On the Way

to Forest Landscape Restoration

ORO VERDE
Tropical Forest Foundation

Global Nature Fund

FINANCING, IMPLEMENTATION AND RECOMMENDATIONS

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Goal and approach

This study by OroVerde – Tropical Forest Foundation and the Global Nature Fund (GNF) gives an overview of existing Forest Landscape Restoration (FLR) Initiatives, their goals and the stakeholders involved. The project is financed by the Federal Agency for Nature Conservation with funds from the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. Recommendations were developed based on four case studies and expert interviews. For the case studies, projects with investments or donations from the private sector in South Africa (Commonland), Kenya (Livelihoods Carbon Fund), Peru (Althelia Climate Fund) and the Dominican Republic (Barrick Colinas Bajas) were visited and presented in separate publications. The analysis focuses in particular on the protection of biodiversity and the involvement of local communities and indigenous peoples. The financing aspect was considered separately and the involvement of the private sector was examined in this context. The emphasis is on promising solutions for common challenges in forest and landscape restoration.

The case study documents can be found here: www.oroverde.de/flr

Forest Landscape Restoration – a global challenge

Forests are of great importance for biodiversity, climate and the conservation of water and soil. However, the growing demand for food and other raw materials has consequences, with 75% of global land areas now degraded (IPBES 2018). Forest areas are being cleared, particularly for the production of palm oil, soybeans, beef, rubber, cocoa, wood and paper. This development endangers not only the immense wealth of animal and plant species, but also influences elementary ecosystem services such as climate functions, water quality and the pollination of flowering plants.

The economic impact on society is enormous. The global cost of land degradation is estimated at USD 23 trillion by 2050 (UNCCD 2018). The good news is that degraded land is not irreversibly lost and more than 2.2 billion hectares of land can be restored (Minnemeyer et al. 2011). A recent study by the Swiss Federal Institute of Technology in Zurich (ETH Zurich) (Bastin et.al. 2019) has found that there is global potential for the reforestation of 0.9 billion hectares which can significantly contribute to global climate protection. The ETH Zurich is urgently calling for timely measures to prevent the climate crisis.

In addition to the restoration of forests and landscapes, the protection of existing forests is just as important for the climate and humanity. The above-mentioned drivers of deforestation must be stopped as forest landscape restoration itself does not tackle the causes of the problem and it takes too long to show any significant, positive effects.

The international community has launched a number of initiatives, such as the **Bonn Challenge** and the **New York Declaration on Forests (NYDF)**, to address the issue of deforestation and degradation. However, the actual implementation and effectiveness of forest landscape restoration and the success of climate protection initiatives remain unclear. In particular, implementation at a local level and the associated ecological and social impact have so far received little attention. In addition, there is a lack of funding for the restoration of forest landscapes.

In this study, OroVerde – Tropical Forest Foundation and the Global Nature Fund analysed various initiatives for the restoration of forests and landscapes using private funding and identified important success factors of the individual measures.

Cooperation between stakeholders from politics, the private sector, the financial sector, science and civil society is crucial for achieving international agreements.

The transformation of rainforests into pastures leads to the destruction of the ecosystem and the degradation of soils.

Agroforestry systems create new sources of income and reduce pressure on the rainforest in the Madre de Dios region of Peru.

How can the restoration of forests and landscapes work in the long term?

Currently, there is no internationally accepted definition of **Forest Landscape Restoration (FLR)**. The research for this study, the literature and case studies show that there are recurring aspects. For example, according to the Global Partnership on Forest and Landscape Restoration (GPFLR), **'forest and landscape restoration is the process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes. With FLR, a diverse range of stakeholders are brought together to identify, negotiate and implement practices that restore an agreed balance of ecological, social and economic benefits of forests and trees within a broad range of land uses[1]'.**

From the case studies and analysing the literature, the following important factors can be identified for long-term, successful Forest Landscape Restoration Initiatives[2].

Integration of cultural knowledge of farmers' groups and indigenous people into the planning process is of great importance.

Important factors for Forest Landscape Restoration Initiatives

Involvement of all stakeholders in a landscape and participatory governance

Forest landscape restoration actively involves stakeholders at different levels (including vulnerable groups) in planning, decision-making and implementation. *For example, in the case study in Colinas Bajas in the Dominican Republic, a general assembly was set up with all stakeholders in the landscape. This includes government representatives, farmers' associations and local communities.*

Restoration of diverse functions of forests and landscapes

Ecological, social and economic functions in a landscape are restored and ecosystem goods and services are produced, which several stakeholders benefit from. *In the Baviaanskloof case study in South Africa, ecological functions are being restored through regenerative agriculture and tree planting. Feed for the goats is cultivated in the valley so that ecologically valuable Spekboom trees can grow again on the mountain slopes. Farmers earn income from the production of essential oils.*

Preservation and regeneration of natural ecosystems

Forest and landscape restoration improves the conservation, recovery and sustainable management of forests and other ecosystems. The transformation or destruction of natural forests or other ecosystems must be avoided. *In the case study in the Dominican Republic, forests were restored in four phases according to the model forest concept. The measures aim at improving the living conditions of the population and reducing the pressure on the forest through human use. Diversified agroforestry with indigenous tree species contributes to this goal.*

1 http://www.forestlandscaperestoration.org/our-approach-landscape-approach, last access 20.11.2019.
2 See the Forest Landscape Restoration Fact Sheet for a more comprehensive description: www.globalnature.org/en/forest-landscape-restoration

Adaptation to local context

Forest landscape restoration uses approaches adapted to local social, cultural, economic and environmental values, and landscape history. *In the case study in Kenya, the local population on the foothill of Mount Elgon has been involved in dairy farming for a long time. By increasing the efficiency and use of agroforestry systems, the farmers now generate surpluses that sustainably meet the high demand for milk.*

Focus on the landscape

Forest and landscape restoration not only takes place in isolated locations, but in and over entire landscapes. It combines mosaics of land use and management practices. At a landscape level, ecological, social and economic aspects (ecosystems / habitats or economic areas) can be taken into account and different requirements and expectations for landscape use can be balanced. *In the South African case study, the landscape approach was implemented using Commonland's 4 Returns approach. This approach combines nature conservation, moderate use and the economic use of land in one landscape. This takes into account the different interests of stakeholders and enables sustainable land use, resulting in four types of returns (inspirational, social, natural and sustainable financial returns).*

Case study Dominican Republic: The model forest concept involves the various stakeholders in a participatory process and reduces pressure on the forest through human use. New tree seedlings are growing here.

Fig. 1: Forest landscape restoration connects different stakeholders and land use requirements in one landscape.

International regulations and global processes

In recent years, several international initiatives have been launched to restore degraded land and forests and improve adaptation to climate change.

The first initiative, the **Bonn Challenge**, was initiated at a meeting of environment ministers in Bonn in 2011. The initiative is a global effort to bring 150 million hectares of deforested and degraded land into restoration by 2020. The Bonn Challenge, launched by the German government together with the International Union for Conservation of Nature (IUCN) and the Global Partnership on Forest and Landscape Restoration (GPFLR), aims at the practical implementation of existing environmental and climate protection instruments. Another important milestone is the United Nations Strategic Plan for Forests – the **New York Declaration on Forests (NYDF)** – of 2014. The NYDF aims to halve deforestation by 2020, end the destruction of natural forests through the production of agricultural commodities (mainly palm oil, paper and beef) by 2030, and restore 350 million hectares of deforested and degraded land worldwide. The Bonn Challenge has meanwhile adopted this goal.

Forest restoration also contributes to achieving the **Sustainable Development Goals (SDG)** and, in particular, **SDG 15** "Protect, restore and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and

Fig. 2: Levels from the global community to the local implementation of forest landscape restoration

reverse land degradation and halt biodiversity loss". SDG 15.3 includes **"Land Degradation Neutrality" (LDN)**, which strives to achieve a land degradation-neutral world. The UN General Assembly adopted this in 2015. When restoring forests, it is important not to lose sight of the loss rate and degradation, as planting trees cannot compensate for the preservation of existing forests and their biodiversity. Figure 2 gives an overview of the various Forest Landscape Restoration Initiatives and stakeholders involved.

Nowadays, there are a number of international agreements and initiatives. Some with very ambitious and overlapping objectives in terms of forest restoration, biodiversity and climate. Dialogue between the individual initiatives and stakeholders is therefore essential to avoid establishing parallel structures in implementing these initiatives. At the various levels, this is still a challenge for all those involved.

Within the framework of the various agreements and initiatives, the participating countries are called upon to specify their goals for the restoration of forests (so-called pledges). In the planning and implementation phases, NGOs and development organisations provide countries with technical support and advice. The intention is to gather experience and share it with other countries. So far, a generally accepted **monitoring system** does not exist. Furthermore, it is difficult to obtain a general overview of measures currently being implemented, particularly at local level. The Food and Agriculture Organization of the United Nations (FAO) carries out an assessment of forest area (increases and losses) and forest conditions in over 200 countries. The results are published in the Global Forest Resources Assessments (FRA) every five years. In this context, the FAO has developed various instruments, such as Collect Earth (Open Foris)[3] for forest inventories. Countries and private partners can use these inventories after a short training period. Furthermore, there are various support tools, such as the Bonn Challenge Barometer (InfoFLR)[4] of IUCN or the Global Forest Watch website (Global Forest Watch)[5] of the World Resources Institute (WRI) and IUCN.

Measuring progress in the restoration of forests and landscapes is often based on voluntary feedback from the respective countries and other stakeholders. There is often a lack of technical quality assurance in relation to the protection of biodiversity and the involvement of the local population. There is also a risk that large-scale monoculture plantations will rank among the restoration initiatives. Here, criteria and standards can provide initial assistance to ensure the conservation of biodiversity and ecosystem services as well as the involvement of the local population in forest landscape restoration.

Implementation of SDGs in practice: In the Livelihoods Fund case study in Kenya, trees were planted to store carbon and fodder trees were cultivated to reduce open grazing areas.

3 http://www.openforis.org/tools/collect-earth.html
4 https://infoflr.org/
5 Global Forest Watch: https://bit.ly/2Puyo9k

Recommendations for: Implementation, financing and enabling environment

Effective implementation in the landscape

Projects and initiatives for forest landscape restoration are not always properly integrated into a functional and diverse landscape. This can lead to conflicts with non-involved stakeholders, contradict traditional land uses and divide ecological corridors. Ecosystem services such as water supply and erosion control can also be affected.

The range of measures available for the restoration of forests and landscapes is wide. These include small and very diverse agroforestry systems with native species, projects for natural regeneration or measures for sustainable / regenerative agriculture combined with tree plantations. Currently, however, monoculture plantations with non-native, high-quality timber combined with the protected forest areas are also among them. The involvement of local stakeholders is just as diverse as the ecological design. Their involvement in planning and decision-making processes is a key success factor.

In workshops, groups of farmers in Colinas Bajas, Dominican Republic, are given the necessary knowledge for reforestation on their land. The wood will generate income in a few years' time.

Furthermore, economic profitability is of crucial importance for long-term success. When local people associate economic benefits or improvements in their living conditions with the restoration of landscapes, they are willing to take risks and change old behaviour patterns. Many measures therefore integrate the development of agroforestry systems. These offer various opportunities to generate income, for example from the sale of cocoa, coffee, bananas, fruit or wood, and reduce the pressure on existing natural forests. Since the project implementers are mostly environmental organisations, there is not always sufficient economic expertise available to develop business cases, establish value chains and manage companies and cooperatives.

Another crucial aspect in convincing communities and smallholders of landscape restoration measures is a balanced distribution of risks. (Smallholder) farmers often take great risks if they refrain from their traditional economic activities. They have to learn new practices and overcome temporary income losses. Further risks are associated with taking out loans, which are often not granted in the local currency in the case of investments from abroad. This means that the local project developer or smallholder farmer also bears the risk of exchange rate fluctuations. If international markets are supplied, for example through the sale of cocoa, this also creates a dependency on market developments that are difficult to predict.

Recommendations for project developers and investors

- The **landscape approach** should be an integral part of planning and implementing forest restoration in order to ensure the involvement of different stakeholders and their expectations and to preserve different ecosystem services. It is important to build diverse systems resilient to climate change and other external factors in order to ensure long-term conservation. In addition, a relationship of trust between the project developers and the local people and mutual appreciation are key success factors of the project. There are a range of tools and concepts available online that facilitate implementation (e. g. ROAM[6]; FPIC[7]).
- **Strengthening economic expertise** at local non-governmental organisations and farmers' cooperatives as well as at state advisory centres is an important factor in developing more sustainable enterprises and value chains.

6 ROAM (The Restoration Opportunities Assessment Methodology) is a framework for countries to identify and analyse areas that are primed for forest landscape restoration. https://www.iucn.org/theme/forests/our-work/forest-landscape-restoration/restoration-opportunities-assessment-methodology-roam

7 FPIC (Free, prior and informed consent) is a specific right that pertains to indigenous people. It allows them to give or withhold consent to a project that may affect them or their territories. http://www.fao.org/indigenous-peoples/our-pillars/fpic/en/

- When designing investments in forest and landscape restoration, the risk must be fairly shared **between the investor and the smallholder**. Project implementers should identify the farmers' economic risks and communicate them transparently to the investor. In some cases, the risks for smallholder farmers are reduced by offering in-kind packages and training instead of loans. In addition, a project duration and an investor commitment of more than 10 years provides greater security and creates confidence in the seriousness of the project. In the case of state participation as a risk buffer (so-called blended finance models), this should primarily be granted for the risks of the project implementers and smallholder farmers. Otherwise, strict requirements should be placed on risk sharing.

Supporting cooperatives enables the participation of disadvantaged groups and the strengthening of smallholder farmers' negotiating power in the Mount Elgon project in Kenya.

Legal framework and good governance

Corruption, weak institutions and unclear legal frameworks are often cited as the major national drivers of deforestation in tropical countries. It is therefore important to support these countries at a national level by strengthening the framework conditions for near-natural forest restoration, sustainable land management and policy coherence between agriculture and forestry. Investments from the private sector in rural regions require suitable framework conditions for profitable business models and incentives for sustainable management with products from forests and agroforestry systems. This includes certain aspects such as clarified land use rights and legal structures for the sale of timber and non-timber products. It takes several years for tree plantations and agroforestry systems to generate profits. The period from the time the forest is established to its use by harvesting products such as cocoa and coffee is at least four years and even longer for logging. It is also important to design laws and regulations in a way that creates favourable conditions for development-oriented and long-term, effective investments.

Recommendations for an enabling environment

- Support and clarification of **transparent land tenure and use rights**, especially to protect vulnerable groups from land dispossession or forced resettlement. This also facilitates access to loans. The implementation of the FAO's Voluntary Guidelines on the Responsible Governance of Land, Fisheries and Forests can support countries in this.
- **National financial incentive mechanisms for tree planting** are an interim solution for bridging the period from planting the trees to harvesting and using the products. They are a good instrument to support smallholder farmers in bridging this uneconomic phase. They also contribute to achieving national goals and promoting rural development. Flexibility is important to enable project implementers and smallholder organisations to adapt their planning when market and framework conditions change.

Political framework in Guatemala

In Guatemala, there are various political instruments and structures to promote forest restoration. Existing incentive mechanisms for forest protection and restoration have been integrated into the National Forest Landscape Restoration Strategy of 2015. For example, through the PROBOSQUE Law smallholder farmers can receive payments for the first few years of establishing and maintaining agroforestry systems.

At the same time, there are numerous legal hurdles for marketing forest products, especially from protected areas, while the commercialisation of products such as beef from deforested areas is much easier.

Lack of policy coherence and incentives for forest restoration can lead to the promotion of monoculture plantations.

- **The involvement of the local population** is essential for effective, long-term forest restoration. This allows traditions and cultural knowledge about cultivation methods and plant species to be incorporated into the process. When farmers' associations and indigenous groups are given a say, they commit themselves in the long term to the conservation and maintenance of the land. It is important to strengthen the population, so they can stand up for their own interests in future and contribute to the long-term preservation of their land in a functioning landscape.
- FLR is a landscape-based approach that involves a variety of stakeholders. This requires all those involved to rethink their actions to include cross-sectoral and cross-regional planning. In addition to integrated national round tables or other common platforms, changes in **education** are also important. Interdisciplinary education courses can also help.

Financing forests landscape restoration

Global initiatives and agreements, such as the Bonn Challenge, have been signed not only by states but also by civil society, indigenous peoples and private sector stakeholders. However, past commitments are not enough. Further funds from the private sector are therefore needed (Macqueen et al. 2018). Possible financiers include **institutional investors, foundations, companies, banks and private individuals**. In addition, stakeholders from industrialised countries as well as local investors have a direct interest in improving the ecosystems from which they obtain their products.

Private investors have very different interests and risk-return profiles. Some investors expect returns similar to those of traditional investment products, have short investment periods and are more willing to take risks. Institutional investors, such as pension funds, tend to seek stable returns and have long-term investment horizons. Private foundations or companies that invest as part of their corporate responsibility sometimes make donations or accept lower returns in order to achieve a social and ecological impact.

	Private foundations		Businesses	
Investment product	Donation	Impact Investment	Donation or Impact Investment in funds	Direct investment with and without company shares
Expected return	None	Capital preservation	None, moderate return or carbon credits	Projects with suppliers / Projects in sourcing regions
Risk tolerance	Very high	High	High	Moderate to high

Fig. 3: Simplified overview of private investments in forest landscape restoration

The agreements between investors, project developers and project implementers, the planning of measures and the due diligence process require financial and personnel resources and time (FAO 2018). This causes difficulties in reality, for example, due to the expectations of the investors. The project needs to be economically profitable for them in order to generate an appropriate return (Bor et al. 2018). This requires enabling structures and institutions. Functioning cooperatives that bundle the sale of products, processing, transportation and the necessary land use knowledge of smallholder farmers are of importance. A business plan, a track record, and often collateral and guarantees for increased risks are also required.

Many investors still focus on the economic return of the investment and the associated risks. Fund managers or project developers, however, are hardly in a position to determine the ecological and social return and thus demonstrate the positive impact. Therefore, it is difficult to create a holistic picture of the benefits of the investment. The same applies to the risks of the investment. The risk assessment and due diligence process of investors is largely based on economic indicators. Ecological and social criteria are currently hardly included in the risk assessment. Meaning that the potential of sustainable forms of land use to reduce risks and conflicts is not taken into account.

Investors, such as institutional investors or investment funds with high investment volumes, prefer to invest their capital in a small number of larger projects in order to keep administrative expenses and costs low. This poses major challenges for project developers, especially when smallholder farmers are involved and species-rich systems are established in the landscape. It is difficult to generate a high return with smallholder structures and species-rich systems in long-term projects. The reasons are the high coordination effort involved, the necessity of capacity building and the required differentiated knowledge of sustainable cultivation methods. Often the smallholder families themselves have an income below the subsistence minimum. Forming part of projects to develop forest and agroforestry systems could improve their livelihood. However, in this kind of projects high incomes for farmers and attractive returns for investors are rarely generated.

Heavily degraded areas require innovative financing ideas and investors with longer investment periods of at least ten years, as in the Baviaanskloof in South Africa.

Simple agricultural practices such as mulching do not require investment and improve soil quality and food production in the Mount Elgon project in Kenya.

Institutional investors	**Financial institutes**	**Wealthy individuals with mixed portfolios**
Funds or blended finance models with public money as a risk buffer	Loans, bonds	For FLR: blended finance, impact investments in funds, direct investments with or without shares, donations
Moderate to market return	Market return	For FLR rather low return
Low to moderate	Low to moderate	For FLR rather high

With the Mount Elgon Project in Kenya, the Livelihoods Carbon Fund is helping 30,000 farmers to increase their (agricultural) productivity and improve soil quality through sustainable practices.

Recommendations for financing forest landscape restoration

- Developing **innovative financing instruments** to also cover the **establishment of local structures** and projects. One possibility is the provision of funds for capacity building (Technical Facility) as well as independent funds to develop local structures. *Case Study: The Althelia Climate Fund is financing the establishment of a smallholder farmers' cooperative in Peru to process and sell cocoa from established agroforestry systems. An external manager supports the organisational development and capacity building.*
- In addition to improved monitoring of ecological and social aspects, research work is needed to determine **ecological and social returns** as well as the **risk reduction potential of forest and landscape restoration projects**. *Practical example: The Dutch &Green Fund has set itself the target of an ecological return of 5 million hectares of protected or restored tropical forest. The ecological return will be measured using transparent indicators.*
- **Realistic return expectations** are necessary for investors. Return rates of between two and four percent are more likely to be achieved than market returns. It is also helpful to include ecological and social returns as well as the fact that sustainable management can lead to reduced risks.
- **Financial support from investors for preparatory and initial phases as well as capacity building** is beneficial to speed up the process and enable the participation of local non-governmental implementers. It is important to restrict this support to initiatives that work with species-rich systems, conserve biodiversity and actively involve the local population. In addition, **technical support** is helpful for project implementers to enable the compilation of the relevant financial data. This provides investors with a realistic assessment of the ecological and social risks and positive impacts of forest landscape restoration.

The cultivation of rosemary mixed with other crops and the production of essential oils allow farmers to reduce livestock and provide land for landscape restoration in the Baviaanskloof in South Africa.

Outlook and recommendations for international debate

This study highlights key approaches for involving private sector investments in forest landscape restoration. In order to achieve the ambitious global goals, appropriate preconditions must be considered in the international debate. The following three general recommendations go beyond local implementation.

At an international level, the transferability and scalability of promising measures are often discussed. However, the case studies have shown that in many cases implementation is highly dependent on local conditions. This relates to ecological aspects such as the degree of degradation, precipitation patterns as well as social aspects and the living conditions of local people. In addition, the existence of infrastructure and legal frameworks as well as suitable implementation partners play decisive roles. This makes it difficult to transfer and scale promising measures.

FLR actors and investors come together at different levels (landscape, regional and national).

Recommendations for transferability and scalability

The development and targeted promotion of local partners with strong implementation capabilities and suitable capacities is crucial to achieve **transferability and scalability**. Government support for organisational development and the reduction of transaction costs in the initial phase are essential for implementing long-term measures.

For the dissemination and transfer of FLR measures, it is also necessary to clarify which measures are promising and positive in the long term for biodiversity and local communities. Monoculture plantations, which generate returns that can be easily determined and are supposedly low-risk, may make sense temporarily, but they cannot be seen as measures to rebuild functional landscapes. Therefore, not all local projects make a long-term contribution to restoring degraded areas and improving the living conditions of the local population. In some cases, economic interests, such as returns, take precedence over ecological and social functions and thus impair the long-term sustainability of the initiatives.

Recommendations for minimum requirements or exclusion criteria

To ensure that FLR Initiatives for the restoration of forests and landscapes at an international level do not risk becoming unreliable or meaningless, it is important to develop internationally recognised **minimum requirements or exclusion criteria** for the selection of promising FLR measures. These requirements and criteria should include the rights of local communities and indigenous peoples, consultation and participation processes, and environmental aspects, particularly in relation to natural forests and biodiversity, as is already the case in other **international safeguards.**

Most forest and landscape restoration projects are still in their initial stages. Their long-term ecological, social and economic effectiveness has not yet been proven. This also leads to the problem that less sustainable ideas are considered part of the FLR initiatives. Moreover, many project developers and investors do not sufficiently consider the post-investment phase.

Recommendations for sustainability and actual effectiveness

Ensuring the **sustainability and actual effectiveness** of projects must be given greater consideration. This needs to be an integral part of planning and in discussions on measures for the reforestation of biodiverse forests landscapes in cooperation with the local population. Therefore, stable value chains and lasting incomes for smallholder farmers need to be ensured. They must be able to sustain themselves after the project has ended. In addition, a monitoring scheme should prove the effectiveness of soil regeneration, resilience to climate change and the improvement of biodiversity.

Support programmes such as those in Guatemala are an important instrument to foster the development of agroforestry systems and reduce risks for farmers.

Appendix and imprint

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For reasons of better readability, we have decided to use the male form in this publication. However, this should not be understood discriminatory. We ask all women and girls to feel equally addressed.

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