

POLICY BRIEF

Harnessing forests for the Sustainable Development Goals:

Building synergies and mitigating trade-offs



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Key messages

Forests hold an important potential to contribute to achieving the SDGs

Strengthening the contributions requires focusing on goals and targets that improve:

- Participatory governance (decision and rule-making)
- Administration, policy and regulatory framework and effective enforcement
- Accountability, transparent institutions like for instance tenure security and rights
- Access to markets and finance
- Education, skills and capacities
- Social capital and absence of conflict (Table 1)

The pursuit of some SDGs and targets can have negative impacts on forests and people

The SDGs that are likely to have negative impacts on forests include, for instance SDG 2 (Zero hunger), SDG 7 (Affordable and clean energy), SDG 8 (Decent work and economic growth), SDG 9 (Industry, innovation and infrastructure)

Solution 1:

Recognize synergies and minimize trade-offs

- Recognize when the implementation of SDGs and targets may have negative outcomes on forests and people and identify alternative options that contribute to social development and forest conservation, e.g. supporting forest entrepreneurship
- Minimize unavoidable negative outcomes, e.g. consider where infrastructure expansion should be limited to protect biodiversity or other environmental values or indigenous people's social and cultural values

Solution 2:

Design SDG impact pathways at the right scale, involving relevant actors and applying due process

- Develop a national implementation strategy that considers all SDGs and targets and recognizes synergies and trade-offs, including those affecting forests and people, before embarking on sectoral strategies or implementation at lower level jurisdictions
- Facilitate cross sectoral coordination in sectoral SDG implementation to mitigate potential trade-offs
- Promote specifically the consideration of forests and forests people in SDG implementation in relevant jurisdictions with significant areas of forests and forest dependent livelihoods, i.e. regions, provinces, municipalities
- Assure the involvement of relevant stakeholders, especially women, indigenous peoples and other marginalized groups in the design and implementation of the SDGs

Introduction

Agenda 2030, the 17 Sustainable Development Goals (SDGs) and the associated 169 targets orient development policies across the world. The Agenda emphasizes the interlinked and indivisible nature of the goals and targets. Understanding these interlinkages and the role of forests and trees in them is crucial for advancing ecologically, socially and economically sustainable development.

The SDGs and related targets form a complex aspirational framework with clear sectoral emphases but also strong interlinkages among goals and targets. The agenda does not explicitly address these interlinkages and interdependencies, nor the resulting synergies and trade-offs among the goals' targets. Efforts to advance one target can directly or indirectly influence the advancement of other targets, either positively or negatively. Identifying these interactions in different contexts and how these can be considered when designing SDG implementation pathways is important for successful implementation of specific SDGs and meaningful progress in all SDGs. The brief at hand focuses on these potential synergies and trade-offs from the point of view of forests and forest-related livelihoods and development.

Forests and trees are an important natural resource for sustainable development at all scales, from local to global. Forests cover about one-third of the world's land area and they provide ecosystem services that are fundamental for human well-being. The comprehensive and interrelated nature of the SDGs and targets will inevitably directly or indirectly affect for-

ests and their capacity to provide goods and services. Understanding the likely and potential impacts of the implementation of the SDGs and their targets on forests, forest-related livelihoods and forest-based development is crucial for reducing potential negative impacts and to leverage synergies that will ultimately determine whether comprehensive progress towards the SDGs will be accomplished.

National circumstances and development priorities influence how the SDGs are prioritized and how they are included in national strategies and policies. Measures taken to implement the SDGs vary according to economic prosperity, political stability, social cohesion, level of technological development and policy, institutional and social frameworks as well as geographic features and the natural resource base. The extent and condition of forest resources and the role of forests in industrial development and for livelihoods largely determine the relative importance given to forests in relation to other land uses. Social and cultural perspectives also play a key role, as do the values and interests of different actors in society, and their representation and voice pertaining to forest related decision making. These conditions greatly influence how synergies can be leveraged and unavoidable trade-offs mitigated.

In many locations forests and trees hold considerable potential for improving local livelihoods and contributing to rural development, and in some cases for national economic growth as well. Forests are important for the well-being of growing urban populations

and urban forest ecosystem services will become more important in the future. Capturing the potential of forests and trees for sustainable development requires that they are integrated in efforts and measures undertaken to reach the SDGs and specific targets. In this process harnessing opportunities for beneficial synergies and mitigating trade-offs among the SDGs and their targets is of utmost importance.

This brief builds on information produced by the International Union of Forest Research Organizations' Special Project World Forests, Society and Environment (IUFRO WFSE). It is meant to draw attention to the opportunities to harness synergies and mitigate trade-offs between forests and other land sectors in the context of national level development efforts and policy making in different sectors. Recognizing the potential for synergies and conflicts among the targets from the point of view of forest-related development and livelihoods is the first step towards achieving synergistic implementation of the targets, while mitigating trade-offs and building cross-sectoral coordination.



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Forests contribute to achieving the SDGs

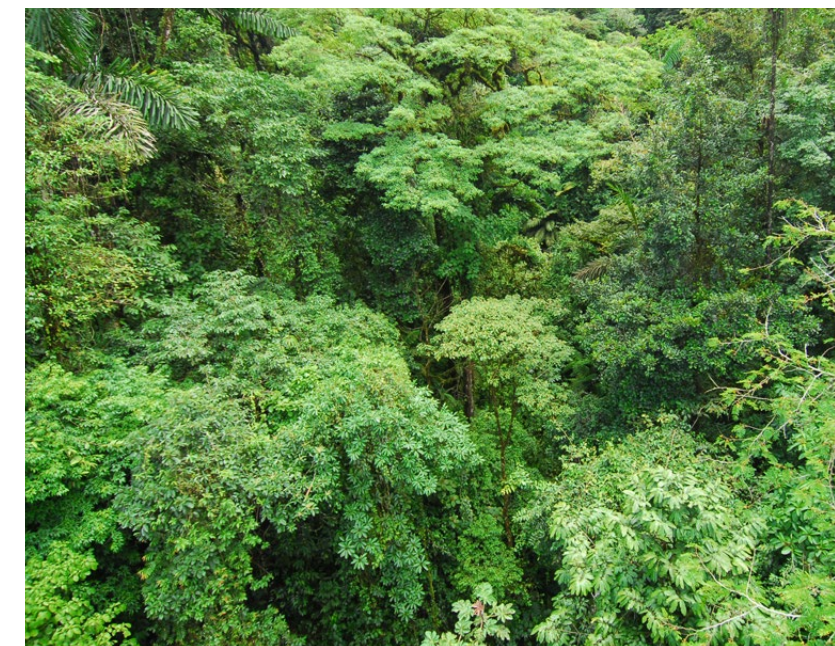
Forest biodiversity and the ecosystems services forests and trees provide are crucial for human survival and well-being. Forests are directly or indirectly linked to each of the SDGs. All people benefit from the important climate change mitigation services forests provide. Forests store carbon and the use of wood or other fibre in industrial production instead of oil-based products can also contribute to mitigation (SDG 13). Forests are also crucial for the pollination of agricultural crops, water regulation, soil formation and nutrient circulation services.

Mangrove forests (SDG 14) provide coastal protection benefits and strengthen coastal community resilience to climate-related hazards. Forests are integral to the water cycle as they influence precipitation patterns, regulate stream flows and support groundwater recharge. They are important for water quality

by reducing soil erosion and sedimentation in water bodies and by filtering and purifying water thereby contributing to water and sanitation (SDG 6). Most of the world's terrestrial biodiversity is found in forests (SDG 15). Biodiversity is extremely important for the function of ecosystems and planetary resilience; it is also the foundation for the provision of ecosystem services and important resources to humanity.

Forests and trees also provide wood for houses and furniture, plant- and animal-based products for food and medicines, contributing directly to food security (SDG 2) and ensuring health and well-being (SDG 3). Forestry provides employment and income contributing to decent work (SDG 8), ending poverty (SDG 1) and reducing inequality (SDG 10).

Forests and trees contribute to access to affordable energy and reduce dependence on fossil fuels (SDG 7). About one third of the population worldwide relies on wood fuels for energy. Wood fuels are also important in renewable energy, generating about 40% of the global renewable energy supply. Forests provide wood for construction to substitute for concrete and steel, thereby contributing to resilient infrastructure and sustainable industrialization (SDG 9). Forests provide opportunities for recreation, and are locations for spiritual and religious practices, contributing to physical and mental well-being (SDG 3) and resilient and sustainable cities (SDG 11).



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Box 1: Importance of the informal sector

The informal sector is estimated to equal or exceed formal forest sector contributions to GDP and exceed those of employment. Small and medium sized forest enterprises, most of which operate in the informal sector, constitute an estimated 80-90% of forest sector enterprises, and they employ an estimated 40 million people (part-time or full-time), while the formal forest sector employs just over 13 million people. The informal sector is primarily linked to domestic wood (including fuelwood and charcoal) and markets for non-wood forest products. Women are more frequently employed in the informal sector than men. (Source: Stoian et al. 2019)

Box 2: Urban forests and trees

The ecosystem services provided by forests and trees are increasingly appreciated in the development and planning of urban areas. For example, the Urban Forestry Strategy of Vancouver (Canada) highlights the myriad ecosystem services provided by the city's urban forests, including for culture, recreation and social cohesion. In Medellín (Colombia) the role of urban forests is emphasized for improving air quality, reducing storm-water runoff, and for carbon sequestration, combating pollution and reducing erosion as well as for improving public health. Ho Chi Minh City's (Vietnam) expanding urban green-blue network contributes to combatting flooding and the heat island effect. (Source: Devisscher et al. 2019)



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Women play a crucial role in forest-related activities (SDG 5), much of it undertaken in the informal sector. Women's local knowledge regarding the use of forest biodiversity for food and medicinal purposes supports nutrition (SDG 2) and health (SDG 3). Some traditional forest communities and decentralized, participatory community forest initiatives support equality (SDG 10) and inclusive institutions and societies (SDG 16). Measures in the forest sector to curb illegal activities and trade can also contribute to promoting the rule of law and reducing illicit financial flows (SDG 16).

Potential impacts of SDG implementation on forests and people

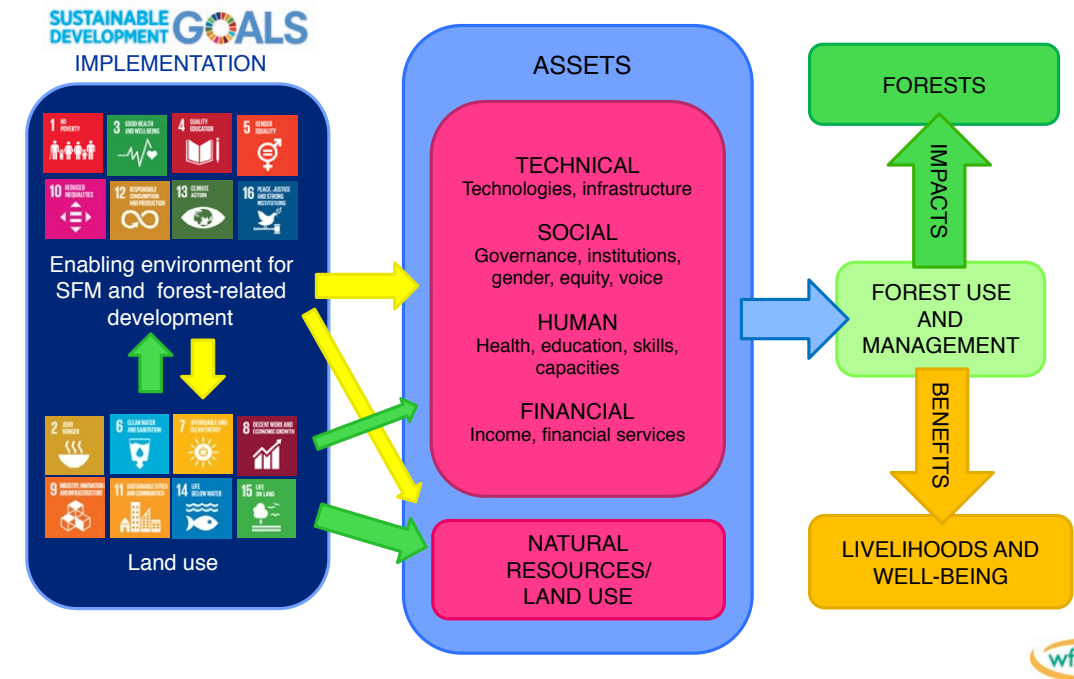
Impacts transpire via two mechanisms

Forest-related activities rely on a wide asset base that in addition to natural resources also includes human (e.g. health, education, skills), social (e.g. governance arrangements, institutions, markets, gender, norms), technical (e.g. technologies, infrastructure) and financial (e.g. subsistence benefits, income, access to finance) assets. They are crucial for shaping the opportunities, options and incentives for sustainable forest management (SFM) and conservation and influence the impacts of forest management and use on forests and associated benefits for people.

The implementation of SDG targets influences these assets through two mechanisms (Figure 1). One group of SDGs and associated targets relates to the technical, social, human and financial assets that can either support or undermine SFM and forest-related livelihoods and development. Another group relates more directly to the natural resource base and the use of these resources potentially leading to competition and trade-offs among different land uses. These two groups are used below to structure the discussion on the impacts of SDG implementation on forests and forest-related livelihoods and devel-

opment. However, there is important overlap and interaction among the SDGs within these groups. Specific targets of the SDGs in the latter group can also influence the enabling environment, and vice versa; targets of the SDGs in the former group can have important impacts on land use. Furthermore, different targets under specific SDGs can also have opposing impacts on forests potentially leading to situations where the measures to implement one target can have positive impacts on forests and forest-related livelihoods while the efforts towards reaching another target under the same SDG can undermine them.

Figure 1. Impacts of SDG implementation on forests and people transpire via two mechanisms: One group of SDG targets relates to the technical, social, human and financial assets that can either support or undermine SFM and forest-related livelihoods and development. Another group relates more directly to the use of land and natural resources potentially leading to competition and trade-offs among different land uses.



SDGs impacting technical, social, human and financial assets supporting sustainable forestry

Several SDGs are closely connected to technical, human and institutional and governance assets pertaining to forests and forest-related livelihoods and development (Figure 1, Table 1). Most of the targets of these SDGs address issues that have also been found to be crucial for a supportive and enabling environment for SFM and conservation, associated livelihood benefits and forest-related development. Such issues include good governance and the rule of law, supporting policies and legislation as well as their effective enforcement, appropriate institutional arrangements such as secure tenure and rights, participation in relevant decision and rule making, adequate public administration, access to finance and well-functioning markets for forest goods and services, education and capacity building, as well as

land-use planning, including zoning for various objectives, social capital and absence of unmanageable conflicts. Progress in the SDG targets that support these issues can thus be expected to support SFM and forest-related livelihoods and development (Table 1). At the same time some of these targets can also lead to deforestation and forest degradation if adequate safeguards are not in place. For example, expanding road networks might support forest-based production by improving market access, but could also facilitate access to previously inaccessible forest areas and make their utilization and/or conversion to agriculture economically viable leading to deforestation.

The creation of an enabling environment also requires that simultaneous progress be made in all of these issues; lack of adequate progress in one issue can seriously undermine overall progress relating to forests and forest livelihoods. For example, tenure security alone is not enough for advancing SFM; it needs to be supported by adequate capacities, access to finance and markets and a regulatory framework that supports small scale and community operators as well as large scale operators. In this connection it is important to consider the local context. Because of social and cultural differences special attention to different social groups might be needed in different contexts.



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Table 1. Main SDG targets supporting the development of an enabling environment for SFM and forest-related livelihoods and development.

Main elements of an enabling environment for SFM and forest-related livelihoods and development	Relevant SDG targets
Participatory governance (decision and rule-making)	5.1, 5.5, 5.b, 5.c, 10.2, 16.7
Supporting administration, policy and regulatory framework and effective enforcement	8.3, 10.3, 15.2, 15.6, 15.7, 16.3
Accountable, transparent institutions, e.g. secure tenure and rights	1.4, 2.3, 5.a, 16.5, 16.6, 16.9
Access to markets (incl. infrastructure) and finance	2.3, 8.10, 9.1, 9.3, 15.b
Education, skills and capacities	4.1-4.7, 13.3
Social capital and absence of unmanageable levels of conflict	10.3, 10.4, 16.1, 16.10

Box 3: Gender and rights

The insecurity of women's rights to forests continues to undermine their important role in SFM and in harnessing forests and trees to improve local livelihoods. An assessment of the legally recognized rights of indigenous and rural women to community forests in 30 low- and middle-income countries concluded that none of the assessed countries adequately recognized women's rights. Women's rights to inheritance, community membership, governance and community-level dispute resolution were inadequate in most countries, indicating a crucial area that requires much more attention. (Source: RRI 2017)

SDGs impacting natural resources and land use

The other group of SDGs relates more directly to land use and affects how societies produce goods and services and develop sectors that benefit from forests or compete with forests for land. Implementing these SDGs and their targets can either support (Table 2) or be antagonistic (Table 3) to efforts to advance SFM and forest-related development.

With population growth and more affluent population the demand for food, energy, water and different goods and services, including forest-based goods and services, will increase pressure on land. Climate change aggravates these pressures with negative impacts on agricultural productivity. Furthermore the efforts to create and maintain economic growth, employment and improve livelihoods involve the development of infrastructure and often rely on the development and expansion of natural resource sectors, such as agriculture and mining.

The agricultural sector is crucial for food security (SDG 2) and in many countries an important sector for the national economy, rural development efforts and employment generation (SDG 8), and poverty reduction (SDG 1). However, conversion of forest land to agriculture is also the main cause for deforestation: between 2000 and 2010 forest loss in tropical regions was about seven million ha/year and the increase of agricultural area about six million ha/year. Large scale commercial agriculture ac-

counts for about 40% of deforestation in the tropics and sub-tropics and smallholder agriculture about 33%. Regional variation is great: commercial agriculture accounts for almost 70% of deforestation in Latin America but accounts only for about 1/3 of forest conversion in Africa, where the role of small scale agriculture is more important ¹.

FAO has estimated that a major part of the future increase in food demand could be met by more intensive production on existing cultivated land, but there are large differences among regions. The gains in productivity in the least developed countries continue to be limited, and the increasing demand for food resulting from population growth has been increasingly met with agricultural imports. The expansion of cultivated area will continue to be the primary means for increasing crop production in parts of sub-Saharan Africa and Latin America, but with lower rates than in the past.

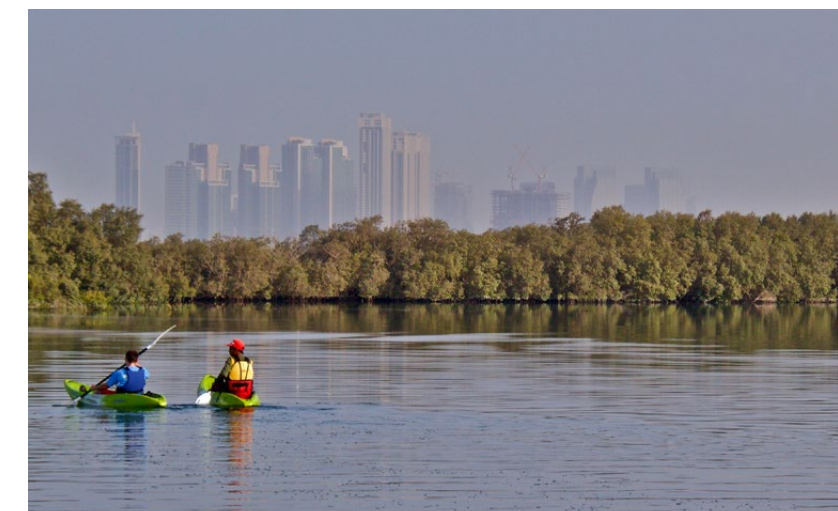
Increasing agricultural productivity (Target 2.3) and achieving sustainable and resilient food production (Target 2.4) while maintaining forest ecosystems and genetic diversity (Target 2.5) would reduce need for expanding cultivated land. Therefore, progress towards these targets will largely define the impacts of SDG 2 implementation on forests.

The interlinkage between SDG 6 and forests relates to water availability and water quality. Generally forests have a positive impact on water quality (Target 6.1, 6.3, 6.5, 6.6); this favours maintaining forest

cover and increasing cover in protected or degraded catchments. A focus on water efficiency (Target 6.4), however, may restrict the establishment of new forest plantations in semi-arid areas.

The implementation of SDG 7 can have positive or negative effects on forests. Traditional wood fuels are the main source of energy for a large portion of the global population. Efforts to move towards more modern and efficient energy sources (Targets 7.1 and 7.3) can reduce the use of forests for energy. The move towards renewable energy sources (Target 7.2) in middle and high-income countries has led to increasing use of processed wood fuels (pellets) and liquid biofuels, which could be produced sustainably. However, the expansion of biofuel crops like oil palm has led to competition with food crops and deforestation.

Formal forest sector contributions to GDP and employment (SDG 8) are generally low and declining at the global level. This often means that efforts to spur economic growth, often prioritize other sectors (e.g. large scale production of agricultural or energy crops, mining) due to their more robust contributions to GDP and/or employment (Target 8.1, 8.5, and 8.6). Significant trade-offs are expected if efforts to create and sustain economic growth focus on these sectors as they compete with forests for land, and can also lead to negative environmental impacts that affect forests beyond the area converted to other uses (for example, pollution of soils and water and loss of forest ecosystem services that support agricultural production) with corresponding impacts on people's health and livelihoods.



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Many forestry activities are informal, and their contributions to employment and the economy are often not considered in policy and investment decisions. Potential for synergy between SDG 8 and forest activities exists where growth strategies and associated policies explicitly target the forest sector through activities like timber and non-timber forest products and creating higher value-added production, restoration, tree plantations, ecotourism and payments for environmental services. To harness these synergies requires adequate legislation that supports SFM and forest conservation and effective enforcement mechanisms.

The decoupling of economic growth from forest-related environmental degradation (Target 8.4) will be a major challenge, but if accomplished would support progress towards reversing forest loss and increasing the area of protected forests (SDG 15). This would be expected to bolster forest-related livelihoods and development.

¹ FAO 2016

SDG 8 and 9 are interlinked and progress in SDG 9 is important for economic growth and employment (Targets 8.1, 8.5, 8.6) in rural and urban areas. Harnessing the potential of forests for growth and employment generation requires adequate infrastructure (Target 9.1) and the development and formalization of micro-, small- and medium sized forest enterprises (Target 9.3) as well as innovation (Target 9.5). Infrastructure is also needed to facilitate the increasing interlinkages between urban centers and the surrounding rural areas with respect to e.g. markets and employment as well as recreation and cultural values.

Yet, infrastructure development also poses serious risks to forests. Road expansion is an important driver of forest fragmentation and degradation as well as deforestation through the opening of forest areas for extractive activities and unsustainable utilization or by facilitating the expansion of agriculture. Roads also facilitate the transmission of diseases affecting

forest dependent indigenous groups. In addition to transport route construction, other large infrastructure projects for e.g. energy (oil, hydropower) and mining threaten forests and the livelihoods of indigenous and other rural inhabitants.

The progress towards all targets under SDG 15 is beneficial for forests. Also Target 14.5 (to conserve at least 10% of coastal and marine areas) should support conservation of mangroves. Strict forest protection can, however, exclude local actors from using and benefiting from forests and undermine forest contributions to livelihoods.

BOX 4: China's Ecological Redline Policy

As a response to serious environmental problems China has formulated a national policy, the Ecological Redline Policy, for sustaining critical ecosystem services by using a coordinated national scale assessment and planning approach. The Ecological Redline Policy is based on scientific assessments that consider, for instance, biodiversity, susceptibility to erosion, crucial ecosystem services (such as securing water supplies, pollination and soil conservation) and resilience to natural disasters. Areas that need to be protected are chosen for their biodiversity and natural beauty, for the ecosystem services they provide, or for their capacity to buffer against natural disasters such as flooding and sandstorms. These areas are protected from industrialization and urbanization and can include restoration of ecologically fragile areas. The Ecological Redline Policy is estimated to protect one quarter of China's land area. (Sources: Jixi 2019, Stanford University Natural Capital Project <https://naturalcapitalproject.stanford.edu/china-case-study/>)

Table 2. Main SDG targets with potential positive impacts on forests and people

Main SDG targets with potential positive effects on forests and forest-related development through impacts on land use	Mechanism
2.3, 2.4, 2.5, 12.3	Increased agricultural productivity and sustainable production and reduced food waste
6.1, 6.3, 6.5, 6.6	Forests favoured for positive effects on water quality
7.1, 7.3	Reduced use of traditional wood fuels
8.4, 9.2, 9.4, 9.5	Improved resource efficiency, value added and environmentally sound technologies
8.9	Promotion of sustainable tourism
11.7	Green public spaces in urban areas and better links between urban and rural areas
12.2	Sustainable management and efficient use of natural resources
13.1, 13.2	Forests and trees in climate change measures and in strengthening resilience and adaptive capacity to climate-related hazards and natural disasters
15.1-15.c, 14.2	Sustainable management and conservation of forests and coastal ecosystems (mangroves)

Table 3. Main SDG targets with potential negative impacts on forests and people

Main SDG targets with potential negative effects on forests and forest-related development though impacts on land use	Mechanism
1.1, 1.2, 1.a, 1.b, 2.1, 7.1, 7.2	Expansion of agricultural crops (incl. for energy)
7.2	Increasing use of forest or biofuels produced on forest land for renewable energy
8.1, 8.3, 8.5, 9.2, 9.3, 10.1	Prioritization of other sectors for industrialization, economic growth, employment, income growth
2.a, 7.2, 9.1, 9.a	Infrastructure development (e.g. roads, dams)
6.4	Restrictions for forest plantations in water-limited areas (e.g. semi-arid regions) to maximise water availability



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Key sources:

De Jong, W., Pokorny, B., Katila, P., Galloway, G., Pacheco, P. 2018. Community Forestry and the Sustainable Development Goals: A Two Way Street. *Forests* 2018, 9, 331; doi:10.3390/f9060331.

Devisscher, T., Konijnendijk, C., Nesbitt, L., Lenhart, J., Salbitano, F., Cheng, Z.C., Lwasa, S., van den Bosch, M. 2019. Chapter 11. SDG 11: Sustainable Cities and Communities - Impacts on Forests and Forest-Based Livelihoods. In: Katila, P., Colfer, C.J.P., de Jong, W., Galloway, G., Pacheco, P. and Winkel, G. (eds.) 2019. *Sustainable Development Goals: Their Impact on Forests and People*. Cambridge, UK: Cambridge University Press. In press.

FAO 2018. *State of the world's forests. Forest Pathways to sustainable development*. Rome: FAO.

Jixi, G. 2019. How China will protect one-quarter of its land. *World View* 21 May 2019. *Nature* 569 (457). doi: 10.1038/d41586-019-01563-2.

Katila, P., Colfer, C.J.P., de Jong, W., Galloway, G., Pacheco, P. and Winkel, G. (eds.) 2019. *Sustainable Development Goals: Their Impact on Forests and People*. Cambridge, UK: Cambridge University Press. In press.

Katila, P., de Jong, W., Galloway, G., Pokorny, B., Pacheco, P. 2017. Policy brief: Harnessing community and smallholder forestry for Sustainable Development Goals. IUFRO.

Katila, P., Galloway, G., de Jong, W., Mery, G., Pacheco, P. (eds.) 2014. *Forests under pressure: Local responses to global issues*. Helsinki: IUFRO-WFSE.

RRI 2017. *Power and Potential. A comparative analysis of national laws and regulations concerning women's rights to community forests*. Rights and Resources Initiative, May 2017.

Stoian, D., Monterroso, I., Current, D. 2019. Chapter 8. SDG 8: Decent Work and Economic Growth - Potential Impacts on Forests and Forest-Dependent Livelihoods. In: Katila, P., Colfer, C.J.P., de Jong, W., Galloway, G., Pacheco, P. and Winkel, G. (eds.) 2019. *Sustainable Development Goals: Their Impact on Forests and People*. Cambridge, UK: Cambridge University Press. In press.



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