



**United Nations**  
Convention to Combat  
Desertification

# GLOBAL LAND OUTLOOK

Second Edition

**Summary for Decision Makers**

# United Nations Convention to Combat Desertification

## Global Land Outlook, second edition

### *Land Restoration for Recovery and Resilience*

## Summary for Decision Makers

This Summary for Decision Makers is a synthesis of the key messages contained in the second edition of the UNCCD's flagship publication, the Global Land Outlook, *Land Restoration for Recovery and Resilience*. This edition sets out the rationale, enabling conditions, and diverse pathways by which countries and communities can design their tailored land restoration agenda. The summary and full report are based on the best available evidence, following an extensive analysis of the literature as well as documented case studies and good practices.<sup>1</sup>

“Investing in large-scale land restoration to combat desertification, soil erosion, and loss of agricultural production is a win-win solution. It is a win for the environment. It is a win for the climate. It is a win for the economy, and for the livelihoods of local communities. Land restoration is a powerful and cost-effective sustainable development tool.”

Ibrahim Thiaw, UNCCD Executive Secretary

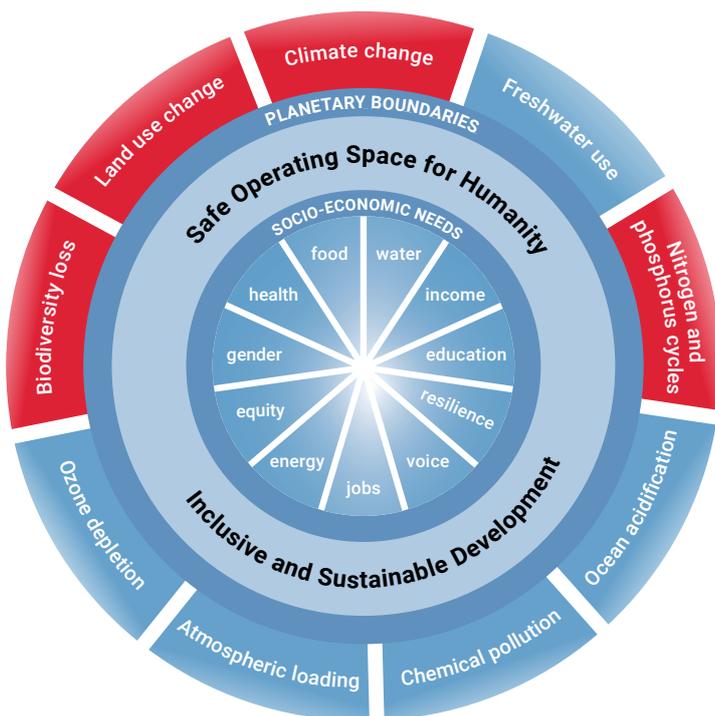
## 1. Land in the Balance

- 1.1 Land resources – soil, water, and biodiversity – provide the foundation for the wealth of our societies and economies. They meet the growing needs and desires for food, water, fuel, and other raw materials that shape our livelihoods and lifestyles. However, the way we currently manage and use these natural resources is threatening the health and continued survival of many species on Earth, including our own.
- 1.2 Of nine planetary boundaries used to define a ‘safe operating space for humanity’, four have already been exceeded: climate change, biodiversity loss, land use change, and geochemical cycles.<sup>2</sup> These breaches are directly linked to human-induced desertification, land degradation, and drought. If current trends persist, the risk of widespread, abrupt, or irreversible environmental changes will grow.<sup>3</sup>
- 1.3 Roughly USD 44 trillion of economic output – more than half of global annual GDP – is moderately or highly reliant on natural capital.<sup>4</sup> Yet governments, markets, and societies rarely account for the true value of all nature's services that underpin human and environmental health. These include climate and water regulation, disease and pest control, waste decomposition and air purification, as well as recreation and cultural amenities.<sup>5</sup>

“Taken together, human actions are undermining and challenging the fundamental processes that underpin a habitable biosphere and Earth system resilience. It can no longer be taken for granted that the planet will be able to continue to support human wellbeing and development.”<sup>6</sup>

International Science Council

**FIGURE 1** Nine planetary boundaries



Source: Raworth, 2017.

Humans have already transformed more than 70% of the Earth’s land area from its natural state, causing unparalleled environmental degradation and contributing significantly to global warming.<sup>7 8</sup> If current land degradation trends continue this century, scientists predict that severe climate-induced disturbances will increase. These include disruptions to food supplies, forced migration, and continued biodiversity loss and extinction. Collectively, these trends increase the risk of declining human health, more zoonotic diseases, and greater conflict over land resources.<sup>9 10</sup>

Poor rural communities, smallholder farmers, women, youth, indigenous peoples, and other at-risk groups are disproportionately affected by desertification, land degradation, and drought.<sup>11 12</sup> Land degradation – the persistent or long-term loss of land-based natural capital – incurs significant costs to society. It gives rise to poverty, hunger, and pollution while making communities more vulnerable to disease and disasters, particularly in the drylands that cover more than 45% of the Earth’s land surface and are home to one in three people. Land and resource rights for dryland communities,

secured through enforceable laws and trusted institutions, can empower them to transform land assets into sustainable development opportunities that promote more equitable and cohesive societies.

**The COVID-19 pandemic has changed the way decision makers, businesses, and civil society see the links between the environment and human health.** The heightened recognition of the interdependencies between people, plants, animals, and their shared environment underlines the need for ‘One Health’ approaches. These approaches call for multi-sector collaboration that restores diversity and resilience in our landscapes to safeguard the health of communities and ecosystems.<sup>13</sup> By restoring the land, we can significantly improve human health and livelihoods, increase food and water security, and reduce the risk of future pandemics. This implies expanding and connecting protected and natural areas, improving soil, crop, and livestock health, and creating green and blue spaces in and around cities.

The annual cost of future pandemics could be as much as USD 2 trillion – for just 1% of that cost, the world could prevent pandemics at their source by protecting and restoring nature.<sup>14</sup>



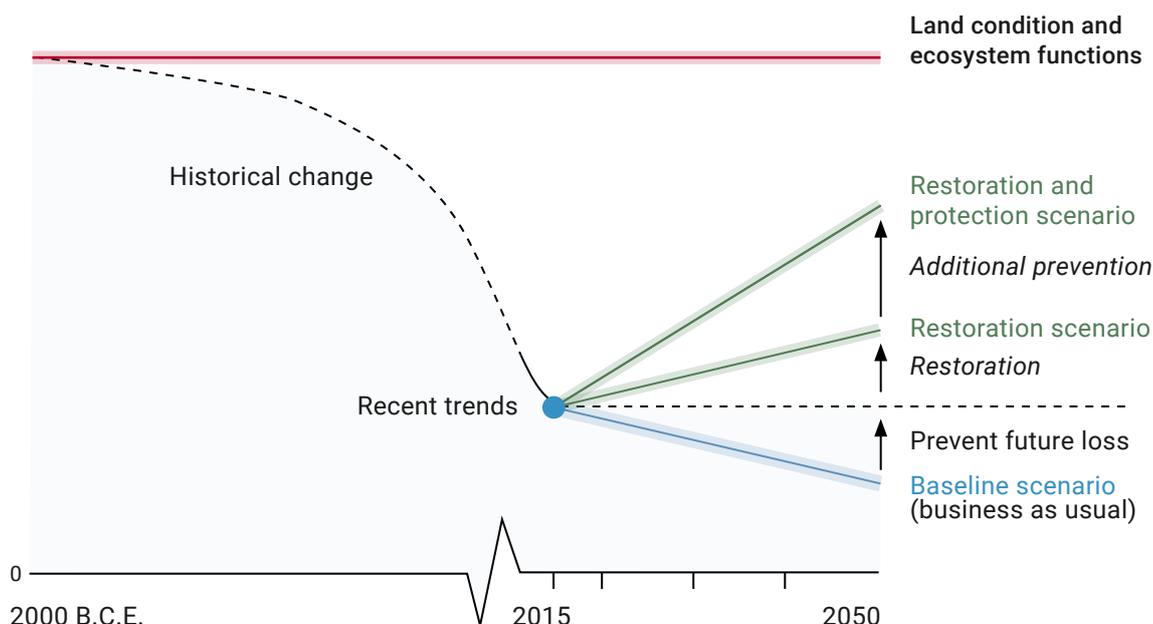
## 2. Moving to a Crisis Footing

- 2.1** The world is facing a confluence of unprecedented crises: the fast-moving COVID-19 pandemic has merged with the ongoing and relentless global changes to our climate, land, and biodiversity. Collectively, these are causing extraordinary levels of human suffering, social and economic instability, and environmental devastation. Conserving, restoring, and using our land resources sustainably is a global imperative: one that requires moving to a crisis footing.
- 2.2** At no other point in history has humanity faced such an array of familiar and unfamiliar risks and hazards, interacting in a hyper-connected and rapidly changing world.<sup>15</sup> We cannot afford to underestimate the scale and impact of these existential threats. Rather we must work to motivate and enable all stakeholders to go beyond existing development and business models to activate a restorative agenda for people, nature, and the climate.
- 2.3** Land restoration is essential and urgently needed. It must be integrated with allied measures to meet future energy needs while drastically reducing greenhouse gas emissions; address food insecurity and water scarcity while shifting to more sustainable production and consumption; and accelerate a transition to a regenerative, circular economy that reduces waste and pollution.

“Never before have we had such an awareness of what we are doing to the planet, and never before have we had the power to do something about that.”<sup>16</sup>

Sir David Attenborough

**FIGURE 2** Three scenarios for future land health



Source: PBL, 2021.

**As this Outlook's restoration scenario analysis makes clear, business as usual is not a viable pathway for our continued survival and prosperity.**<sup>17</sup> As the global population grows, the increasing pressures to meet the rising demand for housing, food, and other essential goods are stretching the productive capacity of land and water systems to their limit. A rational response begins with a profound reassessment of current land use and management practices. Countries and communities can no longer rely on incremental reforms within traditional national planning and development frameworks. Priority must be given to creating the jobs and skillsets needed to fully realize the potential of a restoration economy – one that can respond to interlinked development and sustainability challenges.

**When political will, collective action, and sustained investment come together, global crises can be averted or at least minimized.** Today's confluence of social, economic, environmental, and health emergencies presents a new set of opportunities to build forward better. While the COVID-19 pandemic has provided valuable insights and lessons for decision makers, it continues to have profound impacts on human health, livelihoods, and the global economy. As the UN Decade on Ecosystem Restoration (2021-2030) gets underway, now is the time to reposition our investments in human, social, and natural capital for short-term economic recovery and to enable long-term planning and implementation. Just as COVID-19 vaccines were developed, tested, and rolled out at unprecedented speed and scale, so too must land restoration and other nature-based solutions to ensure a healthy and prosperous future.

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The human-environment relationship must drastically change to avoid catastrophic tipping points whereby the human power of exploitation is overwhelmed by the power of nature.

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## 3. Setting the Agenda

- 3.1 The international community has pledged to restore one billion hectares of degraded land by 2030. This is only the start. The aim is to preserve nature's life-support services and safeguard the productivity of land resources for generations to come, reduce the risks and impacts of disasters and pandemics, and boost ecosystem and community resilience in the face of impending environmental stresses and climate shocks.
- 3.2 Restoration is a proven and cost-effective solution to help reverse climate change and biodiversity loss caused by the rapid depletion of our finite natural capital stocks. Land restoration is broadly understood as a continuum of sustainable land and water management practices that can be applied to conserve or 'rewild' natural areas, 'up-scale' nature-positive food production in rural landscapes, and 'green' urban areas, infrastructure, and supply chains.<sup>18</sup>
- 3.3 The land restoration agenda is a multiple benefits strategy that reverses past land and ecosystem degradation while creating opportunities that improve livelihoods and prepare us for future challenges. For example, regenerative land use practices employed to boost soil health or recharge groundwater also enhance our ability to cope with drought, floods, wildfires, and sand and dust storms.

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The global extent of land degradation is estimated at between 20-40% of the total land area, directly affecting nearly half of the world's population and spanning the world's croplands, drylands, wetlands, forests, and grasslands.<sup>19</sup>

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**Investing in land restoration makes sound economic sense and the benefits often far exceed the costs.** Each dollar invested in restoring degraded land is estimated to return between USD 7-30 in economic benefits.<sup>20 21</sup> Much as an investor uses financial capital to generate profits, regenerating a forest or improving soil health offers returns in the form of a future supply of timber or food. But there are many pathways with the potential to bundle human, social, and financial capital to restore natural capital and realize a more equitable and sustainable balance between economic, social, and environmental objectives. Restoration can also promote landscape and biocultural renaissance through the revival of traditional land and water governance and management practices.

**Land restoration creates meaningful livelihoods that boost incomes and ensure food and water availability in a healthy environment with a stable climate.** Many regenerative agriculture practices have the potential to increase crop yields and improve nutritional quality while reducing greenhouse gas emissions and drawing down carbon from the atmosphere.<sup>22 23 24</sup> For example, the integrated management of soil and water resources (e.g., terrace/contour farming, conserving/restoring watersheds, rainwater harvesting/storage) improves water retention and availability, prevents soil erosion and landslides, reduces flood risk, sequesters carbon, and protects biodiversity habitat.

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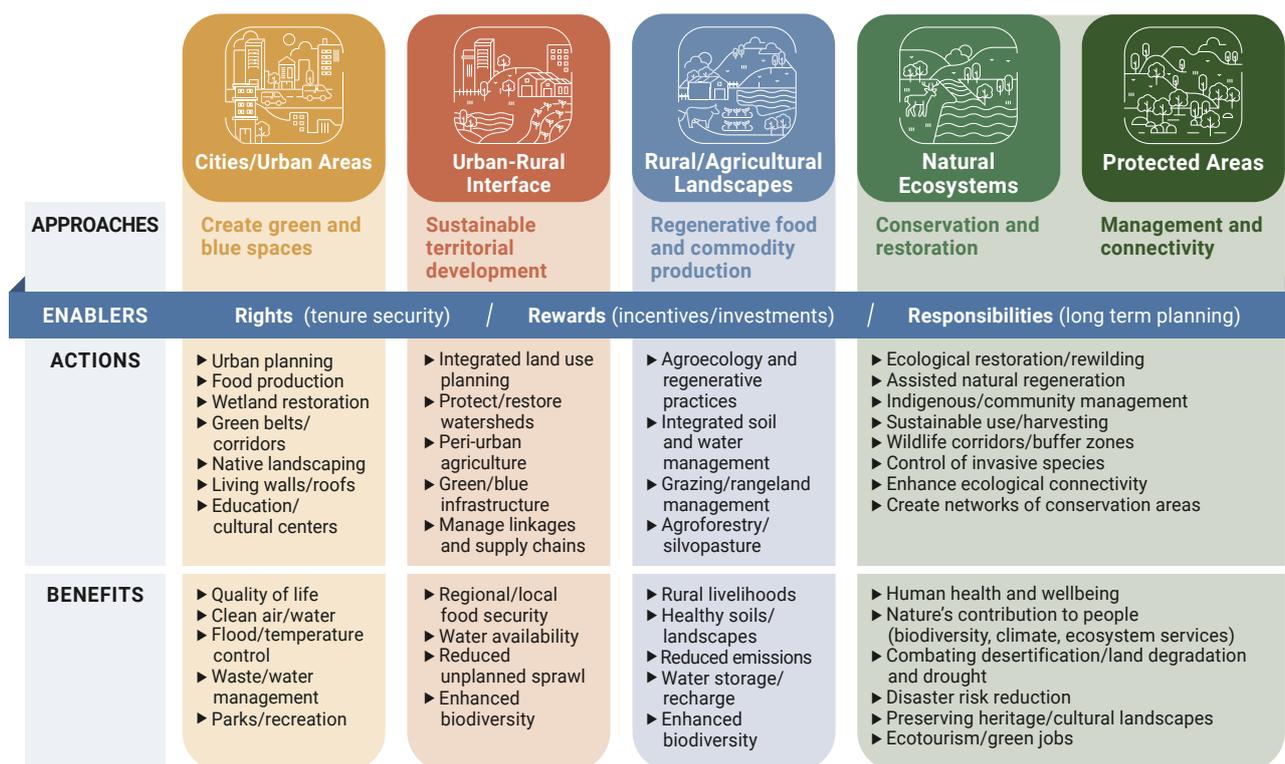
**Our planet, the lives of all its inhabitants, and our future prosperity depend on the conservation, wise use, sustainable management, and restoration of land resources.**

**Our challenge** is to motivate, enable, and implement regenerative land use practices for both short-term recovery and long-term resilience.

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FIGURE 3

Place-based restoration approaches, actions, and benefits



Implementing the land restoration agenda will require sustained efforts and investments – supported by government policies and expenditure, considerable shifts in consumer and corporate behavior, and more inclusive and responsible land governance. These conditions come together to **motivate, enable, and implement** biodiverse, regenerative, climate-smart, and integrated land and water management practices:

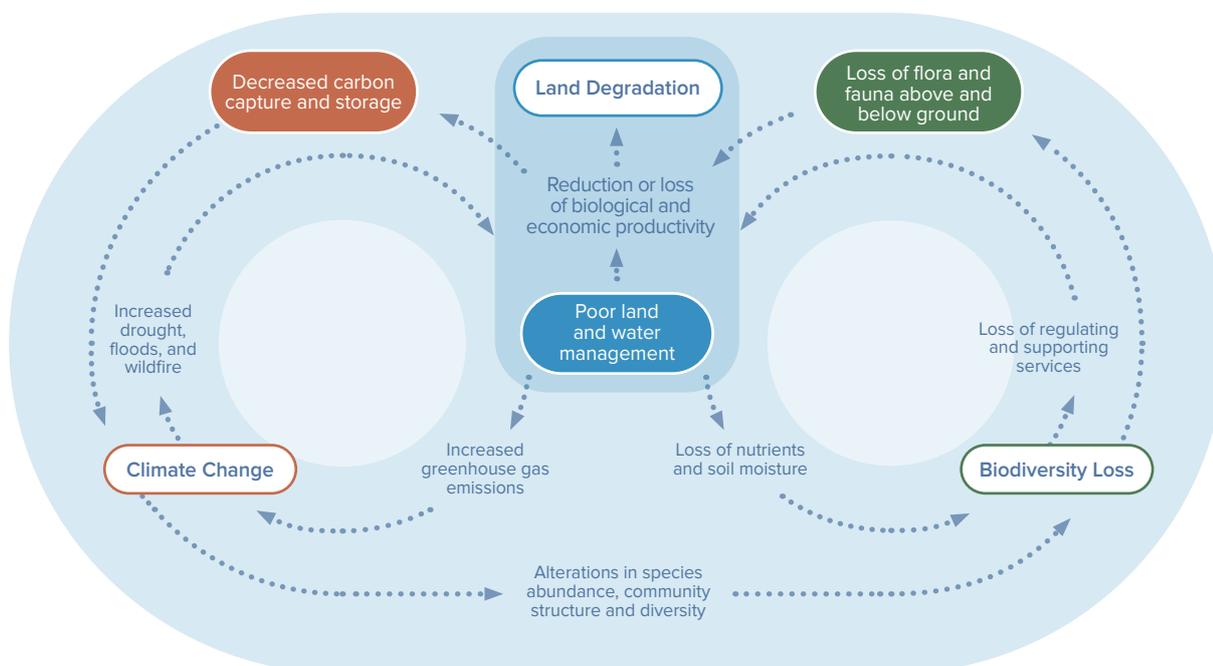
- **Awareness is the precursor of behavioral change and motivates restorative actions.** This is based on an understanding of land degradation impacts and drawing inspiration from practical solutions. For intact natural areas, our priority must be to **avoid land degradation** through more effective conservation measures and protected areas. For existing land uses (e.g., agriculture, forestry, mining), we must **reduce land degradation** by adopting and scaling out sustainable use and management practices. In areas with widespread or severe land degradation, we must **reverse land degradation** through the rehabilitation and restoration of biodiversity and ecosystem processes. This is the response hierarchy suggested for achieving Land Degradation Neutrality (LDN) targets championed by the UNCCD.
- **Building and aligning all forms of capital enables restoration efforts.** Inclusive opportunities to shape and carry out the land restoration agenda provide communities with a sense of ownership, trust, and unity. In addition to **financial capital**, restoring **natural capital** requires **human capital** – the education, knowledge, skills, and capacity to work and adapt. **Social capital** is also critical as it allows individuals to network and act collectively to ensure shared responsibility and equitable benefit sharing. When these forms of capital come together in the right proportions, land restoration initiatives can be designed and implemented in a wide range of settings.
- **All restoration takes place locally, on the ground, implemented by communities with a shared vision.** Land restoration can be done in many ways where we live, work, or play. It can be an engine of economic growth and cultural revival fueled by both **individual and collective action**. It can bring together diverse sectors and stakeholders for mutual benefit. Land restoration can be easy or difficult, cheap or costly, passive or active. It can rely on traditional or modern knowledge or both, and generally takes time and requires sustained effort. But, above all, to be successful, land restoration must also deliver people- and climate-positive outcomes.

## 4. Making Land the Focus

- 4.1 Land is the operative link between biodiversity loss and climate change, and therefore must be the primary focus of any meaningful intervention to tackle these intertwined crises. Restoring degraded land and soil provides the most fertile ground on which to take immediate and concerted action.
- 4.2 Land and ecosystem restoration will help slow global warming, reduce the risk, scale, frequency, and intensity of disasters (e.g., pandemics, drought, floods), and facilitate the recovery of critical biodiversity habitat and ecological connectivity to avoid extinctions and restore the unimpeded movement of species and the flow of natural processes that sustain life on Earth.
- 4.3 Restoration is needed in the right places and at the right scales to better manage interconnected global emergencies. Responsible governance and land use planning will be key to protecting healthy and productive land and recuperating biodiverse, carbon-rich ecosystems to avoid dangerous tipping points.

Protecting and restoring nature can reduce greenhouse gas emissions and increase carbon storage, providing more than one-third of the cost-effective climate mitigation needed between now and 2030 to limit global warming to 1.5°C, compared to pre-industrial levels.<sup>25</sup>

**FIGURE 4** Feedback loops between land degradation, climate change, and biodiversity loss



Source: Millennium Ecosystem Assessment, 2005.

**Governments and civil society, the United Nations and the scientific community – and increasingly the private sector – recognize the need for proactive measures to reimagine, recharge, and restore our land resources.**

These stakeholders have come together to set targets that commit governments and encourage businesses to rapidly decarbonize the economy and halt biodiversity loss as well as to transform food systems and the markets, infrastructure, and supply chains that connect producers to consumers. Leading the way are the many inspiring, innovative, and often young green entrepreneurs around the world already engaged in restoration. They are using practical tools and technologies to boost agricultural yields, revitalize degraded land, and create long-term economic opportunities that are important for many poor rural communities struggling to recover from the COVID-19 pandemic.

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**We must encourage a new generation of young people and ‘ecopreneurs’ – Generation Restoration – already working to build a more equitable and sustainable future based on restoring the planet and our relationship with nature.<sup>26</sup>**

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**The UN Decade on Ecosystem Restoration stands as the global catalyst for transformative actions that will improve environmental outcomes and human wellbeing.<sup>27</sup>** The scale of the challenge is immense, and we need a holistic long-term vision to match. Ignoring the social and economic dimensions of land restoration has often led to a failure to achieve environmental objectives and resulted in a raft of unintended consequences: dispossessions, land grabs, resource conflicts, forced migration, and the further marginalization of vulnerable groups. An integrated approach to land and water management that responds to the human dimensions (e.g., poverty, hunger, meaningful work, social justice, cultural heritage) will help guarantee the success of the land restoration agenda.

### **Restoration around the World**

**The examples from around the world showcased in this Outlook tell us that land restoration is receiving increased attention by communities, businesses, and governments alike.** These case studies make clear that restoration can be implemented in almost all settings and at many spatial scales, signifying that every country can design and implement their unique land restoration agenda. The examples also show that inclusive and responsible governance of land resources is an effective way to balance trade-offs and harness synergies that optimize restoration outcomes. Many successful restoration initiatives are implemented by local communities, often empowered by the protection of their rights and heritage. Success also requires predictable finance, a sensitive balance between traditional and modern scientific knowledge, and partnerships that can sustain human and technical capacities to restore degraded land and soil.

**Many of the cases underscore the value of education, training, and capacity building, not just for local communities, but also for government officials, land managers, and development planners.** New learning builds human and social capital, especially when focused on urgent local priorities. Practical experience from different disciplines and clear criteria are also needed to select the most appropriate restoration interventions. At the same time, meaningful and sustained land restoration efforts must acknowledge the rights of indigenous peoples and local communities, promote gender equality and youth engagement, and help all stakeholders navigate financial, legal, and institutional issues. Participatory monitoring and evaluation are critical to adapt management practices when needed and to demonstrate the benefits of or returns on restoration investments for communities, donors, and governments. Finally, linking local engagement to national policies helps ensure a responsive and well-aligned restoration agenda that delivers tangible outcomes for people, nature, and the climate.

## 5. Transforming Food Systems

- 5.1 Modern agriculture has altered the face of the planet more than any other human activity – from the production of food, animal feed, and other commodities to the markets and supply chains that connect producers to consumers. Making our food systems sustainable and resilient would be a significant contribution to the success of the global land, biodiversity, and climate agendas.
- 5.2 Globally, food systems are responsible for 80% of deforestation, 70% of freshwater use, and are the single greatest cause of terrestrial biodiversity loss.<sup>28 29</sup> At the same time, soil health and biodiversity below ground – the source of almost all our food calories – has been largely neglected by the industrial agricultural revolution of the last century.
- 5.3 Intensive monocultures and the destruction of forests and other ecosystems for food and commodity production generate the bulk of carbon emissions associated with land use change.<sup>30</sup> Nitrous oxides from fertilizer use and methane emitted by ruminant livestock comprise the largest and most potent share of agricultural greenhouse gas emissions.<sup>31</sup>

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“Food systems are one of the main reasons we are failing to stay within our planet’s ecological boundaries.”<sup>32</sup>

UN Secretary-General António Guterres

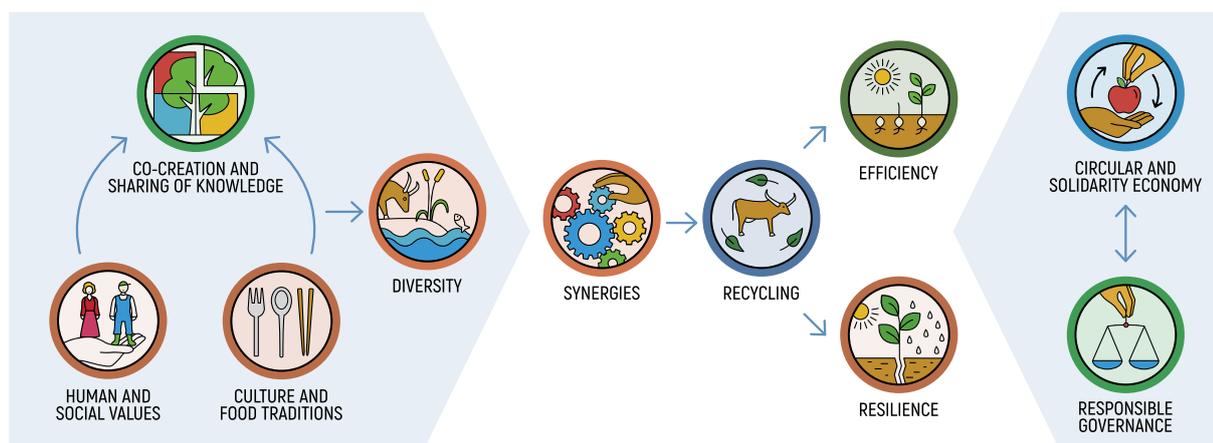
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**Food systems must continue to provide us with sustenance, but can be redesigned and redeployed to ensure positive outcomes for nature and the climate as well.** By eliminating or repurposing harmful subsidies and providing the right incentives, we can shift from resource-depleting models of production to those that link resource efficiency and productivity gains to healthy and resilient food systems, helping decouple economic growth from land and ecosystem degradation.<sup>33 34 35</sup> These were the conclusions of the United Nations Food Systems Summit 2021, during which governments committed to accelerate and deepen food systems transformation to better align national policy and action with the 2030 Agenda for Sustainable Development.<sup>36</sup>

### Agricultural Ministers at the 2022 Global Forum for Food and Agriculture:

- Recognized that desertification, land degradation and drought represent massive threats to global food security, nutrition, and sustainable food systems worldwide
- Stressed that healthy soils are key to the production of sufficient nutritious and safe food, adaptation to and mitigation of climate change, and the halting and reversal of biodiversity loss
- Emphasized that secure access to agricultural land through ownership, use rights, and other forms of legitimate tenure is of great importance for local and global food security<sup>37</sup>

**FIGURE 5** Agroecological transition to sustainable and resilient food systems



Source: Barrios et al., 2020.

**Many traditional and modern food production practices can enable agriculture to pivot from being the primary cause of degradation to becoming the principal catalyst for land and soil restoration.** As with all innovation that disrupts established systems, this transformation will require time and money. Fortunately, sustainable alternatives, inspired by agroecological approaches, already exist and are affordable and effective.<sup>38</sup> Nonetheless, the transition to regenerative agriculture practices will entail variable timescales, approaches, and incentives depending on the scale and resource-use intensity of food producers. In the long term (>10 years), improvements in soil health will not only increase land productivity and reduce biodiversity loss, but also store greater amounts of carbon.<sup>39</sup>

**Youth can and must play a significant role in an equitable and just transition to more resilient and sustainable food systems.** Food systems are the world’s largest employer of young people, particularly in developing countries where two-thirds of these youth live in some of the most agroecologically productive areas on Earth.<sup>40</sup> Investing in young human capital by providing incentives and training for land restoration is key to transforming food systems. Governments, in partnership with donors and civil society organizations, should establish and scale up initiatives that increase access to land resources for young farmers, with more equitable rights of inheritance and long-term security of tenure.

**As agriculture now occupies more than 40% of the global land area, restoring long-term health and productivity in our food landscapes is critical to ensure future sustainability.** It is within our power and that of decision makers to make bold changes to harmful incentive structures, enforce existing laws and regulations, or promote greater equity in land distribution. Consider the following:

- More than USD 700 billion is paid out in agricultural subsidies each year, yet only around 15% of this amount positively impacts natural capital, biodiversity, long-term job stability, or livelihoods.<sup>41</sup>
- At least 70% of the tropical forest cleared for agriculture between 2013 and 2019 was done in violation of national laws or regulations.<sup>42</sup>
- Just 1% of farms control more than 70% of the world’s agricultural land while more than 80% of all farms are under two hectares, representing only 12% of total farmland.<sup>43 44</sup>



## 6. Putting People Front and Center

- 6.1 Land restoration is about creating sustainable livelihood opportunities for people – small-scale farmers, indigenous peoples and local communities, businesses and entrepreneurs, women and youth – to boost incomes, secure food and water supplies, and make individuals and communities less vulnerable.
- 6.2 Top-down solutions to avoid or reduce land degradation and water scarcity are unlikely to succeed without bottom-up stakeholder engagement and the security of land tenure and resource rights. At the same time, trusted institutions and networks are needed to help build bridges that bring together different forms of capital to restore land health and create dignified jobs.
- 6.3 More inclusive and responsible governance can facilitate the shift to sustainable land use and management practices by building human and social capital. Increased transparency and accountability are prerequisites for integrated land use planning and other administrative tools that can help deliver multiple benefits at various scales while managing competing demands.

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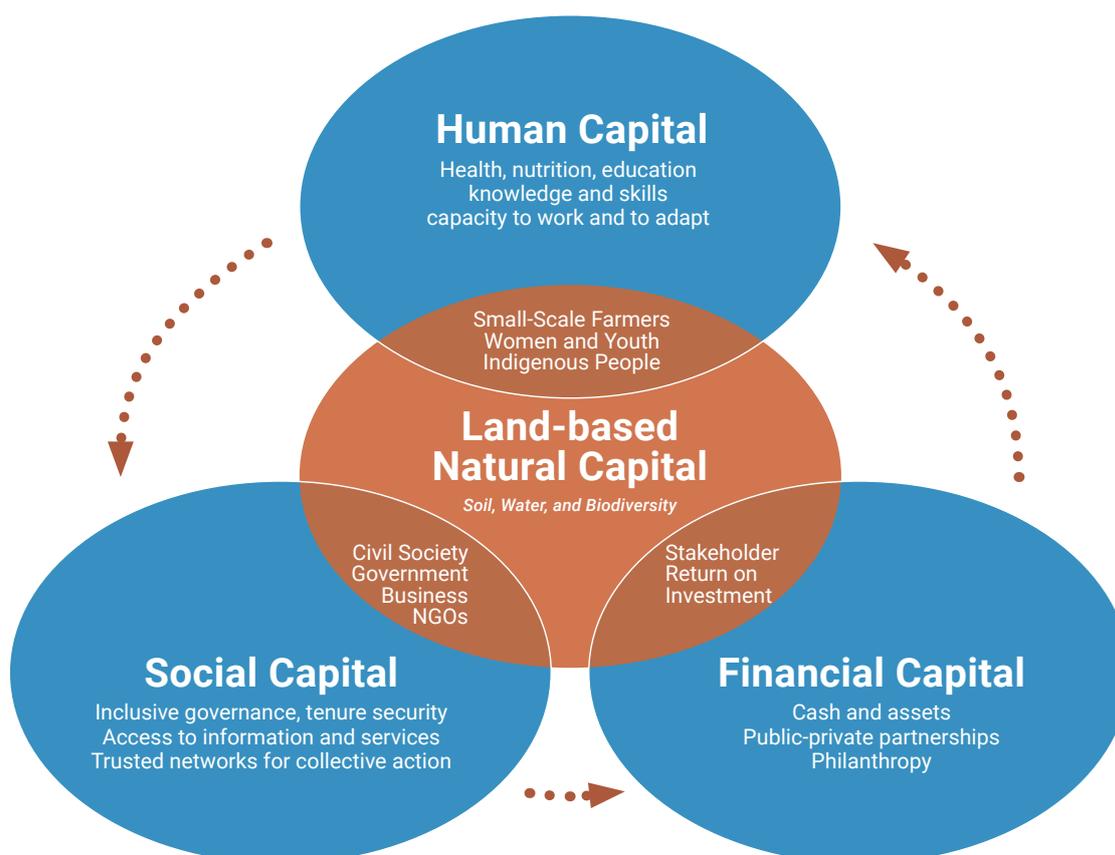
Enforcing legitimate tenure rights and offering rewards for good land stewardship can trigger coordinated action, innovation, and entrepreneurship, leading to more equitable and efficient ways of managing our land resources.

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**Effective land restoration means putting people front and center.** Restoring natural capital is place-based, embedded in local contexts, and largely dependent on human, social, and financial capital. Individuals and communities are motivated and enabled when they have or acquire the resources and capacities to adopt and scale sustainable land and water management practices. For example, farmers or land managers provide critical knowledge and labor, while donors and investors supply the financial capital needed to pay for work on the ground or to compensate opportunity costs. Government agencies incentivize restoration efforts through assessments, policies, and planning as well as the creation of regulatory and institutional frameworks that encourage harmonization, alignment, and coordination. Scientists and civil society organizations provide data and tools, advocacy and communications support, or restoration volunteers.



**FIGURE 6** Harnessing forms of capital for land restoration



**By bringing together different forms of capital, land restoration can create millions of green jobs and other economic opportunities for a growing and youthful population.**<sup>45</sup> Restoration projects and programmes tend to have long-term multiplier effects that strengthen rural economies and contribute to wider regional development. They generate jobs that cannot be outsourced, and investments stimulate demand that benefits local economies and communities. The restoration economy can reach well beyond the agriculture, forestry, or conservation sectors to encompass new business models and emerging technologies that encourage greater resource efficiencies, such as green, blue, and renewable energy infrastructure.

**Creating attractive opportunities for rural employment will reduce social unrest and political instability that tend to accompany high rates of youth unemployment.** The energy, talent, creativity, and pioneering spirit of young people can lead society to a more equitable and resilient future. With experience and knowledge of information and communication technologies, youth have become increasingly significant, vocal, and influential actors in local and global movements demanding climate action, food justice, and environmental stewardship. They are also strong advocates for greater corporate responsibility and more sustainable consumption, which holds great promise for accelerating the land restoration agenda.



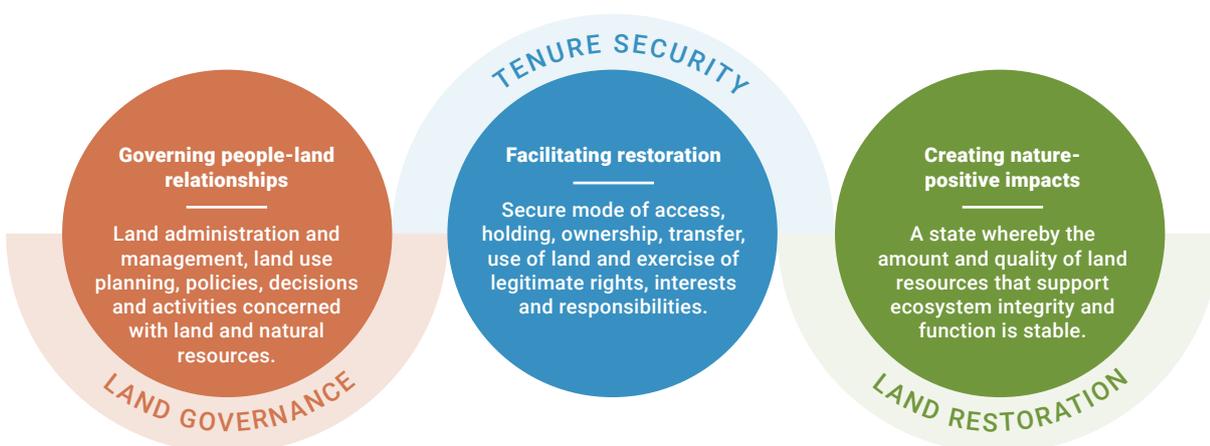
# 7. Safeguarding Land Rights

- 7.1 Land restoration provides unique entry points to apply human rights-based approaches that improve natural resource use and environmental management, especially when they are linked to existing national commitments under international treaties and agreements.
- 7.2 In 2019, the UNCCD adopted a decision which “invites Parties to ensure that measures to combat desertification, land degradation, and drought are carried out in a non-discriminatory and participatory way so that they promote equal tenure rights and access to land for all, in particular vulnerable and marginal groups”.<sup>46</sup>
- 7.3 In 2021, the UN Human Rights Council adopted a resolution that “calls upon all States to conserve, protect and restore healthy ecosystems and biodiversity and to ensure their sustainable management and use by applying a human rights-based approach that emphasizes participation, inclusion, transparency, and accountability in natural resource management”.<sup>47</sup>

Gender, race, caste, class, age, or economic circumstances affect how people interact with their environment and how different groups assess and value the costs and benefits of restoration.<sup>48</sup>

**Rights-based approaches to land restoration are essential for stakeholder engagement and require the full implementation of multilateral environmental agreements to defend vulnerable populations.** Disenfranchised groups, such as women and youth, indigenous and displaced peoples, often do not have the adequate forms of capital needed to fully and equitably participate in land restoration activities. This may be due to a lack of human capital – i.e., awareness, knowledge, or the capacity to take advantage of restoration opportunities – or a lack of agency and social capital arising from power imbalances, systemic discrimination, or insecure tenure and resource rights.

**FIGURE 7** Land governance, tenure security, and land restoration



**Limited land rights, coupled with traditions, customs, or religious norms, can prevent women and girls from participating in and benefiting from restoration activities.** These factors restrict their ability to obtain reasonable and unbiased access to dispute resolution mechanisms or customary governance institutions. Inclusive restoration begins with assessing and reforming legal, regulatory, customary, and administrative frameworks to be gender-responsive, thereby recognizing women and girls' critical role as primary caregivers and their important contribution to household health and income, food and water security, and sustainable development.

**Gender-responsive land restoration is an obvious pathway to reduce poverty, hunger, and malnutrition.**

In developing countries, women typically have major roles in both rural and urban agriculture – from seed collection, harvesting, and processing to sales in local markets. These roles typically come with other responsibilities, such as education, childrearing, or obtaining water. The recognition of women's legitimate land rights will accelerate restoration efforts by opening doors to markets and finance, training and extension services, and gender-appropriate technologies. Gender-responsive restoration projects and programmes embrace specific objectives, action plans, and budgets that foster women's participation and promote gender equality.<sup>49 50</sup>

**Indigenous peoples and local communities represent a vast store of human and social capital that must be respected and embraced to protect and restore natural capital.** As proven land stewards, indigenous peoples and local communities will be vital to the success of the global land restoration agenda, but only if their rights are recognized and they are involved in the management of protected areas.<sup>51</sup> Indigenous and local knowledge, customary use, and management practices must be given equal footing alongside modern scientific approaches. Addressing past injustices, respecting human rights, and restoring traditional governance are key priorities for the 'land back' movements gaining momentum around the world.<sup>52</sup> Businesses and land developers can do their part by engaging in partnerships with indigenous peoples and local communities to help obtain legal recognition of their customary lands as mandated by free, prior, and informed consent.<sup>53</sup>



## 8. Redirecting Investment and Incentives

- 8.1 Redirecting public spending towards regenerative land management solutions offers a significant opportunity to align private sector investment with longer-term societal goals – not only for food, fuel, and raw materials, but also for green and blue infrastructure for drought and flood mitigation, renewable energy provision, biodiversity conservation, and water and waste recycling.
- 8.2 Territorial and landscape approaches can leverage public and private financing for large-scale or multi-sector restoration initiatives by allowing diverse groups of stakeholders to establish partnerships that pool resources, aggregate project activities, and share costs. These collaborative approaches will make land restoration initiatives more effective and attractive to donors and investors.
- 8.3 It is unrealistic to expect developing countries to cover the entire bill for a ‘just transition’ to a restoration economy and climate-resilient future. Extra-budgetary support will be needed – from corporate investment, climate finance, debt relief, and donor/development aid to a range of innovative financial instruments that explicitly include environmental, social, and governance criteria.

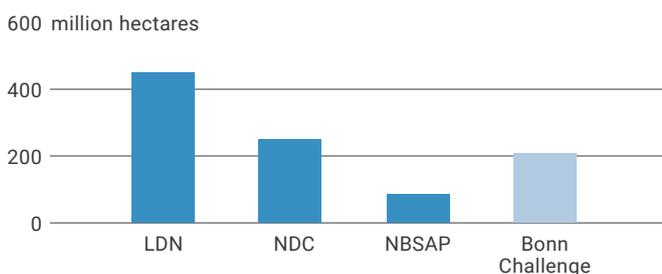
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The returns from a regenerative restoration economy that reduces greenhouse gas emissions, land degradation, and biodiversity loss are estimated to be worth USD 125-140 trillion annually – up to one and a half times global GDP of USD 93 trillion in 2021.<sup>54</sup>

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**FIGURE 8** Global restoration commitments



Source: PBL, 2021.

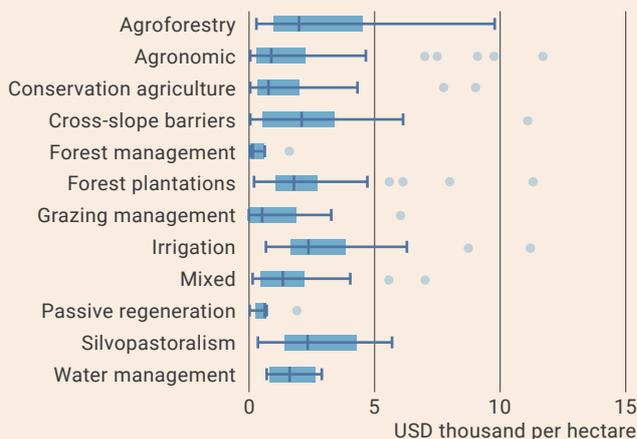
At the end of 2021, more than 115 countries had made quantitative, area-based commitments to restore 1 billion hectares of farms, forests, and pastures – an area greater than the size of the United States or China. Almost half of these are pledged as voluntary national LDN targets under the UNCCD, including 250 million hectares of farmland. Implementing these commitments will require investments of as much as USD 1.6 trillion over 10 years.<sup>55</sup> While this is significant, it is far less than the amount of subsidies provided to the agriculture and fossil fuel industries. International and multilateral organizations already play a

key role connecting the public and private sectors, but closing the investment gap will require new forms of partnership and cooperation between governments, businesses, and civil society.

**While restoration costs are likely to be high for most developing countries, international financial support, innovative business models, and cost-sharing mechanisms can deliver at scale.** In addition to reallocating government budgets, repurposing harmful subsidies, and more targeted development funding, a variety of financing windows are available for countries to scale up their land restoration activities. These include dedicated project funding (e.g., GEF, GCF, development banks), public-private or blended finance (e.g., LDN Fund, Restoration Seed Capital Facility), corporate investments (e.g., BNP Paribas Ecosystem Restoration Fund), and environmental, social, and governance (ESG) funds. At the start of 2020, global ESG assets were valued at USD 35 trillion. While this amount was 15% higher than two years earlier, these investments need increased transparency and better guidance to deliver demonstrable environmental or climate benefits.<sup>56</sup>

### Financial Commitments Accompanying the Glasgow Leaders Declaration on Forests and Land Use

**FIGURE 9** Cost range per restoration measure



Source: PBL, 2021.

At the UNFCCC COP26 in November 2021, more than 130 world leaders committed to work collectively to halt and reverse forest loss and land degradation by 2030, while delivering sustainable development and promoting inclusive rural transformation.<sup>57</sup> Funding will be provided to developing nations as a priority, supporting projects to restore land degraded by land use change for agri-food, other commercial activities, flooding, drought, or wildfires. The commitment includes more than USD 19 billion in public and private funds to support regenerative actions,<sup>58</sup> with 14 country and philanthropic donors pledging at least USD 1.7 billion between 2021 and 2025 to advance indigenous peoples and local communities' forest tenure rights, and support their role as guardians of forests and nature.<sup>59</sup>

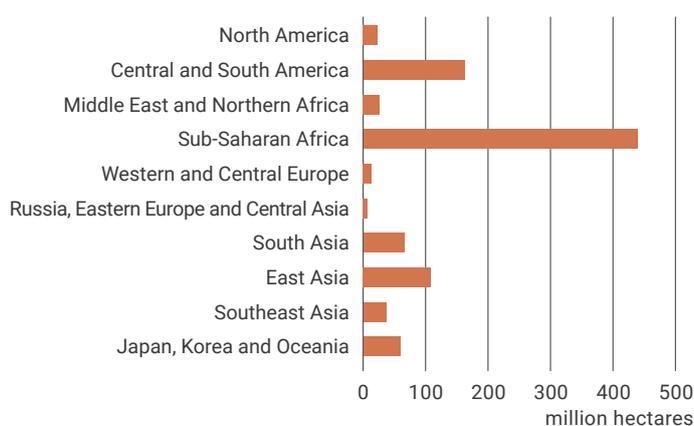
The commitment also includes a pledge by 12 country and philanthropic donors of at least USD 1.5 billion to protect the forests of the Congo Basin;<sup>60</sup> an announcement by the Bezos Earth Fund of an additional USD 1 billion to accelerate landscape restoration in the Great Green Wall countries of Africa;<sup>61</sup> and a promise by CEOs from more than 30 financial institutions controlling more than USD 8.7 trillion in global assets to eliminate investment in activities linked to deforestation.<sup>62</sup>

## 9. Working Together to Restore Land

- 9.1** The stark implications of the business-as-usual scenario means that decisive action at all levels and from all actors is needed to realize the promise of the restoration scenarios contained in this Outlook.<sup>63</sup> What is clear and unequivocal is the need for coordinated measures to meaningfully slow or reverse climate change, land degradation, and biodiversity loss to safeguard human health and livelihoods, ensure food and water security, and leave a sustainable legacy for future generations.
- 9.2** The United Nations, acting as one, has a unique capacity to motivate the global community, stimulate a worldwide movement, and help secure finance for land restoration at scale. With its convening power, the UN can help build the evidence base needed to assist countries in creating incentives that shift attitudes and behavior towards regenerative, climate-resilient, and nature-positive solutions.
- 9.3** The UN General Assembly has affirmed that combating desertification, land degradation, and drought – and achieving Land Degradation Neutrality (LDN) – is an effective pathway to accelerate progress towards achieving multiple Sustainable Development Goals by 2030.<sup>64</sup> The UNCCD and many global partners are championing the land restoration agenda, using a wide range of evidence-based strategies and practices that can be tailored to local contexts and replicated at multiple scales.

**The UN Decade on Ecosystem Restoration calls for a broad and balanced response, addressing all ecosystems and their connectivity to reestablish a healthy landscape mosaic.**<sup>65</sup> While restoring forest landscapes and planting trees has become a powerful strategy, driving global efforts and attracting much-needed funding, not all land nor all species are suitable for this type of restoration. Grasslands and savannas are productive, biodiverse ecosystems that support the livelihoods of millions of people. They match forests both in their global extent and in their need for protection and restoration. Equally important are wetlands which are in long-term decline, averaging losses at three times the rate of global forest loss in recent decades. Sustaining their capacity to absorb and store carbon is key to a climate-resilient future.<sup>66</sup>

**FIGURE 10** Restoration commitments by region



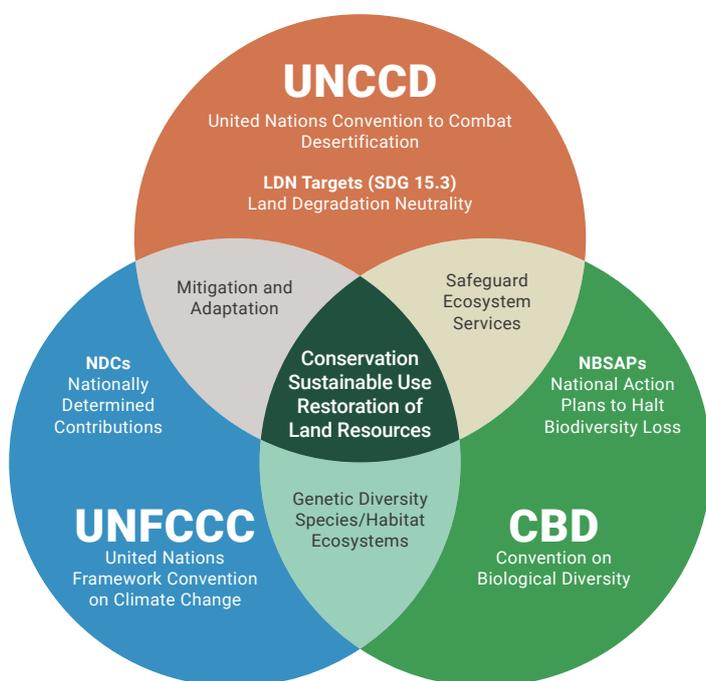
Source: PBL, 2021.

**Leadership from the United Nations, the Bonn Challenge, and other global and regional initiatives to reverse land degradation is helping to set the necessary level of ambition.** Building on these initiatives, G20 leaders in November 2020 expressed their shared ambition to achieve a 50% reduction in degraded land by 2040.<sup>67</sup> It is individual country policies and efforts that will drive action on the ground through a combination of measures and customized restoration pathways that build on existing and emerging capacities to innovate and remain competitive. In fulfilling their restoration commitments, countries also face critical governance and equity issues, especially when expanding protected areas or undertaking large-scale restoration activities that may disenfranchise vulnerable communities.

**The Glasgow Leaders Declaration on Forests and Land Use asserted for the first time the importance of leveraging multiple UN processes.** At the UNFCCC COP26, more than 130 countries reaffirmed their respective individual and collective commitments to the three Rio Conventions – on Desertification (UNCCD), Biological Diversity (CBD), and Climate Change (UNFCCC). This landmark declaration is supported by unprecedented corporate and donor pledges and includes assurances of financing and more secure land tenure and forest rights for indigenous peoples and local communities. It also includes commitments to facilitate trade and development policies that avoid deforestation and land degradation, especially regarding internationally traded agricultural commodities, such as beef, soy, palm oil, and timber.<sup>68</sup>

The efficiency gains of joint land, climate, and biodiversity prioritization underscore the mutual benefits that arise from bridging the aims of the three Rio Conventions rather than pursuing their objectives in isolation.<sup>69</sup>

**FIGURE 11** Land restoration and the Rio Conventions



**The Rio Conventions are multilateral environmental agreements that emerged from the 1992 Earth Summit and now strategically positioned to activate the land restoration agenda.** Their mandates address interdependent issues related to the sustainability of Earth systems. At the global level, the institutions and processes of the Rio Conventions are almost identical in their decision making and subsidiary bodies and in their modes of stakeholder engagement. Each convention sets goals and targets, with their country Parties developing action plans to implement them at the national level. The conservation, sustainable use, and restoration of land resources are often central to these action plans.

**To begin, countries could explore the ways and means to merge individual national action plans (e.g., NDC, LDN, NBSAP) into a single unified strategy and implementation plan.** By mapping overlapping challenges and opportunities, countries could achieve economies of scale to meet the objectives of the Rio Conventions while advancing national

development priorities. For example, if climate change is the overriding national priority for a country, restoration commitments and response measures under other conventions and processes could be allied and integrated with mitigation and adaptation objectives. This increased level of coherence will unlock the potential of sectoral and departmental coordination, create a pipeline of investment-ready projects and programmes, and engage the private sector and civil society to cost-effectively achieve mutual benefits through land restoration.

Bringing together national action plans currently siloed under the UNCCD, CBD, and UNFCCC frameworks represents an immediate opportunity to align targets and commitments to implement land restoration, realize multiple benefits, and maximize returns on investment.

# 10. Activating the Land Restoration Agenda

- 10.1** Ambitious land restoration targets must be backed by clear action plans and sustained financing. Countries that are disproportionately responsible for the climate, biodiversity, and environmental crises must do more to support developing countries as they restore their land resources and make these activities central to building healthier and more resilient societies.<sup>70</sup>
- 10.2** The UN Decade on Ecosystem Restoration is galvanizing indigenous peoples and local communities, governments, the private sector, and civil society as part of a global movement to undertake all types of restoration, across all scales, marshalling all possible resources. This powerful 10-year ambition aims to transform land and water management practices to meet the demands of the 21st century while eradicating poverty, hunger, and malnutrition.
- 10.3** Land restoration is a shared responsibility – everyone has a role to play because everyone has a stake in the future. Governments, businesses, and communities can restore together by seeking convergence and complementarity. Environmental and development priorities can be responsibly co-managed to create a healthier and more sustainable mosaic of land uses, without compromising needs and aspirations of current and future generations.

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The Great Green Wall in Africa is an inspiring example of a regional restoration initiative that embraces an integrated approach with the promise of transforming the lives of millions of people.<sup>71</sup>

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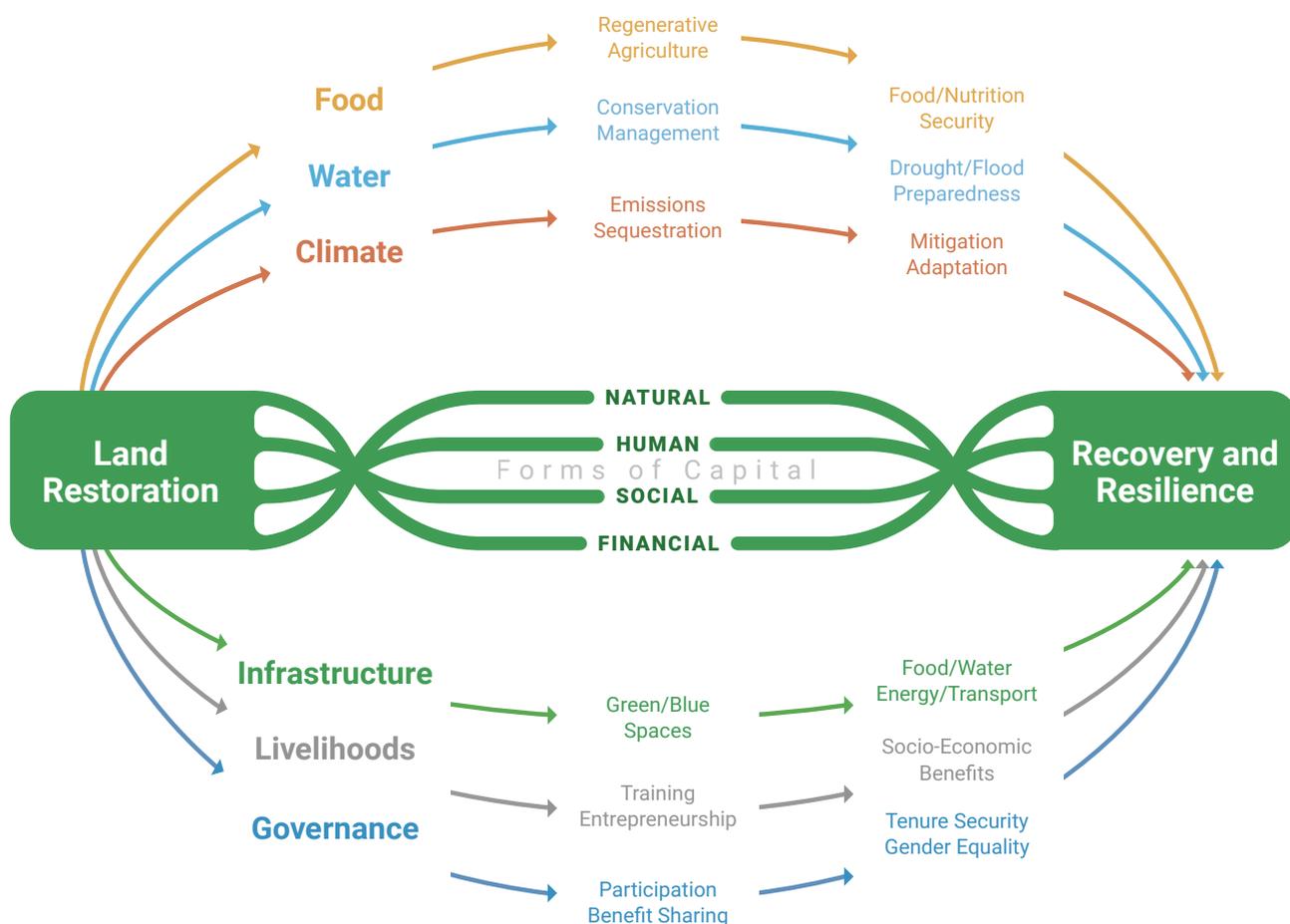
**Achieving Land Degradation Neutrality (LDN) by 2030 is at the heart of the land restoration agenda and key to achieving many Sustainable Development Goals.** As of 2021, more than 100 countries developed LDN plans that have been recognized as ‘frameworks for action’ by local and national authorities, civil society, and the private sector.<sup>72</sup> These plans are critical to the land restoration agenda as they specify the measures and resources needed to achieve LDN by avoiding, reducing, and reversing land degradation at scale. At the same time, to accelerate progress, these frameworks also respond to the urgent need for more responsible land governance and management practices that create meaningful livelihoods, halt biodiversity loss, and embody immediate climate action.

**No country can stand alone – alliances, coalitions, partnerships, collaboration, and cooperation are essential to build, scale, and deliver the required mix of capital needed to transform our land use systems.** Immediate financial support is needed to fund conservation and restoration in those developing countries with a greater share of the global distribution of intact, biodiverse, and carbon-rich ecosystems. At the same time, local and national authorities must be agile and flexible when preparing and responding to desertification, land degradation, and drought. They must be ready and willing to act with coordinated, multi-level responses that may include policy and regulatory reform, budget and subsidy reallocations, devolved governance arrangements, and the repurposing of administrative functions.

**Greater investments in human and social capital will help maximize the impact of financial capital when undertaking land restoration activities.** Land restoration is efficient, effective, and equitable when people are front and center – actively and meaningfully participating in community-based approaches that are supported by national policies and budgets. Restoration projects and programmes can have even greater impacts when they are employed in tandem with poverty alleviation, disaster risk reduction, and rural development strategies. This combination gives people the agency to improve their health, livelihoods, and prospects by regenerating land-based natural capital. Finding the right balance among different forms of capital will also enable communities to implement restorative actions according to their local priorities. This will ensure that all necessary and appropriate demands on land resources can be met with the least harm to the environment.

The investments and decisions taken today will determine the quality of life on land tomorrow. We must seize the opportunity to act and restore now.

**FIGURE 12** Land restoration pathways to recovery and resilience



### The Global Land Outlook, second edition

The second edition of the Global Land Outlook highlights diverse pathways and good practices to further engage and empower local communities and vulnerable groups to contribute to the land restoration agenda. It presents a suite of regenerative approaches to improve food production, water management, climate action, green infrastructure, job creation, and inclusive governance. These pathways can be bundled to suit national and local circumstances, offering the prospect of immediate action resulting in such tangible benefits as food and water security, improved human health and livelihoods, disaster risk reduction, and climate mitigation and adaptation. While significant challenges remain, the case examples reveal positive feedback loops between changes in societal attitudes (i.e., more responsible corporate and consumer behavior, strengthened policy, regulation and supply chains, short-term incentives, and long-term planning) and increased levels of capital investment in land and ecosystem restoration.

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# GLOBAL LAND OUTLOOK

Second Edition

## Summary for Decision Makers

The Global Land Outlook is the flagship publication of the United Nations Convention to Combat Desertification (UNCCD). It is supplemented by scenario analyses, thematic regional reports, and a working paper series. The objective of the UNCCD is to assist countries with the “rehabilitation, conservation and sustainable management of land and water resources, leading to improved living conditions”.

The first edition published in 2017 offered a global perspective on the intertwined drivers, risks, and impacts of desertification, land degradation, and drought. Since then, human-induced land degradation, water scarcity, biodiversity loss, and climate change continue to increase risk levels in food production and ecosystem services at times and in places where economic growth and stability is most needed.

The second edition of the Global Land Outlook sets out the rationale, enabling factors, and diverse pathways by which countries and communities can reduce and reverse land degradation by designing and implementing their bespoke land restoration agenda. Land restoration for recovery and resilience is about creating livelihood and development opportunities for people simply by changing the way we use and manage our land resources.



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Convention to Combat  
Desertification

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