'landscape restoration,' or 'climate-smart agriculture.' In these cases, the ILM agenda could be integrated into these ongoing work plans, if the agendas are not already fully aligned.

For example, in Ethiopia, the Water and Land Resources Centre, in collaboration with EcoAgriculture Partners, initiated an Ethiopian Learning Landscape Network to facilitate dialogue, collaboration and policy advocacy. They engaged country-level partners representing key government agencies, NGOs, development partners, and research institutions actively engaged in integrated landscape management in a core working group who then inventoried potential landscapes and selected seven case study landscapes to participate in an Ethiopian Learning Landscape and Actors Dialogue held in Addis Ababa in May 2015 (EcoAgriculture Partners 2015).

Review the existing policy framework and enabling environment for ILM

Once a working group is formed it can conduct a review of the country's or jurisdiction's policy and legal frameworks to identify policies, laws, strategies and plans that support or constrain ILM. This review would identify the extent of ILM, the roles that government is playing in supporting or limiting it, as well as key policy or implementation gaps. The documents that would be analyzed can be drawn from a wide range of sectors, including economic development and planning as well as agriculture, environment and natural resources agencies. As part of this process, leaders of integrated landscape initiatives could be supported to develop their own assessment of how policies are affecting them. These perspectives could be integrated into the broader analysis.

For example, in 2015, EcoAgriculture Partners and Duke Environmental Law and Policy Clinic piloted a methodology for assessing the enabling national policy environment for integrated landscape management in Kenya in based on 21 indicators across four key areas: 1) stakeholder cooperation and coordination; 2) legal and regulatory framework; 3) knowledge and capacity; and 4) investments and incentives for ILM. Through this analysis, they identified several areas in which the policy and legal environment in Kenya is supportive of ILM, as well as ways the policy framework might be improved to better facilitate the development of ILM (Heiner et al. 2016).

Convene a landscape policy dialogue to identify key actions to better support ILM

The analysis described above provides a foundation for a national or jurisdictional landscape policy dialogue which could be convened by the landscape policy working group to review the findings and to engage a potentially broader range of stakeholders than were initially participating in the working group. This process identifies a concrete work plan to be taken on by policymakers as well as leaders of landscape initiatives to build a stronger enabling environment for ILM. The action plan could include actions such as:

- Incorporate language about ILM in key national policy and strategy documents.
- Explore ways to institutionalize a shift from sector-based to placed-based government financing and move toward implementation.
- Integrate ILM into educational curricula on various levels and link it to discussions on spatial planning, territorial development, and the implementation of the SDGs

A clear and comprehensive plan developed from these steps should result in an actionable agenda that has legitimacy across various sectors and among relevant stakeholders. Once the steps are identified, members of the landscape policy working group can move forward on their individual pieces of the plan. As the work progresses, members of the group report back on their progress and work together to revise and update the plan as necessary.

In 2014, EcoAgriculture Partners, in partnership with the World Agroforestry Centre's Strengthening Rural Institutions project, began a process to improve the policy and institutional framework for ILM in Kenya based on policymaker and civil society engagement. Then, key stakeholders in five landscapes—Embu, Bungoma, Laikipia, Lari and Naivasha—identified policy needs and recommendations that could be addressed by national or sub-national policymakers. In the final phase of the process, civil society leaders and key county and national level policymakers worked together to improve the policy environment for ILM in Kenya through a facilitated national level policy dialogue. Some key recommendations for improvements to national and county policies and policy-making processes were: 1) further empower civil society participation in policy-making;2) harmonize land use policies vertically and horizontally; 3) support multi-stakeholder collaboration/platforms; and 4) develop/enhance incentive mechanisms and market opportunities for ILM (Shames and Heiner 2014).

These kinds of policy dialogues at national and sub-national levels based on multi-stakeholder participation and clear analysis of policy context, barriers and opportunities are critical to the development of enabling environments that are supportive of ILM. The action plans that result from these dialogues can chart the way towards achieving a wide variety of inter-linked policy goals that can only be realized with sustainable landscapes.

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