Analyse widely, act deeply

Forest and farm producer organisations and the goal of climate resilient landscapes

James Mayers

Discussion Paper

April 2019

Forests

Keywords:
Forests, Finance, Forest and Farm Facility

iied

Forest and Farm Facility

About the author

James Mayers is the director of IIED's Natural Resources Group.

Corresponding author James Mayers; james.mayers@iied.org

Acknowledgements

Development of this Discussion Paper was made possible with funding from the Food and Agriculture Organization of the United Nations (FAO) through the Forest and Farm Facility (FFF). FFF is a partnership between FAO, IIED, IUCN, and AgriCord. The government of Sweden provided the specific support to FAO to make a grant in the transition period between FFF Phase I and FFF Phase II. The content of this paper is the author's own and does not necessarily reflect the views of those donors. The author would like to thank Jeffrey Campbell, Francesca Guarascio, Duncan Macqueen and Svea Senesie for reviewing a draft of this paper, Nicole Kenton for copy editing the paper, and Judith Fisher for layout.

Produced by IIED's Natural Resources group

The aim of the Natural Resources Group is to build partnerships, capacity and wise decision-making for fair and sustainable use of natural resources. Our priority in pursuing this purpose is on local control and management of natural resources and other ecosystems.

Published by IIED, April 2019

Mayers, J. 2019. *Analyse widely, act deeply: forest and farm producer organisations and the goal of climate resilient landscapes.* IIED Discussion Paper. IIED, London.

http://pubs.iied.org/13610IIED

ISBN 978-1-78431-681-5

Printed on recycled paper with vegetable-based inks.

International Institute for Environment and Development
80-86 Gray's Inn Road, London WC1X 8NH, UK
Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
www.iied.org

@iied
www.facebook.com/theIIED

Download more publications at http://pubs.iied.org

Local organisations, thriving amongst smallholders dependent on adjacent forests or trees growing on their farms, constitute perhaps the world's biggest and most effective force for improved rural livelihoods and sustainability. They face fast-changing pressures. Many are likely to find it useful to have an organisational goal of contributing to climate resilient landscapes. Various international programmes can help in understanding and supporting such contributions – especially through practical actions for climate adaptation and mitigation, and forest restoration. 'Landscape approaches' are helpful for analysing the various connected issues, while context-specific politically-savvy planning is needed for effective action. This paper explores the possible motivations and actions for climate resilient landscapes amongst four different sorts of forest and farm producer organisations (FFPOs): indigenous peoples' organisations, community forest organisations, forest and farm producer groups, and processing groups in urban and peri-urban contexts. The Forest and Farm Facility (FFF) aims to help FFPOs to further develop and pursue such practical actions over the next five years.

Contents

Acronyms

AFR100	African Forest Landscape Restoration Initiative
CIFOR	Center for International Forestry Research
FAO	Food and Agriculture Organization of the United Nations
FFD	Food and Forest Development Finland
FFF	Forest and Farm Facility
FFPO	Forest and farm producer organisation
FLR	Forest and landscape restoration
GLF	Global Landscapes Forum
GPFLR	Global Partnership on Forest and Landscape Restoration
IIED	International Institute for Environment and Development
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for the Conservation of Nature
LDN	Land Degradation Neutrality
OED	Oxford English Dictionary
SDG	Sustainable Development Goal
WRI	World Resources Institute

Introduction – what this paper is about

1

This paper tries to answer the question: what could the goal to achieve climate resilient landscapes mean for forest and farm producer organisations (FFPOs) and their supporters? Part of the answer lies in identifying where such a goal is coming from and where it might come from in future. Who has such a goal (as opposed to other goals, some of which may be quite closely related but different to climate resilient landscapes)? The other part of the answer lies in identifying what FFPOs and their supporters could do if and where they set such a goal for themselves.

The Forest and Farm Facility (FFF) is a programme designed to support FFPOs. It has proved an effective FFPO funding mechanism, co-managed by a partnership of FAO, IUCN, IIED and FFD/Agricord. Since 2014, its unique comparative advantage has been in channelling money where it matters. FFF has provided direct grants to diverse FFPOs in ten countries, helping to strengthen their organisations (900+ engaged) and businesses (262 added value), and having policy impacts (51 policy changes) in favour of more than 30 million producer members.[1]

The FFF, in its second phase which started in late 2018, has "climate resilient landscapes and improved livelihoods" as the impact it seeks.[2] In pursuit of this goal, it focuses on FFPOs, including women, youth and indigenous peoples, as the primary agents of change. One of the four outcomes (Outcome 3) which, if achieved, would constitute achievement of its goal, explicitly covers climate resilient landscapes: "improved delivery of landscape-scale mitigation, adaptation and climate resilience for climate change through direct engagement of FFPOs and integration with inclusive livelihood approaches (SDGs 2, 13 and 15)". The other three outcomes are more focused on the 'livelihoods side' of the goal – on improving policies, entrepreneurship and finance, and access to social and cultural services.

During the transition between Phase 1 and 2, and in order to clarify how the FFF co-management team might operationalise this work, three scoping papers were commissioned – of which the current paper is the first – each with a different but complementary focus. The first paper, prepared by IIED – *Analyse widely, act deeply: Forest and farm producer organisations and the goal of climate resilient landscapes* – assesses the various agendas and definitions surrounding climate resilient landscapes and the FFF's commitment to climate resilient landscapes, discusses which of these might be most useful in operationalising the contribution of FFPOs, and proposes practical options for FFPOs. The second paper, prepared by IUCN – *Climate change mitigation, adaptation and resilience through FFPOs* – provides additional practical guidance on how FFPOs at different levels (global/regional, national and local) can contribute to climate resilient landscapes. The third paper, prepared by FFD (as AgriCord partner) – *FFPOs' tree-based strategies to climate change mitigation* – analyses forest mitigation options that FFPOs might use to enhance carbon sequestration and decrease emissions (and thereby contribute to national mitigation targets). These scoping studies are intended as strategic planning documents and advisory inputs to the FFF co-management team and the in-country facilitators tasked with the process of developing effective grant agreements with FFPOs relating to FFF Outcome 3. Building on these studies and additional materials developed through FAO's climate change teams, the FFF team will be putting together a *Toolkit on climate resilience for FFPOs* (title to be developed further).

Rural and forest lands are inhabited primarily by smallholders, numbering about 1.5 billion, producing about 80% of food supplies in Asia and sub-Saharan Africa, and managing about 500 million family farms and approximately 30% of forest lands in the global South.[3] Most are highly dependent on adjacent forests or trees growing on their farms. Local organisations amongst this huge slice of the global population constitute not only a huge army of tree stewards, but perhaps the world's biggest and most effective force for improved rural livelihoods and sustainability. FFF, in its first phase, has helped prove this.[1]

This paper recognises that the case for FFPOs as primary agents of change for improved livelihoods (the 'livelihoods half' of the second phase FFF goal) is a clear, proven and practical one. It is not a full comparative analysis of the many approaches that are focused entirely, or in part, on climate resilient landscapes, nor is it a full practical guide to action for such landscapes. The paper focuses more on the 'landscapes half' of the FFF goal and discusses **why FFPOs may want to contribute directly to achieving climate resilient landscapes, and what types of action FFPOs might attempt to achieve them**.

Huge collective power of smallholders and FFPOs – but facing fast-changing pressures

2

Work by the FFF has shown that FFPOs have a strong comparative advantage compared to individuals or governmental action in delivering benefits to local livelihoods, and that smallholder production exceeds that of the world's largest companies, making smallholder production collectively the world's largest private sector.[4]

Rural livelihoods are under increasing stress. One-third of the world's soils are moderately to severely degraded.[5] Biodiversity is at risk as agricultural landscapes become increasingly simplified and the number and variety of crops and animal breeds on farms decline.[6] Competition for land is increasing, and water scarcity and pollution are growing.[7] Scientific evidence has greatly strengthened on the links between the different pressures on environmental goods and services involved in local livelihoods.[8]

In many countries there is a recurring trend towards increasingly commercialised land relations, with land values being pushed up, and more disadvantaged groups being displaced into marginal areas. Meanwhile, landholdings are subject to increasing fragmentation and concentration in different contexts.[9] Demographic factors are driving fragmentation in densely populated areas, while economic forces, such as changes in land use and the rise of medium- and large-scale farming, are fostering greater land concentration.[10]

Climate change impacts on temperature and precipitation patterns – as well as the increased frequency and severity of natural disasters – will influence food security and rural livelihoods in different ways in the coming decades. Globally, climate change could cause an additional 100 million people to suffer from extreme poverty by 2030.[11] Climate-induced water scarcity from changes in temporal and spatial distribution of rainfall could lead to increased competition within the agriculture sector and with other sectors.[12] Increased risk from flood and droughts and shifting fire regimes all pose additional threats to forest and farm production.[13]

Meanwhile, roughly 30% of the world's greenhouse gas emissions come from land use, which represents the largest climate mitigation potential in many countries. Indeed, only land-based carbon sequestration efforts currently offer the possibility of the large-scale removal of greenhouse gases from the atmosphere, through photosynthesis and carbon sequestration in soils and perennial plants. Changes in land management and land use may also moderate local and regional climate through changes in albedo, evapotranspiration, soil moisture and temperature. Moreover, within forest and farm production, many adaptation measures have significant mitigation co-benefits. For example, increasing soil organic matter improves adaptive capacity by increasing soil water holding capacity and soil fertility, while also sequestering carbon.[14]

Urbanisation and transport improvements are also shaping rural transformations, through rising demands emanating from cities and small towns. Non-farm sources of income from rural businesses and employment in urban areas are increasingly important, and in many developing countries they contribute a larger share of rural household income than agricultural production.[15] The traditional division between rural producers and urban consumers no longer fully reflects reality in developing countries. Rural people are now often net purchasers of food, and many no longer work in agriculture.[16]

A key issue is thus how to better enable smallholders to act as stewards of forests and other biodiversity, and soil and water in fast-changing times, and how to improve the resilience, sustainability and productivity of smallholder forest and farm production.[17] The FFF second phase goal has never been more important.

What are climate resilient landscapes?

3

A short discussion of definitions is necessary before going further, since these definitions are quite subjective. Here are some thoughts on the key terms in climate resilient landscapes, in reverse order:

Landscape: "all the visible features of an area of land, often considered in terms of their aesthetic appeal" (OED). Despite this emphasis on the 'visible' and 'aesthetic', the word's origins put more emphasis on human activity on the land. 'Landscape' apparently entered the English language from the Dutch at the end of the sixteenth century and "*landschap*, like its Germanic root, *landschaft*, signified a unit of human occupation, indeed a jurisdiction as much as anything that might be a pleasing object of depiction."[18] However, it is important to keep in mind that common usage of the word today tends to be about the visual effect of the whole, rather than what is actually going on in its constituent parts. 'Landscape' as an objective for action is thus for many likely to be an awkward idea – about making diverse motivations fit with an observed 'scene'.

Recent discourse about land use has brought human lives in the landscape more to the fore. As one guide to these discourses puts it: "a landscape is a socio-ecological system that consists of natural and/or human-modified ecosystems, and which is influenced by distinct ecological, historical, economic and socio-cultural processes and activities."[19] Others have condensed this into a shorter phrase, "a particular place, its natural resources and all the people connected to it",[20] or an even shorter one, "a mosaic of land uses."[21] But in some languages and cultural contexts, neither the 'aesthetic' nor the 'living' readings of 'landscape' above may translate well. Many indigenous peoples, for example, prefer the term 'territory' to 'landscape'.

Resilience: "the capacity to recover quickly from difficulties; toughness" (OED). This seems intuitively applicable to trees, land, people and organisations.[22] But again, in common usage perhaps, there may not be much human aspiration associated with this concept. Thus, a landscape might 'look' resilient, but this helps us less than knowing how each 'feature of an area of land' has fared in the past, understanding what is going on currently, and thus be able to assess how it may change in future. We only really know if the soil, the rocks, the vegetation, water, animals, people and built structures are good at 'recovering quickly from difficulties' if we work with them.

In land-use discussions, the importance of adaptive capacity for resilience in ecological systems has been recognised by some for many years. This is discussed further below and relates to genetic diversity, biological diversity, and social systems – the existence of institutions and networks that learn and store knowledge and experience, create flexibility in problem solving, and balance power among interest groups. The term has become the focus of much initiative and variously used. As one commentator on such initiatives recently put it: "resilience is a value, a goal, an ethic, and a principle intended to lead to action".[23]

Climate resilience: Climate resilience has been defined, with apparent widespread acceptance, as: "the capacity for a socioecological system to: (1) absorb stresses and maintain function in the face of external stresses imposed upon it by climate change; and (2) adapt, reorganise, and evolve into more desirable configurations that improve the sustainability of the system, leaving it better prepared for future climate change impacts."[24] The Intergovernmental Panel on Climate Change (IPCC) has tended to install a hyphen between the two words and helpfully adds that: "climate-resilient pathways for development are about both climate mitigation and adaptation". The IPCC defines such a pathway as: "… a continuing process for managing changes in the climate and other driving forces affecting development, combining flexibility, innovativeness, and participative problem solving with effectiveness in mitigating and adapting to climate change."[25] In considering who should take such actions and where, the IPCC also concluded in 2014 that at the local scale, governments, businesses, communities, and individuals in many developing regions have limited capacities to mitigate climate change because they contribute very little to global emissions. They may also have relatively limited capacities to adapt for reasons of income, education, health, security, political power, or access to technology.[25] Nonetheless, climate resilience has become an expressed and, many would argue, vital goal of numerous business and community initiatives.

Climate resilient landscapes: Perhaps surprisingly, this configuration of the three words is not (yet) a widely used framing – the FFF is amongst its pioneers. Putting the above 'common usage' definitions together, climate resilient landscapes could be said to be: the capacity of all the features of an area of land, and their associated socioecological system, to recover quickly from shocks and stresses created by the climate and to be better prepared for such future shocks and stresses. Like other constructs that require fitting many connected issues together, this may be an essential lens for thorough understanding and planning, but could be an awkward idea to try and operationalise in practical action. Such landscapes may be more likely to be a happy outcome for the public good of people doing other things (or perhaps leaving things well alone). Conversely, and increasingly importantly perhaps, groups fighting for rights to territories, lands or forests may be doing so intentionally in part because they want to protect lands and forests from negative effects of climate change without recourse to solutions. Thus the FFF and others are wise to support analysis of the complexity of the issues, to help land users, especially smallholders, take simple actions strongly, and to demonstrate the links between practical activities on the ground and their contribution to the large and complex dimensions of climate resilient landscapes.

Exploring the landscape of 'landscape initiatives'

4

Social and environmental resilience get connected

Relatively early analyses of the connections between social resilience at community level – defined as the ability of communities to withstand external shocks to their social infrastructure – and ecological resilience – the capacity of natural systems to cope with surprises and large-scale changes – predicted rightly that the issues would become more important in the framing of resource management questions in the near future. They noted that this was particularly apposite for resource-dependent communities where they are subject to external stresses and shocks, both in the form of environmental variability (such as agricultural pests or the impacts of climatic extremes), as well as in the form of social, economic and political upheaval (associated with the variability of world markets for primary commodities, or with rapid changes in property laws or state interventions).[22,26]

Theoretical advances in recent years include a set of seven principles that have been identified for building resilience in social-ecological systems. The principles include: maintaining diversity and redundancy; managing connectivity; managing slow variables and feedbacks; fostering complex adaptive systems thinking; encouraging learning; broadening participation; and promoting polycentric governance systems.[27] Others distil four critical factors, perhaps more simply put, for dealing with natural resource dynamics during periods of change and reorganisation: learning to live with change and uncertainty; nurturing diversity for resilience; combining different types of knowledge for learning; and creating opportunity for self-organisation towards social-ecological sustainability.[28]

'Landscape approaches' emerge

Meanwhile the advocates of 'landscape approaches' sought to provide tools and concepts for allocating and managing land to achieve social, economic, and environmental objectives in areas where agriculture, mining, and other productive land uses compete with environmental and biodiversity goals. A review of consensus on these issues in 2013 concluded that there had been a shift from conservation-orientated perspectives toward increasing integration of poverty alleviation goals. Ten summary principles to support implementation of a landscape approach were identified:

1. Continual learning and adaptive management
2. Common concern entry point
3. Multiple scales
4. Multifunctionality
5. Multiple stakeholders
6. Negotiated and transparent change logic
7. Clarification of rights and responsibilities
8. Participatory and user-friendly monitoring
9. Resilience, and
10. Strengthened stakeholder capacity.[29]

Whilst it would be hard to disagree with the above, it would be much harder to implement all these principles in a coherent way in anything short of a massive coordinated programme of action. However, others point out that 'approach' does not have to mean such massive programmes, it can mean smaller and perhaps more practical ones. They argue that the utility of a landscape approach is in connecting actors within a shared space (a particular landscape) of which they are all a part – literally providing common ground.[19,20] However, another useful state-of-the-art review of landscape approaches concludes that attempts to find their universal converging characteristics are doomed to failure since differences are based on incompatible beliefs. Rather it counsels that diversity is a good thing.[30]

The climate smarts

'Climate smart agriculture' was conceptualised in this period too, and its proponents describe it as actions both on-farm and beyond the farm, incorporating technologies, policies, institutions and investment.[31] The Global Alliance for Climate Smart Agriculture (GACSA)[32] now works towards three aspirational outcomes: to improve farmers' agricultural productivity and incomes in a sustainable way; to build farmers' resilience to extreme weather and changing climate; and to reduce greenhouse gas emissions associated with agriculture, when possible.

One report suggested that 500 million farmers could be made climate resilient in ten years while also reducing their agricultural emissions if the following six steps were taken: put the right technology into farmers' hands; get farmers insured; deliver climate forecasts directly; enhance the national enabling environment; inform global policies and processes; and scale up climate investments in climate smart agriculture.[33]

'Climate smart forestry' is yet to spread strongly as a motivator of alliances and platforms internationally, being somewhat limited to technical approaches in the North. In one such initiative, three pillars are suggested that are not too dissimilar to those of their smart agricultural colleagues: reducing and/or removing greenhouse gas emissions to mitigate climate change; adapting forest management to build resilient forests; and, active forest management aiming to sustainably increase productivity and provide all benefits that forests can provide.[34]

'Integrated landscape management approaches'

In the agricultural development community, another relevant discourse bridging to the conservation community has emerged over the last ten years or so as a proposed organising framework for action: 'integrated landscape management approaches.' This discourse encompasses support for food production, ecosystem conservation, and rural livelihoods across entire landscapes. The term has been deliberately used to embrace a wide range of other terms including eco-agriculture, territorial development, model forests, integrated watershed management, agroforestry landscapes, and the ecosystem approach to managing agricultural systems.[35] Leading voices have identified five elements common to these approaches:

1. Landscape interventions are designed to achieve multiple objectives, including human wellbeing, food and fibre production, climate change mitigation, and conservation of biodiversity and ecosystem services.
2. Ecological, social and economic interactions among different parts of the landscape are managed to seek positive synergies among interests and actors or reduce negative trade-offs.
3. The key role of local communities and households as both producers and land stewards is acknowledged.
4. A long-term perspective is taken for sustainable development, adapting strategies as needed to address dynamic social and economic changes.
5. Participatory processes of social learning and multi-stakeholder negotiation are institutionalised, including efforts to involve all parts of the community and ensure that the livelihoods of the most vulnerable people and groups are protected or enhanced.[36]

At this point one could add a range of other frameworks and programmes that also appear to have the above-discussed principles and elements at their heart, albeit with interesting variations, emphases and additions. Here are just four examples, each having considerable momentum currently:

- Multifunctional agroforestry landscapes[36]
- Ecosystem-based adaptation[37]
- Community-based adaptation,[38] and
- Payments for ecosystem services and social conditional transfers.[39]

All of these 'approaches' are potentially relevant to FFPOs, and some FFPOs are certainly grappling with what being part of such approaches means in practice. In some contexts, this is about recasting existing actions in new ways to fit a new objective, in others, perhaps more cynically, it is putting `old wine in new bottles', and in others again some of these approaches are already stimulating widespread new action and hold promise for much more. The most significant of these new actions is discussed in Section 5.

Forest landscape restoration – it's big, it's practical

Here the two words that come to the fore for the first time in this discussion are 'forest' and 'restoration'. The forest landscape restoration or 'forest **and** landscape restoration' discourse thus far is in practice very much focused on getting more forests and trees growing on deforested or degraded lands.[40]

Forest livelihood advocates in IUCN were key to establishing the idea that forest landscape restoration is about regaining ecological functions and enhancing human wellbeing in deforested and degraded lands. They defined it as the process of restoring "the goods, services and ecological processes that forests can provide at the broader landscape level as opposed to solely promoting increased tree cover at a particular location".[41] As well as the more general principles for such processes within landscape approaches described above, these authors suggested that forest landscape restoration be founded on several more specific guiding principles including:

- **Restore functionality** – restore the functionality of a landscape, making it better able to provide a rich habitat, prevent erosion and flooding, and withstand the impacts of climate change and other disturbances.
- **Engage with entire landscapes, not just individual sites** – this typically entails balancing a mosaic of inter-dependent land uses, which include but are not limited to: agriculture, protected areas, agroforestry systems, well managed planted forests, ecological corridors, riparian plantings and areas set aside for natural regeneration.
- **Allow for multiple benefits** – aim to generate a suite of ecosystem goods and services by intelligently and appropriately introducing trees and other woody

plants within the landscape. This may involve planting trees on agricultural land to enhance food production, reduce erosion, provide shade and produce firewood; or trees may be planted to create a closed-canopy forest that sequesters large amounts of carbon, protects downstream water supplies, and provides rich wildlife habitat.

- **Leverage a suite of strategies** – consider the wide range of eligible technical strategies – from natural regeneration to tree planting – for restoring forest landscapes.[41]

Other authors sought to demonstrate the huge area of land globally that has potential for forest restoration – adjacent to agricultural or pastoral land, and an estimated 1.5 billion hectares (ha) of land which could combine forests with other land uses.[42] However, in a review of the scene in 2012, the authors found it necessary to note that "there are few examples of where Forest Landscape Restoration has been successfully achieved and where the process has been in place for any substantial length of time."[43]

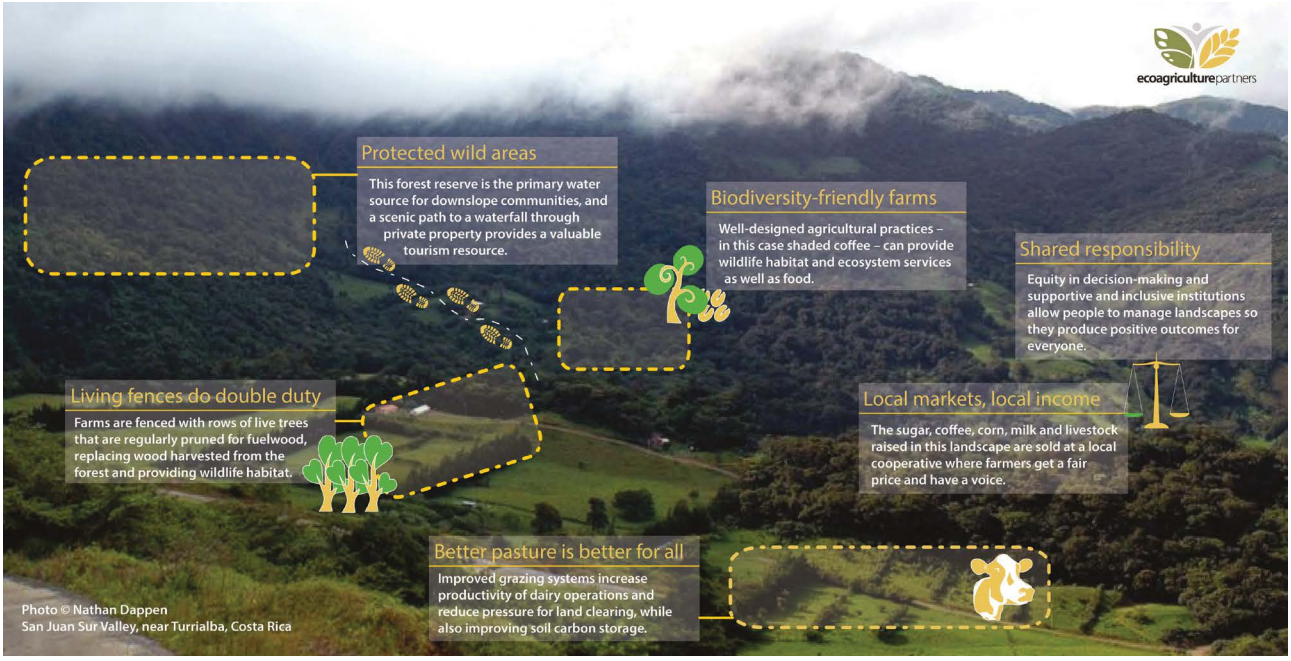
Energetic international drive for forest restoration is provided by the Global Partnership on Forest and Landscape Restoration (GPFLR).[44] Its website notes that "…FLR is not a new idea; many people in different places are already doing it. And while the underlying premise goes by many different names, the fundamental goal is to shift emphasis away from simply maximising tree cover to truly considering forest functions in the overall configuration of landscapes people depend on." We are also offered an illustrative graphic – a version of which appears in many publications about landscape approaches. The one at Figure 1 is by EcoAgriculture Partners and is based on San Juan Sur Valley, near Turrialba, Costa Rica.[45]

As is common with others like it, what this graphic and its wider explanation perhaps miss is the contestation of the scene. Even in (officially) happy Costa Rica, where the practical incentives for decent land use are quite strong and where FFPOs have in various ways been well supported for many years, the history is of claim and counter-claim to the hearts, minds and lands of the people. The net result, currently, is people generally doing the 'right' thing with their land, but this has not been brought about through rigorous voluntary implementation or enforcement of a land use plan.

International focus on forest restoration

The Bonn Challenge is currently at the heart of international attention to forest landscape restoration.[46] Its goal, launched in 2011, was to restore 150 million ha of lost and degraded forests by 2020. At its announcement, it was noted that although the goal may sound ambitious, it can be achieved through a doubling of current rates of afforestation, forest regeneration and silvipastoral and/or agroforestry expansion. In 2014, leaders meeting in New York called for the restoration of an additional 200 million ha by 2030 (that is, 350 million ha by 2030 – an area almost the size of India), a target incorporated into the Bonn Challenge. The New York Declaration on Forests also outlines other ambitious goals, including eliminating deforestation from agricultural commodity supply chains and strengthening forest governance.

Figure 1. Some features in a Costa Rican landscape



A recent stock-take by the secretariat of the GPFLR notes that there are political commitments from 56 countries which, if implemented, would collectively bring 168.9 million ha of degraded land under restoration.[47]

The generation of such political commitments has been further strengthened with the creation in 2016 of the Global Restoration Council, specifically to support the efforts of the GPFLR.[48] Perhaps this heightened political engagement will result in more effective 'landscape-wide' land use planning than is commonly seen – either through effective imposition or painstaking negotiation following the sorts of principles described above. Examples of such planning having effect are still thin on the ground. Yet the GPFLR remains confident that action can take place "…across entire landscapes, not individual sites, representing mosaics of interacting land uses and management practices under various tenure and governance systems. It is at this scale that ecological, social and economic priorities can be balanced."[49]

Monitoring of implementation is the focus of the Bonn Challenge Barometer. Its first report focused on some case material and predicted that its forthcoming 2018 report would provide some more specific quantitative and qualitative measures.[50] Another study estimated that restoring 350 million ha of degraded and deforested lands around the world would create up to US$9 trillion in net benefits.[51] It also claimed that restoration and other natural solutions could offer more than one third of the solution to the climate crisis. Others note that such investments in `natural climate solutions' are also safer, less costly and more beneficial to society than many technological alternatives that are currently being discussed.[52] Another analysis estimated the economic benefits of restoration at US$84 billion a year,[53] while a compelling case has been made that FFPOs can play a key part in forest landscape restoration interventions.[54] The question is, under what agro-physical and socioeconomic conditions does it make sense for them to do so?

Guidance available on forest restoration options

A guide to assessing what restoration opportunities might be appropriate to different contexts, developed by IUCN and WRI, provides a helpful options framework:[55]

- Forest land (where forest is, or is planned to become, the dominant land use)
  - If the land is formerly forested land, now without trees, there are two options: **planting** and **natural regeneration**
  - If the land is degraded forests: **silviculture**.
- Agricultural land
  - If the land is under permanent management: **agroforestry**
  - If it is under intermittent management: **improved fallow**.
- Protective land and buffers (land that is vulnerable to, or critical in safeguarding against, catastrophic events)
  - If degraded mangrove: **mangrove restoration**
  - If other protective land or buffer: **watershed protection and erosion control.**

The above-mentioned guide also provides a range of analytical tools to help stakeholders prioritise and further explore potential restoration interventions, including: Opportunities Mapping; Economic Modelling and Valuation; Cost-Benefit-Carbon Modelling; Diagnostic of Presence of Key Success Factors; and Finance and Resourcing Analysis.

The Bonn Challenge Barometer will likely give us some indication in the future of the inspiration drawn from this guidance, but the degree to which these and other such analytical guides catalyse and support action can only be guessed at this stage.[56] One notion that is conspicuously absent from the above however is 'landscape' – it is dispensed with at an overall objective level, providing an essential analytical framing, but leaving the main focus on practical land restoration.

Landscape as a broad 'movement' for diverse practical actions

'Landscape' returns to the fore as the organising construct of the Global Landscapes Forum (GLF),[57] led by CIFOR with core partners including UN Environment, the World Bank, and the government of Germany. The GLF describes itself as "the world's largest knowledge-led platform on sustainable land use, dedicated to achieving the Sustainable Development Goals and Paris Climate Agreement", estimating that it has connected 3,900 organisations and 150,000 participants in its gatherings. The GLF sustains considerable energy and some participants characterise themselves as thriving within a broad 'landscape movement'.[58]

The GLF has stimulated action on peatlands through the Global Peatlands Initiative,[59] and with coastal communities through the Blue Carbon Partnership.[60] It has also nurtured finance mechanisms to invest in sustainable farming and supply chains with the Land Degradation Neutrality (LDN) and the Tropical Landscapes Finance Facility.[61] At the late 2018 gathering of the GLF, the Landscape Academy was launched – "a curated set of online and face-to-face learning opportunities on Landscape Approaches".[62]

Strong continental restoration initiatives have also been spawned by the GLF. In Latin America, Initiative 20x20 aims at helping governments, civil society and the private sector to bring at least 20 million ha of land into restoration by 2020.[63] Launched in 2014, the initiative takes a three-pillared approach: securing political commitment; analysing restoration opportunities; and creating a supportive financial mechanism for implementation. More than US$2 billion in support has been secured from impact investors.[63]

In Africa, AFR100, or the African Forest Landscape Restoration Initiative, was launched in 2015 and aims to bring 100 million ha of degraded landscapes into restoration by 2030.[64] As of early 2019, some 27 countries have pledged to restore more than 111 million ha. The initiative is supported by 12 technical partners, and 9 financial partners. Support includes US$1 billion from the World Bank Africa's Climate Business Plan and nearly US$500 million from private impact investors. Significant political will for restoration has also created several interesting political instruments: the 2016 Kigali Declaration on Forest Landscape Restoration in Africa; the 2017 Lilongwe Call for Action; and the 2018 joint Funding Strategy for Central African Forests Commission countries. Each of these has catalysed a range of new restoration pledges.[49]

Local restoration initiatives – growing and spreading

A wide range of community and smallholder organisations has been involved to date in initiatives with forest restoration as an explicit objective. Here are some examples in the forest landscape restoration literature, very briefly described:[44,49,57]

- Niger and Ethiopia, where low-cost `farmer managed natural regeneration' has yielded significant benefits. Regrowing indigenous trees and shrubs from stumps, sprouting root systems or seeds has helped ease food insecurity.
- The planting of fruit and fodder trees to boost livelihoods and stabilise terraced farmland in Rwanda.
- A national effort in Ghana that includes establishing commercial teak plantations and reintroducing native tree species.
- Madagascar, where restoration of the Fandriana-Marolambo landscape has included planting 800,000 indigenous trees and establishing new economic activities, including pig rearing, essential oils, fruit trees and beekeeping.
- White Mountain, a Massai community-led holistic landscape and livelihood regeneration initiative in the Kilimanjaro ecosystem in Tanzania and Kenya.
- A project in Chile to establish payments to farmers restoring riparian areas and improving the management of their cattle in order to protect water supplies for people living downstream.
- Costa Rica, where partners have been buying land hectare by hectare for 25 years to restore the Nosara River Basin, improving water supply, creating jobs, and setting aside protected areas.
- Guatemala, where the culturally significant and multi-use breadnut tree is a cornerstone of a restoration initiative that boosts nutrition and food variety for local communities.
- Communities in Nepal with long histories now of organisation of successful forest regeneration linked to local livelihood improvements.

A range of initiatives already supported by the FFF could credibly be added to the above examples.

Women's empowerment as a driving force

Experience to date strongly suggests that it is not only necessary but sensible for restoration initiatives to be gender focused or to be run by women's organisations.[65] In broad picture terms, of the 1.351 billion people who live on less than US$1.25 per day and who depend on natural resources for employment globally, some 829 million are women and girls – as opposed to 522 million men and boys.[66] Empowerment of women over natural resources matters, and much evidence points to the many benefits of women's peer-to-peer learning – facilitating partnerships, for example, with other women's organisations and entrepreneurs that provide business coaching and mentorship support.[67]

Forest restoration efforts in some countries rely heavily on a few species, such as teak or eucalyptus, which provide limited livelihood benefits for women and are often harvested in an unsustainable manner. As well as secure local rights, interventions need to explicitly target sustainability and address gender-related inequalities. Examples of the kinds of mechanisms necessary to address gender issues in restoration initiatives include: earmarking training and technical assistance for women and youth; providing targeted communication channels and feedback mechanisms to potential female applicants of projects; facilitating registration for restoration programmes in easily accessible spaces where women already go; and employing new mechanisms such as the W+ Standard to channel funds directly to women and to measure the impacts of gender-responsive initiatives.[68]

What might action by FFPOs for climate resilient landscapes look like?

5

Types of FFPOs, types of actions

Where FFPOs identify contribution to climate resilient landscapes as a core objective, a range of intervention points for their members to consider can be drawn from the above discussion. For the purposes of illustrating such considerations, and recognising that in reality this is simplistic, FFPOs can be grouped into four main types:

- **Indigenous people's organisations** – often identified by territory, and motivated to secure and maintain their rights and manage their lands for sustainable and prosperous livelihoods. Amongst these FFPOs there might be strong motivations for garnering support and developing climate resilient landscape planning.
- **Community forest organisations** – for whom at least a portion of their livelihoods come from collectively owned forest. For these groups it may be appropriate to plan to combine action, involving both securing rights and improving enterprise, on different areas of land to be more climate resilient.
- **Forest and farm producer groups** – comprising individual farmers, often organised as some form of association or cooperative, who can improve their own land. The focus here may be on integrating information and data so that the landscape impacts of their collective business actions can be addressed.
- **Processing groups in urban and peri-urban contexts** – those not based on the land but whose product origins affect land use, eg peri-urban carpentry groups and charcoal trading unions. As for larger companies, the most appropriate emphasis for such groups may be to aim to improve climate resilience in their supply chains.

These possible types of actions are further illustrated in Table 1 below.

Table 1. Types of FFPO actions that could help achieve climate resilient landscapes[20,55,67,69]

TYPE OF FFPOS (WITH SOME OVERLAPS)	CHARACTERISTICS OF CONTEXT (TYPICAL BUT NOT UBIQUITOUS)	POSSIBLE TYPES OF ACTION TO HELP ACHIEVE CLIMATE RESILIENT LANDSCAPES
Indigenous people's organisations (mainly rights-based)	• Forest core • Low deforestation in natural forests • Organisations identified by territory. • Low population density	• Rigorous and effective assessment of context and entry-points – which can utilise some established diagnostic frameworks and tools covering biophysical, sociocultural and economic issues • Accessing and communicating information on eg research, best practices and community engagements • Strengthening dialogue and partnership capacity • Securing tenure rights • Improving engagement with policy and government institutions in the practice of sectoral and administrative policies • Establishing mechanisms of payment for environmental services, including climate resilience management • Restoration through natural regeneration and silviculture • Establishing territorial climate resilience plans • Engaging with external institutions, eg on social-cultural and donor support

TYPE OF FFPOS (WITH SOME OVERLAPS)	CHARACTERISTICS OF CONTEXT (TYPICAL BUT NOT UBIQUITOUS)	POSSIBLE TYPES OF ACTION TO HELP ACHIEVE CLIMATE RESILIENT LANDSCAPES
Community forest organisations (rights- and business-based)	• Forest edge • Agricultural expansion in (mostly natural) forests • Groups for whom a portion of their livelihoods come from collectively owned forest • Rapid population increase	• Analysing context and options – using a range of available tools to cover: opportunities mapping; economic modelling and valuation; cost-benefit-carbon modelling; diagnostic of presence of key success factors; and finance and resourcing analysis • Strengthening leadership, dialogue, partnership and conflict management capacity • Training and technical assistance for women and youth, eg on entrepreneurship and forest restoration or agroforestry practices with a focus on appropriate tree species for men and women • Providing effective communication channels and feedback mechanisms (eg text messages) for women and making decisions in accessible spaces where women already go (eg schools, healthcare centres) • Supporting village savings schemes, investments in utilities, day care centres, culturally appropriate homecare and childcare to support families, and peer-to-peer women's networks and organisations that can help tackle structural gender inequalities at the level of the family, the business and the nation state • Establishing plans for connected actions on different land parcels to improve climate resilience • Improving engagement with policy and government institutions on securing tenure and investment • Developing sustainable forest management and certification • Restoration through natural regeneration or silviculture, eg by reducing fire and grazing and by liberation thinning and enrichment planting • Planting forests and woodlots on carefully identified land • Mangrove restoration – establishment or enhancement of mangroves along coastal areas and in estuaries or watershed protection and erosion control – establishment and enhancement of forests on very steep sloping land, along water courses, in areas that naturally flood and around critical water bodies • Improving efficient processing and markets for products and services

TYPE OF FFPOS (WITH SOME OVERLAPS)	CHARACTERISTICS OF CONTEXT (TYPICAL BUT NOT UBIQUITOUS)	POSSIBLE TYPES OF ACTION TO HELP ACHIEVE CLIMATE RESILIENT LANDSCAPES
Forest and farm producer groups (mainly business-based)	• Forest mosaic • Co-existence of people and (mostly planted) forests • Associations of individual producers • High populations	• Integrating information about producers to identify optimal climate resilience actions • Improving engagement with external institutions, eg on securing tenure, investment policies, finance, certification and accreditation, and trade • Tree planting of native or exotic trees for various purposes, eg fuelwood, timber, building, poles, fruit production • Restoration through agroforestry – planting or regeneration to improve crop productivity, provide dry season fodder, increase soil fertility or enhance water retention • Improved planted forests and woodlots for restoration • Improving fallow, eg through fire control, extending the fallow period, with the knowledge and intention that eventually this land will revert back to active agriculture • Incubating and developing business in land use products and services – commercial forestry, agroforestry, agriculture and ecotourism • Developing chain of custody, efficient processing, external marketing, quality control, business profiling, adaptive management and participatory monitoring and evaluation • Securing effective forecasting, risk management and insurance
Processing groups in urban and peri-urban contexts who use forest inputs	• Urban forest-linked • Non-forest settlements • Groups without productive lands whose products affect land use • Very high populations	• Making supply chain improvements for climate resilience • Developing efficient processing and markets including through digital applications

Crucial role of getting the start-point right and investing in skills and organisation

Restoration initiatives may fizzle out for all the usual reasons of poor planning, inadequate skills and organisation and lack of support. They may also be inappropriate to context, or cynically labelled as something they are not. For example, the Rights and Resources Initiative identifies the potential danger that community and indigenous peoples' rights could be abused by restoration projects unless they are specifically secured through them. RRI cautions that "the restoration of forest landscapes necessitates careful contemplation concerning who will maintain rights to own and administer these spaces, ensuring that Indigenous Peoples, local communities, and rural women are both respected partners in and beneficiaries of these efforts."[70]

So, in addition to the types of specific action in Table 1, it is likely that all FFPOs will aspire to improve core organisational management practices that would also contribute to climate resilience: improving human capacity; developing effective and efficient organisational (management) systems; applying risk management; sourcing finance – including climate finance; integrating technology improvements; and monitoring actions.

In conclusion – on legitimacy and power for negotiated land use

6

Increasing numbers of local organisations have an organisational goal of contributing to climate resilient landscapes. But they face fast-changing pressures, and often have other empowerment objectives too. Meanwhile, the participants in the platforms, partnerships and programmes pushing for climate resilience and forest restoration to date are primarily international organisations, NGOs and government agencies – and only secondarily the organisations of people who live in forests and make their livelihoods from them. At times, this imbalance is not helped by fanciful analysis of the power of 'landscapes' to galvanise action.[71] This gap – between the objectives and practical needs of local organisations and the international network of their potential supporters – needs bridging.

Legitimacy of forest land use is born of membership and social inclusion. Rights and legality are central to this, but so also are ideas, solutions and capability based in the reality on the ground. Governments, corporations and international organisations, frankly, may not always have this legitimacy, while FFPOs are amongst those who do. FFPOs do not merely exist in the 'landscape'; they are organised and meet human needs from it – often for everyone, and often sustainably.[72]

Robust ways forward are also those that are recognised by all who would otherwise have the power or a claim to undermine them. This means that they need to be seen to have been negotiated properly through inclusion and deliberation. The collective strength and organisational capabilities of FFPOs can put them in a position to steer negotiation of land uses.

Collectively, FFPOs may be contributing much more to poverty alleviation, food security and nutrition and climate change resilience than any other actors and have great potential to spread these gains further.[73] A focus on climate resilient landscapes – used with a spirit of 'analyse widely, then act specifically and deeply' – with the support of the FFF and others who recognise the need for bold action – can serve FFPOs well and bring vital outcomes for sustainability and livelihoods.

Notes and references

1 FFF (2018) Putting producers first works – Impacts and lessons learned from enabling government and strengthening forest and farm producer organisations. Report December 2012-December 2017. Final report of the Forest and Farm Facility, FAO, Italy, Rome; FAO (2016) Mid-term evaluation of the Forest and Farm Facility programme. Office of Evaluation, FAO, Rome, Italy.

2 FFF (2018) Forest and Farm Facility Initiative for climate-resilient landscapes and improved livelihoods 2018-2022. FAO, Rome, Italy. www.fao.org/resilience/resources/resources-detail/en/c/1111568

3 FAO (2012) Smallholders and family farmers. Sustainability pathways factsheet. FAO, Rome, Italy. https://bit.ly/1gsC43 [Accessed 22 March 2019].

4 Mayers, J, Buckley, L and Macqueen, DJ (2016) Small, but many, is big: Challenges in assessing the collective scale of locally controlled forest-linked production and investment. IIED, London. http://pubs.iied.org/16615IIED; Verdone, M (2018) The world's largest private sector? Recognising the cumulative economic value of small-scale forest and farm producers. IUCN, FAO, IIED and AgriCord, Gland, Switzerland. https://portals.iucn.org/library/node/47738

5 FAO (2015) FAO fact sheet: Soil is a non-renewable resource. FAO, Rome. www.fao.org/soils-2015/news/news-detail/en/c/275770

6 Cook, S (2018) The spice of life: The fundamental role of diversity on the farm and on the plate. IIED and Hivos, London and The Hague. http://pubs.iied.org/G04305

7 FAO (2011) The state of the world's land and water resources for food and agriculture: Managing systems at risk. FAO and Earthscan.

8 Millennium Ecosystem Assessment (2005) Ecosystems and human well-being: Synthesis. Island Press, Washington, DC; Schreckenberg, K, Mace, G and Poudyal, M (*eds*) (2018) Ecosystem services and poverty alleviation: trade-offs and governance. Routledge, London and New York.

9 Knapman, C, Silici, L, Cotula, L and Mayers, J (2017) Africa's farmland in changing hands: A review of literature and case studies from sub-Saharan Africa. IIED, London. Available at: http://pubs.iied.org/17598IIED

10 Jayne, TS, Chamberlin, J and Headey, D (2014) Land pressures, the evolution of farming systems, and development strategies in Africa: A synthesis. *Food Policy* 48.

11 Hallegatte, S, Bangalore, M, Bonzanigo, L, Fay, M, Tamaro, K, Narloch, U, Rozenberg, J, Treguer, D and Vogt-Schilb, A (2015) Shock waves: managing the impacts of climate change on poverty. World Bank, Washington, DC.

12 Hanjra, MA and Qureshi, ME (2010) Global water crisis and future food security in an era of climate change. *Food Policy* 35:365-377. 10.1016/j.foodpol.2010.05.006.

13 Peterson, DL, Halofsky, JE and Johnson, MC (2011) Managing and adapting to changing fire regimes in a warmer climate. *Landscape Ecol Fire* 2011, 213:249-267.

14 Smith, P, Martino, D, Cai, Z, Gwary, D, Janzen, H, Kumar, P, McCarl, B, Ogle, S, O'Mara, F, Rice, C, Scholes, B and Sirotenko, O (2007) Agriculture. Climate Change 2007: Mitigation. Contribution to Working Group III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. 2007, Cambridge University Press, Cambridge, UK.

15 Wiggins, S (2016) Agricultural and rural development reconsidered: A guide to issues and debates. IFAD, Rome, p.47.

16 Tacoli, C and Vorley, B (2015) Creating a new menu for food security policy. IIED Briefing. IIED, London. http://pubs.iied.org/17331IIED

17 McIntyre, BD, Herren, HR, Wakhungu, J and Watson, RT (*eds*) (2009) Synthesis Report. International assessment of agricultural knowledge, science and technology for development (IAASTD).

18 Schama, S (1995) Landscape and Memory. HarperCollins, London.

19 Denier, L, Scherr, S, Shames, S, Chatterton, P, Hovani, L and Stam, N (2015) The Little Sustainable Landscapes Book. Global Canopy Programme: Oxford. Global Canopy Foundation 2015. https://cgspace.cgiar.org/handle/10568/94623

20 van Oosten, C, Wigboldus, S, Mulkerrins, J and Brouwers, J (2016) Landscape governance capacity: Towards a framework for assessment and strategic guidance of landscape initiatives. Wageningen Centre for Development Innovation, Wageningen, The Netherlands. https://bit.ly/2GLgQzx

21 Jeffrey Campbell, personal communication.

22 Adger, NW (2000) Social and ecological resilience: are they related? *Progress in Human Geography* 2000 24:347. https://bit.ly/2FvWoC1

23 AGWA (2019) What the Heck is Resilience? Moving Words into Practice. The ClimateReady Podcast. Alliance for Global Water. https://soundcloud.com/climatereadypodcast/sn2episode10

24 Nelson, DR, Adger, NW and Brown, K (2007) Adaptation to Environmental Change: Contributions of a Resilience Framework. *Annual Review of Environment and Resources*. 32:395–419. www.annualreviews.org/doi/10.1146/annurev.energy.32.051807.090348

25 Denton, F, Wilbanks, TJ, Abeysinghe, AC, Burton,I, Gao, Q, Lemos, MC, Masui, T, O'Brien, KL and Warner, K (2014) Climate-resilient pathways: adaptation, mitigation, and sustainable development. In: Field, CB, Barros, VR, Dokken, DJ, Mach, KJ, Mastrandrea, MD, Bilir, TE, Chatterjee,M, Ebi, KL, Estrada, YO, Genova, RC, Girma, B, Kissel,ES, Levy, AN, MacCracken, S, Mastrandrea, PR and White, LL (*eds.*) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1101-1131.

26 Tompkins, EL and Adger, NW (2004) Does Adaptive Management of Natural Resources Enhance Resilience to Climate Change? *Ecology & Society*. http://eprints.soton.ac.uk/202863

27 Biggs, R, Schlüter, M, Biggs, D, Bohensky, EL, BurnSilver, S, Cundill, G, Dakos, V, Daw, TM, Evans, LS, Kotschy, K, Leitch, AM, Meek, C, Quinlan, A, Raudsepp-Hearne, C, Robards, MD, Schoon, ML, Schultz, L and West, PC (2012) Toward Principles for Enhancing the Resilience of Ecosystem Services. Annual Review of Environment and Resources 37(1):421-448.

28 Folke C, Colding, J and Berkes, F (2002) Building resilience for adaptive capacity in social-ecological systems. In: Berkes F, Colding, J and Folke, C (*eds*) *Navigating Social-Ecological Systems: Building Resilience for Complexity and Change*. Cambridge University Press, Cambridge, UK.

29 Sayer, J, Sunderland, T, Ghazoul, J, Pfund, JL, Sheil, D, Meijaard, E, Venter, M, Boedhihartono, AK, Day, M, Garcia, C, van Oosten, C and Buck, LE (2013) Ten principles for a landscape approach to reconciling agriculture, conservation, and other competing land uses. *Proceedings of the National Academy of Sciences of the United States of America*. 110 (21) 8349-8356. www.pnas.org/content/110/21/8349

30 Arts, B, Buizer, M, Horlings, L, Ingram, V, van Oosten, C and Opdam, P (2017) Landscape Approaches: A State-of-the-Art Review. *Annual Review of Environment and Resources* 42:439-463. https://bit.ly/2UZxkbj

31 www.fao.org/climate-smart-agriculture/overview/en/

32 www.fao.org/gacsa/en/

33 CCAFS (2015) Six Steps to Success. How to make 500 million farmers climate-resilient in 10 years while also reducing their agricultural emissions. CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Copenhagen, Denmark. https://cgspace.cgiar.org/handle/10568/68837

34 www.efi.int/articles/climate-smart-forestry

35 Scherr, SJ, Shames, S and Friedman, R (2012) From climate-smart agriculture to climate-smart landscapes. *Agriculture & Food Security* 2012, 1:12. https://agricultureandfoodsecurity.biomedcentral.com/articles/10.1186/2048-7010-1-12

36 Van Noordwijk, M, Hoang, MH, Neufeldt, H, Öborn, I and Yatich, T (*eds*) (2011) How trees and people can co-adapt to climate change: reducing vulnerability through multifunctional agroforestry landscapes. Nairobi: World Agroforestry Centre (ICRAF). https://bit.ly/2HOFTSP; Leakey, R (2012) Living with the trees of life: towards the transformation of tropical agriculture. CABI, UK.

37 Swiderska, K, King-Okumu, C and Monirul Islam, M (2018) Ecosystem-based adaptation: a handbook for EbA in mountain, dryland and coastal ecosystems. IIED, London. http://pubs.iied.org/17460IIED

38 Reid, H, Alam, M, Berger, R, Cannon, T and Milligan, A (2009) Community-based adaptation to climate change. *Participatory Learning and Action* 60. IIED, London. http://pubs.iied.org/14573IIED

39 Porras, I and Asquith, N (2018) Ecosystems, poverty alleviation and conditional transfers: guidelines for practitioners. IIED, London. http://pubs.iied.org/16639IIED

40 Note that the 'and' in the framing of the forest and landscape restoration discourse perhaps implies that it is difficult to restore forests using a landscape approach. The advocates of tree planting and nurturing may prefer this implied separation of forest restoration from landscape restoration. However, the secretariat of the Global Partnership on Forest and Landscape (see following reference) takes any heat out of this possible argument by stating that 'forest landscape restoration' and 'forest and landscape restoration' are the same thing: Besseau, P, Graham, S and Christophersen, T (*eds)* (2018) Restoring forests and landscapes: the key to a sustainable future. Global Partnership on Forest and Landscape Restoration, Vienna, Austria. https://afr100.org/content/restoring-forests-and-landscapes-key-sustainable-future

41 Maginnis, S and Jackson, W (2002) Restoring Forest Landscapes. Gland, Switzerland and Cambridge, UK: IUCN. https://cmsdata.iucn.org/downloads/restoring_forest_landscapes.pdf [Accessed 22 March 2019].

42 Laestadius, L, Maginnis, S, Minnemeyer, S, Potapov, P, Saint-Laurent, C and Sizer, N (2012) Mapping opportunities for forest landscape restoration. *Unasylva* 238, Vol. 62, 2011/2; Minnemeyer, S, Laestadius, L, Sizer, N, Saint-Laurent, C and Potapov, P (2011) A World of Opportunity for Forest and Landscape Restoration. WRI, IUCN and South Dakota State University.

43 Stanturf, J, Lamb, D and Madsen, P (*eds*) (2012) Forest Landscape Restoration: Integrating Natural and Social Sciences, *World Forests* 15, DOI 10.1007/978-94-007-5326-6_1. Springer Science and Business Media, Dordrecht.

44 www.forestlandscaperestoration.org

45 Source: graphic by EcoAgriculture Partners, photo by Nathan Dappen.

46 www.bonnchallenge.org/content/forest-landscape-restoration

47 Message from Tim Christophersen, January 2019. https://twitter.com/TimChristo/status/1069557510804258816 (updating Besseau *et al.* (2018) *op cit.* under Note 40).

48 www.wri.org/our-work/project/global-restoration-initiative/global-restoration-council

49 Besseau *et al.* (2018) *op cit.* under Note 40.

50 Dave, R, Saint-Laurent, C, Moraes, M, Simonit, S, Raes, L and Karangwa, C (2017) Bonn Challenge Barometer of Progress: Spotlight Report 2017. Gland, Switzerland: IUCN, 36pp. https://infoflr.org/sites/default/files/2017-12/2017-060.pdf [Accessed 22 March 2019].

51 Verdone, M and Seidl, A (2017) Time, space, place, and the Bonn Challenge global forest restoration target. *Restoration Ecology*, 25:903-911.

52 Griscom, BW *et al.* (2017) Natural climate solutions. Proceedings of the National Academy of Sciences. Oct 2017, 201710465.

53 www.wri.org/tags/degraded-lands

54 Buffle, P and Buss, C (2015) Forest and farm producers and forest landscape restoration. *ETFRN News* 57 197-204.

55 IUCN and WRI (2014) A guide to the Restoration Opportunities Assessment Methodology (ROAM): Assessing forest landscape restoration opportunities at the national or sub-national level. Working Paper (Road-test edition). IUCN, Gland, Switzerland. 125pp. https://portals.iucn.org/library/node/44852

56 Viani, RAG, Holl, KD, Padovezi, A, Strassburg, BBN, Farah, FT, Garcia, LC, Chaves, RB, Rodrigues, RR and Brancalion, PHS (2017) Protocol for Monitoring Tropical Forest Restoration. *Tropical Conservation Science* 10 (January):1940082917697265. https://doi.org/10.1177/1940082917697265

57 www.globallandscapesforum.org

58 GLF (2019) Outcome statement of the 2018 Global Landscapes Forum: Connecting for impact: From commitment to action. Global Landscapes Forum. https://bit.ly/2X0VNid

59 www.globalpeatlands.org

60 https://bluecarbonpartnership.org

61 http://tlffindonesia.org

62 https://academy.globallandscapesforum.org

63 www.wri.org/our-work/project/initiative-20x20

64 http://afr100.org

65 IUCN (2017) Gender-responsive restoration guidelines: A closer look at gender in the Restoration Opportunities Assessment Methodology. IUCN. Gland, Switzerland. https://portals.iucn.org/library/node/46693

66 Poschen, P (2015) Decent work, green jobs and the sustainable economy: solutions for climate change and sustainable development. International Labour Organization (ILO), Geneva. http://bit.ly/2O8YUUo

67 Bolin, A (*ed.*) (2019) Entrepreneurial empowerment of women in forest landscapes: How the structure and social and cultural services provided by forest and farm producer organisations can best contribute. FAO and IIED, Rome and London. http://pubs.iied.org/13607IIED.

68 Kristjanson, P, Siegmann, K, Afif, Z, Manchester, K and Gurung, J (2018) *Enhancing effectiveness of forest landscape programs through gender-responsive actions. GLF Brief* 1. PROFOR, WOCAN and World Bank, Washington DC. https://www.cifor.org/library/7003/

69 Sources: FFF (2018) FFF Phase II Monitoring and Learning System. Forest and Farm Facility, FAO, IIED, IUCN and Agricord, Rome; Macqueen, D, Benni, N, Boscolo, M and Zapata, J (2018) Access to finance for forest and farm producer organisations (FFPOs): A cross-sectoral literature review for the Forest and Farm Facility. Forest and Farm Facility, IIED and FAO, London and Rome.

70 RRI (2018) At a crossroads: Consequential trends in recognition of community-based forest tenure from 2002-2017. Rights and Resources Initiative, Washington DC. https://bit.ly/2Gp9Au1 [Accessed 22 March 2019].

71 The outcome statement from the most recent Global Landscape Forum summarises impressive progress but perhaps also confuses the reader with, for example, its call for "regreening the mindscapes for scaled action on the ground…" (GLF (2019) *op cit.* under Note 58).

72 Nasi, R (3 September 2018) Opening remarks at GLF Nairobi 2018: Local communities a driving force behind recovering Africa's landscapes. https://bit.ly/2GKq9jy

73 IUCN (16 July 2018) A closer look at a collective economic giant: Small forest and farm producers – Interview with Jeffrey Campbell. https://bit.ly/2Gpyfib

Local organisations, thriving amongst smallholders dependent on adjacent forests or trees growing on their farms, constitute perhaps the world's biggest and most effective force for improved rural livelihoods and sustainability. They face fast-changing pressures. Many are likely to find it useful to have an organisational goal of contributing to climate resilient landscapes. Various international programmes can help in understanding and supporting such contributions – especially through practical actions for climate adaptation and mitigation, and forest restoration. 'Landscape approaches' are helpful for analysing the various connected issues, while context-specific politically-savvy planning is needed for effective action. This paper explores the possible motivations and actions for climate resilient landscapes amongst four different sorts of forest and farm producer organisations (FFPOs): indigenous peoples' organisations, community forest organisations, forest and farm producer groups, and processing groups in urban and peri-urban contexts. The Forest and Farm Facility (FFF) aims to help FFPOs to further develop and pursue such practical actions over the next five years.

IIED is a policy and action research organisation. We promote sustainable development to improve livelihoods and protect the environments on which these livelihoods are built. We specialise in linking local priorities to global challenges. IIED is based in London and works in Africa, Asia, Latin America, the Middle East and the Pacific, with some of the world's most vulnerable people. We work with them to strengthen their voice in the decision-making arenas that affect them – from village councils to international conventions.

International Institute for Environment and Development
80-86 Gray's Inn Road, London WC1X 8NH, UK
Tel: +44 (0)20 3463 7399
Fax: +44 (0)20 3514 9055
www.iied.org

Forest and Farm Facility is a partnership between:

Food and Agriculture Organization of the United Nations
iied
IUCN
AgriCord

Knowledge Products