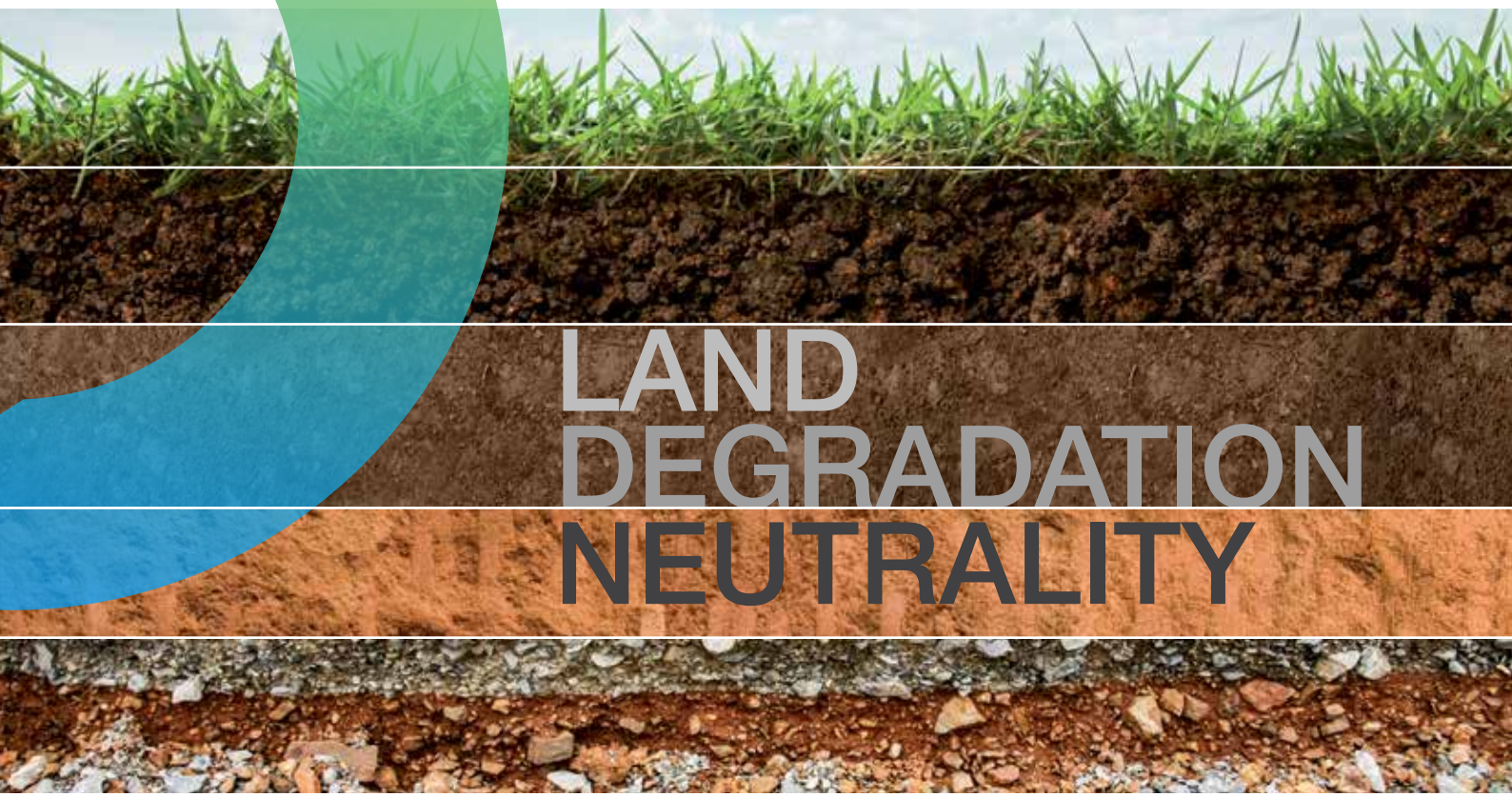
business solutions for a sustainable world



LAND DEGRADATION NEUTRALITY

A business perspective

wbcsd

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FOREWORD

Land resources, such as soil, water or biodiversity are the foundation of our economies and societies. However, 25% of usable land globally is degraded, at an estimated economic loss of US$ 40 billion per year. Agriculture is an important driver of land degradation, responsible for approximately 80% of deforestation worldwide.

But there are more pressures on land than just agriculture. Many industry sectors use land to meet the infrastructure needs that result from increased urbanization. In the developed world, 2% to 7% of land is now buried under concrete while the land area that is available for other uses is in constant decline.

The urgency of addressing this challenge is increasingly acknowledged by governments worldwide. Yet building a world that is land degradation neutral will require the support of business to reverse this negative trend and scale up sustainable land management.

Land degradation can directly impact a company's cost structure and profitability by affecting the availability and cost of its resources, among other factors. Land degradation neutrality therefore needs to be recognized as an investment that can help companies sustain their operations in the long run.

There are huge opportunities worldwide that could be leveraged by companies and society as a whole. As much as 2 billion hectares of degraded land have the potential for restoration, an area larger than South America. The adoption of sustainable land management is estimated to deliver up to US$ 1.4 trillion in increased crop production globally. Additionally, restoring the 10 to 12 million hectares that are degraded every year could secure the cost-efficient sequestration of 20% of global CO2 emissions over two decades.

It is time for a clear framework to be put in place to help business engage and contribute to land degradation neutrality. This publication, supported by inspiring examples of business action, outlines how businesses can finance and implement sustainable practices that support land degradation neutrality in their own operations as well as their extended supply chains.

Through our collaboration with the United Nations Convention to Combat Desertification (UNCCD), the WBCSD supports companies in scaling up efforts towards land degradation neutrality. We believe that this work will be instrumental in bringing the business voice to the 12th Conference of the Parties (COP12) to the UNCCD in Ankara in October 2015.

Peter Bakker, President & CEO, WBCSD

INTRODUCTION

Healthy landscapes are the foundation of basic human needs. They provide a wide range of ecosystem goods and services, such as food, fiber, fuel, access to freshwater, habitats for biodiversity, space for recreation and living, the cycling of soil nutrients, and carbon storage. Land that is managed sustainably is an important natural asset for economic growth and social prosperity. However, with one-fourth of the world's usable land being degraded, resulting in an economic loss of around US$ 40 billion every year,[1] land degradation is a major challenge facing the world today.

The concept of land degradation neutrality (LDN) was first introduced by the United Nations Convention to Combat Desertification (UNCCD) and accepted by the international community during the Rio+20 conference in 2012. Signatories to the Rio+20 outcome document, "The Future We Want", recognized the need for urgent action to reverse land degradation and the need to work towards a land degradation-neutral world in the context of sustainable development.

As a result, LDN is now reflected in the Sustainable Development Goals (SDGs) adopted by the United Nations General Assembly in September 2015.[2] Goal 15 calls to *"[p]rotect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss"*. Corresponding target 15.3 on land degradation states the following: *"By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation-neutral world."*[3]

An intergovernmental process has approved the framework that will, by 2030, guide the transition to LDN for governments and, as a result, civil society and business. In October 2015, the 12th UNCCD Conference of the Parties (COP12) will take place in Ankara and is expected to adopt LDN as a voluntary target. The decision is likely to be followed by a number of countries establishing their own national targets.

The Ecosystems and Landscape Management Cluster of the World Business Council for Sustainable Development (WBCSD) has engaged in the discussion around LDN by establishing the Land Degradation Neutrality for Business initiative. The ultimate purpose of the initiative is to engage business in the process of translating the LDN concept into concrete action and to clarify the business contribution to the LDN target.

Within this context, and with the support of a group of some 20 multinational companies, the WBCSD is implementing a set of activities in the run up to the UNCCD COP12. These include the development of briefing notes and papers that aim to inform and drive the process. This paper is one of the outputs of this work. It is based on consultations, interviews with stakeholders, case studies and a literature review. In particular, the WBCSD interviewed 10 companies from various sectors (agriculture, forestry, mining, energy, chemicals) and 6 institutions (research institutes, international non-governmental organizations (NGOs) and international organizations) in May and June 2015 to collect their perspectives on the role of business in achieving LDN. These interviews helped confirm and complement some of the findings of the literature review conducted in parallel.

This publication, which is targeted at private and public decision-makers, aims to provide a business perspective on the LDN target and what it will take to scale it up. It is based on the assumption that business has an important role to play in moving the world towards land degradation neutrality and explores how LDN can be implemented in a company's direct and indirect areas of influence.

1. HOW TO IMPLEMENT LAND DEGRADATION NEUTRALITY

1.1. TOWARDS A LAND DEGRADATION NEUTRAL WORLD

The Sustainable Development Goals (SDGs) offer a plan of action for people, planet and prosperity. Land resources underpin all of these aspects. Sustainably managed land contributes to food security and economic growth (people), protects the planet from degradation (planet), and is a foundation for economic, social and technological progress in harmony with nature (prosperity). Land degradation neutrality (LDN) is identified as one important avenue to secure sustainable global development.

The objective of LDN is to maintain or even improve the amount of ecologically healthy and productive land resources over time, and to do it in line with national sustainable development priorities.

LDN is a target that can be implemented at local, national and even regional scales.[4] In many instances this will translate into comprehensive national, institutional and corporate strategies that embrace complementary activities. These can include the adoption of sustainable land management and holistic land-use planning, the rehabilitation of degraded land for production, as well as the restoration of natural and semi-natural ecosystems that provide valuable functions and benefits.[5] LDN is, however, not envisaged as a "license to degrade" or a compensation mechanism that aims to restore the productivity of one area of land to offset degradation that has taken place elsewhere.[6]

Reaching LDN will have multiple environmental benefits. Land is, for example, an important carbon sink and can significantly contribute to climate change mitigation and adaptation if managed appropriately. Sustainably managed landscapes are also important habitats contributing to conserving biodiversity. Sustainable land management practices improve water quality, significantly enhance water retention capacity, and consequently help replenish and elevate the water table.

Businesses, through their operations, impact land and depend on land according to their business model. Engaging in LDN can in fact be an opportunity for companies to ensure sustainable and environmentally sound production and value chains.

A number of factors need to be in place for companies to become land degradation neutral and contribute to national or global LDN targets. This includes sufficient funding as well as accountability in terms of clear monitoring and reporting frameworks. Building on other relevant sustainability targets and initiatives may also enable and support company engagement.

1.2. APPLYING LDN AT A COUNTRY AND BUSINESS LEVEL

Countries committing to LDN will have to set their own voluntary targets and integrate LDN into national plans and strategies, such as their UNCCD national action plan. These plans and strategies will have to be informed by data and an analysis of the key challenges and opportunities related to land management, which will help identify the baseline as well as critical actions to implement. The UNCCD has presented possible options for governments to implement. A number of them may also be relevant for companies that are considering setting their own LDN targets or contributing to national ones (see table 1).

A business can choose to support national or sub-national targets. It can also decide to adopt LDN targets for its own operations as well as its entire supply chain by first and foremost:

- Adopting sustainable land management practices and land-use planning in order to minimize current, and avoid future, land degradation. This could, for example, include sustainable agriculture such as conservation agriculture and agroforestry, sustainable forest management, biodiversity and ecosystem conservation, watershed protection, wastewater treatment, reduction/avoidance of waste sent to landfill, and pest and disease control. In addition, the use of renewable energy from wind, solar or biomass, and investments in sustainable tourism and natural infrastructure can be part of an integrated land-use plan.

If there is no room to further minimize and avoid land degradation through sustainable land management, the next best option would be:

- Rehabilitating degraded and abandoned production lands and restoring degraded natural and semi-natural ecosystems that provide vital, albeit indirect, benefits to business, people and landscapes.

For companies using land directly in their operations, these measures can be implemented as part of their core activities. The indirect users of land, such as companies sourcing raw materials from direct land users, may need to engage through their supply chain. They can, for example, set requirements from their suppliers, support the scaling up or continuation of proven sustainable land management practices by farmers, or support the creation of buffer zones for large-scale production fields.

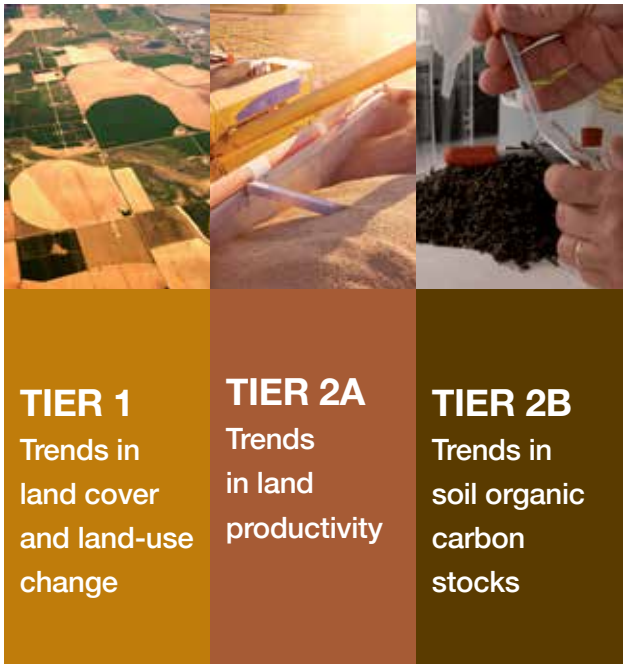
Table 1. UNCCD recommendations for national LDN action plans[7]

	RECOMMENDATIONS
1	Define the **spatial scales and functional** units for LDN implementation.
2	Assess the **type and extent and diagnose the degree** of land degradation in order to establish baselines.
3	Identify the **drivers of land degradation** and ways to reduce or eliminate them.
4	Identify and implement **land management practices** based on the assessments, diagnosis and persistence of drivers.
5	Develop and implement **monitoring and evaluation systems**, including methodologies and indicators for assessing progress towards LDN and its benefits.
6	Establish **policy and national governance frameworks** that put in place the legal instruments, institutional and technical capacities and incentive mechanisms, and facilitate engagement and partnerships.
7	Incorporate LDN-recommended options into **national sustainable development strategies and other relevant plans and programs** to ensure multi-sectoral cooperation, including synergies with biodiversity conservation and climate change adaptation [and mitigation] and the adequate flow of financial resources.
8	Leverage and share **traditional and local knowledge**, as well as modern **technologies, best practices, experiences and lessons learned** from relevant projects and programs, including drought resilience, preparedness and mitigation.
9	Develop comprehensive **public awareness and education strategies** at all levels to effectively promote and communicate sustainable land use and management with all stakeholders, especially youth and rural women, who play a critical role in enhancing sustainable agriculture and rural development, as well as local and indigenous communities.

When investing in sustainable land management and land rehabilitation, companies should also take into account the interconnectivity of different land uses and adopt a landscape-level approach. This means looking beyond the borders of individual plantations or production sites to understand how the various uses of land (e.g. agriculture, pasture, forestry, mining and residential, among others) affect each other with respect to the provision of water and causes of biodiversity loss, reduced productivity, or deforestation and land degradation.

To identify what areas are suitable for restoration, the Restoration Opportunities Assessment Methodology (ROAM),[8] produced by the International Union for Conservation of Nature (IUCN) and the World Resources Institute, may prove useful. The tool is a flexible and affordable framework approach to rapidly identify and analyze forest landscape restoration potential and locate specific areas of opportunity at a national or sub-national level.

Figure 1. LDN indicators



1.3. MEASURING LAND DEGRADATION NEUTRALITY

Companies will need clearly defined indicators to be able to measure progress against LDN-related targets. Identifying data and methodologies to assess baselines and improvements in land health will be critical in this process.

INDICATORS

The UNCCD secretariat has identified three potential indicators to measure progress towards LDN targets (see figure 1 on LDN indicators). A tiered system has been proposed with each succeeding tier providing more in-depth analysis and explanation of the data in the previous tier. This indicator framework for LDN is currently being tested in 14 countries in collaboration with the UNCCD. Findings thus far show that governments may already have sufficient data available or that they can access the data required to prepare the national LDN target; hence, collecting new data or conducting new analysis may not be necessary.[9]

The variety of domestic situations each country faces in addressing land degradation issues will result in largely diverse national LDN monitoring systems. However, it is expected that the proposed set of three indicators and the related methodologies could be used in a consistent manner.

HOW CAN COMPANIES MONITOR AND MEASURE IMPACT?

Companies that have chosen to contribute to a country's national target could either leverage the LDN monitoring framework being tested by the UNCCD and proposed within the SDG process or develop their own indicators and metrics if the UNCCD LDN monitoring framework is not fit for purpose. Companies may, for example, consider developing slightly different key performance indicators for internal decision-making and for external communication purposes. Even if specific company indicators are required, the proposed UNCCD set of indicators and related methodologies and metrics could still serve as a basis for company monitoring frameworks.

Companies that are already monitoring their sustainability performance may in fact be using indicators and metrics that are relevant for LDN monitoring. For example, Veolia has developed technical solutions to help its customers monitor their use of water resources—the Water Impact Index (WIIX)—which could be used by a wide range of companies.[10] Syngenta encourages farmers to adopt good soil management and use practices that help to improve soil productivity over a long period (ref. LDN Tier 2a indicator on land productivity) and has established a monitoring system measuring the impact of the company's Good Growth Plan as outlined in box 1.

BOX 1.

Syngenta: Measuring the impact of the Good Growth Plan[11]

Syngenta has made six commitments in its Good Growth Plan. The Plan considers the resource efficiency that must underpin current productivity; the ecosystem resilience necessary to sustain future productivity; and the far-reaching knowledge transfer needed to support and strengthen rural communities. The company, together with growers and partners, has created a process to measure and report progress on all six commitments:

1. **Make crops more efficient** by increasing the average productivity of the world's major crops by 20% without using more land, water or other agri-inputs. To monitor progress of this target, farms in Syngenta's network measure:

- Land productivity—tonnes of crop production per hectare;
- Nutrient efficiency—tonnes of crop production per kilogram applied;
- Pesticide efficiency—tonnes of crop produced per kilogram applied;
- Application efficiency—tonnes of crop production per number of applications;
- Water efficiency—tonnes of crop production per liter of water applied;
- Labor efficiency— tonnes of crop production per hour of labor;
- Energy efficiency—tonnes of crop production per joule used.

2. **Rescue more farmland** by improving soil fertility on 10 million hectares of farmland. Syngenta promotes projects and educational opportunities to help growers work the land in a way that safeguards soil health and fertility over a long period. The focus is on helping farmers adopt conservation agriculture practices and hence on measuring the number of hectares of farmland that are benefited by:

- Minimum soil disturbance;
- Crop rotation;
- Permanent soil cover—with crop residues or cover crops.

3. **Help biodiversity flourish** by enhancing the biodiversity of 5 million hectares of farmland. To roll out this commitment, Syngenta identifies priority programs, targets and protocols to implement projects to enhance biodiversity in agricultural landscapes. The company measures and reports hectares of farmland benefited by following biodiversity enhancement practices:

- Multi-functional field margins;
- In-situ conservation of crop wild relatives;
- Managed forests;
- Agro-forestry;
- Biodiversity friendly practices—other farming practices that support ecosystem resilience and ecological interactions between farmed and unfarmed areas.

4. **Empower smallholders** by reaching 20 million smallholders and enable them to increase productivity by 50%. To measure this, Syngenta counts the:

- Number of smallholders reached indirectly through sales of company products;
- Number of smallholders reached directly through capacity building engagements.

5. **Help people stay safe** by training 20 million farm workers on labor safety, especially in developing countries. Syngenta measures the:

- Number of people attending training sessions;
- Number of reported accidents and health incidents.

6. **Look after every worker** by striving for fair labor conditions throughout the entire supply chain network. Production teams visit farms regularly for quality assessments, including monitoring labor standards. The Fair Labour Association conducts independent external monitoring, such as random farm-level assessments of working conditions, and requires corrective action plans and public reporting.

1.4. FINANCING LAND DEGRADATION NEUTRALITY

Transitioning to a land degradation neutral economy requires an enabling regulatory framework and significant investments. Under the right conditions, the returns from these investments can become significant. This, in turn, will stimulate replication, favorable policies and more investment opportunities. Investments in land rehabilitation and restoration are still new and relatively untested at large spatial and temporal scales. It is therefore necessary to develop cost-effective business models with the potential to be scaled up.[12]

Investors and shareholders are increasingly paying attention to environmental, social and governance (ESG) factors and are in many cases putting pressure on business to change their practices. There is also a growing impact investment community actively targeting projects that have positive effects. Despite this positive trend, companies in the forestry sector with environmental and socially viable business models, for example, report that it is challenging to attract long-term finance at reasonable prices to scale up small to medium-sized projects, despite the fact that they can show good results and above market return on investments. This is linked to the long-term nature of these projects (could be 20 years or more). Long-term capital is needed and few investors are ready to take a 10-to-15-year risk on a new investment model.

From the interviews carried out for this paper, it appears that activities such as rehabilitation or restoration are commonly funded through corporate social responsibility or operational expense budgets, in particular when it comes to improving agricultural practices or implementing more transparent supply chains, for example.

AN EXAMPLE OF A FINANCE INSTRUMENT: THE LAND DEGRADATION NEUTRALITY FUND

The Land Degradation Neutrality Fund is an investment vehicle for blended finance being established under the auspices of the UNCCD with the specific objective of supporting the transition to LDN through land rehabilitation while generating revenues for investors from sustainable production on rehabilitated land.

The Fund aims to enable the scaling up of viable business models based on rehabilitated land that generates suitable financial returns while contributing to broader food, water and energy security goals, as well as social goals.

Its objective is to bring added value to existing international commitments via a landscape approach that considers all the sectors relevant to land restoration, including sustainable low-input and regenerative agriculture, livestock and agroforestry, sustainable forestry, renewable energy, infrastructure, eco-tourism, and more. The Fund also aims to support the creation of job opportunities.

The Fund will identify investment opportunities combining different sustainability criteria and ecosystem values, including climate regulation, biodiversity conservation, and social and economic welfare.

A typical Fund transaction has four phases;

1. Securing access to degraded land;
2. Rehabilitating the land;
3. Leasing out land for sustainable production or use; and
4. Releasing the rehabilitated land.

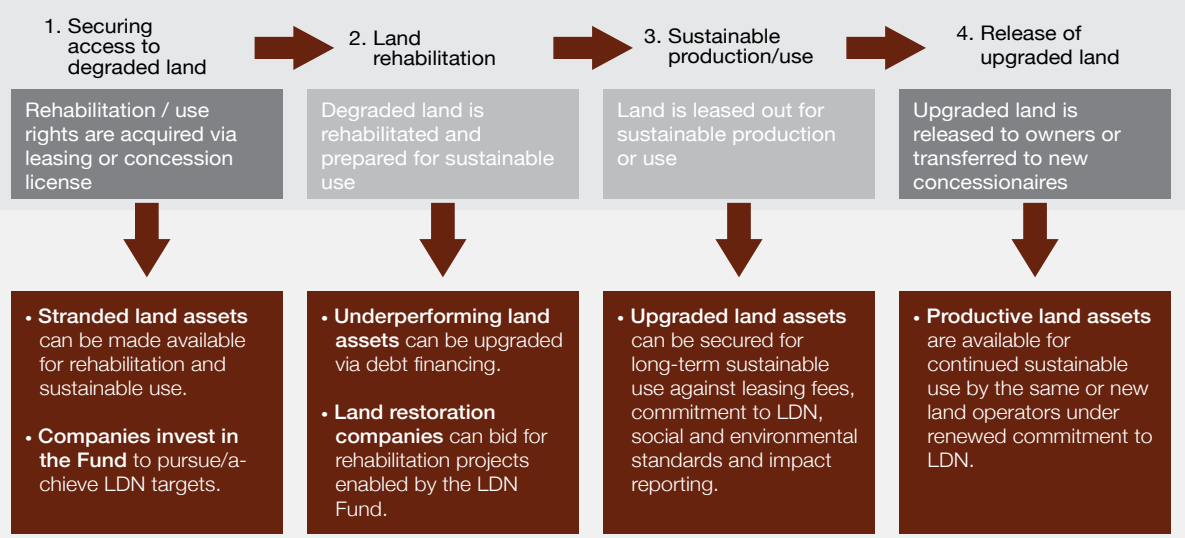
Companies can engage in each of these phases, depending on their financial needs, land materiality risk exposure and interests, as illustrated in figure 3.

Figure 2. The Land Degradation Neutrality Fund's indicative targets

	ANNUAL	20 YEARS
Mobilized	US$ 2bn	US$ 50bn
Rehabilitated	12m ha	300m ha
LDN Reached	5 countries	Worldwide
CO_2 Reduced	1 Gt	20 Gt

Source: Global Mechanism of the UNCCD

Figure 3. Land Degradation Neutrality Fund transaction phases and opportunities for business



OTHER FINANCING OPPORTUNITIES AND TRENDS

There are a number of public and private funds and financial mechanisms that have been established as sources of finance that could support efforts towards a land degradation neutral world. These include, for example:

- Public sources: the European Investment Bank Natural Capital Financing Facility (see box 2), the Green Climate Fund (http://news.gcfund.org), the Global Environment Facility (GEF- https://www.thegef.org/gef), various carbon funds and adaptation funds such as the Adaptation Fund (https://www.adaptation-fund.org) and the Nordic Development Fund (http://www.ndf.fi/about), the Global Agriculture Food Support Programme (GAFSP- http://www.gafspfund.org/content/about-gafsp), etc.
- Private sources: Pension funds, impact investor funds, and corporate impact investors, philanthropic giving and instruments such as green bonds. A new field of privately managed funds for land restoration is also emerging, such as the Althelia Climate Fund (https://althelia.com), the EcoEnterprises fund (http://www.ecoenterprisesfund.com), Lyme Timber (http://www.lymetimber.com), the Moringa fund (http://www.moringapartnership.com), and Permian Global (http://permianglobal.com/en).

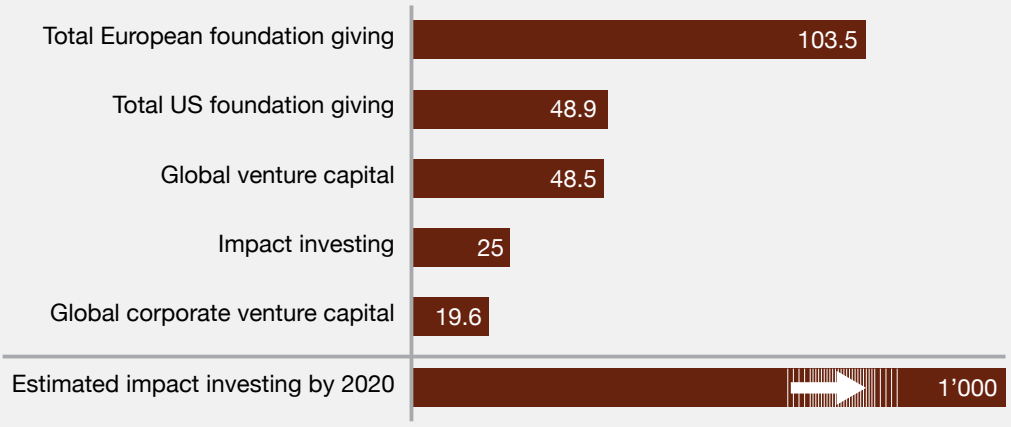
Philanthropic giving, impact investing and venture capital have been on the rise in the last decades and are estimated to reach US$ 1 trillion in total by 2020 (figure 4). This trend can provide important opportunities for LDN financing.

BOX 2.

The European Investment Bank Natural Capital Financing Facility[16]

The European Investment Bank Natural Capital Financing Facility (NCFF) is a newly established financial instrument providing innovative financial solutions to bankable projects that are generating revenues as well as promoting the conservation, restoration and management of natural capital. NCFF aims to demonstrate to investors the attractiveness of biodiversity, ecosystem services and nature-based climate adaptation projects for the longer term, in order to develop a sustainable flow of capital towards those projects and achieve scale. Projects which are at an advanced stage of development and which have the potential to be replicated within the European Union are being prioritized. Target projects are green infrastructure projects, payment for ecosystem services initiatives, and pro-biodiversity businesses.

Figure 4. Philanthropic giving, impact investing and corporate venture capital (2013, in US$ billion)[13]



BOX 3.

Investments with Impact: Scaling up sustainable livestock management in Kenya[17]

NatureVest, the impact investment unit of The Nature Conservancy sponsored by a number of companies and investors, has invested in the Livestock to Market project in Kenya. The investments are contributing to improved livelihoods for pastoralists and support the expansion of healthy habitats for wildlife in the Northern Rangelands of Kenya.The Northern Rangelands Trust in Kenya supports local cattle herding communities who agree to adhere to improved grazing practices, creating a local "conservancy" model. With a US$ 3.5 million impact investment from NatureVest, the Trust will be able to scale up its operations, allowing for better management and rejuvenation of 1.25 million acres of nutrient-rich grasslands and habitats for wildlife.

The establishment of green bond standards allowing investors to assess the environmental integrity of bonds could spur more companies to set up LDN-relevant projects. Eligibility criteria currently exist for wind and solar energy investments, bus rapid transit systems and low-carbon buildings and are being developed for water investments and agriculture and forestry investments.[14]

ESG-focused investor coalitions are putting growing pressure on economic sectors to adopt responsible practices, which may become an important driver of LDN. An example is the Norwegian government pension fund's divestment of US$ 314 million from palm oil producers that produce unsustainably.[15]

Some of the funding sources mentioned above are not available for larger companies but target micro-, small- and medium-sized enterprises (MSMEs) as receivers. They could, however, still be interesting partners for larger companies that are promoting increased environmental sustainability among small-scale suppliers, for instance. Options could include the development of joint bankable projects that support the development of green, climate friendly and socially responsible MSMEs. Large companies would benefit by securing products from environmentally sustainable MSME producers, while producers would have reliable buyers of their products and investors would achieve returns on their investments.

1.5. BUILDING BRIDGES BETWEEN COMPLEMENTARY INITIATIVES

Environmental and social sustainability considerations are currently high on international agendas. There are a number of global, regional and company initiatives and targets that aim to improve the sustainability of operations and supply chains. Many of them complement LDN, which by definition looks at all land uses and sectors and their trade-offs and impacts on the environment as well as society.

These include:

- Government-focused initiatives: The Bonn Challenge initiative (goal: restore 150 million hectares of deforested and degraded land by 2020) and the regional Initiative 20x20 which contributes to the Bonn Challenge (goal: restoring 20 million hectares of degraded land in Latin America and the Caribbean by 2020).
- Government and private sector-focused initiatives: New York Declaration on Forests (goal: 350 million hectares of forest restored by 2030, also incorporating the Bonn Challenge).
- Company targets: net positive impact, deforestation-free commitments, inclusive business models.

There are clear synergies between many of these initiatives. For example, there is a strong correlation between LDN and sustainably managed biodiversity, forest and water. Given the cross-cutting nature of land, rehabilitating the same hectare of land could contribute to several targets while supporting various credit markets[18] (e.g. carbon or water credits) that reward its sustainable use. Inclusive business models that offer goods, services and job opportunities to low-income communities could also contribute to LDN.

Although they all aim to drive more action, these initiatives can sometimes be perceived as overlapping and even competing. They can lack clarity about how and why business should engage. There is a need to build on the complementarities of these various efforts to maximize impact, ensure effective and efficient implementation and avoid creating fatigue among stakeholders due to the mushrooming of international targets and requirements.

Building bridges between the initiatives will enable companies and other stakeholders to ensure a more holistic landscape approach to environmental and social matters. By aligning frameworks, indicators and reporting requirements, it will be easier for companies to incorporate several targets and initiatives, including LDN, into their strategies and operations.

There is also a need to recognize that in some cases there may be trade-offs between targets. While there will also be synergies, the objectives and required action may differ. An example is competition for land. With the global population expected to increase 50% by 2050, combined with a likely per capita increase in consumption, it is projected that food production will need to be doubled or tripled.[19] In this context, forest restoration and biodiversity conservation are factors in the demand for land as they have the potential to reduce food production, increase food prices and create other unwanted consequences.[20] However, this is subject to debate as some experts argue that sustainable agriculture can feed the world population in 2050 without a large increase in land use,[21] indicating that there would be no specific trade-offs between conservation and production.

Adopting a landscape approach can in fact help tackle this challenge by managing multiple land uses in an integrated manner.[22] Taking into consideration both the natural environment and the human systems that depend on it can help stakeholders adopt the most appropriate investment opportunities and management plans.

Table 2 illustrates some of the commonalities and differences between business targets that have recently attracted attention globally—deforestation-free, no net loss and net positive impact—and LDN.

Table 2. Complementarities with LDN

TARGETS	DESCRIPTION	COMMONALITIES	DIFFERENCES
Deforestation-free targets	There are four important deforestation-free global targets:[23] • Zero deforestation, which means no forest areas are cleared or converted. • Zero net deforestation, which means no change to the total forested area of the geographic unit in question, but permits new forests to compensate for converted forests. There are different views on what type of new forest should be counted. • Zero gross deforestation, which means an end to conversion of all existing forestland, without considering offsetting gains in forest cover. • Zero illegal deforestation, which means no deforestation that is not governmentally sanctioned or that violates applicable legal instruments.	• One of the causes of land degradation is the reduction or loss of forest. The principal causes of land degradation and forest degradation/ deforestation are the same: unsustainable pastoral, farming and agro-pastoral land uses, often exacerbated by a lack of relevant policies. Increasing global demand for food puts pressure on land and forests.[24] Contributing to deforestation-free targets therefore also contributes to LDN. • Zero net deforestation leaves room for change in the configuration of the land-use mosaic, provided the net quantity, quality and carbon density of forests are maintained.[25] The same applies to LDN. • Confusion surrounds deforestation-free commitments. The four terms are often used interchangeably, and each does not have its own commonly accepted definition. This issue may be "inherited" by LDN since land also includes forest.	• LDN does not exclusively target deforestation and forest degradation but goes further. The objective of LDN is to maintain or even improve the amount of healthy and productive land resources over time, including forest as well as other land cover types (e.g. agricultural land, rangeland, etc.). It focuses on the productivity of land, hence a more utilitarian approach to land.
No net loss (NNL) and net positive impact (NPI) approaches	NNL and NPI are biodiversity goals for development projects. The biodiversity gains are achieved through compensation measures implemented in the project region.[26] Achieving an NNL or NPI goal for a given project ultimately means no net reduction in the: • Diversity within and among species and vegetation types; • Long–term viability of species and vegetation types; and, • Functioning of species assemblages and ecosystems, including ecological and evolutionary processes.	• Regardless of sector, the diversity, availability and functions of the species, vegetation types, ecosystem services and ecological processes that NNL/NPI goals aim to maintain or improve will in many cases also influence the health and productivity of land and soil. Rehabilitation/ restoration and sustainable land management contribute in many cases to increased biodiversity (e.g. conservation agriculture or forest restoration). Reaching NNL/ NPI will thus, in many cases, also contribute to LDN targets and vice versa. • The mitigation hierarchy approaches used for projects with NNL/NPI goals (avoid, minimize, restore, offset) may also be used for projects with LDN targets.	• The objectives differ. NNL/NPI targets aim to halt biodiversity loss, while LDN aims to halt the degradation of productive land and ecosystem functions and services. In some cases, these objectives may be reached in conflicting ways. An increase in land productivity may happen at the expense of biodiversity and priorities need to be set.

2. OPPORTUNITIES AND CHALLENGES FOR BUSINESS ENGAGEMENT

The key pathways to land degradation neutrality—sustainably managing land, ensuring holistic land-use planning, rehabilitating degraded and abandoned production lands, and restoring degraded natural and semi-natural ecosystems—should make sense to most companies that either have large impacts and/or are benefiting, either directly or indirectly, from the goods and services that productive land ecosystems provide.

A clear message emerging from the various consultations carried out and publications reviewed for this paper is that business is a fundamental partner to involve in initiatives aiming to achieve LDN. Scale cannot be achieved through philanthropy or public funding alone and business has to be part of the solution. In other words, governments and NGOs are calling for business engagement. But how does business see its engagement in LDN?

Most of the companies contributing to this paper find the LDN target relevant to their business regardless of their sector, as land degradation may negatively impact business activities in the future. In fact, many already see their operations working towards LDN in one way or another. While they may not label their efforts as LDN, much of the work they do to minimize their negative environmental and social footprints are indeed contributing either to reducing land degradation or restoring landscapes.

The concept of LDN and the realization that it can pay off are, however, relatively new. Companies and other stakeholders are still waiting to learn more about how this target can be translated into concrete strategy and action plans. While some say that LDN is a very compelling target, there is still some confusion about what land degradation and land restoration entail and what LDN would mean in their specific operational context. In particular, companies want to better understand what indicators to use to measure land degradation and monitor land restoration and what business models are the most suitable to reach the target. The development of a common understanding and thus a framework with a common language would be an important next step.

2.1. WHY SHOULD BUSINESS ENGAGE IN LAND DEGRADATION NEUTRALITY?

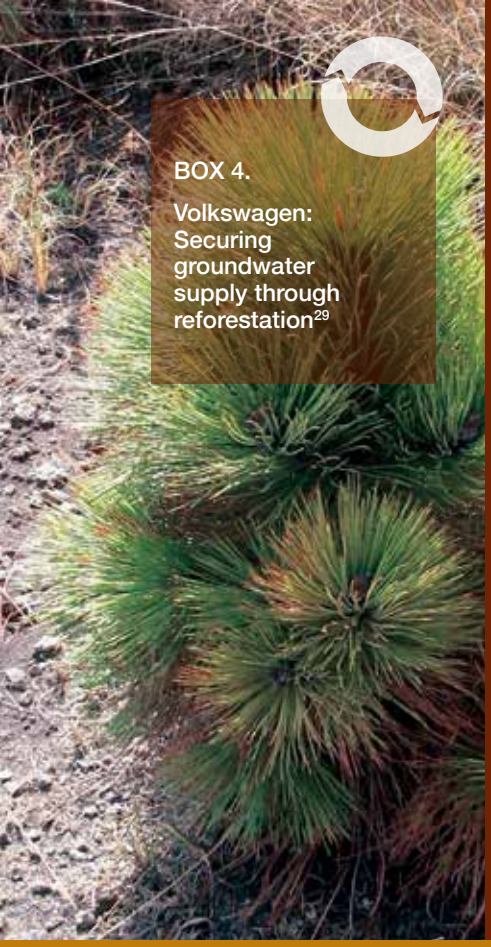
LDN should not be considered as a cost, but as an investment that can help companies sustain and even improve their operations in the long run. Adopting sustainable production methods can indeed yield significant returns. The following are some of the direct opportunities that come with the implementation of different land management approaches that contribute to LDN.

SECURING OPERATIONS THROUGH HEALTHY ECOSYSTEMS

Well-functioning ecosystems provide raw materials and a wide range of other services, which are key to business operations. Sustaining and restoring ecosystem functions can become economic activities[27] in themselves, while protecting, sustainably managing and restoring land assets can provide companies with a comparative advantage.

Healthy, productive landscapes and well-functioning ecosystem services are in particular critically important to:

- Companies with operations that directly depend upon productive land (e.g. agribusiness and forestry companies). Managing their land sustainably will help them maintain productivity and secure access to their means of production, including freshwater and clean air, or reduce exposure to natural hazards, such as floods, droughts, storm surges or landslides, all of which can be exacerbated by climate change.
- Companies sourcing raw materials or depending indirectly on land or ecosystem services provided by land for their product offerings (e.g. consumer goods companies, energy companies). Ensuring their suppliers manage land sustainably and that the ecosystem services provided by land are sustained will help reduce the risk of disruption in their supply chain and ensure future access to, and a higher quality of, raw materials (see, for example, the Volkswagen and Shell case studies in boxes 4 and 5).



BOX 4.

Volkswagen: Securing groundwater supply through reforestation[29]

Volkswagen de México operates a production plant in the Puebla Tlaxcala Valley. In this valley, the water supply is particularly critical and there is not enough freshwater for the growing city of Puebla and the industrial areas nearby.

As treating and recycling wastewater was not enough to secure a reliable supply of water for the company's operations, Volkswagen de México partnered with the Comisión Nacional de Áreas Naturales Protegidas and established the Izta-Popo project to help secure a sustainable supply of water for the local population and future plant operations. Analysis found that groundwater replenishment in the Puebla Tlaxcala valley was highly contingent upon the functioning of the ecosystems on the volcanic slopes of the Popocatépetl and Iztaccíhuatl volcanos. Years of deforestation from illegal logging, livestock farming and fires had led to increased water runoff and loss of groundwater capture and storage in the water table.

The project therefore set as an objective to restore the functioning of the ecosystems on the volcanic slopes. Over six years, the project planted 490,000 trees and established 91,000 pits and 430 earthen banks to preserve water, feeding more than 1,300,000 cubic meters of additional water per year into the ground reserves, which is significantly more groundwater than Volkswagen de México itself consumes every year. In the long term, the trees will also sequester CO2 and improve biodiversity. The additional water supply supports Volkswagen de México's long-term operations in the region.

BOX 5.

Shell and The Nature Conservancy: Assessing the benefits of investing in natural infrastructure[30]

Soil and marshland erosion around oil and gas pipelines located on or near shorelines is a chronic concern for oil and gas companies. In Ship Shoal, Louisiana, USA, Shell and The Nature Conservancy have designed a pilot project that aims to control shoreline erosion using natural infrastructure. The objective is to better understand the relative costs of using natural infrastructure and test the hypothesis that it is more cost effective than manmade infrastructure (hardened structures that armor and stabilize the shoreline; rock reinforcement, wood and metal structures, and sand or cement bags to slow erosion).

The traditional manmade approaches can be costly due to maintenance and the risk of boat traffic damaging the pipelines. They also damage natural habitats. On the contrary, natural infrastructure solutions are expected to require lower initial capital costs and maintenance costs as they are self-sustaining. Historically, natural infrastructure installations, such as oyster reef breakwaters, have cost approximately US$ 1 million per mile versus US$ 1.5 million to 3 million per mile to install traditional manmade rock barriers. Oyster reefs have the ability to create a natural buffer to protect the shoreline and pipeline from erosion. They have the dynamic capacity to repair themselves after storms and adapt to changing conditions such as rising sea levels, and provide important ecosystem services such as improved water quality and increased biodiversity and fish populations.

- Companies with a high impact on land (e.g. extractive sector). Minimizing their footprint through the adoption of the mitigation hierarchy can, for example, reduce regulation or reputational risks that companies may face when extracting resources from land.[28]
- Additionally, companies from the service industry, such as finance and insurance companies, also indirectly depend upon healthy ecosystems, as the performance of the businesses they are financing or insuring depends directly on the way these businesses manage their land impacts and dependencies.

REINFORCING COMPANIES' SUSTAINABILITY TARGETS

Because land management is a cross-cutting issue, the adoption of an LDN target can contribute to companies' efforts in reaching other complementary targets, such as emissions reduction targets or deforestation-free targets.[31] For example, sustainably managed land can be a significant carbon sink and can contribute to climate change mitigation targets. Land rehabilitation activities can also contribute to achieving biodiversity conservation objectives such as no net loss or net positive impact targets (see also section 1.5).

SECURING ACCESS TO MARKETS AND LICENSE TO OPERATE

Setting an LDN target for their operations and supply chains can help companies respond to growing demand for sustainable products, thereby strengthening consumer confidence in their product offerings while positioning themselves as responsible companies.

Figure 5. Company targets

- **L'Oréal Group:** 100% of the group's products are to have a positive environmental or social benefit by 2020.

  See http://www.sharingbeautywithall.com/en/our-commitments/index

- **Nestlé** commits, in its Policy on Environmental Sustainability, to "ensur[ing] that all its raw materials sourced from forested areas have not led to deforestation". Its Responsible Sourcing Guidelines specify that no products will be sourced from areas converted from natural forests.

  See http://www.nestle.com/asset-library/documents/library/documents/corporate_social_responsibility/commitment-on-deforestation-2013.pdf.

- **The Consumer Goods Forum,** representing 400 global brands and retailers has committed to mobilizing resources within their respective businesses to help achieve zero net deforestation by 2020.

  See http://www.theconsumergoodsforum.com/

BOX 6.

Réseau de Transport d'Électricté: Peatland Restoration Project—Reducing operation costs and improving relations with local communities[34]

Réseau de Transport d'Électricté (RTE) manages the French electricity transmission network and ensures the smooth functioning and safety of the electricity system. RTE electricity lines go through Ardennes, a vast and dense forest in northeastern France. To secure electricity supplies, vegetation management must prevent contact between trees and cables.

In this context, RTE has established a peatland restoration project in collaboration with partners. The objective is to restore peatlands located under overhead powerlines to encourage the return of specific plants and animals, restore their provision of ecosystem services and reduce the costs of maintaining the powerlines. Although an initial investment was required, the site does not require maintenance by RTE when peatlands are restored. A cost-benefit analysis of the project showed a 50% reduction in vegetation management costs over 30 years.

Relations with local stakeholders have also improved as a result of the project. The enriched landscapes have enhanced the public's perception of vegetation management in the forest corridor, improving RTE's reputation.

Companies that find ways of communicating their efforts to improve their sustainability performance will be able to harness the ethically aware consumers of the future.[32] Businesses—particularly sector leaders and companies with well-known brands—can also play a significant role in promoting LDN and making it a recognized target. Practical involvement in land restoration and management also has a positive impact on bringing more purpose to company employees.

Another aspect to consider is the social license to operate, which refers to a local community's acceptance or approval of a company's project or ongoing presence in an area.[33] Adopting sustainable land management practices and engaging local communities in LDN efforts may be ways to strengthen a company's relations and acceptance by local communities (see box 6) and help retain its social license to operate. It can also help avoid potential legal costs due to litigation over conflicting land resources or competing land uses.

BENEFITS OF REHABILITATED LAND ASSETS

The establishment of national LDN targets as well as other related targets may change society's attitude towards degraded land and open up new mechanisms that make it more attractive for companies to invest in land rehabilitation. A number of the companies interviewed, for example those engaged in the production of biofuel, palm oil or pulp and paper, recognize that degraded areas can be transformed into valuable land assets for sustainable production. Establishing sustainable land-use activities in rehabilitated areas further contributes to LDN as it reduces pressure to convert additional ecosystems into agricultural land.

There are opportunities for governments to encourage these practices even further by differentiating between greenfield and brownfield sites. Greenfield sites are typically agricultural or forest land that is being considered for urban development. Brownfield sites are land previously used for industrial purposes or commercial uses and that may have been contaminated with hazardous waste or pollution and therefore degraded. These sites could be valued lower and thus provide an incentive for companies to lease or buy them for development instead of greenfield sites.

SUPPORTING SOCIAL STABILITY

In some countries, land degradation may lead to social instability due to increased competition for resources. Land restoration may in turn reduce the potential for such conflicts and therefore reduce direct (e.g. to consumers) and indirect (e.g. to company facilities or employees) business risks due to social instability.

Investing in sustainable land-use and landscape management—such as responsible food production, water management, forest management or land rehabilitation—can also support the creation of jobs locally and thereby halt migration and enhance both environmental and social security, resilience and stability in rural areas.

For example, a recent study estimates that the ecological restoration sector in the US directly employs about 126,000 workers and generates US$ 9.5 billion in economic output (sales) annually. This supports an additional 95,000 jobs and US$ 15 billion in economic output through indirect (business-to-business) linkages and increased household spending.[35] This new economy could represent a tremendous development opportunity in developing countries facing issues related to rural-urban migration. While more than half the world's population already lives in cities, migration to urban areas continues to be a global trend. For example, in sub-Saharan Africa alone, estimates show that the urban population will increase from 37% today to 55% by 2050[36] as people move away from their villages. There is thus a need to create more job opportunities in rural areas to reduce the impact of future migrations.

2.2. CHALLENGES ON THE JOURNEY TOWARDS LDN

There are inevitably some obstacles to overcome and issues to be resolved for companies to engage effectively in LDN. The following are some of the concerns identified through company interviews and the literature review.

A CONCEPT THAT NEEDS TO BE REFINED AND PILOT TESTED

LDN is an emerging concept and there is still some uncertainty about how it can and will work at global, national and local levels and how business can participate. The lack of clear criteria helping identify the elements that constitute land degradation, sustainable land use, restoration and rehabilitation can discourage business from engaging in LDN.

A common message from almost all the companies interviewed for this paper is that well-defined and credible, practical and measurable standards and regulations are needed to ensure a level playing field and encourage companies to engage in LDN. These should also be applicable and understandable to local landowners and land users so that they are encouraged to participate in and take ownership of restoring landscapes together with companies. Some companies also voiced concern that policies do not always encourage sustainable land

management, restoration or the implementation of sustainable action plans.

IS COMPENSATION AN ACCEPTABLE MECHANISM?

Adopting LDN as a target may be challenging for sectors that have a large land footprint and future expansion plans. Compensation for impacts may be a solution, although what is considered acceptable compensation is still not clear.

In this context, lessons can be drawn from the processes of implementing net positive impact (NPI) and no net loss (NNL) goals (see section 1.5). For these goals to be credibly achieved, they typically follow the mitigation hierarchy management approach. Within this framework, project developers are able to identify first and foremost those impacts that should be avoided (e.g. because there is no ability or capacity to compensate for them), then those that can be minimized, and those that will require restoration. Finally, developers must consider those impacts where additional actions may be required in order to compensate for residual negative impacts. Compensation measures are typically referred to as offsets.[37]

There are numerous options to first avoid and mitigate companies' impacts on land and thereby follow the mitigation hierarchy approach. For example, by sustainably intensifying operations on their current land, companies may limit the need for expansion. Creating buffer zones, ecological corridors and planning land use in such a way that biodiversity hot spots are connected and not fragmented may also reduce impacts (see APRIL Group case study in box 7).

REACHING SMALL-SCALE PRODUCERS

The size and complexity of raw material supply chains appear to be a barrier to improving the sustainability of practices on the ground. Enforcing new and sometimes more costly production methods, sustainability standards, rehabilitation requirements or regulations of small-scale suppliers may in some cases have negative social and economic consequences. Additionally, other barriers, such as limited access to finance, may hinder small farmers' engagement in LDN. Measures to reduce the risks of and barriers to contributing to LDN may be needed to enable small-scale producers to engage.

In particular, a lack of land ownership is often a disincentive for land users to invest in sustainable practices with long-term returns and is a key driver of land degradation. Companies need to be cautious about land tenure-related challenges, especially in countries where governance is weak and land conflicts are prevalent.

NEW BUSINESS MODELS TO BE EXPLORED

LDN may offer new business opportunities for certain sectors (see box 8), especially for companies developing solutions and innovations in sustainable land management and restoration technologies, such as ecological engineering and environmental consulting firms.

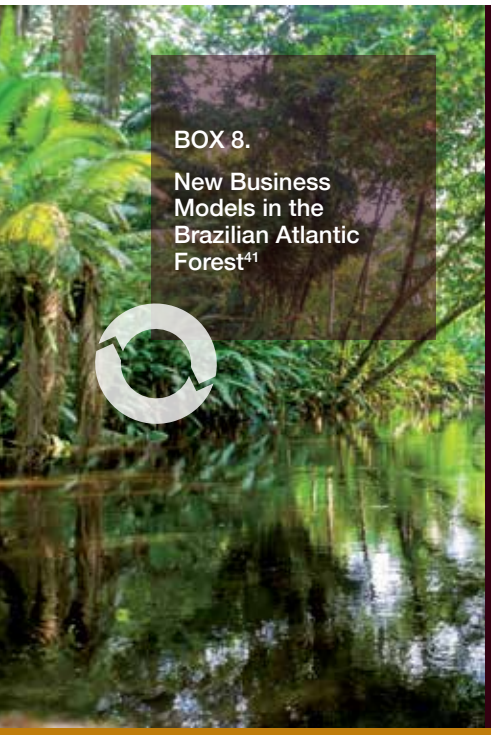
BOX 7.

APRIL Group: Advancing forest conservation and restoration through compensation for impacts[38]

APRIL Group is an integrated forestry, pulp and paper company operating mainly in Indonesia. Having gone through phases of lessons in its forestry and conservation approach, APRIL Group is now working towards achieving a 1-for-1 plantation-to-conservation goal: it is conserving and restoring one hectare of conservation forest for every hectare of plantation forest. APRIL Group has 480,000 hectares of plantation area, with 250,000 hectares of high conservation value (HCV) forest conserved and an additional 70,000 hectares under ecosystem restoration. Advancing towards its 1-for-1 plantation-to-conservation goal, the company currently has conservation and eco-restoration areas approaching 70% of the total plantation area. APRIL Group has also incorporated high carbon stock (HCS) assessment alongside HCV as part of its enhanced Sustainable Forest Management Policy (SFMP), with the objective of eliminating deforestation from its supply chain.

However, other sectors often see investing in land restoration/rehabilitation and sustainable land-use practices as a cost with an uncertain return on investment. Many companies are thus interested in better understanding the business model for restoration and what the lowest investment for the highest return is, whether it be yield increases or increases in water quality and quantity, for example. Land needs to be considered as an asset that will depreciate if it is degraded but will appreciate over time if managed appropriately.

Initiatives such as the UNCCD's Soil Leadership Academy (see box 9) have been established to share lessons and expertise in the field, and a number of financing mechanisms, such as the Land Degradation Neutrality Fund (see section 1.4), are currently being explored to support companies' investments in land restoration projects. It will also be important to train the next generation of business leaders on these new models and introduce new executive education curricula in business schools. Some initiatives are promising. For example, at Yale University, forestry and environmental education are combined with business education,[39] while Commonland is currently developing a business center on ecosystem restoration with the Rotterdam School of Management (Erasmus University).



BOX 8.

New Business Models in the Brazilian Atlantic Forest[41]

Centuries of deforestation and forest degradation have compromised the integrity of the Brazilian Atlantic Forest, where only 12% of the forest estate remains intact. In this context, the Atlantic Forest Restoration Pact was launched by environmental organizations, private companies, governments, researchers and landowners in 2009 with the aim of restoring 15 million hectares of forest by 2050 using native species.

In this context, new business models that improve land-use effectiveness and establish new sources of income are being explored. The 30.5 million hectares used as pastureland in the Atlantic forest is not effectively utilized and studies show that it is possible to double their productivity over the next three decades. By keeping the cattle stock at today's level, it is therefore possible to free up 15.3 million hectares for forest restoration—an area equivalent to the restoration goal of the Pact. Income from the timber harvested in restoration plantings may contribute to covering the opportunity costs of reducing land for cattle ranching. There is also the potential to increase the productivity of lands currently being used for agriculture and to rehabilitate unproductive pasturelands for agricultural uses. The restored tropical forests can help increase crop productivity since they harbor crop pollinators and natural enemies of pests.

BOX 9.

The UNCCD Soil Leadership Academy[40]

The UNCCD Soil Leadership Academy is an initiative that can directly support companies working towards LDN by sharing lessons and expertise. It is based on the concept of a public-private partnership between the UNCCD and the private sector, with the initial investment provided by Syngenta, and has the aim of building the capacity of key policy-makers and decision-makers on achieving LDN. The Academy aims to support the design and implementation of policies that lead to the prevention and rehabilitation of degraded land.

It engages stakeholders, initiatives, organizations, research institutes, universities and on-the-ground practitioners to share knowledge and expertise relevant to achieving LDN. Interactive and tailored training approaches, including an LDN policy development simulation tool to experience and test the reality of land and soil management choices, will be made available to private and public decision-makers worldwide. This approach is expected to motivate global LDN leadership by road-testing realistic policy-making paths, and challenging pre-conceived ideas on achieving LDN. The training encourages innovative policy solutions that aim to also achieve success in national or corporate priority areas; demonstrating that LDN does not amount to trade-offs in other sectors, but in reality strengthens them. Decision-makers will be proposed with tailor-made packages for their landscape and priorities, with follow-up support and knowledge products provided by members of the SLA's partnership network.

3. REACHING SCALE

A number of factors can support companies' adoption of land degradation neutrality targets and the implementation of related action plans. Some are internal enablers of scale while others depend on civil society and policy-makers. Overall, there may be a need for neutral brokers or facilitators to break down some institutional barriers to ensure public-private dialogue and collaboration, as well as to assure fairness and openness in negotiations. The following provides an overview of some of the factors that can help companies engage in bringing LDN to scale.

3.1. SECURING RETURN ON INVESTMENTS

Although sustainable land management, restoration and rehabilitation may be costly in the short term and therefore perceived as a constraint for companies, there are examples of profitable projects that have a balanced risk and return profile in the long term (see for example box 10). Such examples are typical where restoration revenues come from increased yields and/or from other returns such as carbon credits. The market currently does not often factor in land degradation as a cost or ecosystems as a value, which creates dissymmetry as unsustainable land-use practices are in fact often more profitable than sustainable ones. Once the cost of land degradation is factored in, land restoration will no longer be perceived as an additional burden but rather as a maintenance practice to preserve its value and function, as with any other asset.

Governments need to design policies that create a level playing field for LDN-smart solutions to make business sense. Solid methodologies for integrated assessments that, for example, include cost-benefit analyses of different land uses and management strategies and identify socio-economic and ecological uncertainties associated with policy outcomes are needed. Creating partnerships to design good business solutions, identify interested investors and scale up action is also necessary.

BOX 10.

SLM Partners: Doing business on sustainable land management[4]

SLM Partners is an asset management company that acquires and manages rural land on behalf of institutional investors. Its mission is to scale up regenerative, ecological farming systems that deliver financial returns and environmental benefits. It targets financial returns that are commensurate with market expectations for real assets. These returns come from a combination of operational income and capital appreciation.

With a long-term perspective (10 years or more) SLM Partners is adopting land management approaches that minimize synthetic inputs, increase resilience to climate volatility and enhance soil fertility, while producing food and other commodities at a competitive cost. SLM Partners focuses on opportunities in countries with stable regulatory environments, competitive agricultural sectors, and good access to international markets.

3.2. RAISING AWARENESS ACROSS THE VALUE CHAIN

Scaling up sustainable projects proves to be challenging as the investors, companies and entrepreneurs involved are often not yet fully aware of the economic benefits of sustainable land management and land restoration[43] and policies promoting LDN are not yet in place.

Documenting success stories and best practices will be vital in raising awareness and triggering more action. There is a need to educate the public and improve the level of knowledge and understanding about land degradation along the value chain, from smallholder producers to landowners and business and all the way down to consumers. Explaining the issue and solutions in clear and simple words is critical in getting the message across. In particular, communicating how fragile land and soil are, how much all living things rely on them and the non-revocable consequences of losing them, as well as the limits of the absolute availability and carrying capacity of land and its related human competition is important.

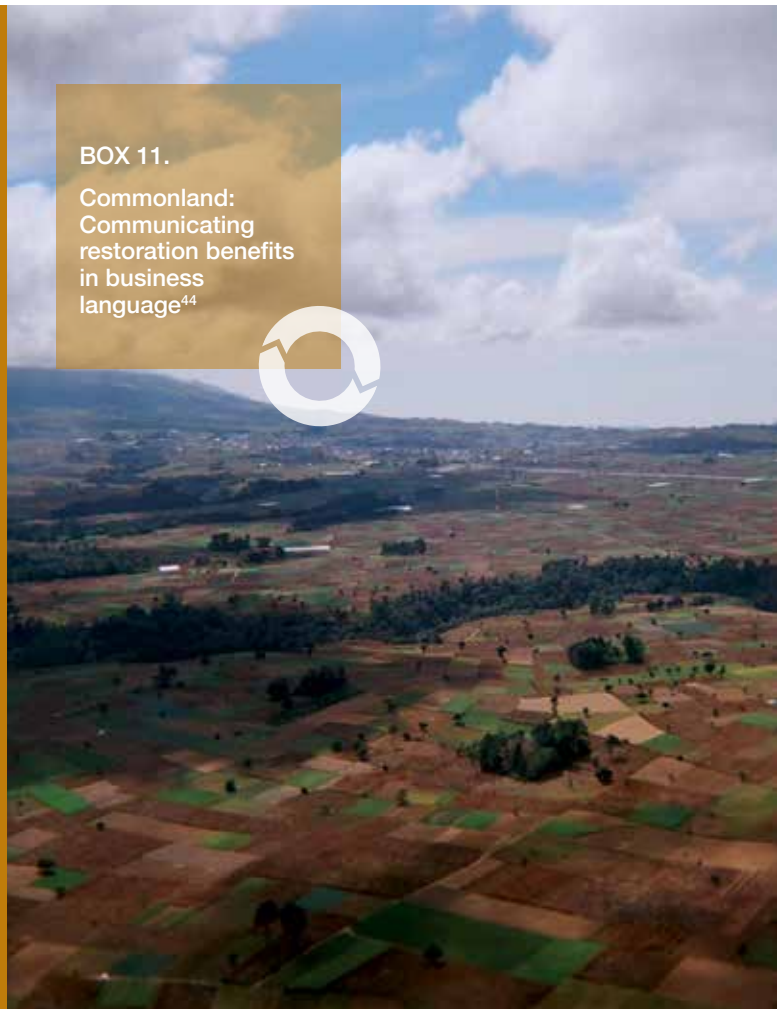
Presenting the benefits of LDN in economic terms may help trigger interest and change the mindsets of business leaders and farmers who need to be reassured about the fact that changing practices will help them secure revenues. Talking about solutions rather than problems and promoting success stories that both raise awareness and inspire action are crucial (see for example box 11).

BOX 11.

Commonland: Communicating restoration benefits in business language[44]

Commonland comprises a foundation, a development company and an investment fund. It aims to create an investable, large-scale landscape restoration industry that is aligned with international guidelines and policies. It argues that restoration projects offer sustainable business models that deliver four types of returns:

1. Return of inspiration: Giving people hope, a positive future outlook and meaningfulness and a sense of purpose.
2. Return of social capital: Bringing back jobs and business activity, education, social services and security.
3. Return of natural capital: Restoring biodiversity, topsoil and hydrology, clearing invasive species, decreasing erosion and increasing carbon absorption.
4. Return of financial capital: Realizing long-term, sustainable profit with a balanced risk/return profile.



3.3. MAKING THE BUSINESS CASE BY VALUING LAND

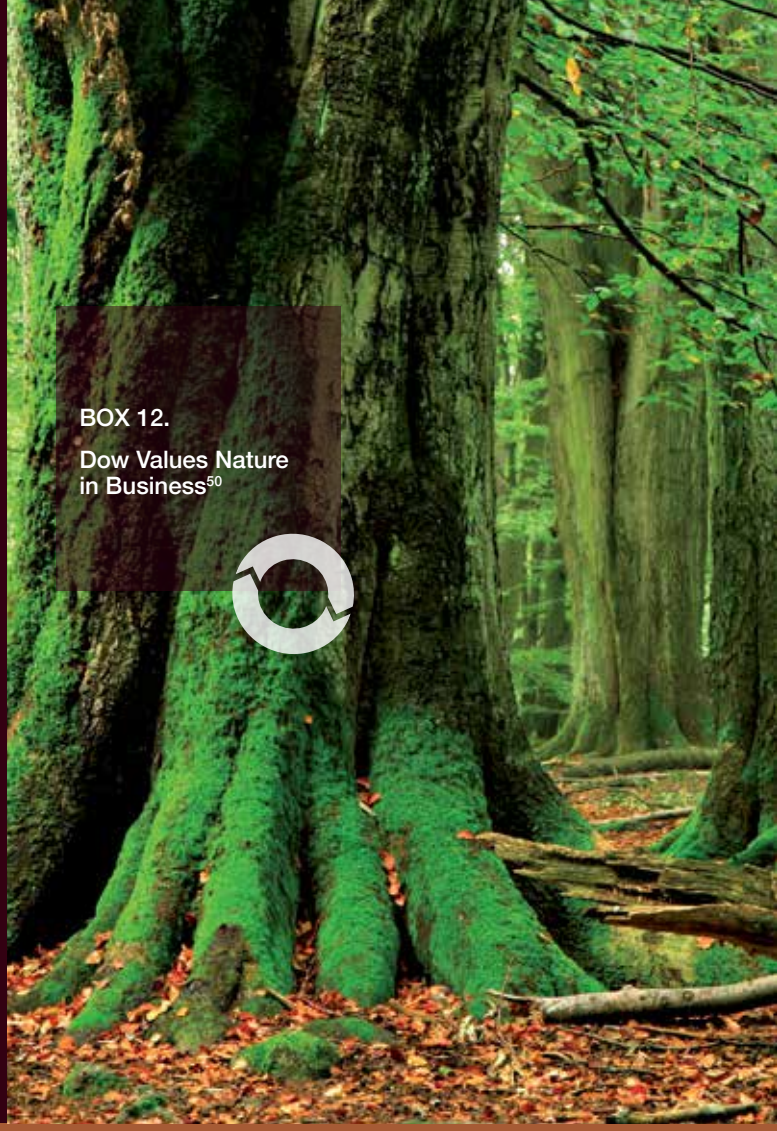
In-depth studies and data on costs and value generated by sustainable land management practices versus land degradation are crucially needed to make the business case for LDN.

An increasing number of companies are engaged in understanding the value of the ecosystem services they impact, whether positive or negative, through their operations. By assessing the total economic value of their land assets, including all related ecosystem services, companies can make informed decisions on how to best manage them. Valuation can help assess the true cost and benefits of adopting sustainable land management or restoring land and allow companies to select the scenario that best balances environmental, social and economic returns. By presenting environmental impacts in financial terms, business managers are able to factor nature's cost into their everyday decision-making alongside traditional business metrics, which are already commonly represented in financial terms (see for example boxes 12 and 13).[45]

The costs of adopting sustainable land management practices or restoration and rehabilitation are fairly well known. For example, it can take as little as US$ 10-25 to rehabilitate one hectare of farmland using simple, traditional agro-forestry, water conservation and livestock management practices.[46] Yet the total economic benefits are often missing or only partially known.[47] Market prices for land—its financial value—are generally based on its direct productive potential (for example, the market value/actual retail price of timber, crops, etc.). These prices, however, often do not accurately reflect the total economic value of land, which also includes the four categories of ecosystems services that land provides (provisioning, supporting, regulating and cultural). When these additional values are factored in, the value of land can increase sharply.[48] Studies show, for example, that when these values are taken into account, the global cost of land degradation reaches about US$ 490 billion per year, much higher than the cost of action to prevent it.[49]

"Businesses are realizing that the cost of inaction is greater than the cost of action".

Paul Polman, CEO, Unilever & Chairman, WBCSD
Source: KPMG (2014).



BOX 12.

Dow Values Nature in Business[50]

The Dow Chemical Company, a multinational science and technology company, is stepping up its efforts to assess the total natural capital impact of its manufacturing sites. As part of its 2025 Sustainability Goals, and in collaboration with The Nature Conservancy, Dow is working to develop tools for valuing nature in business that the company applies in decision processes.

This approach will enable the company to take informed decisions about the best use of the natural resources on its sites in ways that benefit both business and nature. Steps that may contribute to land degradation neutrality include green buffer zones around manufacturing sites, remediation of land that has been damaged in the past and land conservation. As a result Dow aims to deliver US$ 1 billion of net present value by 2025, through projects that are good for business and good for ecosystems.

BOX 13.

Vale: The economic value of Córrego Seco[51]

The major business of Vale, a global mining company, is iron ore production, of which the bulk takes place in the Quadrilátero Ferrífero Region of Brazil. As a result of legal requirements to obtain operational licenses in the region as well as Vale's own commitment to conserve and sustainably use biodiversity and ecosystem services, it keeps 17 private natural reserve units in the area. One of these is Córrego Seco, a 1,878-hectare area holding a water source that supplies 70% of the total water in Itabirito, the surrounding municipality.

Undertaking a study on the cost/benefit ratio of preserving the Córrego Seco Reserve, Vale discovered that the economic benefits provided by the water supply are almost 10 times higher than the maintenance costs of the entire reserve, which is US$ 190,000. When including other ecosystem services, the value was estimated at US$ 1,500,000 yearly. Such revenue would be sufficient to support the operational costs of the reserve and generate profit.

Vale does not receive any income for protecting the headwater and watercourse or the respective water provision. However, undertaking the valuation study helped the company showcase in monetary terms its positive contribution to local communities.

3.4. SMART REGULATIONS AND INCENTIVES

Well-defined, smart and equality-driven policies will be critical for the adoption and successful implementation of LDN by companies. Regulations could include:

- Legal requirements to avoid and mitigate land degradation and restore ecosystems. An example of such a requirement is the recently agreed Brazilian forest code, which requires that land owners in the Amazon maintain 80% of the forest on their land as legal reserves.
- The enforcement of polluter pays principles, which require that those responsible for pollution pay for the damage done to the natural environment. The US Superfund law,[52] which requires polluters to pay for the clean-up of hazardous waste sites, is an example of polluter pays regulation.
- The obligation to restore land when activities degrade them (e.g. mining). An example of such an obligation is the Australian law requiring that "exploration and mining sites have to be left as safe, stable, non-erodible structures with sustainable native vegetation cover".[53]

Introducing incentives and removing perverse subsidies will be critical in making LDN-smart business models competitive compared to unsustainable ones and thereby getting companies to invest in sustainable land management, land restoration and rehabilitation. This can include financial incentives such as carbon credits, payment for ecosystem services (PES) mechanisms and access to markets that require certain sustainability standards (such as the American supermarket chain Safeway's recent pledge to source palm oil only from sites where "no deforestation has occurred").[54]

Other financial incentive mechanisms that could be considered may include the availability of loans and credit facilities for the rehabilitation of degraded land (see section 1.4 on the Land Degradation Neutrality Fund), or tax reductions/exemptions for investments that protect forest areas or rehabilitate degraded land. Different contexts will require different mechanisms and thorough cost/benefit analysis is needed to ensure the optimal use of mechanisms and avoid creating perverse incentives.[55]

Additionally, acknowledging that companies are part of the solution by involving them in the public policy debate will be a key non-economic incentive for companies to engage in LDN. Companies can positively influence the design and implementation of LDN-related policies to improve both their efficiency and effectiveness in delivering environmental outcomes. Policy-makers may benefit from better understanding the positive and negative outcomes of environmental policy on business and draw lessons from experiences to date.

3.5. IS CERTIFICATION PART OF THE SOLUTION?

Manufacturers and companies are increasingly adopting sustainable sourcing commitments, certification or standard-compliant production methods. The volume of commodities produced under various social and environmental certification standards jumped 41% in 2012, far outpacing the 2% growth across conventional commodity markets.[56]

Table 3. Benefits and challenges of product certification

BENEFITS	CHALLENGES
• Certification can help encourage actors along the value chain to adopt LDN, provided it gives access to new or bigger markets. • Certification can help mainstream LDN and increase public awareness about the value of healthy land. • An increasing number of consumer brands and their suppliers have committed to responsible sourcing; an LDN certificate could therefore help create market access for farmers who sustainably manage land and thus further promote LDN. • If LDN was included in existing certification schemes that are commonly used and are open to the inclusion of new elements, it could be rapidly implemented at scale.	• The environment for certifying LDN compliance may be saturated and therefore not conducive. There is already a multitude of certification schemes, which may be confusing for the consumer, costly for the producers and sometimes create unhealthy competition between schemes. In fact, there is an over-supply of standard-compliance production as actual sales of products labeled as "standard compliant" have not grown as rapidly as supply.[57] • Certification is often costly and heavily bureaucratic. MSMEs, especially local ones, and land users, such as farmers, seldom have the funds and capacity to become certified. The supply of sustainable products is concentrated in selected regions with more developed production capacity.[58]

BOX 14.

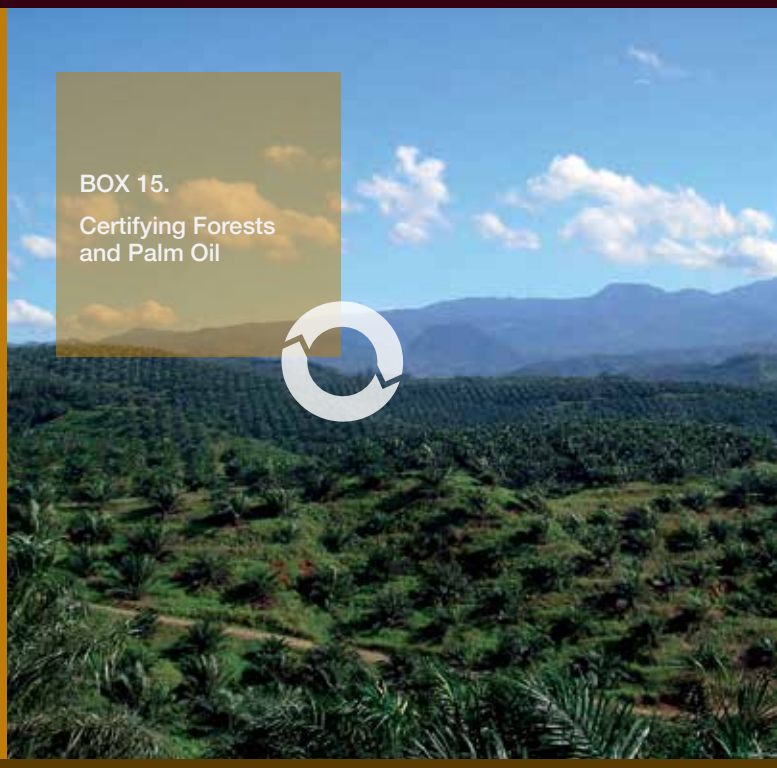
Scaling up Sustainability in the Food Value Chain[59]

Multinational companies' commitments to sustainability standards in their supplier relationships has created market opportunities, but has also added pressure on farmers and agribusinesses around the world to provide evidence of sustainability practice and progress. Challenges are particularly evident in developing markets, where complying with—and proving compliance with—such standards can be prohibitively expensive. In this context, the Blue Number initiative has been established under the UN Integrated Sustainable Agriculture Programme (iSAP) to help connect farmers and small agribusinesses to global buyers who prioritize sustainable sourcing.

Blue Number is a free to all, free-of-charge, internet-based technology platform contributing to making it convenient, cost-effective and compelling for farmers and agribusinesses to switch to more sustainable practices. It allows farmers and agribusinesses to register information about themselves, making them visible on the market. The system also allows them to compare national compliance and international voluntary standards, both to benchmark their current sustainability performance and to chart a path to improve performance. For buyers and retailers, Blue Number is a "suitcase" containing key information on the individual farmer or business, a physical location, and what they produce or provide as a service.

BOX 15.

Certifying Forests and Palm Oil



Certification schemes have been proven to play a major role in improving the sustainability of certain commodities. Examples include the forestry and palm oil sectors.

Forest certification: The forest sector has been a pioneer in establishing best practices for forest management and has established two important global certification systems: the Forest Stewardship Council (FSC)[60] and the Programme for the Endorsement of Forest Certification (PEFC).[61] These systems set very high standards covering the environmental, social and economic aspects of forest management.

Palm oil certification: The Roundtable on Sustainable Palm Oil (RSPO) was established in 2004 with the objective of promoting the growth and use of sustainable oil palm products through credible global standards and the engagement of stakeholders.[62]

BOX 16.

Olam International Engages with Smallholder Farmers in Ghana[64]

To support the delivery of its goal to have end-to-end sustainable supply chains by 2020, Olam International, in collaboration with the Rainforest Alliance, is helping engage thousands of cocoa farmers in Ghana in climate smart conservation agriculture.

The overall objective of the project, which started in 2010, is to improve the capacity of the farmers to mitigate and adapt to climate change while simultaneously increasing productivity through improvements in cocoa agroforestry production systems, certification and broader engagement of supply chain stakeholders. Olam pays premium prices for the certified cocoa and more importantly offers predictable market access. This builds reliability in the supply chain, which also helps support financing for climate change programs.

The project shows that there are opportunities for successful landscape restoration and land management by engaging with actors along a supply chain and fostering the participation of other stakeholders in the process.

Certification is currently being considered by the UNCCD as a way to help scale up LDN. Although certification can bring a number of benefits, there are some challenges associated with the creation of yet another certification scheme (see table 3).

Some organizations are exploring solutions to overcome these challenges, and in particular the idea of a landscape certification scheme or the possibility to integrate landscape considerations and LDN in current certification schemes. For example, the certification of economic zones dedicated to sustainable land management, renewable energy or other environmentally sustainable activities could be an option to help manage landscapes and create incentives for companies to invest in them. Self-assessment by cooperatives could help keep costs low for local producers (see box 14). The harmonization of certification systems could also make it easier to maneuver in the jungle of certification schemes.

3.6. ENGAGING SMALL-SCALE PRODUCERS IN THE VALUE CHAIN

Engaging small-scale producers in the value chain will be fundamental to scaling up LDN. The companies contributing to this paper highlight that LDN will have to make economic sense for small-scale producers or it will be difficult to engage them. Large companies—in particular, consumer good companies dealing with a range of different products with massive outreach to producers—can play an important role in engaging these actors.

There are various examples of how companies are setting sustainability standards for their suppliers and are engaging directly with farmers to safeguard quality, ensure sustainable land use and contribute to social benefits. For example, food and beverage company Nestlé, which has committed to fostering responsible practices in its supply chain, provides training and engages in knowledge sharing and capacity building for the farmers it sources materials from.[63]

Capacity building, awareness raising contributing to behavior change, production inputs, monitoring and microfinance services are some examples of actions that help improve the way land is being managed and thus help small-scale suppliers contribute to LDN.

4. CONCLUSION

Healthy landscapes are needed for food, fiber, fuel and water and, consequently, long-term sustainable economic growth and social stability. Yet one-fourth of usable land is degraded globally, to the tune of some US$ 40 billion lost annually. In this context, the recognition of land and a call for land degradation neutrality (LDN) in the Sustainable Development Goals adopted by the United Nations General Assembly in September 2015 are a major step towards reversing this trend and scaling up practices that contribute to building a land degradation neutral world. The LDN target presents a great opportunity to increase collaboration between governments, the private sector and civil society towards a shared objective.

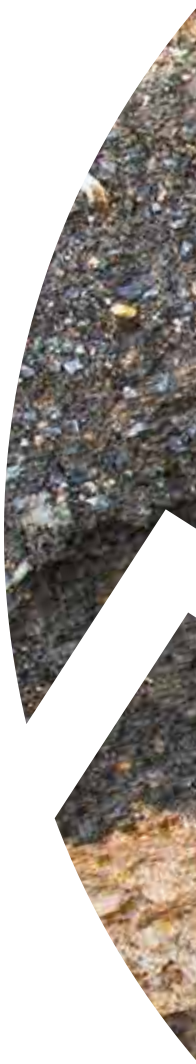
Business has a responsibility, opportunity and role to play in delivering and scaling up solutions that will allow for the sustainable management of land resources and the starting of restoration or rehabilitation of the 2 billion hectares of land that are currently degraded.

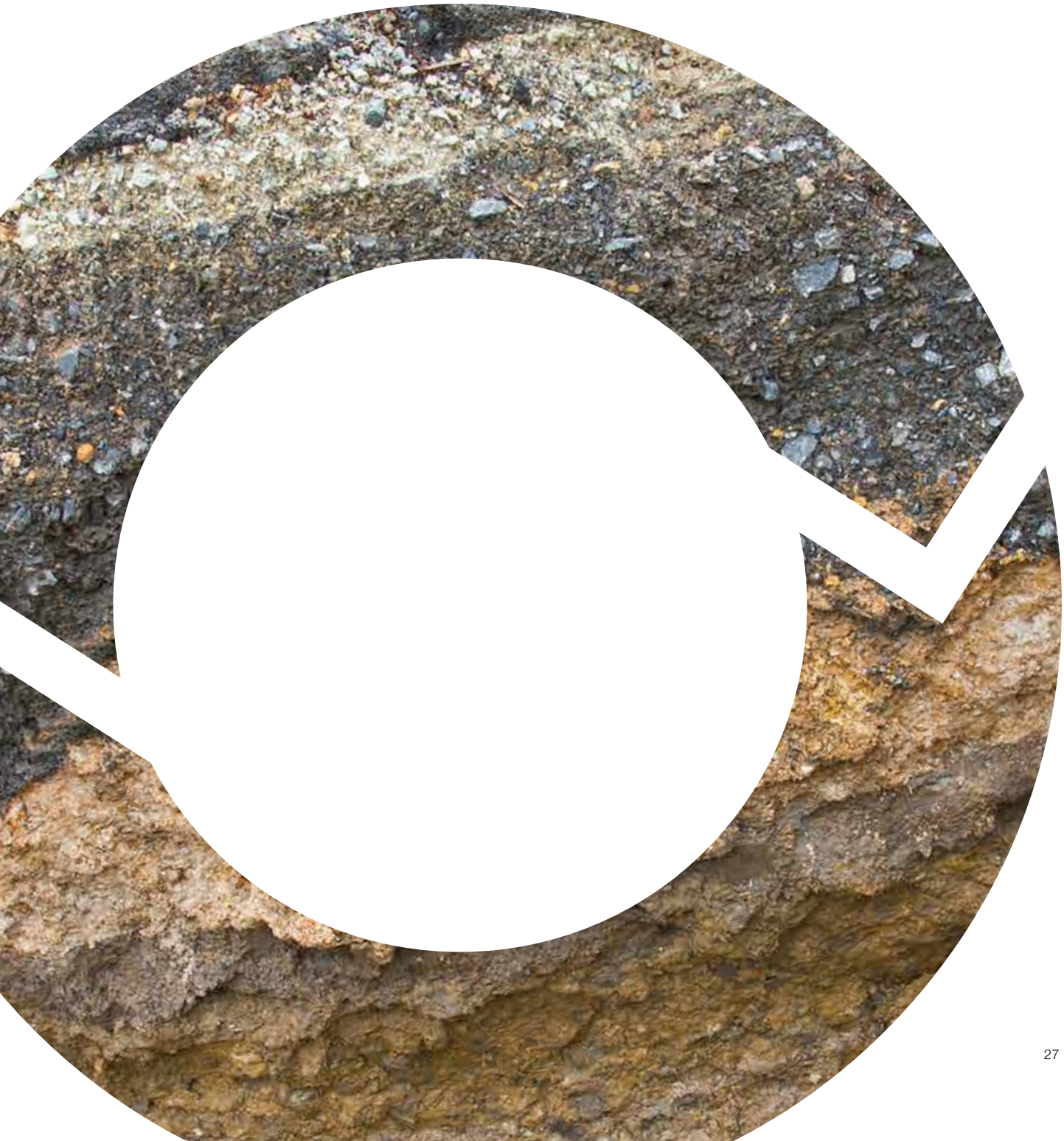
The companies interviewed for this paper recognize the benefits of engaging in LDN. They acknowledge that sustainably managing their land assets will help them secure future operations and continue to access the raw materials and ecosystem services they need for their activities. In a world competing for productive land, rehabilitating degraded land provides an opportunity for business to grow sustainably.

However, investments in land rehabilitation and restoration are still new and relatively untested at large spatial and temporal scales. The benefits of sustainable land management, restoration and rehabilitation activities are still not obvious because of the immediate cost these activities generate. Unsustainable practices are often still more profitable in the short term because the market does not factor in land degradation as a cost and healthy ecosystems as a value.

This publication calls for a number of actions by public and private decision-makers that can help business further engage in scaling up sustainable land management, restoration and rehabilitation and, subsequently, LDN:

- Explore and pilot smart, scalable LDN business models that secure returns on investment, building on existing profitable and sustainable practices.
- Assess the cost of land degradation and the total economic benefits of LDN and factor them in for sustainable land management, restoration and rehabilitation activities to become maintenance practices that are needed to preserve the value and function of land, just as for any other company asset.
- Increase awareness of the cost of inaction and the benefits of action across the value chain in order to encourage producers and consumers to change their current production and consumption patterns towards more sustainable ones.
- Support business action by long-term, smart, measureable policies, regulations and incentives that provide a level playing field.
- Put in place enabling conditions to allow small-scale producers to engage.
- Turn governments and companies into brokers, helping facilitate dialogue and partnerships to ensure the fair distribution of costs and benefits arising from sustainable land management and land restoration.





GLOSSARY OF TERMS

Biodiversity: The variability among living organisms within species, between species, and between ecosystems.

Brownfield site: A term used in urban planning to describe land previously used for industrial purposes or some commercial uses. Such land may have been contaminated with hazardous waste or pollution or is feared to be so.[65]

Compensation (of impacts): Specifically, in terms of biodiversity, compensation involves measures to restore, create, enhance or avoid loss or degradation of a community type in order to compensate for residual impacts on it and/or its associated species."[66]

Ecosystems: A dynamic complex of plant, animal and micro-organism communities and their non-living environment, interacting as a functional unit.[67] They make up the environment around us and are effectively habitats that support various species, for example, coral reefs, forests, grasslands, rivers, farmland and urban parks.

Ecosystem services: The direct and indirect contributions of ecosystems to human well-being. The concept "ecosystem goods and services" is synonymous with ecosystem services. They include provisioning services such as crops, fish, freshwater and timber; regulating services such as climate regulation through trees sequestering carbon; and cultural services such as tourism and spiritual benefits.[68]

Externality: A consequence of an action that affects someone other than the agent undertaking that action and for which the agent is neither compensated nor penalized through the markets. Externalities can be either positive or negative.

Greenfield site: An area of agricultural or forest land, or some other undeveloped site earmarked for commercial development or industrial projects.[69] These areas of land are usually agricultural or amenity properties being considered for urban development.[70]

Forest degradation: A process whereby areas of natural forest are gradually transformed into degraded land or replaced by other land uses.

Deforestation: Implies the long-term or permanent loss of forest cover and its transformation into another land use. Such a loss can only be caused and maintained by a continued human-induced or natural perturbation. It includes areas of forest converted to agriculture, pasture, water reservoirs and urban areas.[71]

Land: Any part of the Earth's surface not covered by a body of water.[72]

Land degradation: The "reduction or loss of the biological or economic productivity and complexity of rain-fed cropland, irrigated cropland, or range, pasture, forest and woodlands resulting from land uses or from a process or combination of processes, including processes arising from human activities and habitation patterns, such as: (i) soil erosion caused by wind and/or water; (ii) deterioration of the physical, chemical and biological or economic properties of soil; and (iii) long-term loss of natural vegetation."[73]

Land rehabilitation: A process aiming to regenerate the capacity of the land to provide a certain range of ecosystem goods and services. Land rehabilitation does not necessarily return the land to its pre-disturbance conditions.[74]

Land restoration: A process that initiates or accelerates the recovery of a degraded terrestrial ecosystem with respect to its health, integrity and sustainability. Land restoration aims to return an area of land to a close approximation of its condition prior to disturbance.[75]

Mitigation hierarchy: A set of prioritized steps to alleviate environmental harm as far as possible through avoidance, minimization (or reduction) and the restoration of detrimental impacts to biodiversity.[76]

No net loss (NNL): Implies that a development project has no net biodiversity losses.

Net positive impact (NPI): Implies that a development project contributes to a net gain in biodiversity.

Offset (as in biodiversity offset): Sustainable conservation actions intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects so as to aspire to no net loss in biodiversity.

Payment for ecosystem services (PES): A voluntary transaction for a well-defined ecological service, with at least one buyer and at least one provider, and based on the condition that the buyer(s) only pay if the provider(s) continue to deliver the defined ecosystem service over time.[77]

Sustainable land management: Constitutes "land-use practices that ensure the land, water, and vegetation adequately support land-based production systems for both current and future generations" and aims to "enhance the economic and social well-being of affected communities, sustain ecosystem services and strengthen adaptive capacity to manage climate change."[78]

Zero net deforestation: Acknowledges that some forest loss could be offset by forest restoration and can therefore be distinguished from zero deforestation, which means no deforestation anywhere. It leaves room for change in the configuration of the land-use mosaic, provided the net quantity, quality and carbon density of forests is maintained.[79]

ACRONYMS AND ABBREVIATIONS

bn	billion
COP	Conference of the Parties
ELD	The Economics of Land Degradation
ESG	environmental, social and governance
FAO	Food and Agriculture Organization of the United Nations
FSC	Forest Stewardship Council
GAFSP	Global Agriculture Food Support Programme
GEF	Global Environment Facility
Gt	gigatonnes
ha	hectares
HCS	high carbon stock
HCV	high conservation value
IISD	International Institute for Sustainable Development
iSAP	Integrated Sustainable Agriculture Programme of the United Nations
IUCN	International Union for Conservation of Nature
LDN	land degradation neutrality
MSME	micro-, small- and medium-sized enterprise
NCFF	Natural Capital Financing Facility, European Investment Bank
NGO	non-governmental organization
NNL	no net loss
NPI	net positive impact
PEFC	Programme for the Endorsement of Forest Certification
PES	payment for ecosystem services
ROAM	Restoration Opportunities Assessment Methodology
RSPO	Roundtable on Sustainable Palm Oil
RTE	Réseau de Transport d'Électricté
SDG	Sustainable Development Goals
SFMP	Sustainable Forest Management Policy, APRIL Group
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNFCCC	United Nations Framework Convention on Climate Change
US EPA	United States Environmental Protection Agency
WBCSD	World Business Council for Sustainable Development
WIIX	Water Impact Index

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About the World Business Council for Sustainable Development (WBCSD)

The World Business Council for Sustainable Development (WBCSD), a CEO-led organization of some 200 forward-thinking global companies, is committed to galvanizing the global business community to create a sustainable future for business, society and the environment. Together with its members, the Council applies its respected thought leadership and effective advocacy to generate constructive solutions and take shared action. Leveraging its strong relationships with stakeholders as the leading advocate for business, the Council helps drive debate and policy change in favor of sustainable development solutions.

The WBCSD provides a forum for its member companies—who represent all business sectors, all continents and a combined revenue of more than $8.5 trillion and 19 million employees—to share best practices on sustainable development issues and to develop innovative tools that change the status quo. The Council also benefits from a network of 70 national and regional business councils and partner organizations, the majority of which are based in developing countries.

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