

IMPACT PROGRAMS

247. The Focal Areas remain the central organizing framework in the GEF-7 delivery model. For each Rio Focal Area, countries' programming options include the menu of investments described above, and a selected number of "move-the-needle" Impact Programs. Through these, the GEF will be better positioned to help countries pursue holistic and integrated approaches for greater transformational change in key economic systems, and in line with their national development priorities. The focused set of country-driven priorities hold the potential to enhance synergies, integration, and impact of GEF investments, and to promote a more effective use of resources and crowd-in private sector funding.

248. The impact programs collectively address major drivers of environmental degradation and/or deliver multiple benefits across the many thematic dimensions the GEF is mandated to deliver. Many of the priorities are also making use of increasingly more relevant global or regional platforms that are attracting a multitude of stakeholders and resources in response to political commitments.

249. These Impact Programs also contribute in significant ways to each of the Focal Area Strategies while at the same time delivering multiple benefits across several MEAs.

Food Systems, Land Use, and Restoration Impact Program

Global Context

250. How the world's food system and land use evolves over the coming few decades will have major implications for the health of the planet. Humanity's demand for food is one of the major underlying drivers of change affecting the global environment, causing significant biodiversity loss and GHG emissions, irreversible land degradation, and depletion of water resources. This is why the GEF must focus on reducing the threats from where and how food is produced. In this regard, key land management obstacles have to be tackled in an holistic way and at ecologically relevant scales. Landscape-scale interventions based on comprehensive land use planning are necessary to foster a transformational change in food systems and land use that is more environmentally sustainable. Figure 2 below shows at a small scale an example of a sustainable integrated landscape.

Figure 2. Sustainable Integrated Landscape³⁷



251. Figure 2 (not to scale) illustrates how a sustainably integrated landscape simultaneously meets a full range of *local* needs, including water availability, nutritious and profitable crops for families and local markets, and enhancing human health; while also contributing to *national* economic development and policy commitments (e.g. NDCs, LDN, Aichi targets for biodiversity conservation, Bonn Challenge); and delivering *globally* to the maintenance of biodiversity, climate change mitigation and adaptation, and provision of food, fiber, and commercial commodities to international supply chains.

252. Four key global challenges ought to be considered in any intervention designed to achieve the ambition of transformational change in food systems and land use. First, the world needs to feed a growing and increasingly affluent global population. The United Nations projects that the world's population will grow from 6.9 billion in 2010 to 9.8 billion by 2050, with most of the growth occurring in the developing world³⁸. And as the number of people grows, the share that is affluent is projected to grow as well³⁹. History shows that more affluent consumers demand more resource-intensive food⁴⁰. As a result of growing population and higher per-capita demand,

³⁷ Figure from Landscape Partnerships for Sustainable Development: Achieving the SDGs through Integrated Landscape Management. Landscapes for People, Food and Nature Initiative. 2015.

³⁸ UNDESA (2017). 9.8 billion people in 2050 reflects the “medium fertility variant” or medium population growth scenario (as opposed to the low growth and high growth scenarios published by UNDESA).

³⁹ “Middle class” is defined by OECD as having per capita income of USD 3,650 to USD 36,500 per year or USD 10 to USD 100 per day in purchasing power parity terms. “Middle class” data from Kharas (2010).

⁴⁰ Foresight (2011a).

food availability will need to increase 60-70% above 2010 levels by 2050 if present trends continue. Yet at the same time, approximately 795 million of the world's poorest people remain undernourished even today⁴¹.

253. Second, the world needs to dramatically reduce the food system's impact on biodiversity, ecosystems, and ecosystem services. By one estimate, "worldwide agriculture has already cleared or converted 70% of grassland, 50% of the savanna, 45% of the temperate deciduous forest, and 27% of tropical forests⁴²." With 40% of the planet's landmass (excluding deserts, permanent ice, and lakes) being used to grow food⁴³, the potential for exacerbating environmental degradation will only increase as agriculture continues to expand. Tropical deforestation and associated impacts on biodiversity (tropical forests support approximately 70% of the terrestrial world's plant and animal species) will continue⁴⁴. At the same time, nearly 2 billion hectares of cropland, grazing land, forests, and woodlands are degraded⁴⁵. This has negative impacts on ecosystem services, including the provision of freshwater, food, fuel and fiber, clean air and water, climate regulation, and habitat. Importantly, some of the ecosystem services already provide critical input to agricultural production, while others, such as biological control, hold significant potential in providing nature based solutions to agricultural intensification. The biodiversity underpinning these key agricultural ecosystem services need to be conserved and managed to harness more fully its contribution to sustainable agricultural production.

254. Third, the world needs to reduce the food and related land-use system's overall impact on climate change. The Paris Agreement commits countries to balance sinks and sources of greenhouse gases sometime in the second half of this century. Agriculture accounted for nearly a quarter of global greenhouse gas emissions in 2010⁴⁶. This figure includes 13% from agricultural production, namely methane from livestock, nitrous oxide from fertilizer use, and carbon dioxide from tractors and fertilizer production. Land use change contributed another 11% (some estimates go to 15% or higher⁴⁷), caused primarily by converting forests, woody savannas, and grasslands into crops and pastures, and by draining peatlands for agriculture. The greenhouse gas emissions associated with the entire global food system—from food transport, infrastructure, refrigeration or preparation of food throughout the value chain, to emissions from waste—are thought to be greater still.

255. Fourth, today's food system consumes far too much water and generates unsustainable levels of pollution. Agriculture accounts for 70% of all freshwater withdrawn from rivers, lakes,

⁴¹ FAO, IFAD and WFP (2015).

⁴² Foley et al. (2011).

⁴³ Figures exclude Antarctica. FAO (2011b).

⁴⁴ Millennium Ecosystem Assessment (2005).

⁴⁵ Gibbs and Salmon, 2015

⁴⁶ WRI analysis based on UNEP (2012), FAO (2012e), EIA (2012), IEA (2012), and Houghton (2008) with adjustments. This figure excludes downstream emissions from the entire food system in processing, retailing and cooking, which are overwhelmingly from energy use, and which must be addressed primarily by a broader transformation of the energy sector.

⁴⁷ Boucher et al. (2011).

and aquifers. When considering freshwater actually consumed, the figure rises to 80-90%⁴⁸. In addition, the food system uses 4.6 million tons of pesticides each year⁴⁹, and more than half of the nitrogen fertilizer applied to crops is lost to the environment—placing pressure on freshwater and coastal ecosystems⁵⁰. For instance, agriculture is the primary source of nutrient runoff from farm fields and poor manure management, which creates “dead zones” and toxic algal blooms in coastal waters and aquatic ecosystems. Techniques are known for proper use of chemical inputs and management of nutrients,, but these are not yet being applied at scale.

256. Each of these challenges is accentuated by the already unavoidable impact of climate change. Rising greenhouse gas concentrations will lead to reduced agricultural productivity globally. This, in turn, will threaten some livelihoods, increase pressure on vulnerable ecosystems and biodiversity, potentially reduce the land systems’ capacity to act as a carbon sink (if large tracts of temperate and tropical forests and grasslands turn into carbon sources), and add pressure to the water cycle with increasing water stress⁵¹. The world needs a more sustainable food system, one that embeds sustainability from farm to fork, generates agricultural commodities without deforestation and habitat conversion, and restores soils and degraded areas back into natural ecosystems or into productivity (relieving pressure for further conversion). The challenges are integrated; the solution needs to be as well. Paradoxically, while unsustainable agricultural systems are a threat to biodiversity, genetic diversity is also essential to provide the necessary adaptability and resilience to agriculture and food production systems in times of climate change.

257. Fortunately, windows of opportunity have opened to foster a transformational shift to a more sustainable food and land-use system. For example, natural climate solutions, such as forest conservation and restoration, and improved land management practices, including safeguards for food, fiber, and habitat, can provide over one-third of the cost-effective climate mitigation needed between now and 2030 to stabilize warming to below 2°C⁵². Alongside aggressive fossil fuel emissions reductions, natural climate solutions offer a powerful set of options for nations to deliver on the Paris Climate Agreement while improving soil productivity, cleaning our air and water, and maintaining biodiversity⁵³. Government willingness to tackle this grand challenge is on the rise. For instance, under the Paris this Agreement, more than 60 countries included avoided deforestation in their nationally determined contributions (NDCs) and more than 100 included actions within agriculture. Likewise, many of SDGs address food systems

⁴⁸ Foley et al. (2005).

⁴⁹ Zhang, W., F. Jiang, and J. Ou. 2011. “Global pesticide consumption and pollution: with China as a focus.” *Proceedings of the International Academy of Ecology and Environmental Sciences* 1(2): 125-144

⁵⁰ Zhang, X., E. Davidson, D. Mauzerall, T. Searchinger, P. Dumas, and Y. Shen. 2015. “Managing Nitrogen for Sustainable Development.” *Nature* 528: 51-59; Lassaletta, L., G. Billen, B. Grizzetti, J. Anglade, and J. Garnier. 2014. “50 Year Trends in Nitrogen Use Efficiency of World Cropping Systems: The Relationship Between Yield and Nitrogen Input to Cropland.” *Environmental Research Letters* 9: 105011.

⁵¹ IPCC AR5 (2014)

⁵² Griscom B. W. et al (2017). “Natural climate solutions”. Proceedings of the National Academy of Sciences of the United States of America

⁵³ Griscom B. W. et al (2017).

and land use directly or indirectly. And at the end of 2017, 40 nations have committed to restore 150 million hectares (Mha) of degraded land under The Bonn Challenge—a historic commitment.

258. Momentum has been building in the private sector and civil society too. In 2010, the Consumer Goods Forum (CGF) committed to eradicating deforestation from their soft commodity supply chains (e.g., beef, palm oil, soy). Building off this, in 2012 the Tropical Forest Alliance 2020 formed to facilitate business and public sector collaboration to achieve these zero deforestation commitments. At the UN Climate Summit in 2014, companies as well as governments and civil society signed the historic New York Declaration on Forests, committing themselves to eliminating agriculture-driven deforestation by 2020. To date, more than 400 companies have pledged to reduce their impacts on forests and respect the rights of forest communities. And 2017 witnessed the creation of the Food and Land Use Coalition, a public-private partnership dedicated to the transition toward a sustainable food and land-use system. Since the development of the Climate Smart Agriculture in 2010, the crucial role of agriculture and the power of the soils within an integrated landscape approach has been increasingly recognized through the establishment of partnerships or initiatives, bringing together varied stakeholders from the public and private sectors, research institutes and NGOs, such as the recently launched “4 per 1000 initiative: soils for food security and climate”.

Program Description

259. The challenges and opportunities highlighted above suggest that a significant transformation of global food and land use systems is needed to ensure that productive lands, which are important contributors to national economies and to the safeguarding of food security, are embedded within landscapes that continue to provide ecosystem services and where valuable natural capital is maintained as global environmental benefits. Conventional policy approaches to attaining this that assume land can have one priority objective while ‘trading-off’ other objectives are no longer viable in much of the world. Instead, achieving this transition will require a holistic, system-wide approach integrating both horizontal (land and natural resources) and vertical (food value and supply chain) dimensions.

260. The Impact Program on Food Systems, Land Use, and Restoration offers a timely opportunity for addressing the underlying drivers of unsustainable food systems and land use change through supporting countries to take a more holistic and system-wide approach that is in line with their specific needs for generating Global Environmental Benefits. A coordinated rational and more environmentally sustainable land-use framework at a national or jurisdictional level is key to ensure efficient food production and commodity supply chains, protect the environment, and support human prosperity. The Impact program will focus on achieving three objectives: (1) Promoting sustainable food systems to meet growing global demand, (2) Promoting deforestation-free agricultural commodity supply chains to slow loss of tropical forests, and (3) Promoting restoration of degraded landscapes for sustainable production and to maintain ecosystem services, which will be described in detail further below.

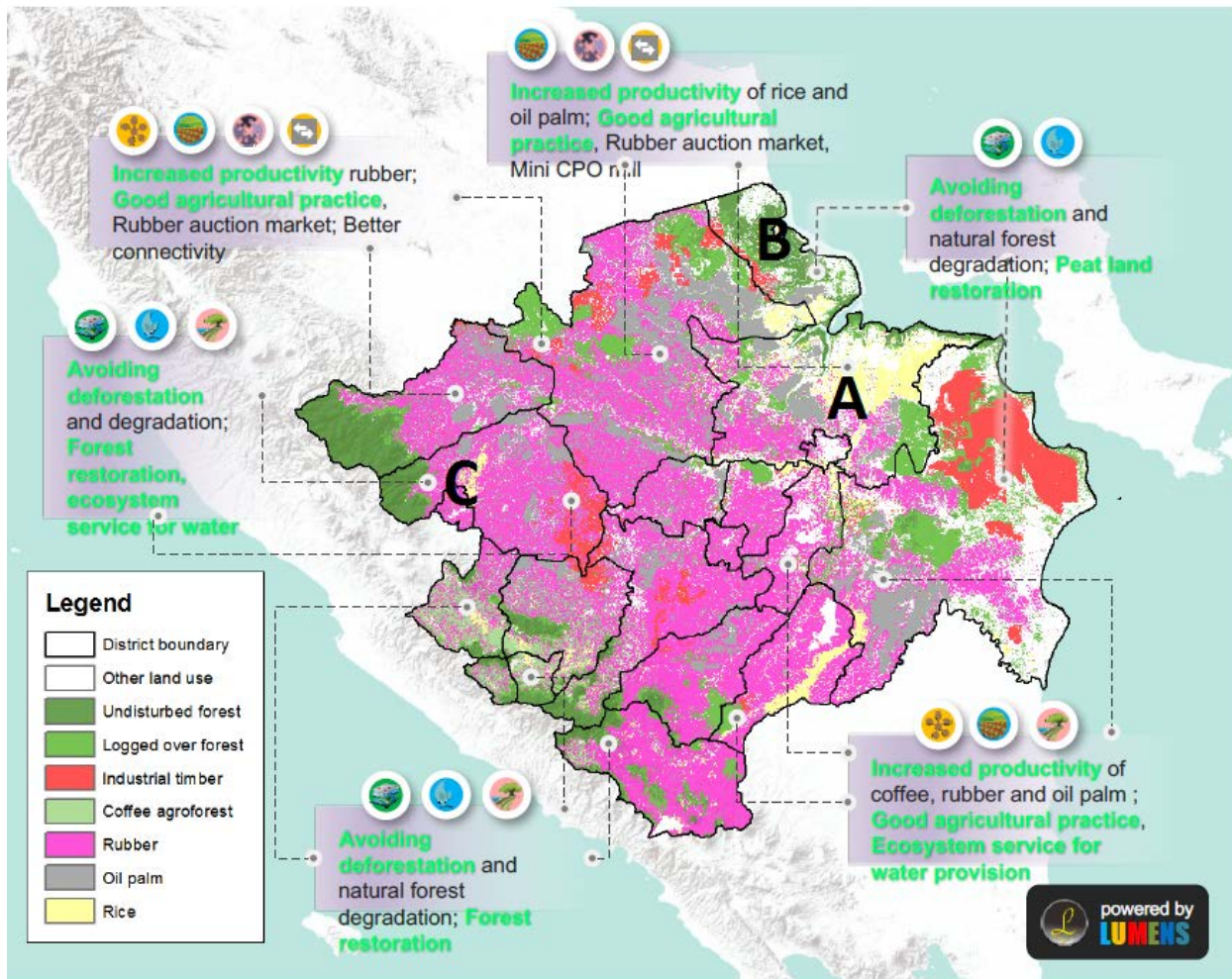
261. The Impact Program will aim to reconcile competing social, economic, and environmental objectives of land management and move away from unsustainable sectoral approach⁵⁴. Comprehensive planning will underpin transformational shift in large landscapes by taking into account competing demands for production of staple foods and major agricultural commodities, and at the same time harnessing opportunities to protect natural environments and restore degraded landscapes. Supporting governments at the national and/or sub-national level in executing and implementing this planning will be a key undertaking of the Impact Program

262. The map⁵⁵ in figure 3 below from the Green Growth Program for South Sumatra Province in Indonesia—supported by IDH and ICRAF— demonstrates an example of such a coordinated land management approach across a range of different land use types and usage zones, as is necessary to achieve sustainability and land integrity at scale. The province is made up of more than 15 districts and municipalities and spans 92,000 km² (35 thousand miles²). As different land uses in such a landscape rely on the same resource base, interventions concentrating on improving output in a single sector must be undertaken in coordination with other sectors to avoid the negative affects of land use competition. For example the intervention labeled “A” in the diagram must recognize that increasing the productivity of rice will occur in a land context where commercial commodities (oil palm and rubber) are also important, requiring management strategies that takes into account their interconnectedness. Improving yields of the commodities in this area would also be key to avoiding their expansion into and destruction of the forested area labelled “B.” Conservation and forest restoration in the area labelled “C”, particularly through agroforestry systems, helps generate global environmental benefits through the preservation of biodiversity, carbon emissions avoided and carbon sequestration. This also maintains important local ecosystem services including the provision of clean water for crops and communities, that helps secure the food security, resilience, and livelihoods of local farmers.

⁵⁴ Denier, L., Scherr, S., Shames, S., Chatterton, P., Hovani, L., Stam, N. 2015. The Little Sustainable Landscapes Book. Global Canopy Programme: Oxford.

⁵⁵ IDH, 2017

Figure 3. Land management examples from Sumatra, Indonesia.



263. Scale is an important consideration and deciding factor of how to bring about transformational change and impact. The Impact Program will operate at large spatial scales with ecological relevance in entire countries or jurisdictions. An approach at that scale requires a suite of related strategies and interventions that need to be pursued simultaneously and depending on countries' contexts. Only in this way holistic and integrated approaches can be designed that fully harness synergy, address trade-offs, and avoid emphasis on demonstration or pilot sites but instead focus on impact at scale.

264. For example, in the jurisdictional approaches towards sustainable landscapes in San Martin, Peru and Acre and Mato Grosso, Brazil⁵⁶, the business case for sustainable transitions in these jurisdictions has been proven by designing interrelated strategies for natural resource management and outlining the financial benefits of improved land use planning and options for increasing productivity. The major lesson learned in these cases is that the frameworks produced

⁵⁶ <https://globalcanopy.org/implementing-sustainable-landscapes>

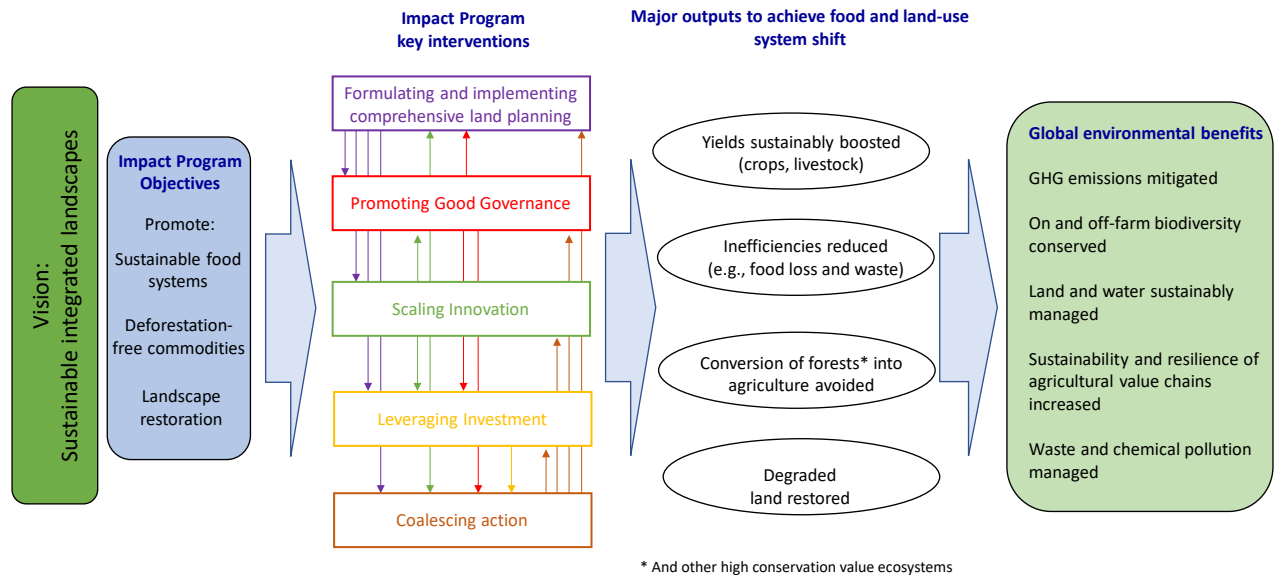
need to provide clear plans and actions for governments, risk mitigation and income potential for investors, and improvements in productivity and social conditions for local communities.

265. The GEF has long-standing experience promoting project designs to meet multiple land management objectives. It is, therefore, well placed to foster such integrated approaches, which will enable countries to base interventions on comprehensive land use planning as a prerequisite for impactful interventions. Ideally, such comprehensive planning should already be in place in order to underpin transformational shift in landscapes. However, some required steps to support enabling conditions to carry out this planning can be established and/or refined within the scope of this Impact Program.

266. Globally, countries vary considerably in their approach to food systems and land use challenges. For example, production of agricultural commodities for the global food supply chains is a major driver of land use change and environmental degradation in the tropical forests and peatlands of Southeast Asia, Africa and Latin America. The growing demand for these agricultural commodities (especially palm oil, beef, soy, coffee, and cocoa) as sources of raw material for global commodity trade will increase deforestation risks in many countries in these regions. Similarly, irrigated rice production in South and Southeast Asia is a major source of negative externalities such as methane emissions, eutrophication from excessive use of nutrients, and overexploitation of both ground and surface freshwater. In sub-Saharan Africa, livestock in the savannah regions are a major source of methane emissions, while low productivity of smallholder agriculture is an important driver of land degradation and loss of vegetative cover. Because Africa and South Asia are projected to have the most significant population growth and the largest increases in per capita income and consumption, what happens with food production and commodity production more specifically in those two regions will be critical globally.

267. As shown in the Theory of Change below ([Figure 4](#)), in order to accommodate differences between countries with respect to opportunities for leveraging GEF financing, the proposed Impact Program will offer a suite of objectives to build implementation packages covering multiple objectives and catering to a wide range of contexts and baseline situations. In this way, integrated solutions can be provided that meet the needs of diverse recipient countries aspiring to transform their food and land-use systems in a manner that generates multiple global environmental benefits. Taking the Sumatra example above, projects can be developed that focus on either food systems, commodities, or restoration actions, and where possible in combination of 2 or 3 of these objectives as part of their specific landscape needs.

Figure 4. Theory of Change



268. The vision in the theory of change of fostering sustainable integrated landscapes to generate Global Environmental Benefits would ideally be attained by supporting countries to combine two or more of the Impact Program objectives (i.e., Sustainable food systems, Deforestation-free commodities, Landscape restoration)—although in some land contexts a single objective focus would be sufficient. The key interventions cut across all the Impact Program objectives, are inter-related and will produce outcomes that are mutually supportive and necessary to achieve food and landuse systems impact. Work to *formulate and implement comprehensive land planning* is integral to rationalizing land use in a way that addresses interconnectedness and trade-offs across multiple scales and ecosystems (natural and agricultural). *Promoting Good Governance* is important for achieving a policy environment where institutional and policy directives are aligned at the national and sub-national levels, as is necessary to eliminate unintended negative interactions that arise when multiple sectoral plans are implemented independently of each other. *Innovations* are the needed spark change, with *financing* helping capitalize required interventions that move away from business as usual scenarios. Complementing all this are multi-sector *coalitions of action* that allow for initiatives to take change to scale. Objectives of the Impact Program are described in further detail in the following paragraphs.

Promoting sustainable food systems to meet growing global demand

269. This objective will enable countries seeking to meet growing demand for increased crop and livestock production, without the risk of further loss of natural habitats, erosion of genetic diversity, overexploitation of land and water resources, overuse of chemical fertilizers and pesticides, increased greenhouse gas emissions, and inefficient practices that lead to food loss

and waste. This is particularly crucial for GEF eligible regions where such risks are associated with value chains of major staple food crops (mainly maize, rice, wheat, pulses, and root crops) and livestock. A recent assessment in the Sub-Saharan Africa region suggests that there are multiple approaches and technical practices throughout the region to better harness value chains and reduce environmental impacts and externalities.⁵⁷ The assessment suggests that utilizing an inclusive action-based, multi-stakeholder platform can facilitate the collective action required to tackle negative externalities and foster a shift towards environmentally sustainable and resilient food VCs.

270. Through the IP, the GEF will help countries to catalyze more resource-efficient and effective food value chains that shift the world to more sustainable, resilient, healthier, and nutritious food systems. The approach will be holistic, encompassing all stages of the food value chain from production, processing, and distribution to marketing, consumption, and disposal. It will support long-term pathways toward sustainable food systems, including by efforts to ensure that climate robust plant and animal varieties will be available for agriculture (cf. also para 60 in the Biodiversity Focal Area section). It will engage agribusiness and the food industry, harnessing their ability to scale best practices and standards across global food value chains and their ability to support small- and medium-sized enterprises.

Promoting deforestation-free agricultural commodity supply chains to slow loss of tropical forests

271. The focus on deforestation-free commodities accelerates and scales up efforts to eliminate deforestation and other habitat conversion from agricultural supply chains—which accounts for a significant proportion of greenhouse gas emissions. Building on a successful pilot program from GEF-6, GEF-7 will deepen engagement on beef, palm oil, and soy supply chains, and broaden focus to include cocoa and coffee. Maintaining natural habitat is a critical aspect of the long-term pathway toward more sustainable food systems and land use, especially in the tropical forest regions. By emphasizing the need to take deforestation out of the commodity supply chains, this IP is complementary to the IP on Sustainable Forest Management, while also avoiding direct overlap. For example, in Brazil the SFM IP focuses on protected forests in the Amazon Biome, where a 2006 moratorium on new land clearing for soy contributed to a significant drop in deforestation in the area over the past decade. However, much of the forest clearing for soy in Brazil has since ‘leaked’ to the adjacent Cerrado Biome, which is a global biodiversity hotspot. In GEF-7, the Food Systems Impact Program will build upon and benefit from the GEF-6 Commodities IAP work being undertaken in the Cerrado to reduce clearing of natural forest in production areas for soy, while retaining a primary focus on protected forests in the Brazilian Amazon through the SFM IP. In tropical forest regions in the Congo where commodities are responsible for significant deforestation, the IP priorities will be similarly aligned with those under the SFM IP to maximize potential for securing forests by addressing a broad range of threats that they face. Under this objective, the GEF will support efforts to engage global and national supply chain actors—including smallholders and other producers, buyers, traders,

⁵⁷UNDP and GEF (2017). Options and Opportunities to Make Food Value Chains More Environmentally Sustainable and Resilient in Sub-Saharan Africa. http://www.thegef.org/sites/default/files/publications/UNDP-GEF_VC_Study_Engl.pdf

retailers, and financing institutions—to further stimulate both supply and demand for deforestation-free agricultural commodities. The ultimate goal is to make deforestation-free a viable and mainstream business model.

272. The GEF will support efforts to strengthen existing weaknesses in the supply-chain approach, specifically the on-the-ground operationalization of deforestation-free commitments made by corporations over the past five years. This will be done while simultaneously assisting governments that have included addressing deforestation as a key national policy priority in progressing toward this goal. Despite sharing similar objectives, corporations and governments have, to a large degree, acted in isolation regarding approaches to addressing tropical deforestation⁵⁸. One critical step in converting these aspirations into action is, therefore, to work with government and major actors from across the supply chain on multi-stakeholder platforms that achieve deeper collaboration, coordination and understanding on advancing deforestation-free commodity implementation. Promising jurisdictional approaches, where comprehensive planning on a sub-national level aligns incentives between actors and generates multiple benefits for companies, governments, and local communities,⁵⁹ may be targeted for platform development so that key actors from jurisdictions can exchange experiences, share successes, and inspire replication across countries and commodities.

Promoting restoration of degraded landscapes for sustainable production and to maintain ecosystem services

273. This objective will target countries seeking to restore degraded ecosystems for reversing negative impacts on biodiversity and ecosystem services, including the provision of freshwater, food, fuel and fiber, air and water quality, and climate regulation, while supporting the production aspects of those same landscapes. The GEF will enable countries to deliver on these commitments through investments that will specifically seek to shift degraded habitats into more productive systems for food and commodities, while generating multiple Global Environmental Benefits. In this way, the Impact Program will compliment the efforts made in the SFM Impact Program, which is focused on maintenance of ecosystem services in selected biomes.

274. Restoring degraded agricultural lands (e.g., cropland, grazing land) back to increased productivity will involve a holistic suite of sustainable land management practices such as agroforestry, silvo-pastoral systems, agro-ecological intensification, and other practices.⁶⁰ This is particularly important for increasing sequestration of carbon in soil, which is estimated to be between 0.90 and 1.85 Pg C/yr globally.⁶¹ The GEF will support restoration across a network of landscapes that span regions, both trans-boundary and intra-boundary. Forest and agricultural landscape restoration will directly support Bonn Challenge pledges, and increase the likelihood

⁵⁸ Miller, C., Lujan, B., & Schaap, B. (2017). Collaboration Toward Zero Deforestation: Aligning Corporate and National Commitments in Brazil and Indonesia. Forest Trends and Environmental Defense Fund.

⁵⁹ Miller, Dana and Meyer, Christopher. (2015). Zero Deforestation Zones: The Case for Linking Deforestation-Free Supply Chain Initiatives and Jurisdictional REDD+. *Journal of Sustainable Forestry* 34:6-7, pages 559-580.

⁶⁰ See <https://qcat.wocat.t/en/wocat/> for an overview of practices

⁶¹ Zomer RJ, Bossio DA, Sommer R, Verchot L. (2017). Global Sequestration Potential of Increased Organic Carbon in Cropland Soils. *Scientific Reports*. 7:15554

of having strong buy-in from countries that have already completed planning for targeted landscapes.

275. The agriculture context for landscape restoration will be clearly defined to become mutually supportive and a critical objective for an integrated approach to transform food systems. For instance, the value-chain approach for more sustainable food systems is an underlying feature of deforestation-free commodities whereby buyer-supplier contracts (and financing) are predicated on avoided deforestation or conversion more generally. Building global demand for deforestation-free commodities helps trigger pressure to restore degraded agricultural lands back in to productivity (to meet demand) and to restore degraded ecosystems (to rectify past commodity-driven deforestation). Restored landscapes help achieve a more sustainable food system by maximizing land-use efficiency and global environmental benefits.

Private Sector Engagement

276. Private sector engagement will be critical to attuning policies and practice necessary to achieve the innovation and transformational change in land use sought by the Impact Program. GEF financing will incentivize actions by national governments to promote private sector investment, such as through policy options for scaling-up existing technologies and good practices that reduce negative externalities along food value chains, and for promoting access by land users to input and markets for products that drive sustainable production at scale. Broadly categories of engagement could include support of private sector efforts to⁶²:

- *Strengthen corporate governance and sourcing policies, including through the provision of incentives and support to suppliers, particularly small-holders.* This is illustrated through an agreement developed by Carrefour and Agrotools with the government of Mato Grosso, Brazil for development of an electronic system to monitor purchases of domestically consumed beef to ensure meat does not come from producers who engage in deforestation, or ranch in embargoed and protected areas or on land held by indigenous communities⁶³;
- *Identify and source from jurisdictions that are putting in place ambitious programs to rationalize and improve land management.* For example, Sabah Malaysia's jurisdictional wide certification of palm oil. By committing to sustainable approaches for palm oil and forestry, the government of Sabah intends to maintain clean waterways; limit deforestation; reduce land degradation; and support alternative livelihoods for forests communities, while helping to meet global demand for sustainable palm oil⁶⁴;

⁶² List adapted from Miller and Meyer (2015)

⁶³ <http://www.carrefour.com/current-news/carrefour-launches-its-sustainable-farming-platform>

⁶⁴ Alphabet. (2017). Supporting jurisdictional leadership in net zero deforestation through sustainable value chains: Opportunities for TFA 2020. Report prepared for Tropical Forest Alliance 2020.

- *Require zero deforestation in supply chains for both direct and indirect suppliers.* To date, only about 20% of influential Forest 500 companies (as compiled by the Global Canopy Programme) have made zero or zero net deforestation commitments,⁶⁵ and these and other companies making such pledges are facing challenges in meeting them; and
- *Support government policy and regulatory reform, with the understanding that these elements are needed for companies to meet their own corporate commitments.* Demonstrated by the active involvement of private sector in Africa Palm Oil Initiative (APOI), in which 10 West and Central Africa countries are developing national action plans to transition the palm oil sector into a sustainable driver of development that is socially beneficial and protects the tropical forests of the region.

277. Small and medium-sized enterprises (SMEs) are critical contributors to the supply chain and are often at the leading edge of both environmental threats and solutions to mitigate them. This includes technologies and practices for sustainable intensification on-farm (e.g., improving land and water management, harnessing biodiversity and ecosystem services, such as pollination and biological pest control); improved use of agricultural inputs (e.g., feedstocks and manure management systems that reduce livestock greenhouse gas emissions and recapture and recycle valuable inputs such as energy, organic matter, better fertilizer technologies/practices, efficient irrigation practices); and for reducing food loss and waste (e.g. energy efficient storage).

278. Private sector involvement in the sustainable production of commercial commodities will be important to improve smallholder yields in order to reduce their need to expand into natural forest areas, and to link their products to markets; ensure that actors across the supply chain are compelled to not only make but meet but meet their zero-deforestation commitments; encourage sustainable sourcing by traders and retailers; and ensure that financing into the sector by domestic and international banks and other financiers not only recognizes the importance of forest safeguards but that these become a financing precondition⁶⁶.

279. The Impact Program will also facilitate crowding-in of private sector investments in land use systems using financial incentives including non-grant financial instruments that can reduce the risk of investors and helping to create the economic underpinning of required system changes to sustain impact in the long-run.

280. Access to finance for smallholders and small businesses in most land sectors is a big challenge. In this context, the LDN fund is an innovative private sector fund, which will invest in profit-generating sustainable land management and restoration projects worldwide. The Impact Program will use this opportunity to cooperate with countries that implement projects funded by the LDN fund. Specifically, countries⁶⁷ that are already in an advanced stage or have expressed interest in bringing transformative projects to the LDN fund may wish to participate in the Impact

⁶⁵ Haupt et al. (2017) Zero-deforestation Commodity Supply Chains by 2020: Are We on Track? Background Paper prepared for the Prince of Wales' International Sustainability Unit.

⁶⁶ Ibid.

⁶⁷ E.g. Brazil, Indonesia, Nicaragua, Peru, Tanzania, Zambia, Kazakhstan, Mali, and Colombia.

Program to complement these efforts to enhance their environmental impact and sustainability in the long term and to contribute to achieving voluntary Land Degradation Neutrality targets in those countries.

Criteria and Key Interventions for GEF Financing

281. The Impact Program on Food Systems, Land Use, and Restoration will help to promote transformational shift to more sustainable food and land-use systems, and thereby help meet the objectives of numerous multilateral environmental agreements. It will harness the expertise and reach of multiple sectors: governments, companies, financial institutions, land managers, research institutions, and civil society. The Impact Program will achieve measurable, transformational change in terms of global environmental benefits (e.g., climate, biodiversity, water, chemicals), while at the same time supporting improvements in human well-being, country resilience, and economic growth and prosperity. By promoting an integrated approach across sectors, actors, and geographies, this Impact Program will help ultimately trigger a shift to a more sustainable food and land use system.

282. The Impact Program seeks to catalyze systemic change by delivering integrated solutions to environmental challenges that leads to multiple benefits at national or jurisdictional scale. Therefore, GEF financing will be based on the following criteria:

- *Contribution to wider national/sub-national strategy.* The programming should be aligned with and contribute to implementing a salient portion of a clear, compelling, and comprehensive national or sub-national—particularly jurisdictional—land use strategy for transitioning to a more sustainable food and land-use system. That strategy should be based on science-based, long-term pathway(s) for how the country’s or jurisdiction’s food and land-use systems will meet national development needs as well as commitments under the multilateral environmental agreements;
- *Public sector support.* The programming must demonstrate strong buy-in from public sector entities (e.g., government ministries and agencies), including a program previously endorsed by the government (e.g., TFA2020 deforestation-free commodities program, restoration commitment). The enabling policy and regulatory environment, including efforts to clarify or reform land tenure and monitor and enforce laws, should be conducive to generating positive results through implementation of the Impact Program;
- *Private sector involvement.* The programming should consider private sector entities with the ability to have on-the-ground impact. These could include companies involved in any stage of the food and commercial commodity supply chain, restoration implementers, and solution providers, among others;
- *Potential for achieving large-scale change.* As discussed above, this will be necessary to so that results generate significant global environmental benefits requiring a clearly identified approach for converting results into larger scale impact in terms of geographies covered, financing mobilized, and number of actors influenced; and

- *Ability to catalyze innovations generated in technology, policy, governance, financing, and business models.* Transitioning to sustainable food and land-use systems will ultimately require new ways of doing business if successful.

283. Key interventions for GEF financing within this Impact Program include the following: a) formulating and implementing comprehensive land planning, b) promoting good governance, c) scaling innovations, d) leveraging investment, and e) supporting coalitions of action.

Formulating and implementing comprehensive land planning

284. This Impact Program will support interventions designed to get the right context in place for the transition to a more sustainable food and land-use system. Examples of such enhancements include (but are not limited to):

- Land reclassification, licensing, zoning, and trade off analyses;
- Convening multi-stakeholder dialogues and ensuring involvement of local governments, local communities, indigenous peoples, and women; and
- Support techniques that increase on-the-ground ability of governments, the private sector, land owners (especially smallholders), and civil society to sustainably produce food and commodities, and restore lands.

Promoting good governance

285. Support will be provided to governments to take steps in aligning objectives, budgets, incentives and capacities across government ministries and agencies responsible for different sectors (e.g. agriculture, forestry, environment, planning and investment, etc) and facilitating and rewarding inter-agency coordination and collaboration. Additional policy instruments and governance reforms reform could include, but are not be limited to, the following:

- Protected area enforcement, tenure clarification and security, and recognized indigenous rights;
- Efforts to secure livelihoods and tenure rights of smallholders;
- Encouraging public hearings and participation in decisions on land-use; and
- Applying monitoring and assessment tools that enable a timely and refined understanding of on-the-ground conditions, interventions, and resulting impacts.

Scaling innovations

286. The Program will support combinations of innovations that have the potential to shift the economic and political calculus of decisions by policymakers, private sector actors, and producers toward more sustainable food and land-use systems. Candidate innovations include:

- Breakthroughs technologies (e.g., those enabling sustainable agricultural intensification, those reducing greenhouse gas emissions from livestock or fertilizer);
- Step-change improvements in land management practices (e.g., those that lower the costs of land rehabilitation and restoration);
- New business models that align business practices with sustainability, such as deforestation-free commodity procurement agreements, long-term contracts, and ESOPs or joint ventures that encourage a more efficient scale of production for smallholders; and
- Technology-enhanced monitoring of land use and land-use change to increase transparency, enable adaptive management, and improve accountability.

Leveraging finance

287. The Impact Program will support efforts to increase the availability and absorption of financing for the transition to more sustainable food and land-use systems. Delivery of technical assistance will include how to bring “bankable projects” (e.g., restoration projects, new business models, improved technologies, etc.) successfully into the investment phase. Financing leveraged will include:

- Blended finance that de-risks (e.g., first-loss guarantees) private sector investment, and development of financial products, such as green bonds and other structured instruments, to attract much larger financing;
- Results-based financing for carbon emissions reductions; and
- Local bank loans to smallholders and low-tech plantations to achieve desired productivity gains.

Coalescing action

288. Multi-stakeholder initiatives and platforms that bring governments, companies, NGOs and other target stakeholders together will help to scale and replicate approaches and results. See Table 6 “Existing global collaborations and initiatives relevant to the IP” for details on a number of these initiatives across the three program objectives.

Existing initiatives and Potential Partners

289. There are several existing global and regional multi-stakeholder platforms that the Impact Program could engage to rapidly gain on-the-ground traction and to scale the Program’s impact (See Table 6). These platforms offer opportunities for GEF-funded projects to collaboratively engage financial institutions, food companies (producers, processors, and retailers), policy-makers, technical experts, and civil society. Thus, the Impact Program will not be starting from

scratch but will be able to leverage or “turbo-charge” existing momentum to accelerate progress toward more sustainable food systems and land use.

Contributions to the Multilateral Environmental Agreements

290. UN Convention on Combating Desertification – The UNCCD text explicitly mentions links between desertification, drought, and lack of food security. The Convention currently has a Ten-Year Strategy and Action Plan (2008 – 2018) that aims to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought. Four strategic objectives guide the actions of all UNCCD stakeholders and partners, all of which will be directly supported by the Impact Program, and as a result, enable countries to advance toward their Land Degradation Neutrality targets. And finally, restoration of degraded lands is key to achieving Land Degradation Neutrality (LDN) through UNCCD.

291. Convention on Biological Diversity – The CBD recognizes the critical importance of conservation and sustainable use of biological diversity for agriculture, food and nutritional security. The IP specifically integrates priorities under the BD focal area, and will directly support the convention agenda by promoting innovative practices that harness ecosystem services derived from biodiversity (e.g. pollination, soil health), increase on-farm diversification and sustainable use of agrobiodiversity, and reduce direct pressure on natural habitats. The CBD currently has a Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets covering the period 2011–2020, that embody the proposed IP outcomes as priorities for countries to invest.

292. UN Framework Convention on Climate Change – The IP will directly contribute to climate change mitigation and adaptation, and responds in an integrated way to the Paris Agreement. For example, land as such including forests and other terrestrial ecosystems can act as major carbon sinks and thus form an essential component of mitigation strategies laid out by the IPCC. Soils too can be sinks for carbon, even on farms if they are managed for that purpose. Restoration through reforestation and sustainable management of forest plays an important role in the UNFCCC’s REDD+ mechanism. The Impact Program will also position countries to leverage LDCF/SCCF resources based on priorities identified in National Adaptation Programs.

293. Beyond the Rio Conventions, the IP will also contribute to the Stockholm Convention objectives. The negative environmental effects on ecosystem services and the food chain due to industrial waste are significant. By enhancing capacity for sustainable management of pesticides and promoting safer alternatives to pesticides, the IP will contribute to reducing and ultimately eliminating the continued reliance on POPs pesticides in food systems.

Comparative Advantage of the Global Environment Facility

294. The GEF is well placed to advance transformational change in agriculture and land use systems in ways that maintain or restore ecosystem function and generate biodiversity, sustainable land management, and climate change mitigation benefits. This IP draws from GEF’s vast experience in developing sustainable agriculture, SFM, commodities, and restoration

programs, and ensures that the approach is integrated to enable the tackling of drivers of environmental degradation in a synergistic way. In particular, this will build on the experience of GEF-6 with the IAP on Food Security in Africa, and the IAP on Commodities which have already put in place collaborations and networks that can continue to expand in this new IP. The GEF will play a catalytic role in leveraging private sector engagement and co-financing while generating GEBs across different focal areas. The GEF has already engaged with key players and participated in platforms such as TFA2020, the Global Restoration Council and the Bonn Challenge.

295. The IP provides a new approach through which GEF financing will directly focus on good practices and innovations in food systems and value chains that meet demands for increased efficiency and effectiveness. While the GEF financing alone cannot address the full range of challenges for ensuring more sustainable food systems, it can play a significant role in catalyzing innovations to foster efficiency and effectiveness across the entire food value chains. The GEF's convening role within the framework of MEAs is particularly crucial for engaging key stakeholders to advance the environmental sustainability and resilience agenda for food systems in the developing world. By mobilizing diverse stakeholders and linking across scales, the synergistic and catalytic effects of GEF financing for the IP will also be greater than what can be achieved through disparate project investments.

Global Environmental Benefits

296. In accordance with its mandate, GEF financing will contribute measurable global environmental benefits by: a) sustainable use and conservation of biodiversity; b) increasing land area under sustainable practices without increasing the total land area used; c) increasing carbon sequestration; and d) reducing greenhouse gas emissions (GHG). Because the IP will target specific geographies during implementation, there is greater potential for economies of scale in achieving objectives of the Land Degradation, Biodiversity, and Climate Change focal areas. In addition, it will also support specific objectives and priorities under the International Waters and Chemicals and Waste Focal Areas.

Table 5. Global Environmental Benefits

Focal Area	Objectives and Priorities to be addressed through the IP
Biodiversity	<ul style="list-style-type: none"> • Manage biodiversity in production landscapes, such as through on-farm diversification, management of riparian areas, and maintenance of forest connectivity in areas that buffer forested landscapes • Harnessing biodiversity for sustainable agriculture – safeguarding biodiversity supporting key agricultural ecosystems, such as through pollination, biological pest control, or genetic diversity • Identification and set aside of high conservation value forest (HCVF) areas inside of commercial managed areas (e.g. concessions, plantations, farms, etc.) and within the broader production landscape
Climate change Mitigation	<ul style="list-style-type: none"> • Land-based and value chain GHG mitigation (<i>sequestration and avoidance</i>) - climate smart agriculture, GHG emissions reductions from food systems and supply chains, innovations soil quality improvement techniques that increase carbon storage in farmlands
Land Degradation	<ul style="list-style-type: none"> • Sustainable land management • Diversification of crop and livestock systems • Restoration of degraded production landscapes
International Waters	<ul style="list-style-type: none"> • Integrated land and water management, such as through advancing the nexus approach in watersheds and basins, improved and efficient irrigation systems • Prevention of nutrient pollution
Chemicals and Waste	<ul style="list-style-type: none"> • Replacement of POPS and relevant HHP's used in the global food supply chain, including agricultural plastics contaminated by these chemicals with alternatives, preferably non-chemical alternatives. • Disposal of obsolete agricultural chemicals that are POPs.

297. Outcomes and GEBs for the impact program will be in line with the MEAs and the SDGs, as follows:

- Sustainable land and water management in existing production systems, including improved management of chemical inputs;
- Mitigation of GHG emissions through improved crop and livestock management, and efficient use of energy-based technologies;
- Conservation of agrobiodiversity by increasing on-farm diversification and managing genetic diversity of crops and livestock;
- Contributing to Land Degradation Neutrality;
- Removal or disposal of hazardous chemicals (especially pesticides) and waste associated with food value chains; and
- Increasing sustainability and resilience of food value chains.

Table 6. Existing global collaborations and initiatives relevant to the IP

Collaboration	Description	Thematic priority		
		Sustainable Food Systems	Deforestation-free Commodities	Landscape Restoration
Food and Land Use Coalition	Public-private partnership advancing the shift to a sustainable food and land-use system, one that can nutritionally feed the world yet stay within planetary boundaries			
Global Agribusiness Alliance	Coalition of 40+ leading agriculture producers dedicated to sustainability			
New York Declaration on Forests	Includes a call to eliminate deforestation caused by agricultural commodities by 2020 and to restore 350 Mha of degraded land by 2030			
Food Reform for Sustainability and Health (FReSH)	Private sector collaboration to accelerate change in food systems to achieve healthy diets within planetary boundaries			
Consultative Group on Int'l Agricultural Research	Scientific research network assessing, among other things, ecosystem services and GHG mitigation in crop/livestock systems			
Global Alliance for Climate Smart Agriculture	Alliance seeking to catalyze transformational partnerships to advance climate-smart agriculture practices			
GROW Africa & Asia	Network to increase private sector investment in agriculture, especially with smallholder farmers.			
10-Year Framework Program on Sustainable Food Systems	UNEP-led initiative to raise awareness and build capacity to shift to more sustainable food systems from farm to fork			
YieldWise	USD 130 million Rockefeller Foundation grant program to tackle food loss and waste in Africa, North America, and Europe			
Tropical Forest Alliance 2020	Partnership dedicated to achieving zero deforestation			

	supply chains for palm oil, beef, soy, and more.			
Consumer Goods Forum's Zero Deforestation Resolution	Commitment by world's largest retailers and manufacturers to source 100% deforestation-free soft commodities by 2020			
Cocoa & Forests Initiative	Commitment by world's top cocoa and chocolate producers to achieve zero deforestation in cocoa supply			
Tropical Forest and Agriculture Fund	Public-private financing vehicle that invests in agricultural productivity improvements linked to zero deforestation			
Governors' Climate and Forests Task Force	Coalition of 30+ governors dedicated to reducing emissions from deforestation and forest degradation			
Global Forest Watch and TRASE	Online tools that monitor forest change (loss, gain) and trade flows of soft commodities			
Conservation and Financial Markets Initiative	Moore Foundation initiative to improve production practices and financing in order to stop deforestation in Argentina, Brazil and Paraguay, and halt mangrove loss from shrimp production in Southeast Asia.			
Supply Change	Online platform that tracks corporate commitments to remove deforestation from their production and supply chains			
The Bonn Challenge	Calls on nations to restore 150 Mha of degraded forest landscapes by 2020, and a further 200 Mha by 2030			
Global Partnership on Forest Landscape Restoration	Network of practitioners, scientists, and policy-makers dedicated to supporting The Bonn Challenge			
Global Restoration Council	Coalition of public/private sector leaders (including the GEF CEO) dedicated to inspiring ambition and catalyzing action to achieve The Bonn Challenge			
Initiative 20x20	Country-led effort to bring 20 Mha of land in Latin America and the Caribbean into			

	process of restoration by 2020			
AFR100	Country-led effort to bring 100 Mha of land in Africa into process of restoration by 2030			
4 per 1000 Initiative	Initiative seeking to advance carbon sequestration in soils via farming methods (e.g., agroforestry, conservation agriculture)			

Sustainable Cities Impact Program

Global Context

298. Global urbanization has caused unprecedented challenge to the global environmental sustainability but also offers opportunities to scale-up solutions. In a world with 7.5 billion people, over 4 billion reside in urban agglomerations (United Nations, 2014; United Nations 2016), occupying only 3% of the Earth's land, but with a global ecological footprint. This is a five-fold increase in the urban population since 1950. Urban demographic projections estimate that between 2014 and 2050, another 2.5 billion people, mostly poor, will be added to the world's cities, predominantly in Asia and Africa. Africa has the highest urban growth rates in the world (3.3% per year between 2000 and 2015), and the continental urban population is projected to reach one billion by 2040. In much of the developing world, urban growth is characterized by urban sprawl—cities are expanding their territories faster than their populations. Further, the scale of conflict- and climate-induced displacement are pushing even more people towards cities⁶⁸. Globally, 65 million people were displaced and 60% of all refugees—19 million people—settled in cities. The scale and pace of the challenge is so large that mayors and local governments are struggling to respond; land use is poorly planned and unstructured; motorization rates are increasing rapidly as is pollution. The mega-trends are converging in cities with local and global negative environmental impacts.

299. Higher urban population density and concentrated emissions in cities pose risks to public health and safety within and beyond the urban jurisdictions. Air pollution contributes to half a million deaths a year in Asia, with 67% of cities failing to meet a key air quality standard for particulate matter.⁶⁹ Transboundary air and water pollution is increasingly observed around the globe with health, agriculture, and food security impacts. Additional concerns include chemical safety, handling and disposal of electronic and industrial waste with heavy metals and solvents, pesticide application for public health and vector control, and urban run-off. Cities are hotspots, which may contain more hazardous materials than in hazardous management facilities. For example, many POPs (some covered by the Stockholm Convention such as PCBs and SCCPs) are semi-volatile compounds, which may enter the gas phase at environmental temperatures, tend to be higher in modern cities than in agricultural areas.

300. Cities, the sites of most global wealth and economic activity, are acutely vulnerable to climate change. Fourteen of the world's 19 largest cities are in port areas. Around 360 million people reside in urban coastal areas that are less than ten meters above the sea level. With sea-level rise and increased frequency and intensity of storms, these areas are likely to face immediate coastal flooding with storm surge, physical damage to infrastructure, and other impacts such as compromised water and food security. Urban climate risks are unevenly

⁶⁸ Half of the Latin America's indigenous population resides in cities (World Bank, 2015) and likely in Asia and Africa.

⁶⁹ The World Health Organization recommends that PM_{2.5} levels not exceed 10 micrograms per cubic meter as a guideline for average annual PM_{2.5}. Long-term exposure to pollution above this level has been shown to increase the risk of fatal illness. It is estimated that nearly 92% of the world's people live in places where this safe level is exceeded. Of 194 countries with data in 2015, only 26 reported safe levels of PM_{2.5}, and in 145 countries more than 99% of the population was exposed to un safe levels (World Bank, 2017).

distributed. Most at risk, as the vulnerable urban poor, with about a billion urban residents living in slums, often settling in high-risk areas including in coastal or low-lying areas of urban ecosystems (United Nations, 2017). Climate change threatens to force up to 77 million urban residents back into poverty. Likewise, urban assets and systems that are mal-adapted to climate hazards are at high risk. By 2030, disasters will cost cities USD 332 billion, with the concentration of people and assets in cities making them vulnerable to cascading failures in the wake of a disaster.

301. Cities consume over two-thirds of global energy supply, and over 70% of global carbon emissions are associated with cities (IPCC, 2015). A significant share of growth in the per capita greenhouse gas emissions (GHG) in developing countries is attributed to urban areas, through expanding and intensifying energy use, with emissions from sprawl, transport, commercial and residential buildings, and industries. Meeting the production and consumption needs of urban populations for food, energy, water, and transport significantly strains rural and urban ecosystems, locally and globally. Physical expansion of urban areas can directly compromise the provision of ecosystem services vital to cities, for example those provided by forests—clean air, providing water catchment integrity, helping to control storm water and conserving energy. Policies need to consider the linkages between cities and the surrounding rural areas as well as the broader trans-boundary ecological burden. Urban planning, governance systems, and services—including water, sanitation, transport and land markets—need to address gender and promote equal opportunities to achieve greater social, economic, and environment benefits.

302. Global response to these challenges has been a three-fold prioritization of urban solutions. Urbanization is prioritized by the *2030 sustainable development* agenda by dedicating Goal 11 to Sustainable Cities and Communities along with direct reference to cities within several of the 17 Sustainable Development Goals (SDGs). This is complemented by the *Paris Climate Agreement's* emphasis on subnational actors, and the United Nation's one-in-twenty-year Habitat III conference that resulted in the adoption of the *New Urban Agenda (NUA)* in Quito, Ecuador. The NUA is an important milestone in the push for sustainability and resilience by world leaders, which included the Sendai Framework, Paris Agreement, and the Sustainable Development Goals.

303. Cities offer an effective entry point to operationalize this urban commitment and addressing these challenges for major investments in global environmental benefits in the context of local, national, and global level actions. This presents a timely opportunity for the GEF to support countries in harnessing the growing momentum by cities to advance the urban sustainability agenda.

304. Cities control policies and vital systems related to global and local environmental conditions, such as system-level management of local infrastructure and land use, regional natural resource management, and setting some environmental standards. Many cities have direct control over vast pools of public land and private and public land use, zoning, and building codes, transit systems, local roads, water supply, wastewater treatment, solid waste management, labor markets, and others. Mayors and city administrators play an essential role in

multiple levels of urban and regional governance, necessitating their direct engagement. They can be quicker in decision-making and responsive to pressure and requests from local constituencies. In the context of climate change city leaders are demonstrating global leadership as well.

305. Projected urban development demands present an opportunity and an imperative for cities to manage their development sustainably, starting with the planning and design phase. For example, there are many-fold efficiency and environmental gains to be had with ex-ante urban investments in reserving land for public right of way for infrastructure investments that follow with demand (Angel, 2014). There is an opportunity to facilitate upstream planning to demonstrate models that avoid locking in conventional urban forms, and to help demonstrate innovative options for retrofitting to make existing cities greener and more resilient. Enhancing inclusive urban-rural linkages offers opportunities to advance integrated regional development in ways that ease economic pressures leading to congestion.

306. Concentration of people, wealth, and institutions enable agglomeration economies of scale, scope, and complexity in with gains for firms, households, and cost of providing basic infrastructure and services. Urban productivity tends to be higher, enabling more efficient output with fewer resources when guided along a sustainable urbanization pathway. Cities are incubators of innovation and present unique opportunities to generate and disseminate technological, social, and cultural ideas. These offer the dual-opportunity of decarbonizing urbanization and building deep resilience, contributing to achieve Paris Climate Agreement under the 2030 Agenda set by the Sustainable Development Goals.

307. Cities are natural places for integrated solutions. Cities offer fertile ground to integrate operations of interdependent systems of water, energy, transport, health, education, and security services. Traditionally, these urban systems have been integrated with varying degrees of effectiveness through urban governance and land use planning. To advance integration of these human systems with natural systems there are strong environmental, social, and economic cases to be made. For instance, the development and management of watershed, ecosystems, forests as well as urban and peri-urban agriculture as elements of green infrastructure in and around cities, offer compounding benefits for global climate change mitigation and local urban adaptation, resilience, diminishing air and water pollution.

308. However, global financing gap for urban infrastructure is between USD 4.5 and 5.4 trillion per year with a 40% premium for efficiency gains and up to 27% premium for resilience. These financing gap figures dwarf official development assistance. Cities need a combination of traditional solutions and radical new approaches to scale action.

Program Description

309. Recognizing the critical role of cities for sustainable development and risks of not acting now, the GEF joined forces with key entities to support cities' endeavors towards sustainable integrated urban planning. The GEF has introduced Sustainable Cities Integrated Approach Pilot (SC IAP) program for GEF-6. The SC-IAP has supported 28 urban jurisdictions across 11 recipient

countries through a USD 140 million combined grant, leveraging USD 2.4 billion in co-financing. Those cities are participating in and supported by a Global Platform for Sustainable Cities (GPSC), which serves as a knowledge platform where participating cities can tap the cutting edge knowledge and expertise in sustainable urban planning, and exchange ideas and share experiences. The larger Global Platform is led by the World Bank and joined by major global city-based networks advocating urban sustainability including, ICLEI and C40 and leading environmental think-tanks such as World Resources Institute (WRI). Through engagement with the GPSC, these technical partners and city-based networks provide knowledge sharing and technical expertise in support of participating cities, in partnership with Implementing Agencies, and National Governments.

310. The Sustainable Cities IAP program has played a major role in positioning GEF in the urban space, and further reinforced the need for GEF engagement with cities and urbanization both as drivers of global environment degradation and as key players in addressing Convention objectives. The program is directly supporting cities to pursue sustainable urban planning through integrated solutions in buildings, mobility and waste management. In addition to contributing more than 100 million tons of CO₂eq in GHG mitigation benefits, the integrated approach to urban sustainability planning will enable the cities to introduce innovations for improved management of municipal solid waste, and promote effective use green spaces for conservation of biodiversity and ecosystem services. The GEF-7 Sustainable Cities Impact Program will strengthen the framework necessary to support the overall planning and implementation of these global priorities by cities in recipient countries, establishing effective linkages between the global knowledge platform and city-level investments.

311. The Sustainable Cities Impact Program is built on the experience of GEF-6 SC-IAP. The main thrust of the program remains the same, namely, to support sustainable and integrated urban planning by enhancing policy and financing environments to promote innovations for improved urban infrastructure, and to revamp how cities operate at all levels and for all stakeholders. The IP will further support GPSC to catalog cutting-edge knowledge and promote cross-learning. The vision will benefit more cities in building urban sustainability through compact land-use planning, and resource-efficient management. Participating cities can not only benefit from the GPSC but also inform and enrich the platform with on-the-ground results. Further, cities not part of the investment program will be incentivized to join the global knowledge platform to learn and share.

312. Ensuring a strong and clear link between sustainable development plans and individual city projects is critical in this regard. Ideally city-level projects should stem from a well-developed sustainable urban development plan. If those do not exist, then countries to harness GEF financing through the program to fund the development or upgrading of a sustainable urban development plan, and child projects should come along with this process. This way it is clear how the child projects support the broader sustainable development agenda of the city. And hence this will be a key criterion for considering aspiring cities for the IP.

Objectives, Key Interventions, and Criteria for GEF Financing

313. The IP will further enhance the GEF support for cities to pursue sustainable urban planning through spatially integrated solutions in energy, buildings, transport, urban food systems, management of municipal solid waste and wastewater, and utilization of green space and infrastructure. As a result, the IP will contribute multiple global environmental benefits through decarbonization, improving biodiversity conservation, reducing land degradation, and elimination of hazardous chemicals. Increased results are expected through two interlinked components: a) promoting innovative business models for integrated solutions and investments at city-level, and b) strengthening the global platform for knowledge exchange and learning by cities on urban sustainability planning and investments. As the city-level investments lead to multiple global environmental benefits, the platform will enhance the potential for amplifying the benefits across many more cities in recipient countries.

a) Advancing Innovative Models for Integrated Solutions and Investments at City-level

314. Building on programming achievements through the Sustainable Cities IAP program, the GEF-7 impact program will continue to support countries with clear aspirations for mainstreaming sustainable and integrated urban planning for their major cities. The GEF aims to step up its support for cities to link urban planning process with concrete actions and investments that generate environmental and development benefits. The objective in GEF-7 is to bring stronger coherence of interventions across an expanding network of participating cities through enhancement of the global knowledge platform and engagement by key networks and providers of technical assistance and knowledge. Cities can implement high-impact solutions by rapidly decarbonizing urbanization on one hand and deepening resilience on the other hand. Key to this IP will be to ensure that cities move away from single-sector uncoordinated investments into more integrated multi-sector coordinated urban planning and investments. For example, GEF's grants should encourage and enable cities to expand the traditional use of land use, zoning, and building codes and construction standards for property value enhancement and tax collection, land pooling for town planning schemes and vacant land utilization while leveraging innovative non-traditional and lesser tapped resources such as land value capture, development exaction fees, own source revenue mobilization for local governments, strengthening sub-national government creditworthiness, and private sector technical and management collaboration. The GEF financing to countries will therefore be primarily driven by the following criteria:

- *Willingness of national governments to support strong, direct engagement by local governments in developing, shaping and participating in the program. Successful outcomes for the IP will depend on strong ownership by local municipal leaders and governments, which also requires buy-in from the national government;*
- *Willingness to embrace integrated urban planning and go beyond sectoral focuses. Integrated urban planning aims to integrate urban form with urban flows by coordinating spatial development and the planning of infrastructure systems;*

- *Commitment to prepare an Urban Sustainability Vision and commitment to act on sustainable and integrated urban planning, including the commitment to:* (i) develop an integrated plan; (ii) establish, monitor, and report on a harmonized set of performance indicators (urban sustainability metrics); and (iii) define local and national policies on urbanization linked to relevant national, metropolitan and local planning processes and strategies (such as national development plans, NDCs, urbanization reviews, etc.) Many cities may already have achieved these items, and others would need to commit – together with the national government – to their achievement during GEF grant implementation period;
- *Commitment to mobilize finance* by utilizing the GEF grant to achieve a large leverage ratio. Countries are expected to program the IP incentives with their STAR allocation at a ratio of 1:2, and generate significant co-financing from various sources. The co-financing may come from international financial institutions and donors, as well private sector, philanthropies or social enterprises;
- *Commitment to improve sustainability of municipal financing over time and demonstrate credible financing plans for proposed activities and concrete catalytic investment opportunities.* During GEF project implementation, a specific set of activities to improve finances of participating cities (which will require support from national governments) over time;
- *Willingness to actively engage with the global knowledge sharing platform through a network-based approach during grant preparation and implementation.* During grant document preparation, the GPSC with technical partners will help to identify good practices related to the city’s sustainable development challenge, identify key cities to learn from, and engage in knowledge exchanges to bring these lessons to the project design. During project implementation, cities should commit to participate in knowledge management, cross-learning, and sharing of lessons learned with the participating cities across the world. It is expected that cities will actively participate in knowledge exchange through sub-groups of cities with similar development challenges (e.g., cities in FCV environments, cities working on biodiversity and urban development, etc.);
- *Demonstrated political commitment to maximize impact and replication potential within country.* This would require a specific endorsement by national and participating local governments. Under ideal circumstances, the national and local governments would describe how the lessons from implementation of the GEF-funded activities would be disseminated at the national level through associations of municipalities or other networks (such as the examples from Brazil, China, India and South Africa during GEF-6);
- *Geographical distribution and urbanization status.* Rationale for city selection in terms of size/tier (mega versus secondary, now or 2050) and geographical distribution. For mega cities, articulation of intervention focus (such as themes/sectors, geographical areas); and

- *Local and national governments clearly identify urbanization as a policy priority.* Articulation of urbanization challenges in relevant national sustainable development strategies and policies, including through national urbanization reviews, sustainability action plans and follow-up priority investments. For example, city to metropolitan region scale-up by supporting within-city projects to integrate metropolitan or city-region approaches.

315. These criteria will serve as basis for the GEF to identify and assess opportunities for impactful and transformative investments by recipient countries under the IP. In order to ensure an objective approach to identifying and assessing interests by aspiring cities, GEF will engage directly with countries through a consultative process. This engagement will also enable countries to determine potential entry points and priorities for maximizing global environmental benefits through the integrated approach to development of their cities. Recipient countries will be given ample opportunity and time to express their interests. An expression of commitment that contains the key elements outlined above by the mayor or the top leadership of the interested cities supported by the national government is a pre-condition for the selection of countries into the IP.

316. To maximize potential for global environmental benefits, countries through their integrated and holistic urban development plans for specific cities, can design individual projects to program GEF resources for interventions in the following categories: a) Evidence-based Spatial Planning—National, Regional, Local, b) Decarbonizing Urbanization with Infrastructure Integration at National, Regional, and Local Scales, c) Building Deep Resilience with smart systems and slum solutions, and d) Cascade Financing Solutions for Urban Sustainability.

Evidence-based Spatial Planning—National, Regional, Local

317. This category will include:

- *Enhancing spatial planning* - Geospatial tools such as satellite maps and data layers of geographic information systems can be used in the urban context for a wide range of purposes, including mapping underground utilities, tunnels and other urban infrastructure to identify issues, improve efficiency and design retrofit, identifying infill areas such as abandoned land or buildings that are suitable for redevelopment and planning for their reallocation, mapping natural resources such as prime agricultural land and unique or endangered habitats, and mapping areas at risk of earthquakes, floods, landslides and other disaster risks and adjusting development plans accordingly; and
- *Investing in digital and data leadership* - Efficient urban services delivery requires a capable municipal government that can implement policies and spend public resources effectively. It also requires an empowered citizenry able to hold city leaders to account. This can be strengthened through streamlining processes to reduce discretion and opportunities for rent-seeking, ensuring that public resources are collected and spent efficiently and in an environmentally-friendly manner, without leakage; improving municipal service provider management through better monitoring; and receiving

feedback from service users to track satisfaction, identify problems, and improve service quality real time.

Decarbonizing Urbanization with Infrastructure Integration at National, Regional, and Local Scales

318. This category will include:

- *Coordinating inter-city infrastructure* - Inter-city infrastructure ranges from intercity rail systems to open space planning, integrated food processing, marketing and distribution systems, sharing of waste disposal facility and water supply. Promoting seamless intercity connection can not only greatly reduce the carbon footprint of intercity transport, but also promote jurisdictional complementarities and generate spillover effects. Green and productive space planning (greenbelts and greenways) can be used as growth boundaries to help contain urban sprawl and to separate different land use functions such as industrial activity and residential uses;
- *Innovation in freight and transport* – Promoting innovative technologies in the transport sector, including infrastructure and vehicles. Energy savings and reduced climate emissions result from increased efficiency in both freight and passenger transport as well as a potential decrease in overall transport needs. This in turn leads to a saving in lives, time, money, and the environment; and
- *Building seamless urban connectivity* – Promoting the use of innovative (e.g. digital) technologies to improve urban mobility in various ways, including traffic management, multimodal trip planning and congestion pricing; ensuring safe movement for pedestrians and bicycles; and incentive programs that encourage non-motorized transport modes.

Building Deep Resilience with smart systems and slum solutions

319. This category will include:

- *Optimizing urban resources management* – Promoting the use of innovative (e.g. digital) technologies for various urban development needs, such as smart grids and demand management, monitoring resources consumption, integrating urban food systems and value chains, and reducing waste through a life cycle approach - waste audits, segregation of waste at source, better management, composting, recycling and reuse (e.g. through sharing economy). The use of hazardous materials should be avoided, as appropriate, and there should be a reduction and elimination, in the long-run, of POPs such as PCBs, BFRs and UPOPs;
- *Accelerating building and district energy efficiency* – Promoting solutions for urban planners seeking to advance sustainability through application of technology and financing to foster energy efficient and resilient buildings and district heating/cooling systems which offer lower operating costs and long-term environmental benefits;

- *Streamlining municipal services for sustainability* - Streamlining services and process. One-stop computerized service centers can provide citizens with access to a wide range of public services from different departments at one location. This kind of service centers not only save time, speed delivery and expand options, but also reduce corruption opportunities;
- *Tracking of resource use and consumption* – The generation of hazardous waste and the increasing amounts of domestic waste contaminated with hazardous waste due to lack of proper regulatory and legal frameworks in place remain a major challenge for cities. Cities should work towards actions to reduce waste and to minimize natural resource extraction by employing circular economy approaches, which promote reducing, redesigning, reusing, repairing, and recycling. At the same time, they should work on reducing and eventually eliminating POPs, such as PCBs and brominated flame retardants, for example; and
- *Non-stop slum solution*—Developing ex-ante and ex-post solutions to scale up slum improvement and prevent expansion through a solutions portfolio—combining supply and demand side solutions such as site and services, slum upgrading, housing finance, subsidized mortgages, construction standardization, redesigned building codes, land tenure requirements, land markets; last mile extension of basic and resilient infrastructure service delivery all while avoiding mal-adaptations to climate change—such as slum upgrading in the flood plains and the like.

Cascade Financing Solutions for Urban Sustainability

320. This category will include:

- *Cities need to enhance fiscal capacities* in three domains for accessing capital under fiscal austerity. First, to negotiate and utilize intergovernmental fiscal transfers. Second, improve municipal financial management including managing and expanding own revenue collection and expenditure. Third, establish and enhance creditworthiness for accessing private capital markets. Cities also need to build capacity to develop bankable projects and investment opportunities while ensuring effective and efficient project design and delivery; and
- *Experimenting with land value derivatives*. Cities may explore utilizing a range of conventional and contemporary instruments to derive and utilize value from urban land. These instruments may range from routine managing of land value creation through land use planning, zoning, and associated use and density distributions and its collection through property taxes to instruments such as land value capture, development exaction fees, or incentivizing vacant land utilization to incentivize urban sustainability.

b) Strengthening the Global Knowledge Platform to advance Urban Sustainability Planning and Investments

321. The Sustainable Cities IP will seek to push further the GEF engagement in urban transformation through the Global Platform for Sustainable Cities (GPSC). The GPSC provides a single-entry point for all cities seeking to advance urban sustainability, and serves as a global convening space for dialogue and a ‘clearing house mechanism’ on issues, resources and expert needs that will help position cities as major hubs for global environmental and development benefits, including opportunities for financial leverage to advance the sustainability and resilience agendas for cities.

322. By engaging the networks and technology providers, the GPSC will serve the needs of countries and cities, including the following:

- *Ensure Cities own and drive the GPSC agenda.* Cities are at the center of sustainable development, as has been recognized by, among others the New Urban Agenda and Goal 11 of the SDGs and the New Climate Economy initiative. Cities are also engines of national and global growth, accounting for around 80% of global economic output⁷⁰. City administrations are often acutely influential, with sharp local powers to affect the form of the city and investments happening locally⁷¹. If Cities are central actors for local economic and sustainability efforts, they should also actively drive this global platform;
- *Make GPSC the platform of choice for all funders of sustainable cities.* As GPSC strategic planning exercises identify sustainable bankable projects, funding for the projects should not be restricted to GEF. The GPSC will help to pull resources from IFIs and the private sector to accelerate the implementation of sustainable projects;
- *Make GPSC focus on identifying, documenting and replicating solutions for sustainability.* The GPSC will focus on how to make cities more sustainable. As Cities are laboratories for innovation, the comparative advantage of GPSC should be in identifying, curating and documenting state of the art city-led initiatives, so that cities can learn from one another. The GPSC will aspire to be the umbrella organization centralizing the information about integrated strategic approaches for sustainability, providing technical advice to cities to have an impact on changes on the ground;
- *Make GPSC the global platform for peer to peer learning by cities.* The GPSC helps identify the different types of technical resources and solutions that “lead sustainable cities” can provide to other cities trying to follow a similar path;
- *Ensure GPSC becomes the center for innovation for monitoring progress by cities through geospatial data.* The last few years have seen striking advances in the geospatial information sphere related to some trends: 1) sharp rise in the amount of data available through smart phones, credit cards, social media, GPS devices, Google and other resources; 2) an increase in the accuracy of data; 3) increase sophistication in the methods

⁷⁰ Better Growth, Better Climate: The New Climate Economy Report. 2014.

⁷¹ C40 Cities and Arup, 2014. Climate Action in Megacities: C40 Cities Baseline and Opportunities.

used to analyze geospatial information, partly enabled by standardization of data and databases; 4) advances in hardware; 5) maturation of open-source software, to make data more accessible to a broader group of people⁷². All these advances create a huge opportunity to start thinking about data for urban sustainability in a new way. Hence, the GPSC will shift its focus to practical use of geospatial data; and

- *Make GPSC agile for implementation, focused and helping to identify city priorities.* The GPSC will be strengthened to become more flexible and dynamic in implementation, to have a more fluid and direct communication with the local governments, and to ensure there is a designated entity leading the integrated planning effort at the local level and centralizing the capacity building and training efforts.

323. The Sustainable Cities Impact Program will further strengthen the role of technical partners and city-based networks as an integral part of the GPSC, for knowledge sharing and high-level technical assistance to all cities participating in the program, and to facilitate their interaction with other cities that are emerging as models for advancing the urban sustainability agenda. These entities are well placed to harness their capacity to work on the ground, existing networks and local presence, and their strong technical capacity on the sustainable cities agenda. Working in conjunction with the World Bank as lead agency for the GPSC, the rest of the Implementing Agencies and the National Governments involved in city-level project implementation, technical partners will provide cities with the knowledge, tools and as feasible in response to demand, technical assistance in their effort to undertake a strategic approach to sustainability and integrated planning, and/or specific sectoral technical issues related to city-level project implementation. Utilizing a bottom-up approach and responding to demand and needs from the cities, the partners working through the global platform will provide participating cities with support by helping to:

- **Populate the GPSC web platform** with state of the art information on urban sustainability topics;
- **Document technical knowledge** produced by exchanges; and
- **Produce new tools and knowledge** to be part of the GPSC technical knowledge library. The topics for the new knowledge products can be selected based on demand from cities and implementing agencies, knowledge gaps, and GEF interest.

324. Through the global platform, the technical partners will also tap into their existing network and other technical resources to support countries in their needs that could include:

- **Prioritizing cities for integrated urban planning and investments.** The IP could support National Governments to prioritize their cities, and evaluate potential candidates for future investments based on sustainability efforts and commitments;

⁷² McKinsey & Company. 2014. Innovations in local government open data and information technology.

- **Sustainability Plan Assessment.** Understanding previous planning and sustainability efforts that cities have in place through a Needs Assessment, to capture existing analysis and gaps to avoid duplication of efforts. The needs assessment would also provide information required to tailor capacity development efforts to the needs of the cities;
- **Informing investment opportunities.** Supporting city-level projects to identify suitable investments by organizing peer-to-peer exchanges to study specific technical solutions and inform the investments; supporting cities and partners in the identification of investment projects that fit the broader sustainability context; and
- **Implementation.** Supporting implementation by providing technical support through capacity building in areas of interest for cities, through the City Academy, and other learning formats.

325. Through the GPSC, the IP will draw on strengths and comparative advantage of the technical partners to expand the network of cities and municipalities committed to applying the sustainable and integrated city planning approach. This will further enhance opportunities for cities to access the best available tools, knowledge and expertise for integrating sectoral priorities toward smart- and sustainable urban development. Under this vision, aspiring cities can access the following services and support:

- Access to sustainable urban development knowledge continuously accumulated by the GPSC on sustainable urban development – this would include tools, training materials, knowledge products, and lessons of implementation from cities that have implemented investment and policy programs under the auspices of the GPSC;
- Advice on the preparation of GEF city proposals, beginning with a strong focus on integrated sustainable city planning and management;
- Access to practical lessons of experience from cities already supported by the GPSC in the implementation of sustainable sectoral programs embedded in an integrated sustainable plan for the city;
- Identification of cities with relevant experience in the specific areas of interest of the proponent city, and initial exchanges for city-to-city advice in the preparation of the proponent city proposal to GEF funds (or other sources of financing linked to the GPSC);
- Access to global knowledge by various networks and institutions in areas related to urban sustainability and sectors of interest to the proponent city; and
- Invitation to periodic workshops and training sessions organized by the GPSC in the areas of interest of the proponent city.

Existing initiatives and Potential Partners

326. The GPSC has already engaged all the major International networks and technology providers, including C40, ICLEI, UCLG, Compact of Mayors, 100 Resilient Cities, UN-HABITAT, WRI, ESA, and others. In addition, the self-organized Resource Team is playing an important role under the GPSC to bring cutting-edge support, learning and knowledge sharing experiences to cities. This broad-based coalition now in place will attract additional partners, including private sector entities to help increase investment opportunities for cities and local governments aspiring for sustainability. The network partners will increasingly connect people who are tackling challenges and enable them to learn from others' experiences and adapt solutions to their own unique situations.

327. Building on models emerging from the GEF-6 IAP program, the IP will further strengthen opportunities for cities to harness the private sector in the following areas:

- *Knowledge partner for innovative tools and practices to support the sustainability planning process.* Leading entities such as Microsoft, ESRI, and CISCO have been mobilized as key partners of the GPSC, who are well placed to deliver the tools and capacity needed for cities to pursue integrated urban development. These tools are vital for supporting the integrated urban planning process, including indicators for monitoring;
- *Leveraging GEF investments for scaling-up innovations.* For example, seven Chinese cities participating in the GEF-6 IAP program are partnering with Mobike, the world's first dockless bike sharing company, to use their data for evidence-based urban planning, fill in public transit gaps, and facilitate intelligent transport dispatch. At the same time, data acquired from these seven cities also helps Mobike to improve its technology and service precision;
- *Technology providers* – There are a wide range of technologies available to support the development of smart and sustainable cities. For example, through the GEF-6 IAP program, participating cities in India will invest in waste-to-energy technologies that are now widely available for scaling-up; and
- *Incubator* – Cities offer various opportunities for business, finance, CSOs to come together to test new ideas and business models. Examples include Energy Efficiency Building and Lighting Initiatives and District Energy Systems Accelerator Initiative. These involve private sector, financial institutions and cities as regulator and planner.

328. The GEF also recognizes that development finance will ultimately not be sufficient to cover all the urban infrastructure needs in the cities over the coming decades. While helping cities to improve their management and to prepare bankable projects on urban sustainability, the GEF is well placed to assist cities to build an evidence-based plan for the future, improve their financial management capacity, and also identify concrete financing needs. The aim is for cities to achieve fiscal sustainability and full access to capital markets. Through harnessing the

investment by private sector, cities will be able to better implement the urban sustainability agenda.

329. The GPSC is also serving to convene GEF Agencies and a wide range of relevant technical partners that are well placed to support the delivery of quality projects with countries and potential co-financiers. This framework for coordination and collaboration at country-level will help to define the best niche for GEF funds to enable and scale up the work of others including stimulation of increased private sector engagement.

Contributions to Multilateral Environmental Agreements

330. Various Conventions are increasingly recognizing the role of cities both as drivers of environment degradation and as key players in addressing Convention objectives. Sustainable cities engagement is a promising first step that is directly contributing to the Multilateral Environmental Agreements for which GEF serves as financial mechanism—UNFCCC, CBD, UNCCD and Chemicals Conventions.

331. The United Nations Framework Convention on Climate Change (UNFCCC) Decision 1/CP.16 recognized the need to engage subnational and local governments and numerous decisions identified a role for these subnational stakeholders and governments such as Decision 1/CP.11, Decision 1/CP.16, and Decision 2/CP.17⁷³. In Decision 1/CP.19 from 2013, Parties agreed to facilitate the exchange of experiences and best practices between cities and subnational authorities in identifying and implementing opportunities to mitigate GHG emission and adapt to the adverse impacts of climate change. Furthermore, the role of subnational governments to engage in the UNFCCC process is being discussed within the framework of the “Friends of the Cities,” among interested parties and institutions.

332. The Convention on Biological Diversity (CBD) Decision IX/28 articulated the need to involve cities in biodiversity strategies and action plans. A number of cities have initiated Local Biodiversity Strategic Action Plans in partnership with national governments, based on Decision X/22. In 2012, the CBD launched the “Cities and Biodiversity Outlook.” The CBD also set up a Cities for Life Summit, in parallel to the official CBD-COP, and created the Global Partnership on Cities and Biodiversity.

333. The United Nations Convention to Combat Desertification (UNCCD) recognizes the rural-urban interface as a major priority for tackling land degradation. Through its multi-year work program, the convention identifies migration as one of the important variables and hence considers cities strongly interlinked with what the Convention aims to achieve, through their potential role and impact on migration.

334. Article 6 of the Stockholm Convention and article 11 of the Minamata Convention respectively address the management of waste that contains persistent organic pollutants (POPs) and mercury. Cities are central stakeholders in the management of these pollutants. Moreover,

⁷³ The decisions refer to dialogue on long-term cooperative action to address climate change (1/CP.11), in adaptation plans and strategies (1/CP.16), and in Nationally Appropriate Mitigation Actions (NAMAs) (2/CP.17).

cities are major users and producers of chemicals and waste, and have a key role in the management of a number of the new POPs relevant to cities. Additionally, SAICM risk reduction objectives also include reducing, “the generation of hazardous waste, both in quantity and toxicity, and to ensure the environmentally sound management of hazardous waste, including its storage, treatment and disposal.⁷⁴” In addition to reducing mercury, POPs, and ODS in infrastructure, products and materials, the program will also contribute to reducing air emissions of relevant chemicals.

335. The GEF can help develop and implement efforts in a more coordinated manner to enhance effectiveness and address common drivers that the individual Conventions seek to address. The GEF interventions will incorporate issues on gender equity and women’s empowerment as promoted by all of the above Conventions. The results and lessons learned on generating global environmental benefits for individual Conventions will also be shared, to help inform Parties as they consider the role of cities and urbanization in the Convention context.

Comparative Advantage of the Global Environment Facility

336. This IP builds on the robust demand from countries to join in the Sustainable Cities IAP program initiated in GEF-6. The GEF has harnessed its convening power to help successfully launch GPSC, which now serves as a one stop shop for cities to access knowledge and technical expertise for advancing the sustainability agenda. The GEF’s role in this crowded urban space is to strengthen its mandate as financial mechanism for the MEAs by helping cities to generate global environmental benefits. With mayors and municipal leaders demonstrating increased commitment and aspirations for urban sustainability, the GEF is now well positioned to engage directly with them in exploring the relevant innovations needed to promote integrated planning and implementation. Rather than addressing the challenges of urbanization through disparate and isolated investments, GEF financing will enable cities to align and integrate priorities in a manner that will minimize tradeoffs in generating global environmental benefits while achieving the sustainability goals.

337. The ability of the GEF to mobilize financing to address concerns that cut across multiple sectors and focal areas is a unique advantage. Stakeholders, including national and urban leaders and institutions, are calling for stronger efforts by the GEF to address key drivers of environmental degradation in an integrated manner through city-focused action. In addition, the GEF, as a pioneer of innovation through grant financing, is well suited to support the testing and demonstration of models of integrated urban management, with a strong potential for impact per dollar invested. By ensuring that gender equality and women’s empowerment are considered in demonstrated models, the GEF can leverage its advantage to greater benefit. The GEF grant funding in and of itself serves as an incentive mechanism to support promising innovative activities, helping to lower the risk to clients and other investors.

⁷⁴ UNEP - WHO (2006) Overarching Policy Strategy para 14, Strategic Approach to International Chemicals Management http://www.saicm.org/index.php?option=com_content&view=article&id=73&Itemid=475

338. The GEF can play a key role partnering with relevant countries and cities as well as relevant GEF Agencies and bilateral institutions, building on the extensive experience in supporting urban area projects in various focal areas. The growing number of urban initiatives currently planned or implemented by GEF Agencies and bilateral institutions offers timely opportunities to catalyze action. The GEF will harness its partnerships to help establish an enabling environment for generating and channeling investments that contribute to global environmental benefits and associated resilience. The GEF will not directly invest in large scale infrastructure projects as this may be done through a multilateral development bank or bilateral loan packages as co-financing, or leveraged financing from countries or cities.

Global Environmental Benefits

339. In accordance with its mandate, GEF financing will contribute measurable global environmental benefits by: a) reducing greenhouse gas emissions (GHG); b) mainstreaming biodiversity conservation to harness ecosystem services and safeguard threatened wildlife species; c) integrating voluntary LDN targets; and d) improved chemicals and waste management. Because the IP will target specific geographies during implementation, there is greater potential for economies of scale in primarily achieving objectives of the Climate Change Mitigation and Chemicals and Waste focal areas, and secondarily the Biodiversity and Land Degradation focal areas

Table 7. Global Environmental Benefits

Focal Area	Objectives and Priorities to be addressed through the IP
Biodiversity	<ul style="list-style-type: none"> Integrating biodiversity and ecosystem values in urban planning – focus on integrating options and opportunities for safeguarding threatened wildlife species and habitats affected by urbanization
Climate Change Mitigation	<ul style="list-style-type: none"> Urban-related GHG emissions avoidance – integrating low-carbon technologies and practices needed in the urban sector, including energy efficiency (buildings, lighting, air conditioning, transport, district heating systems), renewable energy development (solar, wind, co-generation, waste-to-energy), and solid waste and wastewater management
Land Degradation	<ul style="list-style-type: none"> Sustainable land management in the rural-urban interface Restoration of degraded production landscapes in the rural-urban interface
International Waters	<ul style="list-style-type: none"> Decreased pollution of rivers, deltas and coastal areas associated with urbanization Advance efficient water use and re-use in cities and metropolitan areas
Chemicals and Waste	<ul style="list-style-type: none"> Reduction of POPs, ODS, and Mercury in built infrastructure, industry and products and materials used in cities – integrating the management and disposal of electronic and industrial waste with heavy metals and solvents, pesticide application for public health and vector control, and urban run-off

340. Outcomes and GEBs for the impact program will be in line with the MEAs, as follows:

- Mitigation of GHG emissions through energy efficiency;
- Removal or disposal of hazardous chemicals, especially Mercury;
- Conservation of threatened wildlife species and habitats; and
- Contributing to Land Degradation Neutrality

Sustainable Forest Management Impact Program

Global Context

341. Forests cover around 30% of the earth's land surface, just below 4 billion hectares⁷⁵. Rapid development and competing land uses, particularly for farming and grazing lands, commercial plantations, and infrastructure expansion, have cut wide swaths through the world's forests. These threats place remaining natural forest areas and their globally important biodiversity under heavy pressure. As human populations continue to increase, competition for land only will further intensify. Over the past 25 years, the extent of the world's forests has declined by about 3%, but encouragingly, the rate of net forest loss has been cut by over 50% over this same timeframe⁷⁶. Advances made in slowing forest decline have been achieved through a range of measures, and important among these are the forest protection, management and restoration approaches that are at the core of sustainable forest management (SFM).

342. The GEF has a significant track record in investing in sustainable forest management. Over the past 3 years covering GEF-6 alone, GEF has funded 51 projects totaling over USD 766 million. The Global Environmental benefits have been significant in terms of GHG emissions avoided (434 tCO₂e) and over 160 million ha of land under sustained management. Despite these impressive outcomes, SFM investments have been isolated to certain small forest lands across all of GEF's eligible countries with no sustained vision nor potential for ecosystem or biome level outcomes. Fragmented and isolated investments while good for small area of forest, fall short of maintaining the integrity of entire biomes where there is that potential.

343. Furthermore, many governments, also face an array of economic, ecological, and political challenges in achieving SFM, and deforestation and degradation of many global forests continues at an alarming rate. This forest loss threatens vital environment services, such as the maintenance of biodiversity, climate stability, integrity of land, and delivery of fresh water. The degradation of forests and their associated environmental services also undermines the livelihood of an estimated 1.6 billion forest-dependent people, with consequences for migration and security.

344. There are few places in the world where intact forest biomes still exist and allow for a more converted and comprehensive approach to sustainable forest management. The Amazon, the Congo Basin, and some important Dryland landscapes around the world represent the last geographies where a different approach to long-term development can be tested. These biomes are globally important for biodiversity and carbon storage, provide livelihoods and subsistence to communities that rely on forests and agriculture for their survival and as such qualify as "key ecosystems" where a concerted SFM approach can have value. In these globally important ecosystems, there is an opportunity to change the future development trajectory from natural resource depletion and biodiversity erosion, to one based on natural capital management and productive landscapes. The latest science also indicates that these globally important ecosystems

⁷⁵ Global Forest resources Assessment 2015, FAO: <http://www.fao.org/3/a-i4793e.pdf>

⁷⁶ Ibid

require integrated ecosystem-scale management for maintaining their “ecological integrity and functioning” and delivering Global Environmental Benefits. Because of the scale of these biomes, a comprehensive and large-scale set of investment is needed as fragmented and isolated projects will not be sufficient in these large ecosystems to maintain the integrity of these unique and globally important area.

345. In GEF-6, an Amazon Landscapes Program (ASL) that for the first time brought 3 of the most important Amazonian Basin countries together was launched, to coordinate on important aspects of Ecosystem-wide management and development trajectories. The ASL program has focused on designing and implementing collaborative approaches to productive and conservation land uses that will provide for livelihoods while preserving the ecological integrity and global environmental value of this ecosystem. These approaches have the potential to be truly transformative by linking social and economic development directly to the integrity and functioning of the Amazon biomes. Success in this program will be measured by ensuring that the integrity of these key ecosystems, and the services they provide, is at the center of a sustainable development model that provides for people and production.

346. The time is now ripe for the SFM program to evolve into an Impact Program with a clear geographical focus to better harness time-bound opportunities for impact on critical forest biomes and systems. The 3 selected regions are the major ecosystems and perhaps the last places where an integrated and concerted SFM approach can truly transform the course of development and produce multiple benefits for biodiversity, climate change, and land degradation.

Program Description

347. SFM is defined in line with UNGA (2008) as a “dynamic and evolving concept, which aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations”. GEF’s approach will thus encompass broad landscapes where forests and trees outside forests are important elements to be managed for conservation, production or multiple purposes, to provide a range of forest ecosystem goods and services at the local, national, regional and global levels.

348. The SFM IP will focus on these 3 key biomes and address challenges associated with sustainably managing and protecting forests and drylands. The novelty of this Impact Program resides in the fact that GEF will be aiming at maintaining the ecological integrity of entire biomes by concentrating efforts, focus, and investments, as well as ensuring strong regional cross-border coordination. Past SFM investments were often isolated and mainly focused on integrating SFM principles in land management projects at the project scale only. The SFM IP will address the drivers of forest loss and degradation through strategies aimed at creating a better enabling environment for forest governance; supporting rational land use planning across mixed-use landscapes; strengthening the management and financing of protected areas; clarifying land tenure and other relevant policies; supporting the management of commercial and subsistence agriculture lands to reduce pressure on adjoining forests; and utilizing financial mechanisms and incentives for sustainable forest management.

349. The SFM IP will complement existing conservation and REDD+ initiatives for synergy. In both the Amazon and the Congo basins, REDD+ initiatives are on-going or under preparation to reduce greenhouse gas emissions from deforestation and forest degradation. In the Congo for example, this baseline initiative focuses on the reinforcement of institutional and decentralized capacities to integrate REDD+ in land-use planning processes, zoning, and promote SFM and agroforestry systems to reduce land-use emissions. The GEF SFM IP will build on these opportunities, looking for synergy, and avoid duplication, with a special focus on landscape scale sustainable forest management and biodiversity conservation, and focus extra attention on working with forest dependent communities in the management of their own forest resources. The same principles will be applicable for drylands forests with a focus on livelihoods. If sustainably managed, success in these areas can serve as models for addressing the nexus between generating global environment benefits, poverty alleviation, and improved economic development. As evidenced by the country leadership in the Amazon Sustainable Landscapes Program in GEF-6, through initial discussions with the President of Gabon, and a declaration of support from 6 Congo basin countries, this IP benefits from strong country support from key recipient countries.

350. The SFM IP will support multi-country collaboration on management challenges that cross borders and that countries identify as priorities during the design process.

351. The SFM IP will promote the inclusion of women and their role in the sustainable management of forests and trees and build capacity of communities to capitalize on the complementary role of women and men in the diverse activities needed for advancing the objectives of forest management, biodiversity conservation, and watershed protection in a local setting.

352. All the three targeted systems have benefited from significant investments in previous GEF cycles creating a baseline to scale up impact: Amazon Sustainable Landscape Program and a long history of GEF investments in the Amazon basin since the start of the GEF, Strategic Congo Basin Program, and the Sahel and West Africa Program to Support the Great Green Wall Initiative. The SFM IP can therefore further advance previous gains by responding to country priorities to protect, restore, and sustainably manage their forests and drylands so that they provide a wide range of ecosystem services, support local livelihoods, strengthen climate change resilience. GEF's implementing experience in the Amazon, Congo Basin, and elsewhere shows that coordinated programs foster collaboration, strengthen knowledge exchange, and extend the impact of the scope of the work.

Amazon Sustainable Landscapes

353. South America is home to several sensitive biomes, most notably the Amazon, where balancing economic development with conservation remains an on-going challenge. The Amazon Biome is defined as the area covered predominantly by dense moist tropical forest, with less extensive areas of savannas, floodplain forests, grasslands, swamps, bamboos and palm forests. The Biome encompasses 6.70 million km² and is shared by eight countries (Brazil, Bolivia, Colombia, Ecuador, Guyana, Peru, Suriname, and Venezuela), as well as the overseas territory of

French Guiana (WWF, 2009). The majority of the Amazon forest is contained within Brazil (60%), Peru (13%) and Colombia (10%). The Amazon includes 610 protected areas, as well as 2,344 indigenous territories that cover 45% of the basin. More than 40% of the rainforest remaining on Earth is found in the Amazon and it is home to at least 10% of the world's known species, including endemic and endangered flora and fauna. The Amazon River is the largest river basin in the world and accounts for 15-16% of the world's total river discharge into the oceans. The Amazon River flows for more than 6,600 km and with its hundreds of tributaries and streams contains the largest number of freshwater fish species in the world. The Amazon forest and river ecosystem is one of the largest natural areas that still has the potential to remain sustainably conserved and managed.

354. The Amazon plays a critical role in climate regulation regionally and globally. The Amazon forests helps regulate temperature and humidity, and is linked to regional climate patterns through hydrological cycles that depend on the forests. Given the large amount of carbon stored in the forests of the Amazon, there is considerable potential to influence global climate if not properly protected or managed. The Amazon contains 90-140 billion metric tons of carbon, the release of even a portion of which could accelerate global warming significantly. Land conversion and deforestation in the Amazon release up to 0.5 billion metric tons of carbon per year, not including emissions from forest fires, thus rendering the Amazon an important factor in regulating global climate⁷⁷.

Drivers of environmental degradation

355. There are several interrelated factors constituting the drivers and root causes of the deforestation and degradation of the Amazon Biome. These are related to export markets (e.g. international demand for agricultural and forest goods, minerals and energy), transport infrastructure development, social inequality and poverty. All these are linked to the context of each country in the Amazon and in some cases to shortcomings of the policy frameworks to support sustainable development in various sectors and value ecosystem services, weak governance of some institutions and governmental entities to establish and enforce legislation for nature conservation and other sustainable development policies, and lack of appropriate land use planning. These threats can be found in varying degrees in individual countries conforming the Amazon, and could be exacerbated by the lack of regional coherence in laws and policies among the Amazonian countries.

356. Given current environmental and development trends, the opportunity to make a lasting impact at the basin scale is likely to disappear in 10 to 20 years. Continued deforestation and interactions with climate change (including reduction of precipitation due to reduced evapotranspiration) is likely to speed up the rate of forest loss, and if current destructive trends continue, more than 50% of forests within the basin could be destroyed in the next two decades.

⁷⁷ Nepstad, D, C.M. Stickler, B. Soares-Filho, and F. Merry. 2008. Interactions among Amazon land use, forests and climate: prospects for a near-term forest tipping point. *Phil. Trans. Roy. Soc. B.* doi:10.1098/rstb.2007.0036

In addition, deforestation will destroy habitat for migratory fish and likely accentuate the damaging impacts of mercury used in gold mining on the environment and human health.

Objectives and Key Interventions

357. The objective of the Amazon Sustainable Landscapes (ASL) Program is to protect globally significant biodiversity and implement policies to foster sustainable land use and restoration of native vegetation cover. It will build on the components of the GEF-6 ASL Program and its associated objectives with the aim to expand its reach by including the other GEF-eligible countries that are part of the Amazon biome. The ASL program aims at generating scalable results in reducing deforestation and the loss and fragmentation of natural habitats as well as preventing the extinction of threatened species and improving their conservation status through five inter-related interventions:

- *Integrated Amazon Protected Areas*: This component will increase conservation and protection of biodiversity through the implementation of large scale initiatives influenced by the strategies and approaches of the successful Amazon Region Protected Areas Program in Brazil (ARPA). The ASL Program will catalyze protected areas creation, and improve management and sustainable financing at the protected area system-wide level;
- *Integrated Landscape Management*: This component aims to contribute to climate change resilience and enhance sustainable land use by improving forest and land management and reducing carbon emissions from deforestation in the respective project areas;
- *Freshwater Ecosystems Management*: This new component will focus on improving the management of freshwater ecosystems and aquatic resources which provide food security, transport, and water for local communities;
- *Policies for Protected and Productive Landscapes*: This component will incorporate biodiversity management principles (both conservation and sustainable use) into selected government sectors that are drivers of deforestation (i.e., agriculture, extractive industries and infrastructure) through sectoral agreements and/or instruments that engage private sector actors; and
- *Capacity Building and Regional Cooperation*: This component will be designed to complement the national projects and maximize the efficiency of the broader approach through shared capacity building and training initiatives. The component will support south-south learning through expert technical exchanges, foster intergovernmental cooperation around identified policy or technical thematic issues, and develop and implement program-wide training and communication strategies.

358. The key outcomes will be the following: a) increased area of globally significant forest ecosystems in new protected areas; improved protected area financial sustainability and management effectiveness; b) increased area of native forests managed sustainably; c) reduction

in the loss of native forests; d) increase in area of restored forest ecosystems; e) improved and coordinated management of freshwater ecosystems; and f) sector policies and regulations under implementation that are increasingly favorable for the reduction of deforestation through an integrated landscape- and sector-based approach that takes into account development needs of all groups of stakeholders and includes considerations of indigenous peoples, and gender.

359. In consultation with the countries, additional priorities may be included, such as the formalization or regulation of the artisanal and small-scale gold mining (ASGM) sector.

Existing initiatives and Potential Partners

360. The GEF-6 Amazon Sustainable Landscapes program was the first significant regional investment by GEF to manage terrestrial ecosystems in the Amazon biome that included the participation of multiple countries. The GEF-6 Program design will serve as a strong basis for the expansion of the program to other countries during GEF-7 drawing on the lessons learned thus far particularly with regards to the the implementation of a Coordination Grant to facilitate South-to-South learning and knowledge management at the regional level and the role and function of the Program Steering Committee.

361. In the GEF-6 ASL Program, the Coordination Grant helps the individual country projects achieve their objectives through enhanced regional coordination and capacity building by providing access to information and best practices and strengthening coordination, monitoring and communication amongst national project stakeholders. In this way the coordination grant contributes to the achievement of the Program goal of further consolidating the network of protected areas in the Amazon and increasing the land area destined to restoration and sustainable management. Similarly, the Program Steering Committee (PSC), chaired by the World Bank as lead agency and comprising one-program focal point from each country, the Global Environment Facility Secretariat, and relevant Implementing Agencies (UNDP & WWF-US), acts as an advisory mechanism to maximize synergies amongst the national level projects and contribute to successful implementation of the ASL Program. Both of these project mechanisms will be maintained going forward, although the elements and composition of each may change to reflect the design features of the GEF-7 ASL Program. For example, depending on enrollment by new participating countries and the GEF Agencies that may join, the PSC will be expanded accordingly and the Terms of Reference for the PSC adjusted as necessary.

362. The GEF-7 initiative will continue to communicate with donors (i.e., Norway, UK and others), bilateral-aid agencies (i.e., USAID, GIZ, and others), and private foundations (i.e., Gordon and Betty Moore Foundation, MacArthur Foundation, and Blue Moon Fund) investing in the Amazon biome to maximize collaboration and coordination during project design and implementation.

Private Sector engagement

363. Sectoral agreements and/or instruments that engage private sector actors will be voluntary and will cover specific actions and commitments of the different parties. Each activity

to be identified in the agreements will follow three steps: (a) consolidation of existing information (assessment of obstacles and alternative solutions); (b) consensus building with stakeholders (analysis of constraints and solutions); and (c) development of solutions (methods and procedures). Thus, government agencies will dedicate attention and resources to the identification and implementation of mainstreaming opportunities that enjoy the support of relevant stakeholders. It will also pursue strategies for incorporating the objective of biodiversity conservation and sustainable land use into policies, programs, projects, and development plans at different levels of government activity. These mainstreaming practices will be tested on the ground through applied land management activities adopted in concrete cases that have environmental implications for connectivity and conservation in the Program area (eg.: oil/gas exploration and exploitation activities, construction of roads, etc.). If successful, these practices will contribute to scale up the mainstreaming of environmental policies from the bottom, which could be translated at the top into the promotion of incentives, access to credit and similar measures for the segment of producers involved.

364. The Private Sector has a significant role to play to improve the sustainability of many sectors operating in the Amazon and with the potential to reduce deforestation. Promising progress is being made with large companies that produce or trade global commodities like soy and beef. But SMEs generally face more costly barriers to improve production practices and achieving scale in the commercialization of their products. This Impact Program could partner with emerging platforms that are aiming to set reimbursable investment funds for small and medium rural producers businesses operating in the Amazon. National state and commercial banks are willing to partner in joint pilot initiatives that pursue differentiated financial arrangements for public credit lines directed at small farmers and suppliers. If successful, through aggregation these investments can lead to more sustainable and productive business and supply chains, thereby contributing to reducing deforestation and GHG emissions, as well as to the longer term viability of local businesses.

Congo Basin Sustainable Landscapes

365. Central Africa contains more than 2.87 million km² of forest ecosystems, comprised of both humid and dry forests. The region's 2.27 million km² of remaining closed canopy tropical forest represents one fifth of the what remains in the world for this highly valuable forest type, and, after the Amazon, is the earth's second largest area of contiguous moist tropical forest. Central Africa's Congo basin is defined by the watershed of the Congo river and primarily covers Cameroon, Central Africa Republic, the Democratic republic of Congo, Equatorial Guinea, Gabon, and the Republic of Congo.

366. The forest habitats provided by the Congo Basin are the largest on the entire African continent and are home to an extraordinary diversity of life. Endemic and emblematic species include, Great Apes (chimps, bonobos, gorillas) and the forest elephants, among others. Congo Basin forests provide vital regional and global ecological services as carbon sinks, basin catchments, and regulators of climate. There are on-going researches to better understand the importance of Central Africa forests both in regional rainfall patterns and their influence on large-

scale atmospheric circulation⁷⁸. It is however established that the Congo Basin represents a carbon reserve of global significance for regulating greenhouse gas emissions. The recent identification of one of the most carbon-rich ecosystems on Earth – a peatland area, greater in size than England, sequestering alone some 30 billion metric tons of carbon, or nearly 30% of the world's tropical peatland carbon reinforces the values of these tropical forests as a global common asset^{79,80,81}.

367. These forests ecosystems provide also livelihoods and services to 60 million people who live in or near the forests, and fulfill social and cultural functions essential to local indigenous populations. Agriculture is mainly small-scaled and combines various annual and perennial crops (cassava, maize, groundnut, banana, vegetables, and tuber), alternating with short or long-term fallows depending on local land availability.

Drivers of environmental degradation

368. The causes and drivers of deforestation and environmental degradation, including defaunation, are complex, interlinked, and aggravated by demographic trends, accelerated urbanization, insecurity of land tenure, and resource user rights. The general context of the Congo Basin is also particularly difficult with violence, fragility, insecurity, and various related traffics severely weakening the rule of law, and having devastating effects on capacities to manage forests, protected areas, and protect wildlife. However, small-scale agriculture (subsistence) and harvesting of fuelwood are considered among the main drivers of deforestation and forest degradation in the Congo Basin⁸². The direct causes of declines to emblematic species (primates, elephants) are strongly linked to poaching and other changes in land use, most notably clearing of forests for farming and infrastructure development⁸³. Challenges associated with extreme poverty and tensions between local people and protected area management strategies add to the complexity.

369. Other drivers exist and may become more important in the future. Countries affected by the development of commodities, agribusiness, and/or the need for forest restoration will be invited to join the Food Systems-Land Use and Restoration Initiative. Issues related to artisanal gold mining will be considered under CW (three countries so far are Parties to the Minamata Convention). A support from IW will be discussed at the transboundary Congo river basin scale.

⁷⁸ Todd M.C. & Washington R., 2004. Climate variability in Central Equatorial Africa: influence from the Atlantic sector. *Geophysical Research Letters* 31: L23202.

⁷⁹ Gibson L., et al. 2011 (corrigendum 2014). Primary forests are irreplaceable for sustaining tropical biodiversity, *Nature*, Volume: 478 Pages: 378–381

⁸⁰ The Forests of the Congo Basin – Forests and Climate Change, 2015. Eds. De Wasseige C, Tadoum M., Eba's Atyi R. & Doumenge C., 2015. Weyrich. Belgium. 128p

⁸¹ Dargie, G. C., Lewis, S. L., Lawson, I. T., Mitchard, E. T., Page, S. E., Bocko, Y. E., & Ifo, S. A. (2017). Age, extent and carbon storage of the central Congo Basin peatland complex. *Nature*. doi:10.1038/nature21048

⁸² The Forests of the Congo Basin – Forests and Climate Change, 2015. Op. cit.

⁸³ http://ec.europa.eu/environment/cites/pdf/WAP_EN_WEB.PDF

Objectives and Key Interventions

370. The Congo Basin Sustainable Landscapes program (CBSL) builds on GEF's 25 year-experience in biodiversity conservation and sustainable forest management. Under GEF-6, most of the investments in the region have been made along two strategic programmatic approaches: the Global Wildlife Partnership to tackle wildlife conservation, poaching, and trafficking and The Restoration Initiative to support the Bonn Challenge.

371. The CBSL's Theory of Change is based on the pathway to produce preserved and sustainable managed landscapes for global environment benefits and people. The CBSL will integrate upfront several GEF policies, principles, and decisions to emphasize the importance of livelihoods and well-being of forest dependent communities (stakeholder engagement, gender equality, Indigenous Peoples, and Civil Society engagement).

372. The main objective of the CBSL will be to incorporate environmental management principles in forest management through landscape approaches at different levels (local, national, and transboundary). The notions of connectivity, corridors, and their governance will be considered in a inclusive way with local communities. Innovative mechanisms and partnerships will be developed to improve law enforcement against illegal logging and poaching of global important biodiversity.

373. Contrarily to other forested basins, a political and technical process already exists in the Congo Basin between Heads of States, Ministries, partners, and various stakeholders⁸⁴. There will be no much need to finance coordination of agencies per se under the CBSL program, but it will be essential to support and dynamize some of the existing networks to foster cooperation, maximize synergies in the different countries, and avoid overlaps. The regional level will also be operational to deliver actions in additional landscapes, corridors, and countries to address key threats to endangered species, globally important forest habitats, and forest dependent peoples.

374. A programmatic approach is justified by the importance of supra-national issues as the transboundary and regional levels and that cannot be tackled at the project level (e.g. carbon leakage effect, illegal timber exploitation, wildlife poaching and trafficking). For instance, specific landscape level mechanisms will be proposed for conflict resolution between different land users and across national boundaries. Other mechanisms will address important cross-cutting issues, such as gender inequalities in the implementation of SFM. The CBSL program will focus on a few number of transboundary landscapes in the heart of the Congo Basin. Selection of landscapes will be prioritized based on their potential for transformation and multiple benefits, and where the GEF can make a difference. The following criteria will be considered: 1) high carbon storage values, 2) presence of globally endangered species, 3) presence of forest dependent people in the surrounding forest patches, and 4) significant baseline investments on conservation, SFM and/or REDD+ as a starting point.

, COMIFAC: Central Africa Forests Commission, <https://www.comifac.org/>, CBFP: Congo Basin Forests Partnership, <http://pfbcbfp.org/home.html>

Existing initiatives and Potential Partners

375. Many initiatives are on-going in the region that provide a strong baseline of partnerships and lessons on which to build: REDD+ program with FCPF and the carbon funds; the Forest Investment Program (FIP) and the associated IDA investments in DRC and republic of Congo; the Central African Regional Program for the Environment, CARPE, supported by USAID; the Program for Conservation and Rational Utilization of Forest Ecosystems in Central Africa, ECOFAC, funded by the European Commission since 1992; several long-term bilateral and NGO programs; recently Central Africa Initiative (CAFI) launched a USD 200 million initiative for REDD+ in the Congo Basin. Moreover, most of the countries, as well as the COMIFAC⁸⁵, are on the way to developing submissions to the Green Climate Fund. The GEF can play a strategic and catalytic role to compliment these investments, based on its comparative advantage. To develop complementarity and avoid duplication, a dialogue with countries, agencies and partners will take place. Collaboration mechanisms will be proposed within the program and project cycle, notably related to knowledge management and monitoring.

Private Sector Engagement

376. The role of the private sector will be addressed under different entry points in the program to promote innovative and sustainable financing mechanisms for conservation, development, peace-building, and benefits for local communities. Existing Public-Private Partnerships for biodiversity conservation will be one option. Another option will be the support of responsible and sustainable value chains from the local communities to the markets in the considered landscapes (Non-Timber Forest Products, improvement of agroforestry practices, climate smart agriculture promotion of best practices, access to markets, certification, etc.).

Dryland Sustainable Landscapes

377. Drylands are a vital part of the earth's human and physical environments, encompassing grasslands, agricultural lands, and forests. They cover approximately 40% of the world's land area and support two billion people, 90% of whom live in developing countries where women and children are highly vulnerable to the impacts of land degradation and drought. They harbour important global biodiversity, many of which is endemic, and store significant amounts of carbon. Drylands also provide much of the world's grain and livestock, many tree products and vegetable species as well as globally important agro-biodiversity. A recent paper in *Science*⁸⁶ comments on the important link between forests and drylands, arguing that the extent of forest has been grossly underestimated: "Forests in drylands are much more extensive than previously reported and cover a total area similar to that of tropical rainforests or boreal forests. This increases estimates of global forest cover by at least 9%, a finding that will be important in estimating the terrestrial carbon sink." While dryland landscapes are not as geographically distinct as the

⁸⁵ COMIFAC: Central Africa Forests Commission, <https://www.comifac.org/>

⁸⁶ Jean-François Bastin et al. (2017). The extent of forest in dryland biomes. *Science*. Vol. 356, Issue 6338, pp. 635-638. doi: 10.1126/science.aam6527

Amazon or the Congo Basin, they do represent a globally important biome and an important element of the global ecosystem.

378. Selection criteria as outlined below will allow that important forest and shrubland biomes could be covered (e.g. Miombo, Mopane and Fynbos woodlands, Savanna tropical grasslands and open woodlands, Dry Central Andes grassland and shrublands, Cerrado, Caatinga, and Mato Grosso seasonal forests; Central Asian rangelands and steppe forests) although the program will address such biomes through a landscape approach aiming for potential multiple GEBs.

Drivers of degradation

379. Land degradation in drylands threatens livelihoods, food, water and energy security, and increases the vulnerability of millions of people, and in many cases serving as a cause of migration or social unrest. Population growth in areas where these systems are found is resulting in an increased need for agricultural production that often leads to a depletion of biodiversity (including the genetic bases for crops, livestock, and trees), reduction in vegetation cover, and loss of associated ecosystem services (erosion control, climate balance, pollination, etc.). In addition, pressures from natural factors related to climate variability and extreme weather events, such as forest fires and frequent and prolonged droughts, lead to stark variations in year-to-year yields and income from agriculture. This threatens the resilience of agroecosystems, the stability of food production, and the conservation of forests environmental and socio-economic services.

Objectives and Key Interventions

380. The main goal of the Dryland Sustainable Landscapes program is to avoid, reduce, and reverse further degradation, desertification, and deforestation of land and ecosystems in drylands through the sustainable management of production landscapes, addressing the complex nexus of local livelihoods, land degradation, climate change, and environmental security.

381. The Dryland Sustainable Landscapes program will apply UNCCD's LDN tool to advance sustainable land and forest management aiming at avoiding further land degradation and desertification and improving the quality and maintenance of ecosystem services. This will be done by tackling the root causes of land degradation, promoting the sustainable management of production landscapes in drylands, and addressing the complex nexus of local livelihoods, land degradation, climate change, biodiversity and environmental security.

382. The program will generate multiple environmental benefits and enhance local livelihoods. A landscape approach will help to tailor implementation packages to a wide range of dryland landscapes contexts. Drylands encompass critical landscapes for potential GEBs, especially through (i) building resilience to climate change in environments particularly vulnerable to anticipated impacts of climate change, (ii) sequestering carbon, managing watersheds (leading, inter alia to reduced sediment yields and conserving scarce water resources), and protecting rare and endangered biodiversity.

383. The three main objectives of the program are: 1) integrated landscape management with particular focus on sustainable forest management and restoration, rangelands, and livestock production; 2) the promotion of diversified agro-ecological food production systems in drylands; and 3) the creation of an enabling environment to support the two objectives above. Under the second objective, the initiative will expand the scope to agricultural production areas within forest and shrub lands. Priority will be given to measures of sustainable land and soil management to benefit smallholders and pastoralists. The GEF will also support the development of adequate policies and financial mechanisms that aim to address the drivers of dryland degradation and promote the diffusion of land use practices, land and forest conservation, restoration and sustainable management at a scale consistent with the magnitude of these drivers.

384. Outcomes of the Dryland Sustainable Landscapes will support participating countries to achieve Land Degradation Neutrality in regions which have a high percentage share of semi-arid and sub-humid drylands and ultimately achieve Sustainable Development Goals in those geographies, focusing in particular on countries that have set voluntary LDN targets that the Impact Program will help to implement. Target geographies will be selected based on several criteria, including:

- Defined LDN targets that can be met through SFM and SLM interventions;
- Area share of semi-arid and sub-humid drylands on total land area;
- Degree of dependence on dryland resources for local livelihoods and the potential of GEF investments to benefit smallholders and pastoralists;
- Importance of climate risks, resilience, and environmental security issues including drought, food insecurity, and migration; and
- Being part of geographies / landscapes that are important for delivering multiple ecosystem services, including threatened dryland ecosystems.

Existing initiatives and Potential Partners

385. The Consortium of International Agricultural Research Centers (CGIAR) has initiated a global research program⁸⁷, which provides a basis for collaboration with partners of this program, depending in how far the research program constitutes entry points for implementation at a programmatic level. In addition to the CGIAR initiative, there are regional or thematic initiatives that will be instrumental in supporting implementation, including : 1) The World Initiative for Sustainable Pastoralism (WISP) which is a global initiative that supports the empowerment of pastoralists to sustainably manage drylands resources, 2) TerrAfrica for the Sahel, the Horn of Africa, and Southern Africa; 3) The FAO Drylands & Forest and Landscape Restoration Monitoring Week; 4) The World Overview of Conservation Agriculture Techniques (WOCAT); and 5) Central

⁸⁷ <http://drylandsystems.cgiar.org/>

Asian Countries' Initiative for Land Management (CACILM). Furthermore, global and regional NGOs and CSO are very active in working on the ground in drylands and should be involved in sharing their experience and lessons, including through a coordination with the GEF SGP.

Private Sector Engagement

386. Private sector involvement in the Dryland Sustainable landscapes will be sought and encouraged to improve smallholder yields, add value to their agricultural and forestry products and link the producers to markets. To achieve sustainable land management, it will also be important to create stable revenues with dryland products and to introduce sustainable supply chains for specific dryland commodities including cotton, wool, leather, fuelwood, charcoal, shea, gum Arabica, etc.

387. The program will also seek cooperation with projects of the Land Degradation Neutrality Fund (LDN Fund), which facilitates private investments in sustainable land management. Specifically, countries⁸⁸ that are already in an advanced stage or have expressed interest in bringing transformative projects to the LDN Fund may wish to join the Dryland Sustainable Landscapes to support the establishment of the necessary institutional framework and monitoring mechanisms and/or invest in specific implementation measures to create GEBs. In this way, GEF funding would complement the investments of the LDN fund to achieve voluntary LDN targets in those specific countries.

Contributions to Multilateral Environmental Agreements

388. The Impact Program will help implement SDGs 13 and 15 on climate action and life on land. In addition, the Program will make significant contributions to achieving Aichi Target 2: Integrate biodiversity and development; Aichi Target 4: Sustainable production and consumption; Aichi Target 5: Habitat loss halved; Target 7: Sustainable agriculture, aquaculture and forestry; Aichi Target 11: Expansion of protected area networks; Aichi Target 14: Restore and safeguard essential ecosystem services; Aichi Target 15: Enhance ecosystem resilience and carbon stocks; and Aichi Target 19: Knowledge-base and science applied.

389. The Program will also make significant contributions to the Climate Change Convention through its activities aiming at enhancing ecosystem resilience and carbon stocks, avoiding deforestation and increasing agriculture and forest areas under sustainable management. It will also address important safeguards, including in particular the respect for the knowledge and rights of indigenous peoples and members of local communities, the full and effective participation of relevant stakeholders, and the consistency with the conservation of natural forests and biological diversity.

390. With regards to desertification, land-degradation, and drought, the Impact Program will help reinforce SFM as a means of preventing soil erosion and flooding, thus increasing the size of atmospheric carbon sinks and conserving ecosystems and biodiversity. Inclusion of drylands in

⁸⁸ E.g. Brazil, Indonesia, Nicaragua, Peru, Tanzania, Zambia, Kazakhstan, Mali, and Colombia.

the IP responds to multiple criteria from the CBD and the UNFCCC, but it is essentially aligned with UNCCD goals and objectives and notably its focus on drylands and its use of the LDN tool. The comparative advantage of GEF lies in its mandate given by the UNCCD as a financial mechanism and as the major investor in combating land degradation and desertification globally. Based on GEF experiences with championing SLM through impactful programs⁸⁹, the Sustainable Drylands Program will be able to liaise with the other Rio Conventions to bring transformative change in drylands globally.

391. The Impact Program will also contribute to the UNFF Global Objectives on Forests by reversing the loss of forest cover worldwide through sustainable forest management (SFM), including protection, restoration, afforestation and reforestation, and increase efforts to prevent forest degradation.

Comparative Advantage of the Global Environment Facility

392. The GEF has a mandate from the three Rio Conventions covering SFM and REDD+ activities, in all types of forests within 144 developing countries. The GEF has demonstrated through its portfolio the crucial importance of forests of all types providing a range of important environmental services, in particular to protect a globally important biodiversity, carbon stocks, offering livelihood options for many forest dependent people, and responding to a demand of timber and non-timber products to population living in the vicinity of forest areas. The SFM IP builds on GEF's track record as a champion of the protection and sustainable use of forests for multiple benefits, with to date over USD 2.7 billion in SFM grant support leveraging USD 14 billion of co-financing from other sources. In 2007, GEF initiated an SFM incentive program with the GEF-4 Tropical Forest Account that was announced at the Bali Climate Change COP. It was tested and extended to scale during GEF-5 and GEF-6, with a focus on protection, sustainable management, and restoration of forests. The option to develop regional and global interventions has shown to be essential.

393. All the three targeted systems have benefited from pilot investments in previous GEF cycles creating a baseline to scale up impact: Amazon Sustainable Landscape Program, Strategic Congo Basin Program, and the Sahel and West Africa Program to Support the Great Green Wall Initiative. The GEF is well positioned to further advance previous gains by responding to country priorities to protect, restore, and sustainably manage their forests so that they provide a wide range of ecosystem services, support local livelihoods, strengthen climate change resilience. GEF's implementing experience in the Amazon, Congo Basin, and elsewhere shows that coordinated programs foster collaboration, strengthen knowledge exchange, and extend the impact of the scope of the work.

394. The Program will take on the drivers of forest loss and degradation through strategies aimed at creating a better enabling environment for forest governance, land use policies and for clarifying land tenure; supporting rational land use planning across mixed-use landscapes;

⁸⁹ Such as the Great Green Wall Initiative (GGWI), the Sustainable Land and Ecosystems Management (SLEM) program in India, and the Central Asian Countries' Initiative on Land Management (CACILM)

strengthening of protected areas;; supporting the management of commercial and subsistence agriculture lands to reduce pressure on adjoining forests; and utilizing financial mechanisms and incentives for sustainable forest utilization such as marketsand PES schemes. The GEF also serves as the financial mechanism of several MEAs whose interests are particularly relevant in all type of forests.

Global Environmental Benefits

395. The program will improve management effectiveness of protected areas developed in KBAs and conservation corridors. Buffer zones of protected areas will benefit from sustainable forest management practices, and forest conservation and management measures will result in tons of carbon stored and avoided emissions. The interventions in dryland landscapes will result in an improved provision of agro-ecosystem and forest ecosystem goods and services. Socio-economic benefits will be important and include reduced vulnerability of communities living in drylands. In cooperation with the Chemicals focal area, where feasible, investments to address mercury pollution through unlocking private sector engagement in artisanal and small scale gold mining will be explored. The measure of GEBs will be the area of globally significant habitat, as measured in hectares, sustainably managed or conserved, hectares under sustainable land management, tons of CO₂e mitigated, and reduction in tons of Mercury.

Table 8 Global Environmental Benefits

Focal Area	Objectives and Priorities to be addressed through the IP
Biodiversity	<ul style="list-style-type: none"> • Conserving globally important biodiversity in key landscapes and forested areas.
Climate Change Mitigation	<ul style="list-style-type: none"> • Land-based and value chain GHG mitigation (<i>sequestration and avoidance</i>) - GHG emissions reductions from landscape forest conservation
Land Degradation	<ul style="list-style-type: none"> • Sustainable management of forest landscape and dryland production systems – integrating the LDN targets into planning processes, focusing mainly on improved land use and management for crop and livestock production
International Waters	<ul style="list-style-type: none"> • Integrated land and water management, such as through advancing the nexus approach in watersheds and basins • Prevention of nutrient pollution
Chemicals and Waste	<ul style="list-style-type: none"> • Reduction of Mercury from reforming Artisanal and Small-scale Gold Mining (ASGM) practices