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**Gender and Equity in Policies and Programs to Foster Climate Mitigation and
Adaptation in Latin America**

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*The views expressed in this paper are those of the authors and do not necessarily represent those of the United Nations or The Nature Conservancy.

Gender and Equity in Policies and Programs to Foster Climate Mitigation and Adaptation in Latin America

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This EGM note focuses on economic and environmental resilience in the face of climate change in Latin America, paying particular attention to the gendered nature of farming and production systems and the relationship of men and women to the natural resource base. There is a preliminary scan of climate mitigation and adaptation strategies and financing mechanisms and how they touch down locally and nationally in Latin America. There is also a short section on the bioeconomy as a prominent strategy that is being pursued and funded to address nature loss and promote more diverse and resilient livelihoods. Examples are drawn primarily from a rapid scan of initiatives and case studies in Latin America and are used to explore whether and how governments and multilaterals, the private sector and civil society are addressing the gendered nature of adaptation and mitigation through policy, programs and financing. We recommend that a more systematic and robust analysis be conducted to determine the extent to which these findings reflect the consistent integration or omission of gender and equity concerns in these programs and policies.

Key Takeaways

- Natural climate solutions are going to be increasingly important in addressing climate change globally and in Latin America.
- Mitigation and adaptation will be required to meet ambitious climate goals and imperatives; both strategies need to consider how people are affected or benefit from their deployment.
- While we have many programs and policies to address climate change in Latin America, only the more prominent multilateral mechanisms seem to have consistent frameworks, approaches and safeguards to ensure that gender and equity considerations are incorporated in their design, operation and evaluation.
- The financing mechanisms that fund these policies and programs, particularly the private sector mechanisms, seem to pay less attention to gender and equity concerns, highlighting the need for greater scrutiny of how financial mechanisms are deployed and their distributional impacts, in attempts to foster adaptation and mitigation.

Gender and Climate Change

In order to meet ambitious climate goals and carbon mitigation targets, we need to deploy natural climate solutions, such as reforestation, avoided forest conversion and improved management of existing farmlands (Griscom et al 2020, see Annex, Figure 6). Similarly, as we cope with increasingly frequent and more extreme weather events, such as hurricanes, flooding and drought, we must also consider adaptation as a key pathway to reducing the cost of these impacts for nature and people. As we think through the dimensions of adaptation and mitigation that are being addressed through ongoing programs and policies, it helps to have a conceptual framework of the impact of climate change on households and livelihoods, with a particular focus on agriculture and natural resource-based livelihoods. This same framework can be applied to forestry, fisheries and natural resource management and harvesting (Agarwal 2009; James et al 2020).

¹ This paper does not reflect the official position of The Nature Conservancy.

Figure 1. Addressing Gender in Agriculture

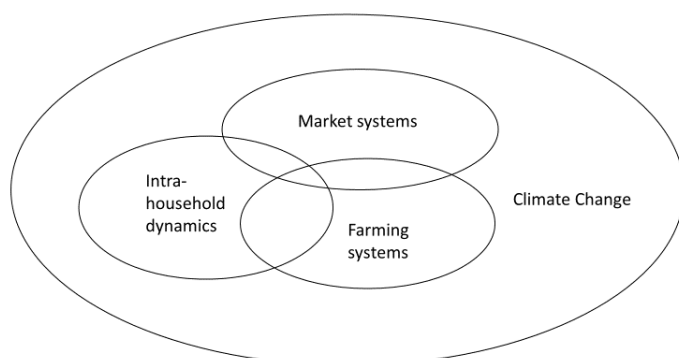


Figure 1 represents the interconnectedness of farming systems, market systems, and intra-household dynamics, and the impact of climate change on all three domains. Climate change is affecting market systems, farming systems and households globally and its impacts in the developing world are arguably more extreme and severe (IPCC 2021). There is an urgent need to alter unsustainable agricultural practices and foster adaptation and mitigation strategies that can sustain livelihoods, ensure food security and reduce degradation and deforestation. Climate change affects farming systems and market systems, both of which impact households and increase pressure on human welfare and wellbeing. Market systems are affected as supply in key value chains becomes more variable and unpredictable and infrastructure, transport and communications are impacted by extreme weather events and costs are elevated by climate related risk. Farming systems are affected as soils erode and are washed away, nutrient levels decline, temperatures rise, water availability is reduced and susceptibility to pests rise.

Intrahousehold dynamics describe the decision-making and choices that take place in households to allocate labor to productive and household tasks (Agarwal 1997). Time use and household decision-making mediate the negative impact of climate change, drawing more labor into production or increasing the burdens placed on family members for provisioning water, fuelwood or food (Buvinic and King 2018; UN Women 2016; Gammage 2010; UNICEF 2016). Gender roles and women's disproportionate responsibilities for household tasks and caring affects their ability to earn and learn and shapes their engagement in agricultural and market activities. There are marked gender differences in time and task allocation and women's labor force participation that underscore that women's disproportionate concentration in unpaid work and their lower rates of labor force participation in the region underpin women's lack of access to own income (ILO 2018, see Annex 1 Figures 1 and 2; CEPAL 2021). Taking these gender roles and responsibilities into account when we design and implement strategies that mitigate or adapt to climate change is crucial if we are to ensure women's equal engagement and maximize their ability to benefit from and influence these strategies (Malapit et al 2020; Mutenje et al 2019; FAO 2018; Meinzen Dick et al 2011).

Gender inequalities are manifest in both market systems and farming systems and gender shapes access to land, financial and physical capital, networks, technology, and time and affects expressions of agency over these resources (Kabeer 2013; Malapit et al 2019; WEIA

2020; CEPAL 2021). At the lower end of most agricultural value chains, oftentimes smallholders and landless laborers are most prevalent. The livelihoods imperative means that in many poorer communities all members of a household work – although there may be a pronounced gender specialization in activities, with women and girls disproportionately engaged in caring and household responsibilities (gathering fuelwood and hauling water, cooking and cleaning) as well as in agricultural processing and sales, and men and boys specializing in production and paid labor.

Increasingly in parts of Latin America, most notably in rural Central America, but also in parts of the Andes, sustained outmigration means that all members of the family work and farm the land. As climate change reduces ecosystem resilience, incomes fall, livelihoods shift, and time use patterns also change. Understanding how women’s and men’s time use affects their engagement in value chains, in farming and market systems, and the costs and benefits that regenerative practices and environmental stewardship place upon them is vital if we are to generate inclusive and equitable mechanisms that foster adaptation and mitigation and ensure human and environmental wellbeing.

Climate Change and Livelihoods in Latin America

Climate change in Latin America is drastically affecting the region’s food systems, habitats, and biomes (Eckstein et al 2021). Despite this, it is important to note that the region also holds the largest reforestation potential to mitigate climate change (Griscom et al 2020). Latin America is the largest net exporter of food and sustains global value chains that feed the world. Higher temperatures, more variable rains, prolonged droughts, floods, hurricanes, and fires are changing the way smallholders farm and the food systems the general population relies on. Central America has been particularly hard-hit in the last decade. In 2020 alone, two storms, Eta and Iota, ravaged Honduras and Nicaragua and negatively impacted El Salvador and Guatemala in unprecedented quick succession in November. Altogether, more than 200 people were killed and more than half a million displaced, and an estimated 7.3 million people were affected overall. Food production was affected by pests which damaged staple and export crops, heavy rains and mudslides caused soils to erode, and crops and livestock were lost (Crop Monitor 2021). In the absence of concerted efforts to transition agriculture to more regenerative and resilient practices, lives and livelihoods will be imperiled, economic growth stunted, and out-migration¹ will continue (Jeffries 2019; Kremen 2020).

The Amazon rainforest is a particularly important biome in the region and globally and has been the focus of global attention and significant flows of climate finance. The Amazon exerts a dramatic influence on the continental climate regime, including the most important agricultural lands in the region.² Brazilian agriculture depends heavily on rainfall regimes that are as stable and predictable as possible; irrigation is the exception, not the norm. More extreme weather events significantly reduce agricultural yields and affect the distribution of crops that are critical for export revenues and upon which millions of livelihoods depend. With more extreme weather events, soils and infrastructure are washed away, transport connections are broken, and supply chains interrupted. The recent Science Panel for the Amazon report underscores that we are close to a tipping point in the Amazon, with the lower reaches of the biome already showing signs of permanent conversion to savannah. If we do not address deforestation and species loss in the Amazon, this report warns that we risk serious consequences for growth and global warming for the economies that extend into the Amazon and far beyond (Lovejoy and Nobre 2019). Reducing pressure on the forest, ensuring

that agriculture and livestock rearing, infrastructure siting and development are compatible with standing forests and free-flowing rivers and respecting the rights of indigenous guardians are essential if we are to maintain the Amazon and its biodiversity and address climate change in the region. Strategies to address climate change in this biome will be indispensable for the entire region.

Strategies to Address Climate Change

A variety of strategies, programs and policies are currently being deployed to adapt to and mitigate climate change at the micro and macro levels (see Table 1) (Meyers et al 2020). How these are engendered and take on board men and women's different roles, responsibilities, resources constraints and agency will greatly affect their impact on households and on livelihoods systems (Burns and Daniel 2020; James et al 2021; Pearse 2016; Terry 2009).

The rapid scan of programs and projects that address climate change is reflected in Table 1. Since agriculture is a significant contributor to climate change and biodiversity loss, a large strand of this work builds capabilities and supports the shift towards regenerative agricultural practices (Lynch et al 2021). Some of these projects focus on providing technical assistance to raise agricultural productivity, improve soils, adopt shade grown crops, reduce tilling and the use of herbicides and pesticides, and deploy regenerative agriculture and land management practices to decrease pressure on standing forests and biomes. Other strategies attempt to promote the use of green infrastructure and Nature Based Solutions (NBS) to adapt to climate change, managing the risks of extreme weather events, reducing vulnerability to floods, soil erosion and hurricanes – this can include increasing forest cover in buffer zones, protecting wetlands, securing reefs and greening grey infrastructure. Restoring and reforestation forms a subset of the work that can be included in NBS but can be pursued independently as part of efforts to recover and establish national parks and co-managed areas.

At the macro-level governments have developed Nationally Determined Contributions (NDCs) as part of the Paris Accords that commit to adaptation measures that can be linked to the mitigation targets and National Action Plans or laws and policies to address climate change globally. All NDCs focus on mitigation and typically follow the mitigation hierarchy that emphasizes avoidance, reduction and offsetting in that order. Where the NDCs include programs to promote carbon sequestration they typically focus on restoration, reforestation and on fixing carbon in vegetation and soils or in blue carbon in marine ecosystems. There is often a greater visibility of community participation and gender considerations at the local level. These policies and programs manifest at the macro level in the NDCs, frequently in tandem with initiatives to implement carbon taxes, cap and trade and develop offset programs. The intent of these strategies is to reduce GHG emission and create incentives that shift production and consumption to lower carbon footprints. Colombia and Mexico have a carbon tax and Chile has recently implemented and strengthened its emissions tax.

The Agriculture, Forestry, and Other Land Use (AFOLU) sector is included in many countries' NDC's, but with varying degrees of specificity. Ecuador offers a powerful example through its adaptation NDC, which focuses on agriculture and other land uses, water, ecosystems, risk and capacity-building. Through the project Strengthening Community Resilience to the Adverse Effects of Climate Change with an Emphasis on Food Security and Gender Considerations ([FORECCSA](#)), policies are being implemented to enable populations to develop and strengthen their adaptive capacities (access to water, food sovereignty). A distinctly "bottom-up"

approach is applied and gender features prominently in the criteria for engagement and the submission of adaptation plans.

This review finds that few of the strategies that are being pursued have evaluations that consistently integrate gender and equity considerations (Eriksen et al 2021; Agrawal 2010; Terry 2009; Pearse 2016). The bulk of the adaptive strategies, including regenerative and sustainable agriculture investments that have environmental and social objectives focus on smallholders and Indigenous Peoples and Local Communities. While there are some agencies and analyses that do consider gender and empowerment dimensions in their development and evaluation, gender and equity considerations seem to be sparse in the literature and in many of the climate change laws, plans and regulations. This concern is echoed powerfully in Eriksen et al (2021) in their review of the outcomes of internationally-funded interventions aimed at climate change adaptation and vulnerability reduction. These authors underscore that some interventions inadvertently reinforce, redistribute or create new sources of vulnerability. Four mechanisms drive these “maladaptive outcomes” which are relevant in this review of mechanisms and funding flows for adaptation and mitigation in Latin America. These include: (i) shallow understanding of the context that makes individuals and communities vulnerable to climate change; (ii) inequitable stakeholder participation in both design and implementation of mechanisms; (iii) a retrofitting of adaptation into existing development agendas; and (iv) a lack of critical engagement with how ‘success’ is defined. It is not surprising, therefore, that in the absence of gender and equity impact evaluations, or the consistent application of safeguards that many of these projects do not address structural inequalities and appear to exacerbate inequality and vulnerabilities.

Those projects that are more micro-focused and emphasize community development and participation are consistently more likely to address gender and equality concerns. There is a relatively large body of work on gender and agriculture, women’s access to productive assets and their ability to benefit from extension and financial services or raise their productivity (FAO 2018; Johnson et al 2016; Meinzen Dick et al 2011; Njuki et al 2019). Witkowski and Blanco Lobo (2017) provide a thoughtful overview of how programs and policies to address climate change in agriculture in the region are including women and elevating a gender perspective. But it is surprising that the bulk of regenerative agriculture and sustainable agriculture initiatives reviewed in this scan do not feature consistent evaluations from a gender and equity perspective. There is also a body of work on reforestation and restoration that does integrate gender, but it typically does so from a qualitative perspective, with a greater emphasis on governance and participation (Pierce Colfer et al 2016). Few empirical analyses of gender integration are readily found in the academic or grey literature (Agrawal 2001; Agrawal 2009; Colfer et al 2016; Leisher et al 2016). There is a well-developed body of work on adaptation to climate change that explores gender and water that does incorporate time use and poverty alongside other gendered livelihoods impacts. This work finds that climate change, deforestation and degradation of lands and soils can impose additional costs on women and households as water scarcity rises and competition between productive and household use of water increases. Much of this work focuses on women’s increased time spent hauling water and gathering fuelwood as a result of climate change or examines interventions to reduce water use or transition to other cleaner fuels.^{3,4, 5}

Where analyses of mitigation projects and programs consider equity, they appear to do so with a broader focus on community engagement and the receipt or retention of meaningful benefits (Zwick 2019; Nia Tero 2021); a more disaggregated analysis of gender inclusion or

exclusion is not readily apparent in the academic literature and program reports and evaluations reviewed. At the macro level, increasingly the NDCs mention gender. Aguilar (2021) points out in her review of the NDCs in Latin America for this EGM, that 100% of NDCs in the region do include reference to gender considerations and gender inequality. There is more evidence, however, that NAPs, and NBSAPs, have addressed gender considerations substantively and in greater detail.⁶ Despite the inclusion of gender in these framings of responses to climate change, we have been unable to find any papers and analysis of carbon markets, offsets and cap and trade programs, that explicitly integrate gender as an equity criterion or consider how these programs affect women’s access to benefits or imply costs to their resource use and access.

Using the conceptual framework above and the WEIA dimensions that encompass decisions about agricultural production or resource use, access to and decision-making power about productive resources, control of use of income, leadership in the community and time allocation, to review these projects and initiatives would be particularly fruitful going forward (Malapit et al 2019; Malapit et al 2020). This framework provides validated metrics that can be qualitative or quantitative and that can be used to shed light on the programs and their funding mechanisms, their impacts and outcomes and their ability to address structural impediments to gender and equity.

Table 1 has links to some of the examples where the adaptation and mitigation strategies and programs have been deployed in the region. Where possible we have linked to examples that highlight the inclusion of gender considerations.

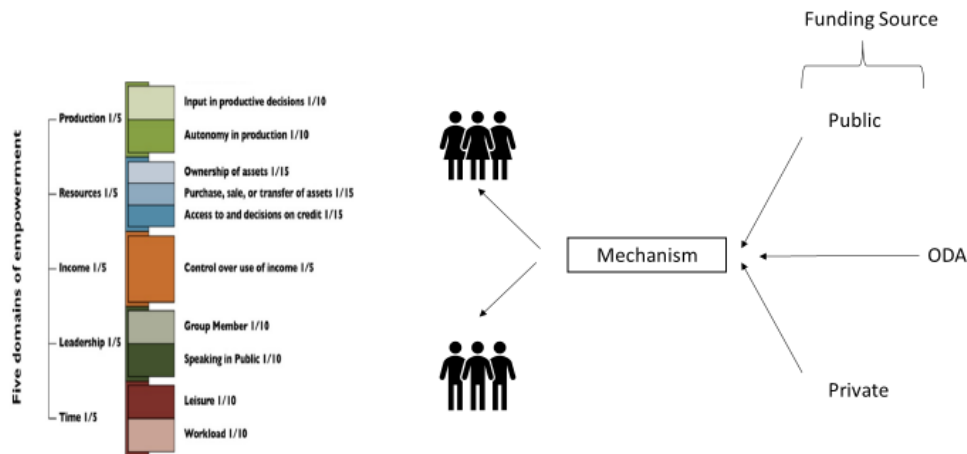
Table 1. Strategies, Programs and Policies

	Micro/Meso	Macro
Adaptation	Green Infrastructure/Nature Based Solutions Restoration and Reforestation Regenerative Agriculture Climate/weather information	NDCs NAPs
Mitigation	Carbon in vegetation and soils Blue Carbon	NDCs Carbon taxes Cap and trade Offsets

These policies are accompanied by different types of financing mechanisms and funding sources (Meyers et al 2020; Deutz et al 2020). In some cases, the funds are national and come from the public coffers generated by taxation. In other cases, they are private and are generated by either national or international investment interests and dispersed through banks and other financial services or released through value chains by lead firms as part of contracting mechanisms. In yet other cases, the funds are international and part of overseas development aid or flow through multilateral funds. Increasingly, we see blended finance mechanisms that combine public and private capital and operate according to a market logic. Evaluating the mechanism and how it affects men and women differently, will tell us more about any gender and equity exclusions. Using frameworks like the Women’s Empowerment in Agriculture Index (WEIA)⁷ can be particularly helpful as they offer multiple dimensions to

assess the impact of the mechanism on individuals and collectives and have been robustly tested and validated. Yet divorcing the mechanisms from the analysis of their funding sources and amounts limits our understanding of their impact and scale and of the cost and benefit incidence.

Figure 2. Climate Adaptation and Mitigation Mechanisms and their Funding



Source: Adapted from WEIA (2020)

Climate change finance flowing to Latin America through multilateral and bilateral mechanisms has been increasing in recent years (Watson and Schalatek 2019). But as Watson and Schalatek report (2019:1), “climate finance in the Latin American region is highly concentrated, with Brazil and Mexico receiving half of the region’s funding.” Moreover, mitigation activities, including forestry, receive more than six times the funds assigned to adaptation from multilateral climate funds. Since 2003, a total of US \$ 3.7 billion has been approved for 397 projects in the region from multilateral climate funds tracked by the CFU website⁸ and 43 new projects were approved in 2018 totaling US \$ 659 million. The Green Climate Fund funded 64% of these new projects (Watson and Schalatek 2019; Annex 1 Figure 3 and 4).

The source of these funds and the conditionalities applied are important and have critical implications for gender and equity. As Schalatek underscores in her CSW66 EGM paper (2021:4) “Whether climate finance is provided as grant, concessional or market-rate loan is fundamentally an issue of gender equality and gender justice, as with the increasing indebtedness of developing countries, their fiscal space to fund social support systems in times of crises is severely curtailed.” The same is true of private finance and the costs associated with recruiting, blending and channeling private finance in value chains. Who pays, who benefits and at what price are important gender and equity concerns.

Agricultural finance directed towards adaptation and mitigation is also growing, often financed by private capital through banks but the extent to which it is funding sustainable agriculture or

just contributing to the financialization and consolidation of food production is unclear (F4B 2021; Bárcena et al 2020). Indeed, as the recent Finance for Biodiversity Report (2021) underscores that ten companies now own half of the world's seed market, and just four agribusiness companies control 90 per cent of the global grain trade. This consolidation is also taking place in farmland, about 65 per cent of which is now owned by one per cent of farmers and/or farming businesses. F4B points out that investors appear to play a significant role in this increasing concentration: with the five largest asset managers owning, variously, between 10 and 33 per cent of major agribusiness companies, reinforcing market concentrations. Similarly, sovereign wealth funds – which are largely public but pursuing the logic of private capital – invested more than US\$100 billion in direct foreign investment since 2008, buying almost 230 million hectares (ibid). How and where funds flow towards smallholders and markets reward more regenerative practices remains understudied.

Some of these financial mechanisms and grants have been analyzed from a gender perspective, and the multilateral finance mechanisms do address gender in their portfolios,⁹ but there is a dearth of information about how women and men may be affected differently or have differential access to these mechanisms (Schalatek 2021, 2020). Extrapolating from the literature on gender and financial inclusion also calls attention to women's more restricted access to formal financial products and services, relegating them to more uneven and limited microfinance mechanisms.^{10,11} Where small loans, microfinance and microcredit mechanisms have been used to finance adaptation, these interventions seem to be primarily developed or deployed within value chain financing by NGOs in collaboration with lead firms or with bilateral grants.¹² Some of these programs have been developed to fund economic activities and livelihood diversification strategies to address climate change with women producers and farmers. *Solidaridad* is one network in Latin America, that also operates globally, that injects resources into value chains with an environmental and equity logic.¹³ Similarly, *Root Capital* also directs funding to agriculture with a focus on environmental and social resilience.¹⁴ Resilient Central America (*ResCA*), is one of the TNC programs that also addresses climate change and channels bilateral funding through the US State department to smallholders in Central America.¹⁵ ResCA works with partners and many of these partners have strong gender mandates and guidelines for gender integration. These three programs and initiatives do involve women as farmers and as environmental managers, but while the work highlights engaging women farmers and addressing gender concerns in their programming, few of their activities have strict gender quotas attached to them or have conducted rigorous analysis of their gender and equity objectives.

The rapid review of the payment for environmental services mechanisms in the region drew on existing reviews of how these mechanisms have been deployed by governments in Latin America (Grima et al 2016; Bárcena et al 2020) and reveals that some include language about men and women farmers, or pay attention to gender in their design, see for example ABC in Brazil and FONAFIFO in Costa Rica and PROBOSQUE in Guatemala. But we have not identified any peer reviewed or grey literature that evaluates how robustly or consistently gender has been addressed in the application of these programs.

Value chain financing through contracts in tandem with traceability mechanisms is being released for larger lead companies and banks to meet their ESG commitments. Deforestation and conversion free beef and soy is being increasingly sought to meet due diligence in supply chains. Prominent programs with Minerva, Marfrig and Cargill and supermarket chains purchasing these products are attempting to ensure compliance with forest codes and meet

commitments to ensuring their products do not increase pressure on forests and ecosystems.¹⁶ Paying premia for deforestation and conversion free products to farmers and slaughterhouses rewards farmers and intermediaries for environmental compliance. Several banks in the region, *ITAU*, *Bradesco* and *Santander*, are also driving financing towards more sustainable activities.¹⁷ But these programs are incipient and have no technical assistance or quotas to ensure that women farmers and indigenous communities gain access to them.

Examples of similar programs for value chain financing and funds that are being used to support environmental and social objectives in Africa could be drawn on to improve these finance-led programs. The [Africa Agriculture and Trade Investment Fund \(AATIF\)](#), is a public-private partnership dedicated to injecting resources into agriculture in Africa with a particular focus on poor and marginalized communities. The Fund aims at improving food security and providing additional employment and income to farmers, entrepreneurs and laborers by investing responsibly in local value chains. AATIF has injected more than 300 million into value chains in 16 countries in Africa. Another example is [Aceli Africa](#) which acts as a catalytic market facility offering concessional financing to lenders that then provide commercial financing to agricultural small to medium enterprises (agri-SMEs) in Sub-Saharan Africa. Aceli addresses the mismatch between the risk-return faced by lenders and the demand for capital by smallholders and agri-based SMEs. The Aceli project underscores that financing for agri-based SMEs needs to include risk mitigation funds. Aceli recommends a blended approach which includes: i) financial incentives to promote lending in segments with low or negative profitability, ii) risk mitigation, including first-loss capital, to encourage lending in new and underserved segments, and iii) technical assistance to help lenders reduce their operational costs, while allowing SMEs to improve their credit-readiness by strengthening financial management, governance and marketing capacity. These funds have equity guidelines and objectives that ensure that women farmers and SMES are able to obtain financing and that could be replicated elsewhere.

Green and blue bonds float debt for nature. Green Bonds have raised hundreds of billions USD for the environment and although generally focused on renewable energy investments, they are increasingly being used to create opportunities for investments in nature. According to Bloomberg data, total green bond issuances reached US\$305.3 billion in 2020, a 13 percent increase on 2019 levels, despite a steep decline in activity during the COVID-19 lockdowns in the first half of 2020. Since 2007, cumulative green bond issuances have climbed to beyond US\$1 trillion.¹⁸ Blue bonds are an emerging niche similar to Green Bonds with a specific focus on the oceans and aquaculture. In Latin America, green and blue bonds are growing in importance as a finance mechanism, to date it is the largest regional green bond market, with more than 10 green bond issuers and with the first regional green bond (Climate Bonds Initiative 2019). Some Social, Sustainability and ESG bonds have been used to finance projects related to access to water and sanitation, education, financial inclusion, gender equality, SME finance and social housing (see Annex 1, Table 1). Mexico's recent SDG bond is an example of a development impact bond that has SDG-related goals including the reduction of multidimensional poverty in the poorest municipalities. The bond will be rigorously evaluated by a third party to ensure that it is meeting the SDG objectives.¹⁹ That said, how these bonds are floated, whether they are sold to or for specific sectors, how they are repaid, whether through national or state taxes, or taxes on specific activities greatly affects the equity and cost-benefit incidence of these mechanisms. There are many questions that need to be answered: How do we use conservation bonds to finance effective and verifiable conservation

and return payments to investors? Who benefits from these bonds and financial resources and how do they flow to men, women and nature fairly?

Debt for nature swaps have also been used throughout the region to convert sovereign debt at lower interest rates and support conservation objectives. These strategies have been deployed since the early 1980s. In the last two decades, organizations such as the World Wildlife Fund (WWF), The Nature Conservancy and other large NGOs worked with governments to purchase sovereign debt in Bolivia, Belize, Guatemala and Ecuador and created financing vehicles to protect forests and coastal ecosystems. From 1991-2003, almost \$1.1 billion was generated for conservation through debt for environment swaps.²⁰ How they are consulted, what is determined to be financed through the debt conversions and how the benefits are distributed, remain important questions about their operation and their ability to address equity and inclusion considerations.

Conservation Trust Funds (CTFs) are large financial vehicles that secure continued payments for conservation activities over time. CTFs provide financing for a range of environmental actions often supporting protected areas, sustainable livelihoods, and other conservation related goals. In Latin America there is a network of CTFs through RedLAC which hosts 26-member environmental funds from 19 different countries in Latin America and the Caribbean that support conservation projects and protected areas.²¹ Many RedLAC members have gender and equity standards, protocols and safeguards.²²

The private sector also generates flows of funds for adaptation and mitigation. Clearly, investors are being primed to look beyond ESG – or Environmental, Social, and Corporate Governance – to measure their commitments to sustainability, reducing environmental risk, and for generating a return on their investments. The new HSBC pollinator fund is an example of this.²³ The HSBC fund claims that it, “intends to establish a series of natural capital funds, investing in a diverse range of activities that preserve, protect and enhance nature over the long-term, and address climate change.” We will need to ask a number of questions about these types of funds operate. How does this strategy lead to nature-positive investments that promote ecosystem health and resilience without stimulating excessive and unsustainable extraction? How robust are the metrics that support the investments and outcomes? How do social entrepreneurs access the funds? How are human rights, equity and diversity ensured through the operations of these funds?

There is also a push to create a new asset class for nature and to monetize it on the stock exchange.²⁴ The New York Stock Exchange has announced a new, nature-based asset class specializing in corporations known as Natural Asset Companies (NAC).²⁵ These NACs will hold rights to ecosystem services produced by natural or human-controlled lands and profit from trading the ecosystem services they provide. This approach is intended to incentivize companies them to “maximize ecological performance as their primary purpose.” The companies, conceived and defined by the NYSE in conjunction with dedicated US firm Intrinsic Exchange Group (IEG), will be listed and traded within their own class on the New York Stock Exchange. IEG, reports that will enable, “the conversion of natural assets into financial capital”. IEG is advising a number of private landowners, public companies and countries on the potential of NACs, and is working with the government of Costa Rica on using NACs as a foundation for preserving the country’s natural assets. IEG was founded with support from investors including the Inter-American Development Bank (IADB) and the Rockefeller Foundation. The NYSE has a minority stake in the company and will license its accounting framework to support the development of the new asset class. IEG reports that it anticipates

that the new asset class will “tap into opportunities from a global ecosystem services market worth an estimated \$125tn annually.”²⁶ Many questions remain about these approaches that draw attention to the need for careful oversight and verification, supply chain transparency and public and private sector accountability. How do these initiatives protect nature and guard against extractivism and commodification? To what extent can markets and financial markets be used to protect nature? How do we monetize environmental and social impacts for investors motivating them to accept a lower return when compared with other stocks and assets? How do we track and validate results and ensure transparency? How can we ensure the protection of human rights, including the collective right of Indigenous Peoples to self-determination and the rights of nature?

Reforming harmful subsidies to create fiscal space and reorient them to incentivize more sustainable and regenerative practices or levying green taxes and increasing taxes and deploying subsidies for adaptation and mitigation is another option that is being pursued in the region (FAO et al 2021).^{27,28,29} CEPAL recently included an analysis of subsidies that exacerbate environmental degradation in their 2020 report on the Climate Emergency in Latin America and drew attention to the fact that most energy subsidies are regressive, and that they exceed expenditures on health-care provision in at least six Latin American countries (Bárcena et al 2020, Chapter 5). While some of these subsidies are designated for particularly vulnerable groups such as fishers or smallholders, others flow to the transport and manufacturing sector and higher income segments of the population. A gendered cost and benefit incidence analysis has yet to be conducted on most of these subsidies.

Some of the climate finance mechanisms from REDD plus to LEAF leverage bilateral or multilateral funding to secure investments in carbon sequestration. REDD plus has been better analyzed from a gender and equity perspective (UN REDD 2017)³⁰ as have some of the GEF projects (GEF 2018). These analyses focus on women’s rights to ecosystem benefits and resources and their inclusion in the process that determines the design, implementation and evaluation of these projects. There are some particularly critical analyses of the equity considerations in carbon offsets and credits programs, citing deeply held concerns about their effectiveness and whether they are merely permits to pollute and do not meet the rigorous expectations of meaningful offsets that are both additional and permanent (Climate Justice Alliance 2017; van Dam 2020) or see indigenous peoples and women in these programs as instrumental and not agentic (Low 2020).

There have also been initiatives that have been more inclusive and led by indigenous groups. COICA, the Coalition of Indigenous Peoples of the Amazon Watershed has endorsed strict carbon standards that are consistent with indigenous peoples rights in the Declaration of California.³¹ The *Suruí* REDD Forest Carbon Project in Brazil was the first indigenous-led conservation project financed through the sale of carbon offsets. It was determined to have dramatically reduced deforestation within the territory during its first five years of operation (2009-2014) but was suspended in 2018 after the discovery of large gold deposits in the territory sparked a surge in deforestation. Before being suspended, the project generated 299,895 carbon offsets certified under the Verified Carbon Standard (VCS) which has strict rules for compliance and to ensure that all carbon benefits are additive and permanent (Zwick 2019).³² The challenges that this project encountered reflect the broader economic and power inequalities present in the Amazon basin, and ongoing disputes over property rights and decisions to extract and profit from natural resources. While the project was in operation, the *Paiter Surui* used proceeds from offset sales to finance six sustainable community

development initiatives that generated income and support traditional practices, that benefitted both men and women, such as the harvesting of medicinal plants and the creation of artisanal handicrafts (Borges 2021). LEAF³³, which was announced in April 2021, is currently being rolled out as a multilateral program, but it has already identified that gender considerations need to be integrated into its mechanism and programming will be informed by other climate finance initiatives that predate it.

Increasingly in Latin America, green taxes and carbon taxes are being used to finance conservation. In Brazil, Colombia, Chile, and Costa Rica green taxes are being levied to fund conservation or taxes are being placed on carbon. Some of these initiatives give rise to “cap and trade” opportunities and others to offsets. In Brazil Floresta Mais is one of these programs that is being used to generate offsets.³⁴ Colombia has an ongoing program of green taxes on petroleum products that generates funding for conservation and a market for voluntary offsets to buy down tax obligations. The national carbon tax seeks to discourage the use of fossil fuels and incentivize technological improvements for their more efficient use. The same Law that creates this tax, allows for the tax to be offset through investment in mitigation projects. Resources from the tax are also used to fund conservation projects that reduce coastal erosion, protect water sources and ecosystems and invest in protected areas. Chile is developing a similar program and focusing on direct taxation of GHGs. Who pays the taxes and how these investments in offsets or conservation affect local communities and men and women has yet to be evaluated from a gender and equity perspective.

Table 2. Financing Mechanisms

	Micro/Meso	Macro
Adaptation	Microfinance/Credit Remittances Insurance mechanisms Payment for Ecosystem Services Value Chain Financing Biodiversity Offsets ³⁵	GEF GCF ODA Adaptation Fund Green and Blue Bonds Debt-for Nature Conversions Conservation Trust Funds Private sector funds Reforming Harmful Subsidies Taxes and Subsidies New asset classes
Mitigation	Taxes and Subsidies Carbon credits and offsets	Article 6 NAMA REDD Plus Forest Carbon Partnership Facility LEAF Green Taxes/carbon Taxes Offsets

The Bioeconomy, Global Finance and Livelihoods

The recent TNC/Paulson Institute Report on [Financing Nature](#) identified that, “Globally, as of 2019, current spending on biodiversity conservation is between \$124 and \$143 billion per year, against a total estimated biodiversity protection need of between \$722 and \$967 billion

per year. This leaves a current biodiversity financing gap of between US\$ 598 billion and US\$ 824 billion per year.” The Financing Nature report provides a number of insights that underscore that closing the financing gap relies heavily upon government actions. Governments need to do more to protect natural capital and put in place a combination of policy reforms to reduce negative impacts on biodiversity, such as reforming harmful agricultural subsidies and reducing investment risk by public and private investors.

Reducing or eliminating environmentally harmful subsidies for agricultural products and inputs, fisheries, aquaculture and forestry can potentially generate almost half the estimated financing gap to secure biodiversity and reverse nature loss. Removing harmful subsidies can also create or free-up resources for other types of investment in regenerative agriculture and practices that protect biodiversity (FAO/UNDP/UNEP 2021). Governments can use these resources to develop and implement new policies or increase the effectiveness of existing ones that increase domestic spending on biodiversity conservation and disincentivize activities that are harmful to biodiversity. These resources can also be used to conduct gender analyses and put resources toward integrating mechanisms for equity within these policies.

How these policy and programs to address climate change also seek to protect biodiversity and address or reverse nature loss that is intimately connected to anthropogenic activity and climate change is similarly an important dimension to analyze. The Recent Science Panel for the Amazon Report³⁶ which analyzes the tipping point in the Amazon and alerts the world to the vital importance of this biome, places substantial emphasis on the bioeconomy.

The “bioeconomy” is increasingly a cornerstone of the unfurling discussion of green growth and a green recovery from Covid-19. It is appealed to in order to secure growth and protect and preserve natural systems. Yet the bioeconomy is broadly and variously interpreted by many different entities and actors as relating to the use of natural ecosystems and services in innovative ways to generate income.³⁷ In some interpretations, developing the bioeconomy can be consistent with the preservation and sustainable use of existing ecosystems and biodiversity; in others, it is not.

Transitioning to a “bioeconomy” is frequently appealed to for producers to diversify their livelihoods and increase resilience by deploying more nature-based solutions and climate-friendly options. But sectors covered by the term “bioeconomy” are extensive, and range beyond food, feed, and beverages to include forestry, mining, biofuels, bioplastics, paper, textiles, chemicals, cosmetics, pharmacology, and health. For this reason, how the bioeconomy is defined and the economic strategies that it encompasses, are fundamental to whether these strategies are consistent with conservation and preservation, sustainable use and ecosystem resilience.

Since the bioeconomy is intimately linked to biodiversity, the potential of the bioeconomy varies from country to country. Development in each country (or sector) depends on a range of factors, including available natural resources, traditional knowledge, innovation, local capacity, technology, property rights and the recognition of indigenous rights, and investment. While often undervalued when focusing narrowly on GDP and job creation, the bioeconomy offers an opportunity to reimagine a development model that delivers broader co-benefits for biodiversity, climate, food and energy security, as well as poverty alleviation and social inclusion, particularly for women and indigenous peoples. It can also deliver income, jobs and growth.

In Latin America, the IDB has been working on a financial model for developing a bioeconomy in the Amazon.³⁸ This is the concept, pilot and scale model that they hope to generalize throughout the region. This model includes seed funding, risk capital and equity investments, and calls for policies that foster an enabling environment to accelerate implementation, technical assistance and verification. Eventually, this model will include three components: a Bioeconomy Fund; an Accelerator and an Investment Platform.

The IDB Bioeconomy Fund³⁹ would support ecoentrepreneurs and develop and diversify livelihoods. Some of these opportunities include natural oils, cosmetics, food and beverages; others include forest crops (non-timber products such as andiroba, camu-camu, copaíba, and Amazon nut). They also plan to include sustainable timber products, and community-based forestry as well as plantations of perennial species (e.g. cocoa, palm, macauba, coffee, açai, pupunha). The types of bioeconomy options, the way they are developed with local communities and are invested in and incentivized by public policies, and the business model they employ to track impact on sustainability and add-value, are going to need to be scrutinized to ensure that they are consistent with preserving these ecosystems and honoring Indigenous Peoples' right to self-determination, as well as a culturally responsive approach to gender equity. There will also be significant equity concerns about who obtains property rights to develop these resources and how. How women and indigenous peoples are included and the safeguards and protections that are set in place for these funds to operate and be held to, will be of particular importance.

Bio-prospecting, genetic sequencing and biomimicry are part of the bioeconomy and also offer a means to generate resources that could obviate the destruction or consumption of biodiversity in the process. But there are also concerns about how these initiatives are undertaken and who benefits. Digital sequencing of genetic material for commercial or public use, for example, has been ongoing for some time. In 2016, the Conference of the Parties to the Convention on Biological Diversity (CBD) recognized for the first time the relevance of, and potential issues surrounding the digital sequence information on genetic resources (DSI) for the achievement of the CBD's three objectives: namely, the conservation of biological diversity, the sustainable use of its components and, notably, the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. The Nagoya Protocol on Access and Benefit-Sharing could be an important mechanism to prevent exploitation and protect global common property resources.⁴⁰ Where women and indigenous peoples depend disproportionately on these common property resources, governance mechanisms and safeguards (as are identified in article 8j of the CBD) must be developed to protect their rights and respect their guardianship (Nia Tero 2021).

In Latin America there is a growing interest in the bioeconomy as a lynchpin strategy in a green recovery from Covid. Brazil is one of the countries that has recently ratified the Nagoya Protocol of the Convention on Biodiversity on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization which is part of the Convention on Biological Diversity. The Nagoya protocol is an international agreement which aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way. Brazil's interest in the agenda is in increasing the country's competitiveness in the bioeconomy globally. Yet there are concerns about how advancing the bioeconomy may affect agriculture, indigenous peoples and the interests of agricultural companies. So internal divisions about the emphasis on the bioeconomy and support for its expansion are visible.

In the Amazon, TNC is working with the State of Pará where developing the Bioeconomy is a central pillar of the state's *Amazonia Agora*⁴¹ initiative to halt further deforestation in the Amazon. The Governor of Pará sees this initiative as a means to promote low-carbon development alternatives for local communities that are compatible with valuing standing forests, and help restore degraded lands, as well. Amazonia Agora has 4 pillars: Command and control to prevent illegal deforestation that builds the ability of the state to respond to and sanction violations; sustainable development policies that include tracking and the distribution of resources to incentivize sustainable enterprises; a sustainable investment fund with transparent and participatory governance; and *the Regularize Pará Program* which guides actions to support land titling and regularization and compliance with the forest code. This initiative works in concert with the Office of Repression and Control of Deforestation and Burnings and with the Sustainable Territories Policy.

The state government of Pará believes that crops like cocoa, babacu⁴² and *acai* deliver economic and environmental benefits, along with important social benefits. Their support for bioeconomy places substantial emphasis on the potential to provide indigenous peoples, traditional rural communities, and family farmers with much improved livelihoods while securing the forests and ecosystems that they depend on. Belem, the capital of Para State, will host the World Bioeconomy Forum in October, 2021.⁴³ The World BioEconomy Forum is a think-tank initiative which provides a global platform for key stakeholders of the Circular Bioeconomy to share ideas and promote bio-based solutions. The Forum's primary objective is to encourage the replacement of non-renewable based industries, products and services to facilitate a more sustainable economy while mitigating climate change.

The Biofin initiative supported by the UNDP has also dedicated time and effort to exploring how financing can be used to secure biodiversity and reverse nature loss. They have an extensive catalog of finance solutions and place emphasis on distributional and equity concerns.⁴⁴ One example of Biofin's work in the region focuses on closing the biodiversity funding gap in Mexico. As Biofin notes, "Mexico is a mega diverse country, between 10 and 12% of the world's species can be found in Mexico. The country depends greatly on the primary sector (agriculture and extensive farming), which is around 3% of the GDP. However, this sector's activity has provoked the land use changes in at least ¼ of the territory." In a 2016 study, Biofin in concert with the statistical agency INEGI, calculated the cost of environmental degradation and depletion, and it concluded that it was 5 times higher than the total expenditure in environmental protection. As part of Biofin's engagement in Mexico, they have developed a small bioeconomy acceleration fund with a microfinance agency, Nuup, to drive funding towards the bioeconomy, with an emphasis on smallholders, gender and equity.⁴⁵

Ensuring that these types of initiatives advance human and indigenous rights, are equitable and that they secure meaningful benefits for nature and people will be essential if they are to address climate change and biodiversity loss fairly. The development of these economies and value chains and the benefits that flow from them must be understood through a gendered lens, particularly where they rely on environmental goods and services that are deemed to be public goods, or which are customarily or de facto particularly important for women's livelihoods and wellbeing.

Conclusions and Recommendations

This preliminary review underscores that adaptation and mitigation programs and policies are growing in importance in Latin America. The public and multilateral financing mechanisms that support these programs are increasing in number and volume. Private sector financing is also being recruited and increasingly delivered to address adaptation and fulfill ESG commitments, particularly in agricultural value chains. Whereas the public sector and global climate finance initiatives appear to have stronger considerations of gender embedded in them, the private sector initiatives and funding flows are far less likely to address gender and equity concerns. The extent to which these mechanisms address gender and the structural exclusions that women face accessing extension and financial services for conservation is uneven and warrants further investigation.

UN Women and other UN agencies (FAO, UNDP, UNEP) could dedicate time and resources to elevating the analysis of gender in these projects and programs. A robust analysis of these programs using the WEIA dimensions could be particularly helpful to generate insights as to whether and how they integrate gender and equity concerns. Where there is a dearth of information, calling attention to the lack of data on gender, diversity and inclusion and embedding metrics in the design, implementation and analysis of these programs is the first step to ensuring that gender and equity considerations are addressed. Using the SG Report on rural women to explore how some of these programs address gender could generate vital information and contribute to elevating this important equity concern among governments and multilaterals.

Bibliography

Agarwal, B. (2001). "Participatory Exclusions, Community Forestry, and Gender: An Analysis for South Asia and a Conceptual Framework." *World Development* 29 (10): 1623–1648.

Agarwal, B. (1997). " 'Bargaining' and Gender Relations: Within and beyond the Household." *Feminist Economics* 3 (1): 1–51.

Agarwal B. (2009). "Gender and forest conservation: The impact of women's participation in community forest governance," *Ecological Economics*. 2009;68(11):2785-99

Agrawal, A. (2010). "Local Institutions and Adaptation to Climate Change." In *Social Dimensions of Climate Change: Equity and Vulnerability in a Warming World*, edited by R. Mearns and A. Norton, 173– 197. Washington, DC: World Bank.

Aguilar, L. (2021) "Promising Practices that Promote Gender Equality and the Empowerment of Women in the Response to Climate Change in Latin America and the Caribbean" expert paper presented to UN Women Expert Group Meeting, 'Achieving gender equality and the empowerment of all women and girls in the context of climate change, environmental and disaster risk reduction policies and programmes,' 11-14 October, 2021

Bárcena, A., M. Cimoli, R. Garcia-Buchaca, J. Samaniego and R. Pérez. (2020) "The climate emergency in Latin America and the Caribbean: the path ahead – resignation or action?," ECLAC Books, No. 160 (LC/PUB.2019/23-P), Santiago, Economic Commission for Latin America and the Caribbean (ECLAC), 2020.

Borges, B. (2021). "The Surui Forest Carbon Project: 1st Indigenous led REDD+ Project in the World," Presentation to the Leticia Pact Implementation Group, REDD+ / Bioeconomy August 26, 2021, Communities and Territorial Governance Initiative, Forest Trends

Burns, B. and T. Daniel. (2020). *Pocket Guide to Gender Equality under the UNFCCC*. European Capacity Building Initiative (ECBI).

Buvinic, M., and B. King. (2018). *Invisible No More? Report and Country Case Studies on Time Use and Unpaid Work*. Washington, DC: Data2X.

CEPAL (2021). "Implications of gender roles in natural resource governance in Latin America and the Caribbean," CEPAL, Insights. <https://www.cepal.org/en/insights/implications-gender-roles-natural-resource-governance-latin-america-and-caribbean>

Climate Bonds Initiative. (2019). "Latin America & Caribbean Green finance state of the market 2019," Climate Bonds Initiative, PAGE, UNDP, IDB, IDB INvest

Climate Justice Alliance. (2017). "Carbon Pricing: A Critical Perspective for Community Resistance. Building Solidarity Against the Threat of Linking Global Carbon Markets," Climate Justice Alliance and Indigenous Environmental Network.

Crop Monitor. (2021). "Impact of November Hurricanes Eta and Iota on the Segunda/Postreera Cropping Season in Central America,"

https://reliefweb.int/sites/reliefweb.int/files/resources/Special_Report_20201215_Central_America_0.pdf

Deutz, A., Heal, G. M., Niu, R., Swanson, E., Townshend, T., Zhu, L., Delmar, A., Meghji, A., Sethi, S. A., and Tobinde la Puente, J. (2020). "Financing Nature: Closing the global biodiversity financing gap," The Paulson Institute, The Nature Conservancy, and the Cornell Atkinson Center for Sustainability.

Eckstein, D. V Kunsel, and L. Schafer. (2021). "Global Climate Risk Index 2021. Who Suffers Most From Extreme Weather Events? Weather-Related Loss Events In 2019 And 2000-2019."

Siri Eriksen, S., L. F. Schipper, M. Scoville-Simonds, K. Vincent, H. Nicolai Adam, N. Brooks, B. Harding, D. Khatri, L. Lenaerts, D. Liverman, M. Mills-Novoa, M. Mosberg, S. Movik, B. Muok, A. Nightingale, H. Ojha, L. Sygna, M. Taylor, C. Vogel, J. West (2021) "Adaptation interventions and their effect on vulnerability in developing countries: Help, hindrance or irrelevance?," World Development, Volume 141, 2021, 105383, ISSN 0305-750X, <https://doi.org/10.1016/j.worlddev.2020.105383>.

FAO (2018). Developing Gender Sensitive Agricultural Supply Chains, <http://www.fao.org/3/i9212en/I9212EN.pdf>

FAO, UNDP and UNEP. (2021). "A multi-billion-dollar opportunity – Repurposing agricultural support to transform," food systems. Rome, FAO. <https://doi.org/10.4060/cb6562en>

F4B (2021). "Making Finance Work for Food, Financing the Transition to a Sustainable Food System," Finance for Biodiversity Initiative.

Gammage, S. (2010). "Time-Pressed and Time Poor: Unpaid Household Work in Guatemala," *Feminist Economics*, 16(3): 79-112.

GEF. (2018). "Guidance to Advance Gender Equality IN GEF PROJECTS AND PROGRAMS," Global Environment Facility. Washington DC.

Grima, N., Singh, S.J., Smetschka, B. and Ringhofer, L. (2016). "Payment for Ecosystem Services (PES) in Latin America: Analysing the performance of 40 case studies," *Ecosystem Services* 17: 24-32.

Griscom BW et al. (2020). National mitigation potential from natural climate solutions in the tropics. *Phil. Trans. R. Soc. B* 375: 20190126. <http://dx.doi.org/10.1098/rstb.2019.0126>

ILO. (2018.) *World Employment and Social Outlook: Trends for Women 2018 – Global snapshot*. International Labour Organisation, Geneva.

IPCC (2021). "AR6 Climate Change 2021: The Physical Science Basis," Intergovernmental Panel on Climate Change, <https://www.ipcc.ch/report/ar6/wg1/#SPM>

James, R., Gibbs, B., Whitford, L., Leisher, C., Konia, R., & Butt, N. (2021). "Conservation and natural resource management: Where are all the women?" *Oryx*, 1-8. doi:10.1017/S0030605320001349

Jeffries, N. (2019). *Regenerative agriculture: how it works on the ground*. Ellen MacArthur Foundation.

- Johnson, N., C. Kovarik, R. Meinzen-Dick, J. Njuki, A. Quisumbing. (2016). "Gender, Assets, and Agricultural Development: Lessons from Eight Projects," *World Development* 83: 295–311.
- Kabeer, N. (2013). "Paid work, women's empowerment and inclusive growth Transforming the structures of constraint," UN Women, <https://www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2013/1/paid-work-womens-empowerment-and-inclusive-growth2%20pdf.pdf?la=en&vs=1454>
- Kremen C., (2020). "Ecological intensification and diversification approaches to maintain biodiversity, ecosystem services and food production in a changing world," <https://doi.org/10.1042/etls20190205>
- Leisher, C., Tensah, G., Booker, F., Day, M., Samberg, L., Prosnitz, D. et al. (2016). "Does the gender composition of forest and fishery management groups affect resource governance and conservation outcomes? A systematic map," *Environmental Evidence*, 5(1).
- Lovejoy, T. E. and C. Nobre. (2019). "Winds of will: Tipping change in the Amazon," *Sci. Adv.* 5, eaba2949 (2019).
- Low, C. (2020) "Gender and Indigenous concepts of climate protection: a critical revision of REDD+ projects," *Current Opinion in Environmental Sustainability* 2020, 43:91–98.
- Lynch J, M. Cain, D. Frame, and R. Pierrehumbert. (2021). "Agriculture's Contribution to Climate Change and Role in Mitigation Is Distinct from Predominantly Fossil CO2-Emitting Sectors," *Front. Sustain. Food Syst.* 4:518039. doi: 10.3389/fsufs.2020.518039
- Malapit, H., C. Ragasa, E.M. Martinez, D. Rubin, G. Seymour and A. Quisumbing (2020). "Empowerment in agricultural value chains: Mixed methods evidence from the Philippines," *Journal of Rural Studies* 76 (2020) 240–253. <https://doi.org/10.1016/j.jrurstud.2020.04.003>
- Malapit, H., A. Quisumbing, R. Meinzen-Dick, G. Seymour, E. M. Martinez, J. Heckert, D. Rubin, A. Vaz, K. M. Yount, and the Gender Agriculture Assets Project Phase 2 (GAAP2) Study Team. (2019). Development of the project-level Women's Empowerment in Agriculture Index (proWEAI). *World Development* 122:675-692
- Meinzen-Dick, R., N. Johnson, A. Quisumbing, et al. (2011). "Gender, Assets, and Agricultural Development Programs: A Conceptual Framework." CAPRI Working Paper 99. Washington, DC: IFPRI.
- Meyers, D., Bohorquez, J., Cumming, T., Emerton, L., Heuvel, O.v.d., Riva, M., and Victurine, R. Conservation Finance: A Framework, Conservation Finance Alliance, (2020)., www.cfalliance.org DOI: 10.13140/RG.2.2.14186.88000
- Mutenje M.J, C. Rozel Farnworth, C. Stirling, C. Thierfelder, W. Mupangwa, I. Nyagumbo. (2019). "A cost-benefit analysis of climate-smart agriculture options in Southern Africa: Balancing gender and technology," *Ecological Economics* 163 (2019) 126–137. <https://doi.org/10.1016/j.ecolecon.2019.05.013>
- Nia Tero. (2021). "Briefing Note: Safeguarding Indigenous Guardianship in Carbon Markets, 24 March 2021
- Njuki, J., M. Melesse, A. Ng'weno, A. Rappoldt, C. Phelane, J. d'Anjou, M. Hassan, R. Ketley, and S. Vossenber. 2019. "Beyond Access: Gender-Transformative Financial Inclusion in Agriculture and Entrepreneurship," Pp 57-82 in A. Quisumbing, R. Meinzen-Dick, and J. Njuki 2019. *Gender*

Equality in Rural Africa from Commitments to Outcomes, ReSAKKS, Annual Trends and Outlook Report, Washington DC: International Food Policy Research Institute.

Pearse, R. (2016). Gender and climate change. WIREs Climate Change. 8(2):e451. DOI: 10.1002/wcc.451

Pierce Colfer, C., B., Sijapati Basnett, and M. Elias (2016). *Gender and Forests, Climate Change, Tenure, Value Chains and Emerging Issues*, Earthscan, Routledge, London and New York.

Shalatek, L. (2021) "Core Steps to Increase Quality and Quantity of Gender-Responsive Climate Finance," expert paper presented to UN Women Expert Group Meeting, 'Achieving gender equality and the empowerment of all women and girls in the context of climate change, environmental and disaster risk reduction policies and programmes,' 11-14 October, 2021

Schalatek, L. (2020). "Gender and Climate Finance," Climate Finance Update, Heinrich Boll Stiftung, Washington DC, <https://climatefundsupdate.org/publications/gender-and-climate-finance-2020/>

Terry, G. (2009). No climate justice without gender justice: an overview of the issues. *Gender & Development*. 17(1)5-18. DOI: 10.1080/13552070802696839

UNICEF 2016. <https://www.unicef.org/press-releases/unicef-collecting-water-often-colossal-waste-time-women-and-girls>

UN-REDD (2017). Gender and Methodological Brief on Gender. UN-REDD Program.

UN Women. (2016). *Progress of the Worlds Women: Progress of the world's women 2015–2016: Transforming economies, realizing rights*, New York.

Van Dam, C. (2020). "La Economía de la Mitigación del Cambio Climático en Territorios Indígenas," *Forest Trends, Communities and Territorial Governance Initiative*, <https://www.forest-trends.org/publications/la-economia-de-la-mitigacion-del-cambio-climatico-en-territorios-indigenas/>

Villarroya, A., Barros, A.C., Kiesecker J., (2014). "Policy Development for Environmental Licensing and Biodiversity Offsets in Latin America," *PLoS ONE* 9(9): e107144. <https://doi.org/10.1371/journal.pone.0107144>

Watson, C., and L. Schalatek (2019). "Climate Finance Regional Briefing: Latin America," Overseas Development Institute and the Heinrich Boll Stiftung, Washington DC, <https://climatefundsupdate.org/wp-content/uploads/2019/03/CFF6-2018-ENG.pdf>

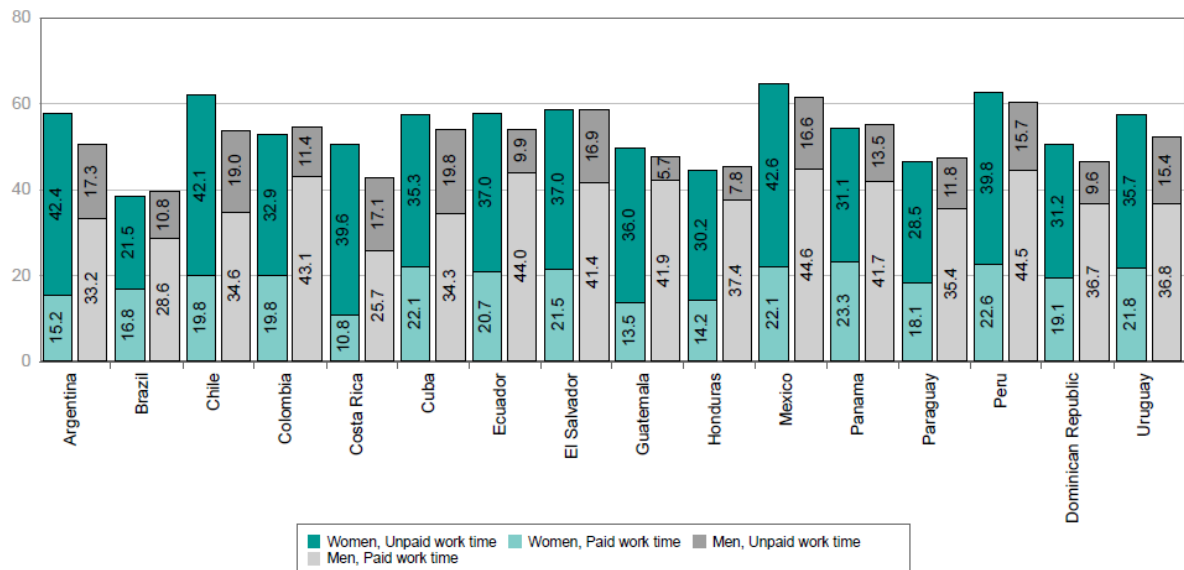
Women's Empowerment in Agriculture Index (2020). Online Resource Center, <https://www.ifpri.org/publication/womens-empowerment-agriculture-index>

Witkowski, K. and M. Blanco Lobo (2017). "De la práctica a las políticas: experiencias latinoamericanas en género, cambio climático y agricultura," IICA, EU. <https://repositorio.iica.int/bitstream/handle/11324/2997/BVE17068915e.pdf?sequence=1&isAllowed=y>

Zwick, S. (2019). "The Surui Forest Carbon Project, A CASE STUDY," *Forest Trends, USAID*. https://www.forest-trends.org/wp-content/uploads/2019/03/doc_5751-1.pdf

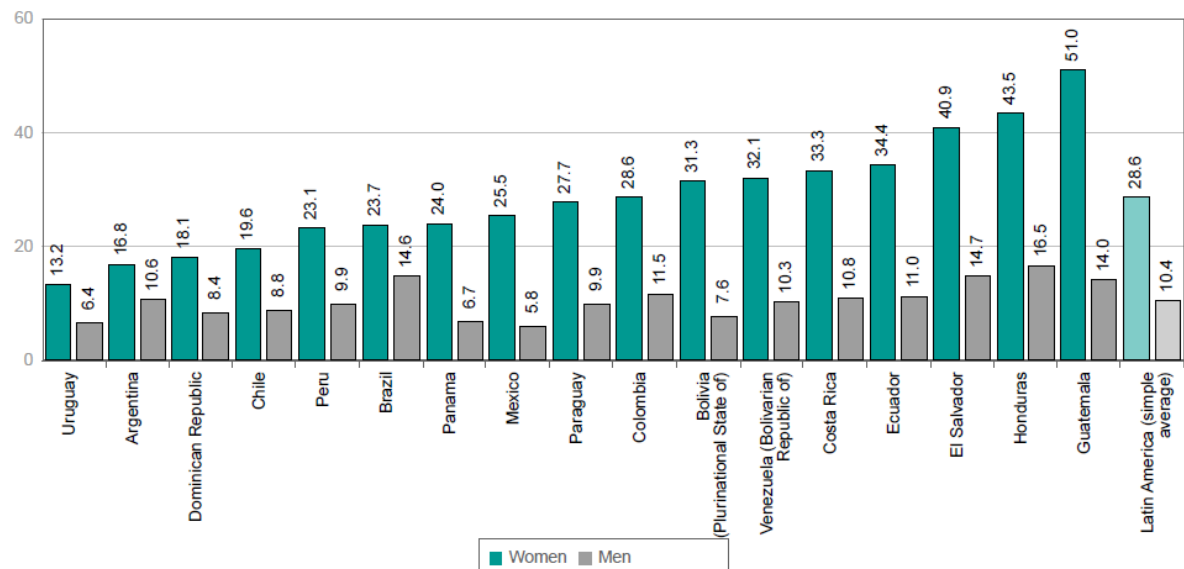
Annex 1.

Figure 1. Total Work Time by Sex in Latin America



Source: CEPAL Gender Observatory, based on time use surveys, accessed September 2021

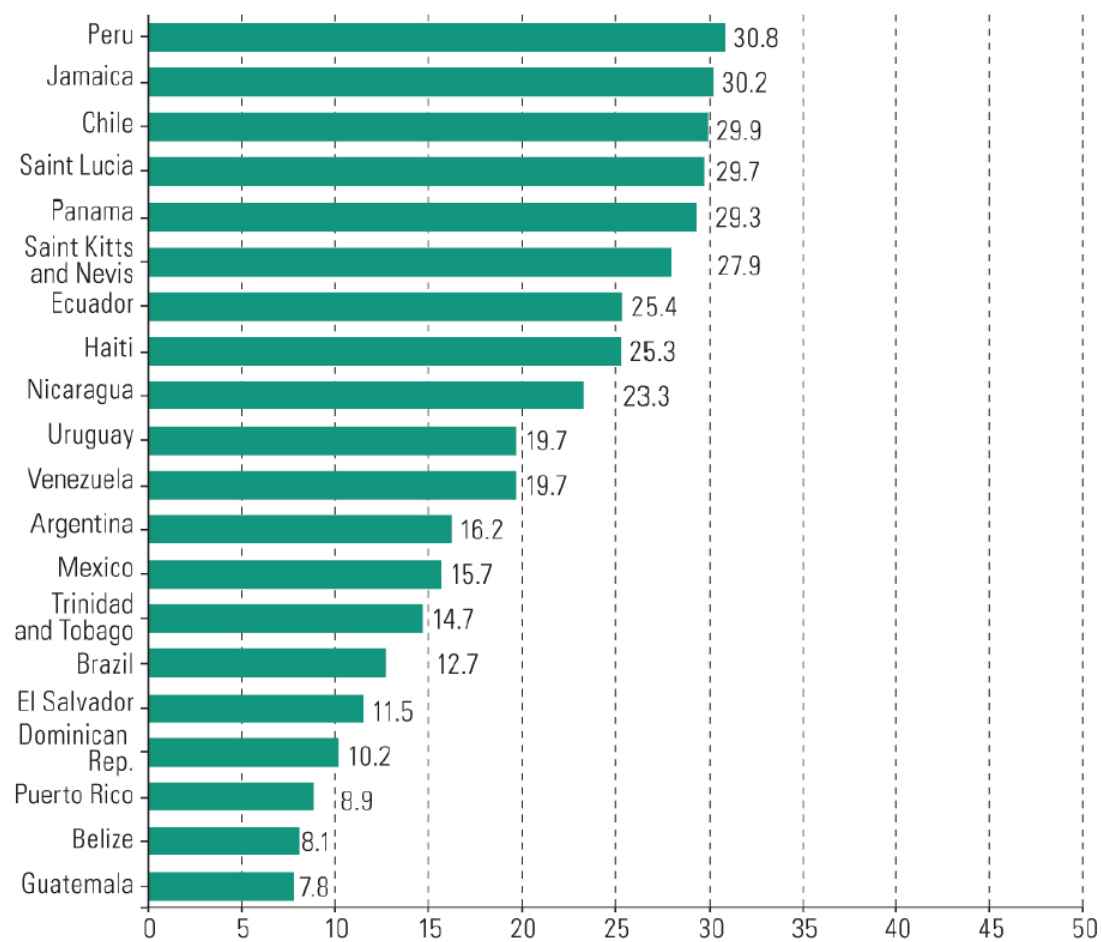
Figure 2. People without Access to Income of their Own



Source: CEPAL Gender Observatory, based on household and labor force surveys, accessed September 2021

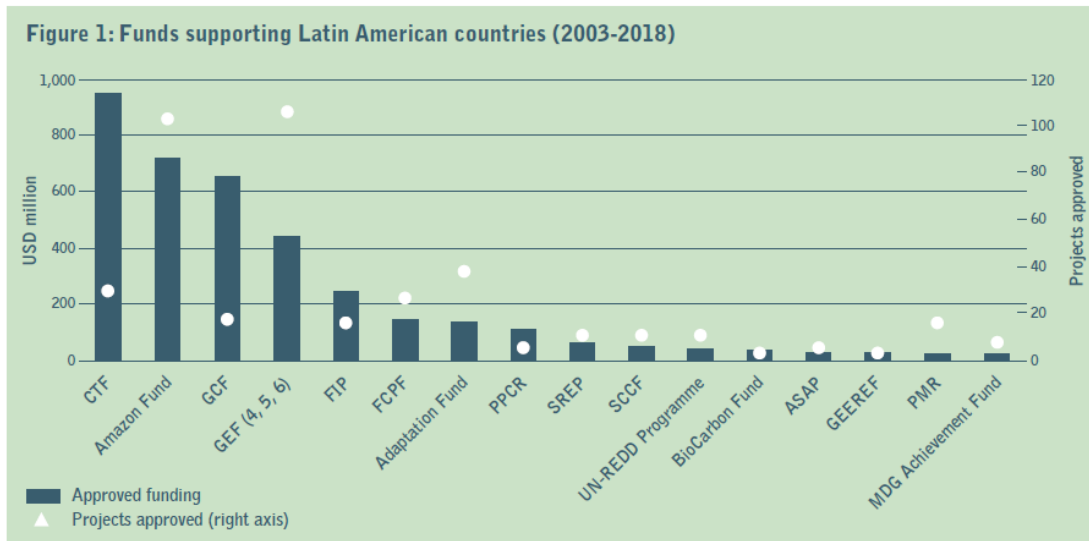
Figure 3.

Women who work the land as a proportion of the total in Latin America and the Caribbean



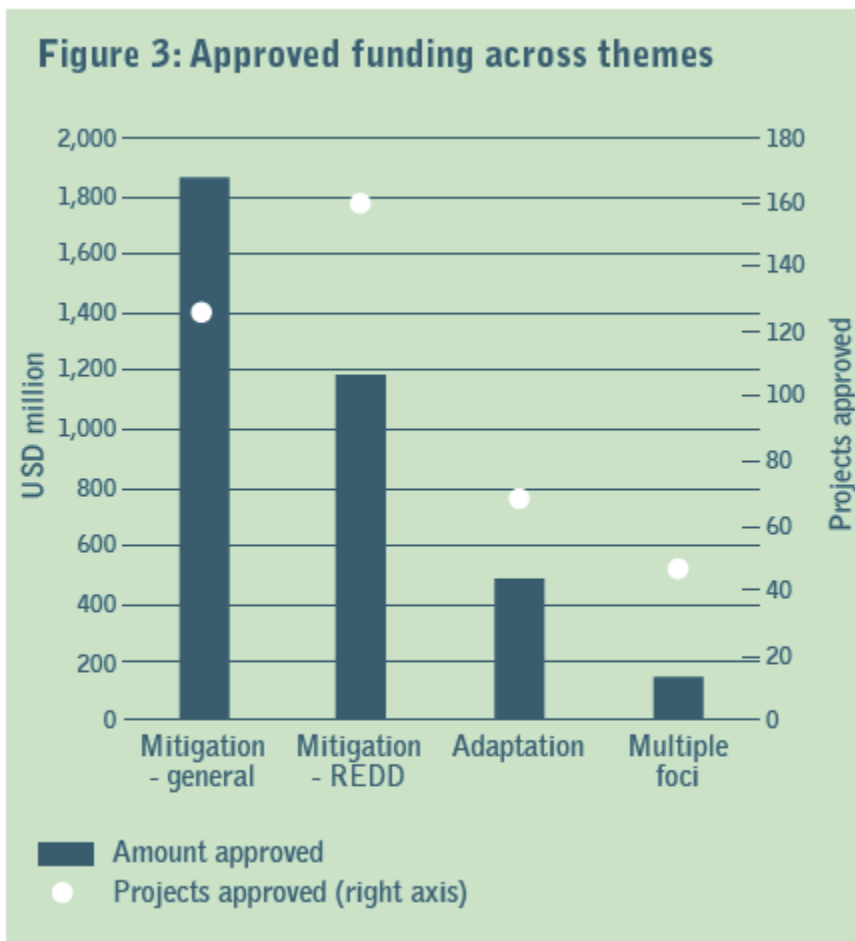
Source: CEPAL (2021)

Figure 4.



Source: Watson, C., and L. Schalatek (2019)

Figure 5.



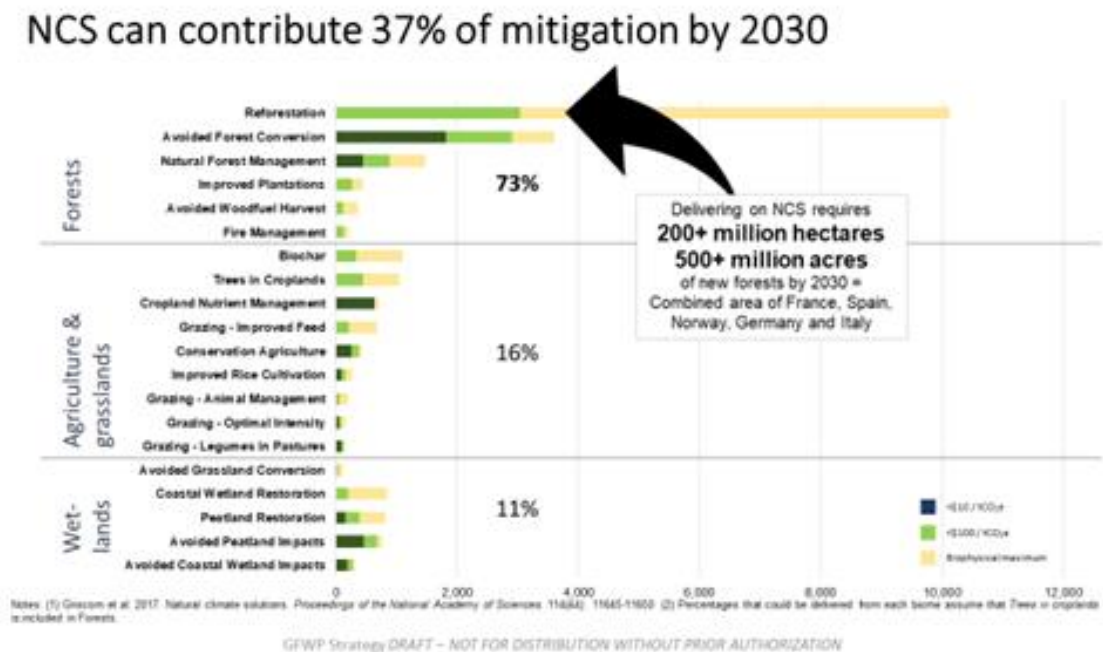
Source: Watson, C., and L. Schalatek (2019)

Table 1. Bond Issuance in Latin America with Social and Environmental Criteria

Country	Deals	Amount (USD)	Issuer name	Date	Comments
Argentina	2	80m	Itaú Argentina, Banco de Inversión y Comercio Exterior (BICE)	Dec 2018	Green loan not included in CBI's database as 30% of proceeds are expected to finance SME loans (i.e. not linked to environmental benefits) and sustainable bond to finance a range of green and social projects.
Chile	4	372m	BancoEstado, Caja de Compensación Los Héroes	Jun 2016 - Nov 2018	Social and ESG bonds raised to fund social housing, social inclusion, microfinance, female-led businesses.
Colombia	3	386m	Bancóldex, Findeter	May 2017 - Jun 2018	Social and orange bonds for projects linked to employment generation, inequality reduction, microfinance, education, healthcare and the 'orange economy', i.e. with a cultural and/or artistic focus.
Honduras	1	115m	Ormat Technologies Inc.	Oct 2018	Unlabelled project loan to finance a 35MW geothermal power plant. OPIC was the sole lender.
Mexico	7	1.0bn	Grupo Rotoplas, Vinte Viviendas Integrales, Nafin, Banobras, Mexico City	Jun 2017 - Aug 2018	Social, Sustainability and ESG bonds to finance projects related to access to water and sanitation, education, financial inclusion, gender equality, SME finance and social housing, among others.
Peru	1	70m	Ferreycorp	Nov 2018	ESG-linked loan whose terms depend on Ferreycorp's performance across ESG metrics.
Supranational	6	590m	Inter-American Development Bank (IDB)	Sep 2014 - Oct 2015	EYE (Education, Youth and Employment) bonds to provide childhood care, education and job access services for young people.

Source: Climate Bonds Initiative (2019), pp 12.

Figure 6.



Source: Griscom et al (2017)

¹ See <https://www.pbs.org/newshour/world/how-climate-change-is-driving-emigration-from-central-america>

² T. E. Lovejoy, C. Nobre, Winds of will: Tipping change in the Amazon. *Sci. Adv.* 5, eaba2949 (2019).

³ <https://www.womenforwater.org/>

⁴ <https://www.worldbank.org/en/topic/water/brief/inclusive-water-institutions-platform>

⁵ <https://www.gendercc.net/gender-climate/water.html>

⁶ <https://napglobalnetwork.org/themes/gender/>

⁷ <https://www.ifpri.org/project/weai>

⁸ See <https://climatefundsupdate.org/>

⁹ <https://www.climatefinance-developmenteffectiveness.org/regional-dialogue-event/img/session/Related-document-for-G1-Gender-and-Climate-Change-Financing.pdf>

¹⁰ <https://www.cgiar.org/blog/what-drives-financial-inclusion-gender-gap-young-women>

¹¹ <https://www.weforum.org/agenda/2019/06/women-finance-least-developed-countries-collateral/>

¹² <https://www.nature.org/en-us/about-us/where-we-work/latin-america/stories-in-latin-america/sustainable-ranching-systems-nicaragua/>

¹³ <https://www.solidaridadnetwork.org/>

¹⁴ <https://rootcapital.org/>

¹⁵ <https://www.resilientcentralamerica.org/en/>

¹⁶ <https://stories.mightyearth.org/2021-beef-deforestation-scorecard/>

¹⁷ <https://www.santander.com/en/press-room/press-releases/2020/07/bradesco-itu-unibanco-and-santander-announces-joint-plan-to-promote-sustainable-development-of-the-amazon>

¹⁸ https://www.whitecase.com/publications/insight/us-leveraged-finance-road-ahead/more-sustainable-approach-debt-financing?utm_source=google&utm_medium=cpc&utm_campaign=H12021USMARReport_Jul21&utm_content=USLevFin_H12021_SustainabilityGoogle&gclid=Cj0KCQjwkIGKBhCxAARIsAINMioK1VxvNKJC8XwhDIYQKKiOQnhVMXwm1iik3cfTCTp9zLa_P2-BT4aAsmyEALw_wcB

<https://www.latinamerica.undp.org/content/rblac/en/home/presscenter/pressreleases/2021/second-bond-issuance-of-1-250-million-euros-to-achieve-the-susta.html>

²⁰ <https://dialogochino.net/en/climate-energy/40577-debt-for-nature-swaps-a-tool-to-protect-latin-america-biodiversity/>

²¹ <https://redlac.org/en/>

²² <https://redlac.org/wp-content/uploads/2021/04/CFAPPracticeStandards2020.pdf>

²³ <https://pollinationgroup.com/climateassetmanagement-1/>

²⁴ <https://www.agriinvestor.com/natural-capital-as-an-asset-class-will-require-open-minds/>

²⁵ <https://environment-analyst.com/global/107318/nyse-creates-asset-class-for-nature-based-companies>

²⁶ <https://environment-analyst.com/global/107318/nyse-creates-asset-class-for-nature-based-companies>

²⁷ <https://www.unep.org/resources/repurposing-agricultural-support-transform-food-systems>

²⁸ <http://www.fao.org/in-action/mafap/highlights/highlights-archive/detail/en/c/1438357/>

²⁹ <https://www.theguardian.com/environment/2021/sep/14/global-farm-subsidies-damage-people-planet-un-climate-crisis-nature-inequality>

³⁰ See <https://www.unredd.net/knowledge/redd-plus-technical-issues/gender-security.html>

³¹ <https://coica.org.ec/el-standar-de-carbono-de-bosques-tropicales-fue-aprobado-en-california/>

³² <https://www.forest-trends.org/blog/the-story-of-the-surui-forest-carbon-project/>

³³ <https://leafcoalition.org/>

³⁴ <https://www.gov.br/pt-br/noticias/meio-ambiente-e-clima/2020/10/floresta-carbono-incentiva-conservacao-de-vegetacao-nativa>

³⁵ See Villarroja et al 2014.

³⁶ See <https://www.unsdsn.org/science-panel-for-the-amazon-presentation-of-initial-findings>

³⁷ See <https://www.nap.edu/read/25525/chapter/5#45>

³⁸ <https://financialpost.com/pmnbusiness/pmnbusiness/amazon-countries-ask-iadb-to-structure-financing-for-sustainability-initiative>

³⁹ <https://www.iadb.org/en/news/idb-launches-initiative-sustainable-development-amazon-region>

⁴⁰ See Morgera et al. 2019.

https://ec.europa.eu/environment/nature/biodiversity/international/abs/pdf/Final_study_legal_and_policy_aspects.pdf

⁴¹ <https://www.semas.pa.gov.br/amazoniaagora/>

⁴² <https://www.nature.org/en-us/what-we-do/our-insights/perspectives/indigenous-women-xikrin-amazon-rainforest/>

⁴³ <https://wcbef.com/>

⁴⁴ <https://www.biofin.org/index.php/finance-solutions>

⁴⁵ <https://www.biofin.org/news-and-media/new-bioeconomy-acceleration-fund-launched>