Goal 3: Significantly reduce deforestation derived from other economic sectors by 2020

No indicators

Key Messages

- Insufficent data means it is not yet possible to assess the aggregate impacts of "other economic sectors" on deforestation.
- However, a number of initiatives plan to assess the deforestation impacts of specific economic activities and are expected to fill some of the research gaps and make more new data available.

OVERVIEW OF GOAL AND INDICATORS

While there is increasing awareness of the impacts of the agriculture sector on deforestation, less attention has been paid to the adverse impacts of other economic sectors, such as mining, urbanization, and infrastructure development, on forests. Studies attribute roughly one-third of global forest loss to these drivers,[1] but there are still no aggregate data sources that allow for an assessment at a global or regional scale. It is also not possible to identify progress indicators on efforts to address these drivers.

In the absence of quantifiable criteria, we provide research updates and case studies of relevant efforts. The assessment of progress toward eliminating deforestation from wood products is covered in the update on Goal 2.

FINDINGS

The development of infrastructure – including transport, energy, settlements and electricity – is an essential prerequisite for economic development, yet it is also a major cause of forest loss, responsible for one-tenth of tropical deforestation.[2] The construction of transport infrastructure, in particular, contributes to deforestation while also opening up land for other uses. For example, in the Brazilian Amazon, a study found that nearly all deforestation in the region occurred within 5.5 kilometers of roads or 1 km of rivers.[3] Forecasts indicate a growing need for transport systems, projecting 25 million km of new roads by 2050, most of them in tropical developing countries.[4]

Similarly, the exploitation of natural resources – minerals and metals – is responsible for a major share of deforestation, while also being an important source of revenue for many countries. Mineral exports contribute a significant share of GDP in some countries with high rates of deforestation: e.g. 29 percent in Liberia, 22 percent in Guyana and 18 percent the Democratic Republic of Congo (DRC).[5] Global demand for mineral and metals will increase by one quarter by 2050,[6] and a recent study shows that the current boom in low-carbon technology will further exacerbate this trend as metals are materials that are essential to clean energy systems (e.g. solar photovoltaic cells, lithinium-ion batteries for energy storage).[7] Mining drives further expansion of transport infrastructure in remote forest areas, bringing with it human settlement and associated activities (e.g. hunting, logging, and agriculture).[8] Although the mining sector is primarily concentrated in 11 countries,[9] many of these countries have extensive forest cover. Mining contributes 7 percent of tropical deforestation,[10] and coal mining alone is estimated to put nearly 12 million hectares of forest at risk for conversion.[11] The largest tracts of forests threatened by coal are located in Australia, Canada, Indonesia, India, and Colombia, with smaller areas in the United States, New Zealand, and the DRC. Legal and illegal gold extraction is another, smaller, driver of forest loss and has contributed to increasing deforestation in hotspot countries such as Brazil, Colombia, Guyana, Peru, Suriname and Venezuela.[12] Annual forest losses related to gold mining are estimated at 4,500 hectares in the Peruvian Amazon.[13]

Development #1: Infrastructure and mining development in the Amazon region

A new wave of infrastructure development is creating a new deforestation hotspot in the Western Amazon. This new wave of expansion encompasses multiple new projects, including mines, oil and gas production facilities, hydroelectric plants, and road networks.[14] While such development is not new to the region, there is a growing number of projects that access previously undisturbed forests and mobilize particularly large amounts of funding.[15] Earlier this year, for example, the Brazilian

government issued a decree opening up the 46 million hectares Renca Reserve in the Amazon states of Para and Amapa for development. Following a legal injunction, the Brazilian president revoked the decree,[16] but his intention to open up the reserve illustrates a general trend of increased pressure on forests in the Amazon region.[17] In addition, in 2016, the Venezuelan government established a strategic development zone in the Orinoco region, opening up more than 112 million hectares (12 percent of the total national territory) for the exploration of mineral reservoirs by more than 150 multinational companies.[18]

Development #2: Infrastructure and mining developments in Indonesia

In Indonesia, the National Development Plan outlines large-scale infrastructure projects and natural resource extraction as primary drivers of growth. The Indonesian government has implemented a comprehensive institutional framework to support infrastructural development, which aims to attract foreign direct investment and the influx of multinational companies.[19] Demand for coal has increased significantly, nearly five-fold between 2001 and 2010, and is projected to double by the end of the decade.[20] This is expected to drive the expansion of coal mining, especially in Kalimantan, where most of the industry is located and where it threatens more than 1 million hectares of forest.[21] Large-scale investments in transport infrastructure are planned to accompany the mining projects, further driving deforestation and opening access to forests.

Development #3: Understanding the role of protected area in limiting deforestation

A study on the effect of protected areas in the Brazilian Amazon found that deforestation near roads and rivers was four times lower in protected than in unprotected areas.[22] However, the study acknowledged that it is not known whether protecting tracts of forests simply displaces deforestation to other areas.

Development #4: New sustainability standards

The Global Reporting Initiative (GRI) has developed standards for best practices for sustainability reporting and disclosure.[23] Compliance with these standards informs policy-makers, the public, and regulators about the economic, environmental, and societal impacts of various economic activities, including mining and infrastructure sectors. The environmental component includes impacts on biodiversity, such as in protected or high biodiversity areas. The new GRI standards will replace the organization's 2013 G4 Sustainability Reporting Guidelines (G4 Guidelines), a similar standard, but compliance is already encouraged. A variety of businesses and locations, including slaughterhouses in Brazil[24] and consumer goods companies

have made use of the G4 Guidelines.[25]

The World Bank has also revised its safeguard policies and developed a new Environmental and Social Framework that is applicable to all economic sectors, including mining and infrastructure.[26] This new framework is intended to increase the coverage and harmonization of policies and improve monitoring and accountability efforts. Set to be applied from 2018, the framework outlines a number of environmental and social safeguards, including prevention of critical habitat conversion and sustainable forest management.

Development #5: Chatham House project on implementing standards for sustainable infrastructure

Implementing sustainable procurement will require companies and regulators to have a better understanding of the environmental risks (including those to forests) posed by the construction and operation of large-scale infrastructure projects. Chatham House, in cooperation with Renmin University, has launched a project that is exploring opportunities for Chinese financial institutions to strengthen their environmental policies.[27] The project focuses at Chinese banks that invest or plan to make investments in the Belt and Road Initiative, a USD 890 billion infrastructure initiative stretching across 65 countries in Asia, Europe, and Africa.[28] The overarching aim of the project is to identify how not only banks, but also regulators and the international community, can facilitate the adoption of sustainable procurement by promoting respective policies, investment criteria, and capacity building. The project highlights deforestation as a key environmental risk, both in the construction and operation phases of infrastructure deployment, and pays particular attention to the potential of sustainable procurement to reduce this risk.

DATA DEVELOPMENTS AND GAPS

Data development #1: Inclusion of forest impacts in CDP disclosure requests for metal and mining sectors

CDP, a sustainability initiative that measures and discloses environmental information from companies and jurisdictions is seeking to expand its data collection to metal and mining sectors. In an effort to improve data availability for measuring progress toward this Goal, CDP has agreed to develop a suite of questions tailored to collecting information on key indicators on the impacts of the metals and mining sector on deforestation.

Data development #2: Mapping data on mining concessions

Global Forest Watch (GFW) is an online forest mapping and monitoring system that has recently integrated publicly sourced information on mining concessions.[29] Maps outline areas licensed by government bodies for extraction of minerals (e.g. through tenure rights, licenses and permits). By tracking concession areas, GFW data enables mining and deforestation maps to be overlaid, helping to identify increased forest loss rates due to an expansion of mining sites.

Data development #3: Global road-mapping effort

Two global road-mapping initiatives currently under development aim both to inform strategies for the conservation, restoration, and monitoring of undisturbed areas[30] and to identify areas in which road construction would have the lowest environmental impact. Driven by a coalition of ecologists, planners, geographers, and agricultural specialists, Global Road Map seeks to inform better infrastructure planning in the future and limit the impact of road construction on the planet's biodiversity, ecosystems, and wilderness areas.[31] The Roadless Initiative, which is based on OpenStreetMap data, seeks to highlight the importance of roadless areas for biodiversity conservation and the need to consider them more explicitly in law.

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[1] Hosonuma et al. (2012). An assessment of deforestation and forest degradation drivers in developing countries. Environmental Research Letters, 7. doi: 10.1088/1748-9326/7/4/044009

[2] Hosonuma et al. (2012).

[3] Barber, C. P., Cochrane, M. A., Souza Jr., C. M., & Laurance, W. F. (2014). Roads, deforestation, and the mitigating effect of protected areas in the Amazon. Biological Conservation, 177, 203-209.

[4] Campbell, M., Alamgir, M., and Laurance, W. (2017). Optimising future tropical roads: Examining the economic benefits and environmental costs of roads in the Asia-Pacific. Australian Wildlife, 1, 26-29. Retrieved from https://researchonline.jcu.edu.au/48803/1/Campbell%20et%20al%2C%202017.pdf

[5] Chatham House. (2015). The impact of mining on forests: Information needs for effective policy responses. London, UK: Chatham House.

[6] Kesler, S. E. (2007). Mineral supply and demand into the 21st century. Proceedings for a workshop on deposit modeling, mineral resource assessment, and their role in sustainable development, 1294, 55–62.

[7] Arrobas, D., Hund, K., Mccormick, M., Ningthoujam, J. & Drexhage, J. (2017). The Growing Role of Minerals and Metals for a Low Carbon Future. Washington, DC: World Bank Group.

[8] Chatham House. (2015).

[9] Kooroshy, J., Preston, F. & Bradley, S. (2014), Cartels and Competition in Minerals Markets: Challenges for Global Governance [Research paper]. London, UK: Chatham House.

[10] Hosonuma et al. (2012).

[11] Olden, M., & Neumann, J. (2015). Double jeopardy: Coal's threat to forests. Retrieved from Fern Website: www.fern.org/sites/fern.org/files/CoalForest_Report.pdf

[12] Alvarez-Berríos, N. L., & Aide, T. M. (2015), Global demand for gold is another threat for tropical forests. Environmental Research Letters, 10(1). doi: 10.1088/1748-9326/10/1/014006

[13] Asner, G., & Tupayachi, R. (2017). Accelerated losses of protected forests from gold mining in the Peruvian Amazon. Environmental Research Letters, 12(9). doi: 10.1088/1748-9326/aa7dab

[14] Butler, R. (2017). Amazon destruction. Retrieved from Mongabay Website: https://rainforests.mongabay.com/amazon/amazon_destruction.html

[15] This information is based on an ongoing analysis coordinated by Anthony Bebbington, Denise Humphreys Bebbington and John Rogan, Professors of Geography and of International Development at Clark University, together with colleagues in Brazil, Central America, Peru and Indonesia. This forthcoming work focuses on the assessment and scoping of infrastructure and extractive industries in relation to deforestation.

[16] Federal Republic of Brazil, National Press (2017). Official Union Journal of 26 September 2017

[17] Yamaguchi, G. (2017). WWF statement on Brazil government's decision to open up a national reserve in the Amazon for mining [Press release]. Retrieved from wwf.panda.org/?309330/WWF-statement-on-Brazil-governments-decision-to-open-up-a-national-reserve-in-the-Amazon-for-mining

[18] Lander, E. (2016). The implosion of Venezuela's rentier state. Retrieved from The Transnational Institute's Website: www.tni.org/files/publication-downloads/lander-venezuela-english-1.pdf

[19] Smith, J., Satar, R., Wiryawan, A., & Boothman, T, & Harrison, G. (2016). Indonesian infrastructure: Stable foundations for growth. Retrieved from PwC Website: http://www.pwc.com/id/en/cpi/asset/indonesian-infrastructure-stable-foundations-for-growth.pdf.

[20] Ministry of Energy and Mineral Resources of the Republic of Indonesia. (2016). [Indonesian energy document]. Retrieved from www.djk.esdm.go.id/pdf/RUPTL/RUPTL%20PLN%202016-2025.pdf

[21] Schücking, H. (2013). Banking on coal. Retrieved from www.banktrack.org/download/banking_on_coal/banking_on_coal_updated.pdf

[22] Barber et al. (2014).

[23] Global Reporting Initiative. (n.d.) GRI standards. Retrieved from www.globalreporting.org/standards

[24] National Wildlife Federation & Gibbs Land Use and Environment Lab. (n.d.). A path towards zero deforestation cattle. Retrieved from www.zerodeforestationcattle.org/

[25] E.g.: Unilever. (2017). Unilever\s GRI G4 index. Retrieved from www.unilever.com/Images/unilever-gri-index-2016_tcm244-508415_1_en.pdf

[26] World Bank. (2017). World Bank Environmental and Social Framework. Retrieved from http://documents.worldbank.org/curated/en/383011492423734099/pdf/114278-WP-REVISED-PUBLIC-Environmental-and-Social-Framework.pdf

[27] Chatham House. (n.d.). Sustainable infrastructure: How investors can build a greener world. Retrieved from www.chathamhouse.org/about/structure/eer-department/sustainable-infrastructure-how-investors-can-build-greener-world-project

[28] Mercator Institute for China Studies. (n.d.). Belt and road initiative. Retrieved from www.merics.org/en/tags/belt-and-road-initiative

[29] Global Forest Watch. (n.d.). Mining concessions. Retrieved from http://data.globalforestwatch.org/datasets/26a457ee3b584824bb930f2ec791b60d_0

[30] Ibisch et al. (2016). A global map of roadless areas and their conservation status. Science, 354(6318). doi: 10.1126/science.aaf7166

[31] Global Road Map Website. Retrieved from www.global-roadmap.org