

# From governments to governance? German forest aid in Mesoamerica

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# From governments to governance? German forest aid in Mesoamerica

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## Executive summary

Photography: Paul Redman

In the past 30 years, international aid has significantly influenced how developing countries define and address the problems of deforestation, biodiversity loss, and climate change, with Germany as a particularly influential actor in this field. Over the past several decades, increasing recognition of the role of non-state actors in addressing environmental problems has driven international aid debates to move beyond *governments* and towards *governance* - involving diverse relationships between the state, the private sector, NGOs, and in particular local communities and indigenous peoples. Mesoamerica stands out in relation to community-led governance, as 65% of its forests have been formally recognized to indigenous peoples and local communities, the highest concentration of such ownership in the world. Much of this shift has occurred in recent decades, defining a new set of relationships in which communities enjoy substantial, though varying, levels of autonomy from the state. Examining the interaction between this move towards community governance and forest aid provides important lessons regarding how to make this aid more effective in dynamic, complex, multi-actor settings common across the global tropics.

To this end, this study examines how German Cooperation has influenced and affected the evolution of forest governance in Mesoamerica, in particular in relation to community and indigenous rights. Mexico, Guatemala, Honduras, Nicaragua and Costa Rica have all been recipients of long-term and consistent German forest aid over time. This financing has predominantly focused on supporting government-led forest administration and initiatives and has generally neglected informal organizations. Despite the large-scale recognition of community forests in Mesoamerica, we estimate that less than 15% of German Cooperation's work has focused on community-based initiatives.

Although German forest aid has only dedicated a small amount of its aid to community management processes, this support has nevertheless yielded significant impacts. Through support to both the social and technical elements of community forest management, communities and development project staff have generated important knowledge and learning. The Forest Pilot Plan in Quintana Roo, the community concessions of the Peten in Guatemala, and the Gualaco and Guata experiences in Honduras provide examples of more successful interventions in this regard; however, this learning has accumulated largely through informal networks, and could be made much more effective by deliberate coordination through German forest aid.

Case studies analyzing the Bosawas and Rio Platano Biosphere Reserves, in Nicaragua and Honduras, respectively, show how German forest aid related to a complex scenario in which indigenous peoples struggled for and eventually achieved their rights through territorial titling. The experiences highlight the dilemmas faced by aid programs working in scenarios of overlapping claims and organizations; in general German aid defaulted aid to supporting formal institutions - especially governmental bodies, with detrimental impacts on indigenous organizations, which are critical for governance. Both cases demonstrate adaptation and flexibility by the aid programs, and in both cases territorial titling improved engagement with local communities. We highlight how these experiences demonstrate the pivotal role of donors in articulating with complex multi-actor processes - with the ability to strengthen or to undermine forest governance.

Key lessons from these experiences point to the opportunity for more effective and efficient allocation of aid, which would require an adjustment in the modes of operation of German forest support. In particular, this includes improving understanding of local community dynamics, moving beyond mere economic conceptualizations of communities and towards a better understanding of the importance of legitimacy, authority, and trust in governance. Where forest aid has managed to do this, such as in Quintana Roo, the community concessions of Peten, and Gualaco and Guata in Honduras, it has achieved strong results. Programs that have focused predominantly on state-centered and formal organizations, to the detriment of community organizations, have often seen forest loss and a weakening of on-the-ground regulatory capacity. Some transitions in this direction have already taken place: a mainstreaming of these lessons in governance within German forest aid can therefore play an important role in enhancing the effectiveness and efficiency of such support.



# I. Introduction



*Photography: Ivan Santillan*

Since the 1980s, international development agencies have increasingly financed actions intended to conserve forests, protect biodiversity, and secure the provision of ecosystem services. This ‘green’ aid accelerated after the 1992 United Nations Conference on Environment and Development, or Rio Earth Summit, when new conventions on biodiversity, climate change, and land degradation were signed, and developed countries pledged additional support for environmental priorities.<sup>1</sup> Since 2007, renewed recognition of the importance of forests to climate change has driven substantial new pledges to Reduce Emissions from Deforestation and Forest Degradation (REDD+), now enshrined in global agreements. Major funding has been allocated through these initiatives: today, several billion dollars are spent every year on conservation efforts, in addition to at least \$9.8 billion pledged for REDD+.<sup>2</sup>

Demonstrating the impact of such initiatives has become increasingly important, given persistent scrutiny from domestic constituencies, recent economic crises, as well as other strains on aid budgets. Yet reporting on the actual impacts of this financing remains inconsistent and uneven, driving new processes to improve donor transparency and reporting frameworks. These efforts seek to strengthen the evidence base for aid effectiveness, regarding both where aid is allocated and what it is meant to do (targeting) as well as what it actually does on-the-ground (impact).<sup>3</sup> While studies that seek to better explain aid distribution and impacts are becoming more common, many remain either at a macro-level econometric scale or seek to explain a very limited number of case studies of specific development interventions.<sup>4</sup>

Understanding the effectiveness of such support is complicated by the fact that while most environmental aid is allocated to governments, environmental problems, and their corresponding solutions,



involve multiple complex relationships between governments, the private sector and civil society. Increasing recognition of these dynamics has occurred especially since the 1990s, as widespread disillusionment with the state as an effective environmental regulator, as well as the globalization, fiscal crises, and opening space for civil society participation drove new forms of conceptualizing environmental problems and solutions. This shift has sought to move away from *governments* and towards *governance*, in recognition of the variety of relationships between states, markets and civil society, and the array of regulatory methods available through such relationships. This work on governance focuses on who makes decisions and how decisions are made, from national to local scale, including formal and informal institutions,<sup>5</sup> as well as rules, power relations and practices of decision making.<sup>6</sup>

Environmental aid programs have, at different times, both driven and reflected this shift towards governance, often based on the logic that enhanced participation by local peoples, distributed responsibilities, and stakeholder buy-in would enhance conservation and development outcomes.<sup>7</sup> The role of community rights has been particularly important in this discussion, especially given the trend towards statutory recognition of such rights. In the 1980s and 1990s, national governments began recognizing the land and forest rights of indigenous peoples and forest communities. In the 20 years following the Rio Summit of 1992, over 50 rights-related laws were passed around the world, while recognition of indigenous and community areas rose from 21% to 31% of the world's forests.<sup>8</sup> The bulk of these reforms occurred in Latin America, which recognized the rights of communities and indigenous peoples of the world's forests to over 270 million ha forested land, over 25% of tropical and subtropical forests in the region.<sup>9</sup> Mesoamerica, the region stretching from Mexico to Panama, has the highest rate of formal recognition of community and indigenous lands globally, at 65% of the region's 83 million forests.<sup>10</sup>

The statutory recognition of these rights fundamentally alters the formal institutional architecture of forest governance by legally recognizing the right of community groups to organize and govern their own resources. It provides certainty for communities that their investment in protecting and maintaining resources will generate local benefits, and not be appropriated by outsiders. This recognition is also a key factor in long-standing self-regulating community governance systems, which Ostrom (1990) posed as an alternative to pure state or market governance options.<sup>11</sup> A broad set of research from Mesoamerica has confirmed the basic hypothesis of Ostrom's work: numerous studies have found a positive correlation between formal forest rights and sustainable forest outcomes, including in Mexico, Guatemala, Honduras, Nicaragua, Costa Rica, and Panama.<sup>12</sup> A recent study analyzing conservation research from the entire region found that case studies analyzing community forest management demonstrated improved forest cover 81% of the time.<sup>13</sup> An important set of this literature also highlights positive livelihood outcomes resulting from the recognition of rights.<sup>14</sup>



Photography: Jaye Renold

More recent research specifically examines the contextual factors around the emergence of such governance systems, given the enormous heterogeneity of institutional relationships which exist within the category of community governance. Within Mesoamerica alone, these systems include hybrid forms of community-enterprise ownership, community-industry agreements, and evolving indigenous forms of social organization, all of which have varying modalities of coordination with national governments, and in some cases, NGOs and international development agencies. These relationships also occur in varying contexts where economic and political relationships may significantly shape community options.<sup>15</sup> Such factors are key for better understanding the ways such systems operate and evolve, and their ultimate social and ecological impacts. They are also critical for understanding how communities devise strategies to ensure legal rights are applied in reality, which remains one of the most common and persistent challenges in these systems.<sup>16</sup> These experiences suggest that while community-governance may be a powerful solution for addressing environment and development dilemmas, it also introduces new levels of complexity that are not commonly understood by aid practitioners.<sup>17</sup>

Environmental aid itself can shape the operation of such governance regimes, yet there is little research analyzing the role of this aid in the development of such systems. This is somewhat surprising given the massive level of funding for major regional conservation projects that are found largely in community-managed forests, such as the Mesoamerican Biological Corridor - and given the fact that environmental aid often plays a major role in shaping conservation plans and schemes. This study seeks to fill a part of this gap by analyzing the role of German environmental aid on forest governance in the region. Our research seeks to answer the question: *How has German Cooperation influenced and affected the evolution of forest governance institutions in Mesoamerica?* We pay particular attention to the processes of rights reforms which have now come to encompass the bulk of the region's forests. It specifically considers where German environmental aid has gone in the region, what types of activities and priorities this aid has supported, and the outcomes of specific processes or spaces that German cooperation has actively engaged in over time.

We single out German forest aid, since it is one of the most consistent and largest donors of environmental aid, both in Mesoamerica and around the world, with global commitments to mitigating



climate change through forest programs and conserving biodiversity.<sup>18</sup> German Cooperation is also among the most influential agencies around the world with respect to forest and conservation policy - and thus its experiences and lessons learned are likely to be influential far beyond the scope of its formally associated agencies and organizations.<sup>19</sup>

Lessons from these processes in Mesoamerica are likely to be useful in the decades ahead for work on forest governance around the world. In Africa, 95% of forests are still claimed by the state, while in Asia, this figure is at approximately 60%. Growing recognition of the value of supporting community rights is reflected in recent launches of Global Funds designed specifically for this end, and recognition of community rights is likely to be a major trend if the world is to meet its current climate and Millennium Development Goals.<sup>20</sup> Yet much work remains to be done in understanding how such governance systems operate, and how international environmental aid processes can best articulate with a variety of national and local actors to strengthen forest governance. This study seeks to contribute to this debate by examining the role of German Forest Aid in Mesoamerica in the midst of the growth of its community-based governance processes since the 1980s.

## Methodological Notes

This study draws on quantitative and qualitative analysis of a variety of different types of data. The bulk of the quantitative analysis is based on the AidData Research Release 3.0, which pulls donor commitment information from the Organization for Economic Cooperation and Development (OECD) donor reporting system and covers bilateral and multilateral official development assistance (ODA) from 1943 to 2013.<sup>21</sup> Further information about the quantitative methodology may be found online at the PRISMA website\*. The qualitative analysis draws from the review of official German development policy, program, and strategy documents, especially those focused on biodiversity and climate change, as well as 35 in-depth interviews with German aid staff, national and local government leaders, non-governmental organization representatives, civil society leaders, and thematic experts from across Mexico, Guatemala, Honduras, Nicaragua, and Costa Rica. A list of the organizations whose representatives were interviewed can also be found in the methodology note on PRISMA's website.

This research team faced major difficulties in obtaining detailed information on a number of projects. A number of GIZ project staff (past and present) participated in in-depth interviews. The GIZ head office also made considerable attempts to provide project documentation, though time constraints ultimately limited this collaboration. Requests for information from KfW referred us to BMZ, with whom we were unable to secure an interview.

In this report, environmental aid generally refers to assistance that fits the "environment strictly defined" category of AidData; however, the bulk of the analysis is more specifically concerned with what we term "forest aid", which in this case refers to the categories discussed in the methodology description in PRISMA's website\*, including projects or commitments coded through AidData as forestry, biodiversity conservation, sustainable development, rural development, and environmental research, development, policymaking, and education. The research team reviewed projects included in the regional-level accounting of aid per country and environmental aid to ascertain (to the extent possible) what the activities under a given program were and whether they fit into the report's definition of forest aid.

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\*[http://www.prisma.org.sv/index.php?id=detalle&tx\\_ttnews\[tt\\_news\]=723&cHash=182938e39cbb3094dcca602c-dad3b52f](http://www.prisma.org.sv/index.php?id=detalle&tx_ttnews[tt_news]=723&cHash=182938e39cbb3094dcca602c-dad3b52f)

When referring to German Cooperation generally, this report refers to the combined efforts of several development assistance agencies both past and currently functioning that provided the funding for, or executed programs on behalf of, the German government. The Federal Ministry for Economic Cooperation and Development (BMZ) has the legal mandate to represent Germany on issues of international development cooperation, including negotiations on international agreements, as well as the development and coordination of development assistance programs and policies.<sup>22</sup> Most official development aid has come from BMZ, though the Federal Ministry for Environment, Nature Conservation (BMUB) has been increasingly responsible for aid linked to national and international environmental issues.

The majority of German development aid is currently implemented by two organizations that offer financial and technical assistance. The first is The German Society for International Cooperation (Deutsche Gesellschaft für Internationale Zusammenarbeit, or GIZ), a federally-owned enterprise that implements programs commissioned by BMZ, BMUB, the German Federal Foreign Office (AA), and the European Union (EU). The second organization, the KfW Development Bank, is Germany's state owned development bank, charged with financing economic and social progress in developing countries.

In 2011, the GIZ emerged from a merger of three organizations, the German Development Service (Deutscher Entwicklungsdienst, DED), the German Technical Cooperation (Deutsche Gesellschaft für Technische Zusammenarbeit, GTZ) and Capacity Building International, Germany (Inwent).<sup>23</sup> GIZ primarily offers technical cooperation to enhance the political and institutional framework for sustainable development in partner countries through building government and civil society capacity. This assistance is usually provided using specialized organizations employing mostly German individuals, to implement established agreements between the German and partner country governments.

KfW, on the other hand, operates as a development bank. It aims to “build and expand social and economic infrastructures and to create efficient financial institutions while protecting resources and the environment,” primarily through engagement with and support to public institutions”.<sup>24</sup>

### *Structure of the Report*

This report has five sections, which include largely quantitative global and regional analyses, in addition to national and territorial scales which combine qualitative and quantitative methods. Section II uses AidData to describe the trends in overall and forest aid to Mesoamerica from all donors and from German cooperation from 1990-2013. It reveals both donor and recipient trends for the region, in terms of the distribution and amount of aid received, identifying which countries have been the major targets for forest aid. Section III takes the quantitative distribution as a basis for diving deeper into regional and national trends in German forest aid based on project documents, strategy and policy reports, academic literature and interviews. Section IV delves into two distinct case studies that reveal how German aid has interacted with emerging institutional arrangements in priority areas for their portfolio: the Rio Platano and Bosawas Biosphere Reserves in Honduras and Nicaragua (both part of the bi-national region called the Muskitia). These cases trace the evolution of land rights recognition and new forms of governance alongside the deployment of some of the most significant projects in the German environmental aid portfolio in each country, suggesting where and how German cooperation has influenced rights regimes. The report concludes in Section V with lessons learned and recommendations drawn from the past 25 years of German environmental cooperation in Mesoamerica regarding the role of ODA in supporting the institutions that govern forests.





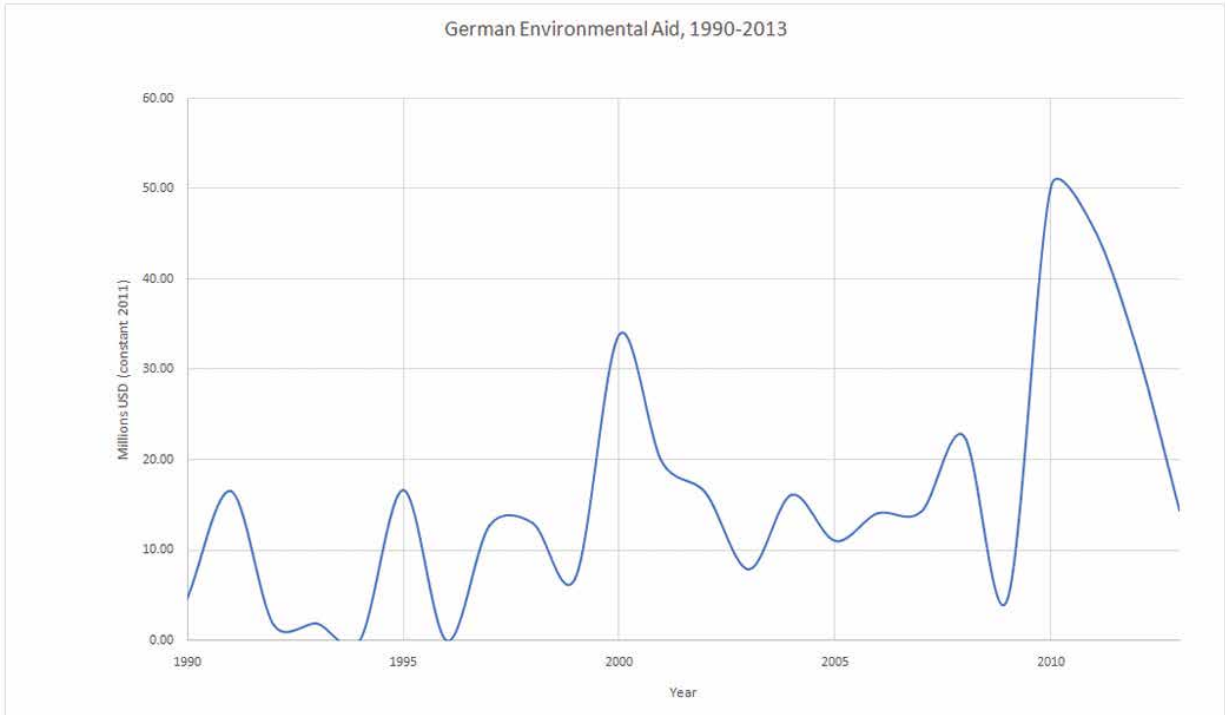
## II. Trends in Environmental Aid to Mesoamerica since 1990

*Photography: National Alliance of Community Forestry Organizat*

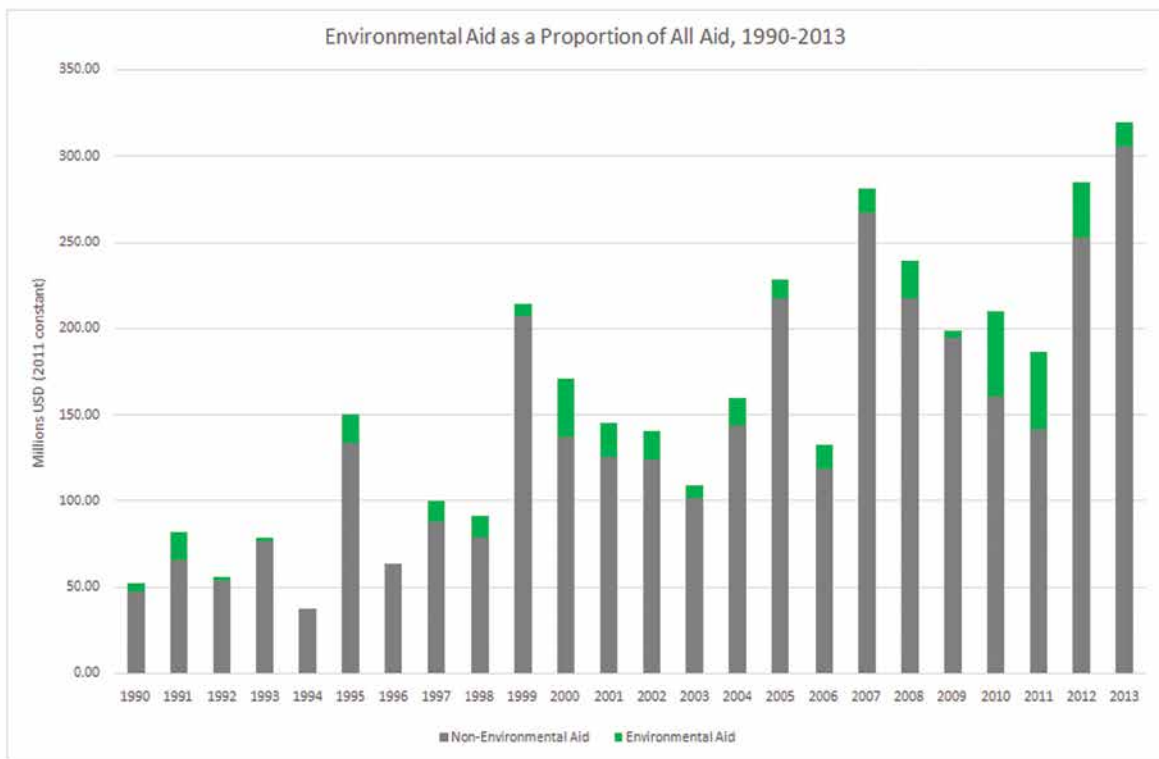
German bilateral development assistance has played a significant role in Mesoamerica for forest aid and overall. This section places German Cooperation in context, outlining general support to the region as a whole and the role Germany has played within this overall assistance, and then more specifically on forest aid. It also specifies which countries have been the most significant recipients of general and forest aid. These findings identify the priority countries within the region for German cooperation from 1990-2013, as well as key places for further investigation regarding their specific modalities of forest activities in Mesoamerica.

Between 1990 and 2013, Mesoamerica received a total of USD 287.52 billion in aid, including debt relief, from all donors.<sup>25</sup> For ODA, the Inter-American Development Bank, the World Bank, the United States, Japan, and Germany are the largest and most consistent donors across all countries over the time period. Across all donors and types of aid, Germany is the seventh largest donor and fourth largest bilateral donor to the region (from a reported list of over 50 donors), with a total of USD 5.8 billion committed to Mesoamerica during this time period.

Of aid from all donors, Mesoamerica received USD 14.35 billion in forest aid (as defined above), or approximately 4.99 percent of the total amount of aid allocated (debt included).<sup>26</sup> Germany is the tenth largest donor overall, and sixth largest bilateral donor for forest aid in the region. Discerning a forest aid trend is more difficult than doing so for the overall aid trend, in part because of the method of reporting aid commitments; however, 2010 was a peak year for German forest aid; this aid is also experiencing an overall upward trend (Figure 1).



**Figure 1.** German environmental aid over time. As a note, 1994 and 1996, when environmental aid dips to zero, was a major debt relief and rescheduling year for the region, and the majority of entries in the database for that year fall into that category or food aid. Peak years for environmental aid do not necessarily align with peak years for overall aid.



**Figure 2.** The proportion of total German aid that is forest aid varies over time, although at its maximum hits 25% of total aid allocated in 2011.



Figure 2 shows the temporal trends in aid and relative amount of forest aid regionally, where on average, 9.8% of related German aid to Mesoamerica is allocated to strict environmental projects in a given year. The year with the greatest amount of German ODA allocated to forest-related programming across all countries is 2010, followed closely by 2011 and 1990. In 2010, Costa Rica, Honduras, and Nicaragua each received more than 10 million dollars in forest aid, while in 2011, Mexico alone received over 26 million dollars, resulting in the highest percentage of forest aid committed for any year studied.

In Mesoamerica, Germany contributes a greater percentage of its aid per country to forest aid than its 2012 global average of 5.6% (Table 1).<sup>27</sup> When debt is included, Germany gives 6.0% of its aid to green programs, while the regional average (1990-2013) across all donors is 5.0%, while excluding debt raises the level of German aid allocated to forest sectors to 10.94% of ODA. In the case of Honduras, this number reaches as high as 21% of all aid received, and the lowest percentage is Costa Rica, which still reaches 8.31%. For several countries in this region, Germany has clearly prioritized forest aid.

Country	Total	Environment	Percent of Total
Costa Rica	381.13	31.69	8.31
Guatemala	464.07	41.24	8.89
Honduras	513.90	109.75	21.36
Mexico	1082.29	99.99	9.24
Nicaragua	693.38	61.63	8.89
Panama	60.97	5.29	8.68
<b>Total</b>	<b>3195.74</b>	<b>349.60</b>	<b>10.94</b>

**Table 1. Total and environmental aid to each country in Mesoamerica from German ODA**, with the percent of all aid that is environmental (debt excluded). All values are in millions of USD (2011 constant). The overall allocation of aid for forest sectors to Mesoamerica as a whole over this time period is 10.94%.

In terms of forest aid, Honduras received the most overall and when adjusted for country size – received more than 20 times what Panama did (Figure 3). Mexico received a great deal of forest aid in total over this period, but relatively little when adjusted for country size. Honduras and Mexico received over 100 million dollars each for forest aid during this period – nearly double the amount the Germans committed to their neighbors in Mesoamerica, although per square km, the amount to Mexico is significantly smaller. German ODA and forest aid to Nicaragua were also relatively high in total and per square km.

Mesoamerica as a region has been an important site for forest aid over the past several decades, and Germany has been a key donor in the sector and overall. Additionally, Germany is a donor that consistently prioritizes environmental aid within its global portfolio, and its efforts in Mesoamerica reflect the importance of this sector for German Cooperation.<sup>28</sup> Its attention to specifically forest-related ef-

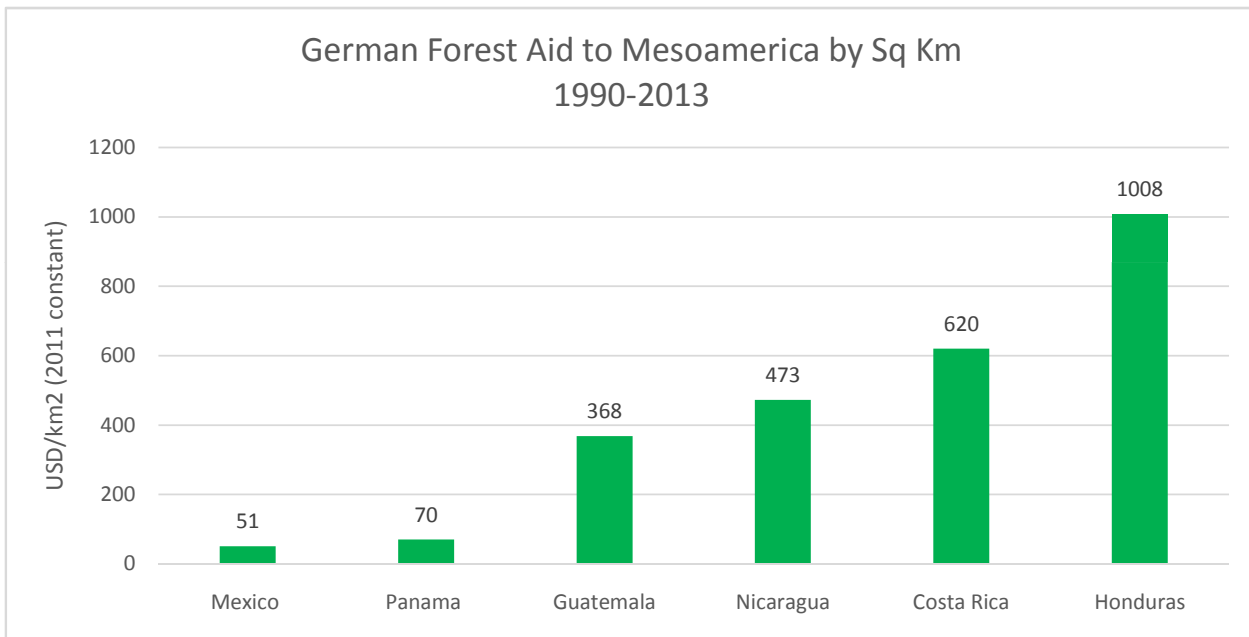
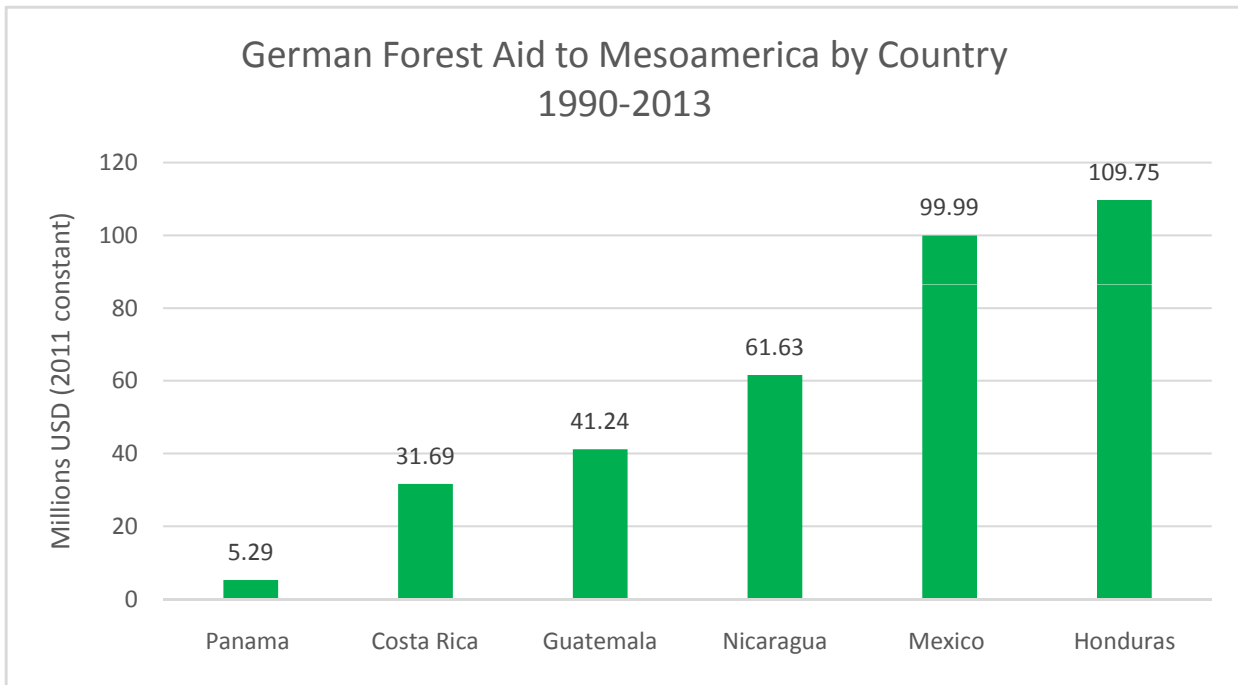


*Photography: ACOFOP*

forts in the region are particularly marked, especially in Honduras. While no country in Mesoamerica ranks as a top recipient for Germany in terms of total forest funding, when adjusted for country size, Honduras, Costa Rica, and Nicaragua have been amongst the highest overall recipients of German forest aid around the world.<sup>29</sup> According to German policy documents, they have also been important for biodiversity conservation and forest strategy in the past several decades.<sup>30</sup> This analysis indicates the relative importance of forest aid for German cooperation in the region, and more broadly, that this sector serves as an important point of cooperation for Germany with several of its recipients.

This basic analysis reveals macro-level trends. In order to more deeply understand the specific actions and pathways of German influence and impact on forest governance, we must dive into national sub-national contexts, as provided in the following section.





**Figure 3.** German forest aid by country overall and adjusted for country area (sq km), 1990-2013.

*German Forest Aid in Context*

# III. German Forest Aid: Regional and country review

*Photography: Andrew Davis*

## German aid in its own words: changing approaches

Trends in the ways German forest aid conceives of forest problems and solutions provide important insights into the strategies and methods it deploys. Pokorny (2015) provides a useful framework for understanding the different approaches used by German forest assistance, divided into state, market and local empowerment paradigms. The state approach posits a central role for formal governmental regulation at local, national and international levels. Market approaches focus on the value of the environment when organized through markets, emphasizing the productive role of forests in society. A third school of thought emphasizes the role of communities and their ability to self-regulate use and management of resources, often highlighting the traditional lack of recognition of these actors in forest management. The corresponding prescription for this last approach therefore calls for empowerment of local communities.

	Command-and-Control	Free Markets	Local Empowerment
General Approach	Effective control of users of forests and forest lands is of utmost importance to avoid mismanagement of forests	The regulative power of free markets is the best way to ensure development and efficient resource allocation	Local people whose livelihoods and cultural identity ground on forests are most appropriate to ensure protection and sustainable use of their forests
Key Agents	Governmental agencies and institutions	The private sectors, particularly companies and entrepreneurs	Local communities and civil society institutions
Key Strategy	Strengthening administrative agencies and their capacities to control and manage forests	Supporting competition and privatisation, commodification of forest' goods and services	Increasing communal self-determination and capacities for sustainable forest use
Priority field of action	Strong forest administration	Timber concessions and carbon markets	Community forestry and protected forests
Impact Pathway	Effectively controlled forests and forest managers guarantee the continuous provision of forest goods and services for local and national benefit	Professional working timber companies effectively protect their concession while investing in local infrastructure as well paying taxes to finance public policies for local and national benefit	Local people taking care of their forests and benefit from a continuous income flow that stabilizes their source of livelihood and energizes markets

**Table 2.** German forest assistance: Understanding the different approaches  
Adapted from: Pokorny, B. (2015)

Although Pokorny notes this framework may be a “grossly simplifying”, it is helpful for understanding different approaches to forest aid and governance.<sup>31</sup> This report will make reference to these frameworks in the upcoming regional and country discussions. Nevertheless, we will first review the way in which German environmental aid has described its own work, including key concepts, priorities, and challenges, between 2002 and 2016, the years for which the benchmark, biennial “Biodiversity in German Development Cooperation” report has been published. This provides key background material for understanding the concepts and approaches of German environmental aid over time.

Throughout the 15 years of these publications, market-oriented approaches play a consistently prominent, though somewhat evolving, role. Early years place a particularly strong emphasis on poverty as a source of environmental degradation, as the 2002 report outlines: *Sustainability of protection...indeed can only be achieved, if linked with economic incentives. The intention here is for controlled utilisation to permit the survival of plant and animal species on the one hand, while on the other hand enabling local population groups to develop economically.*<sup>32</sup>

This economic focus later evolves to include the need for mainstreaming of environmental values into broader policies and economies such as through Payments for Environmental Services, which plays a growing role as of 2006, as well as REDD+. Influential disciplines for this line of thinking include environmental economics and natural resource economics, where environmental problems are chiefly conceived of as market externalities, a problem addressed through the market valuation to achieve the optimum use of all resources.<sup>33</sup>

The reports also consistently emphasize a strong role for states in protected areas management and forestry regulation. The national government is a central figure in the overwhelming majority of projects discussed, and German cooperation reports most often name the state as the main agent of change in addressing environmental problems. This approach reflects the more traditional approaches promoted by Western governments, where environmental problems are understood as arising from a lack of state coercive regulation to constrain local behaviors, necessitating command-and-control solutions.<sup>34</sup>

In the domain of civil society, the role of non-governmental organizations has been highlighted prominently and consistently in the reports. According to BMZ reports, NGOs are critical for their particular expertise in local and national issues and as representative of civil society. What the reports do not acknowledge is the degree to which the category “NGO” can include a broad variety of actors that may not have strong links to the communities in which they ultimately work. They also can take on state-like functions, which is especially problematic as such organizations are often ultimately accountable to donors, unlike governments, which are (in principle) accountable to their citizenry, and unlike indigenous and community organizations, which are accountable to their members.<sup>35</sup>

These German Cooperation reports mention indigenous peoples and forest communities from the beginning, though earlier reports specifically connect poverty, lack of income, and insufficient livelihoods to environmental degradation, making communities targets for intervention by development projects. The importance of governance arrangements, especially the lack of inclusion of communities in decision-making - is far less represented initially. While the first (brief) mention of governance in a report comes in 2004, it is only in 2006 that elements of the “local empowerment” approach begin to appear, specifically regarding protected areas management. BMZ states at this point, *protected areas lacking acceptance by local people are doomed to failure [...]successful protected area*



*management will eventually depend on true participation by local people in decision-making and on tangible benefits for those people.*<sup>36</sup>

In 2008, the most prominent articulation of the local empowerment approach appears in a section entitled “Governance of Protected Areas - Empowering the People”, which stands out for its emphasis not only on supporting the claims and organizations of indigenous peoples and communities, but also for its recognition of problems caused by the lack of support from conservation organizations. The section details the following: *these conventional, often exclusive approaches have engendered profound social costs that have been inflicted mainly on local people, many of whom are among the poorest in their societies... Governance is connected with power, relationships, responsibility and accountability. It reflects what a society considers to be fair with regard to the use and preservation of natural resources and demonstrates how social and political relationships and responsibilities work.*<sup>37</sup>

Later reports do include consistent references to governance - mostly in regards to protected areas, including for state-run protected areas, co-management arrangements, and private or indigenous management. These reports also begin to recognize the historical role of indigenous and traditional communities in protecting forests and biodiversity, which is in keeping with donor trends and international discourses more generally.<sup>38</sup> Nevertheless, issues of power, legitimacy and trust associated with the local empowerment approach are largely absent from the formulation of environmental problems in these later reports, and are substantially less prominently featured than government and market-based solutions.

## Regionalization of German Cooperation

While German development assistance principally goes to partner countries through bilateral cooperation, a trend toward supporting regional initiatives has emerged in the last decade. This approach aims to promote synergies between countries, strengthen regional negotiating positions in international negotiations, and support cooperation between countries in the interest of reducing regional conflicts.<sup>39</sup> In the case of Mesoamerica, since 2010 the amounts allocated to regional budgets tripled over the 2000-2010 period. By the end of 2015, 23 programs and projects were operating in coordination with the Central American Integration System (SICA) with disbursements above US\$ 189.67 million.<sup>40</sup> Notably, 80% of these funds were assigned to the Protection of the Environment and Natural Resources (17 projects, 140 million Euro).

The majority of the programs and projects classified within the environmental category are channeled through the Central American Commission on Environment and Development (CCAD), and include initiatives for the protection of marine resources, REDD+ projects, and transboundary initiatives such as the Selva Maya project (Mexico, Belize and Guatemala) and the Mesoamerican Biological Corridor project (Honduras and Nicaragua). Environmental projects that involve other SICA agencies include the Trifinio Region (Guatemala, Honduras, El Salvador), the Biodiversity Program of the Central American Agricultural Council (CAC), and insurance against catastrophic risks through the Council of Finance Ministers. In February of 2017, following an evaluation of results of previous work, representatives of German aid reaffirmed their support for regional projects through SICA and the Central American Bank of Economic Integration, indicating continued foreseen support for these types of activities.

Among the recipients of German financing, there appears to be a new round of efforts to provide direct support to indigenous and community organizations, with its Integral Management of Natural Resources with Indigenous Peoples in Central America project, implemented from 2012 to 2019

(15.7 million Euros), including conservation, livelihood and organizational support. This is also accompanied by new support to regional NGOs allied with private enterprises.<sup>41</sup> Both initiatives are expected to contribute to actions in the Central American Biological Corridor, one of the major historical commitments of German Cooperation.

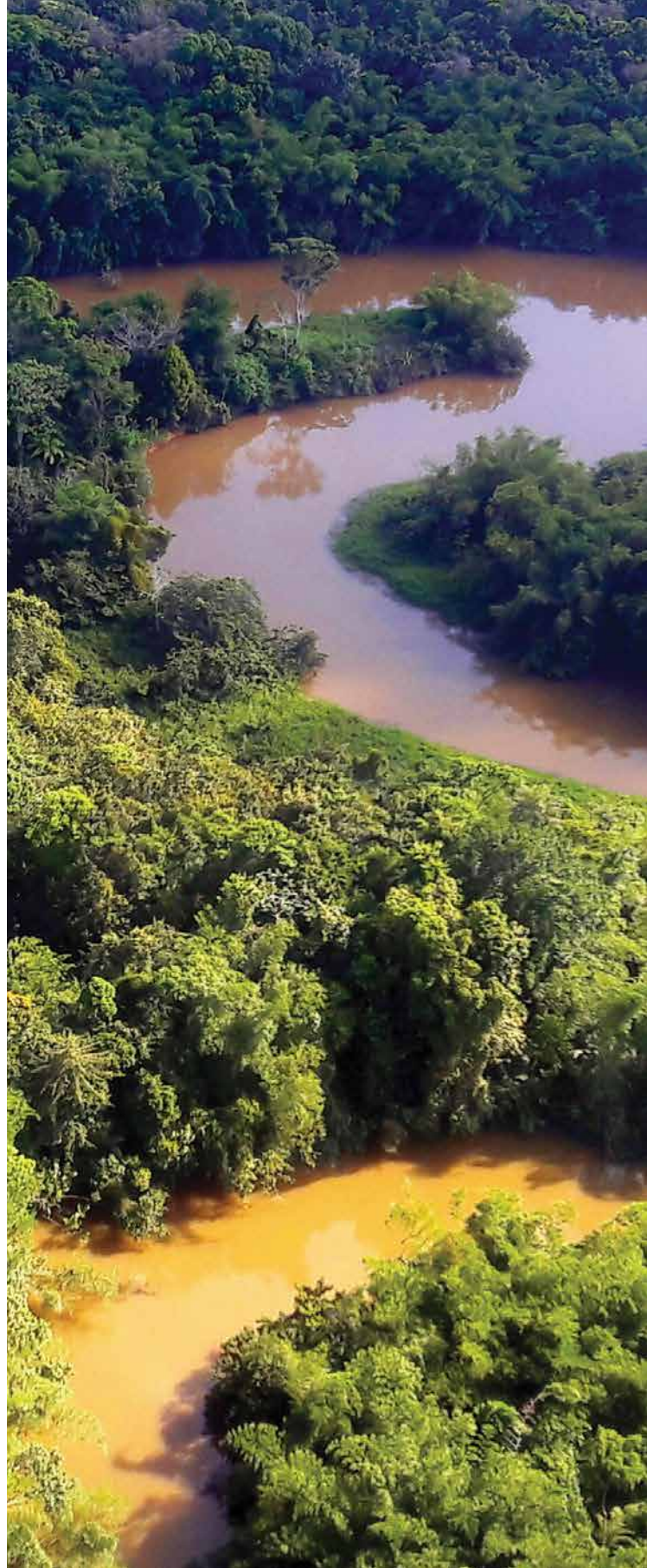
## Germany in Mesoamerica: Country-by Country

### Mexico

#### Forest governance context

The 1917 Mexican Constitution legalized and produced community-based management on a large scale. While often seen as a global model for community forestry, the local arrangements that emerged in Mexico were not the result of carefully designed forest policy towards this end, but the product of multifaceted and contingent interests over many decades.<sup>42</sup> The Constitution designated common property organizations as *ejidos* and *agrarian communities*, but in practice, this top-down designation meant that these organizational forms were largely controlled by the state, with little participation of communities until late in the 20<sup>th</sup> century. Historically, regulations largely outstripped the Mexican government's ability to implement them, opening the door for widespread abuses in the forest industry; communities were generally left with no formal opportunity for benefiting from forests, resulting in large scale deforestation.<sup>43</sup>

In the 1980s and 1990s, a series of legal reforms granted *ejidos* and agrarian communities new rights to manage their forests. These new rights underpinned a widespread movement toward community forest management, driving the emergence of approximately one thousand community forest enterprises operating with different levels of capacity and sophistication.<sup>44</sup> The breadth of this movement challenges exact quantification, but one of the most exhaustive studies undertaken found that a large percentage of *ejidos* and forest communities implement their own basic rules for forest management. Almost half have designated areas specifically for conservation and



Photography: Andrew Davis

70% of communities in the study reporting surveillance and monitoring activities (to prevent fires and illegal logging); the study also identified incremental sanctions for violating management rules, and that only in 12% of cases did infractions go unpunished.<sup>45</sup>

Alongside this community rights movement, the Mexican government pursued a massive expansion of protected areas in the country. Between 1981 and 2013, areas under protection surged from a mere 751,700 to 42,241,900 ha - a 56-fold increase in 32 years.<sup>46</sup> Protected areas policy dominated much of the Mexican government's forest agenda in the country, implemented through CONABIO. The parallel growth in protected areas and community forest management have, in many cases been more contradictory than complementary; protected areas rarely have formal rules in place with communities, low state capacity hinders implementation even when such rules exist.<sup>47</sup> The resulting system has excluded community access and hampered community organization, in a number of occasions driving illegal activity and the breakdown of community self-regulation.<sup>48</sup> Current forest laws also over-regulate communities' forest use, ironically hampering local community capacity to benefit from and protect forests.<sup>49</sup> This disconnect is critical for biodiversity conservation, given that all of the Priority Land Regions identified by the National Commission for the Knowledge and Use of Biodiversity in Mexico (CONABIO) are either contained within or border on community forests. Similarly, all of the 111 Priority Watershed Regions identified by CONABIO include community forest areas.<sup>50</sup>

Despite the tension between community forest management and protected areas, both forms of governance have contributed to Mexico's recent patterns of slowing deforestation, which fell by 55% in the 2000s in comparison to the 1990s.<sup>51</sup> Numerous studies document how community forests have represented an important part of this reduction, and in many cases community governance outperforms protected areas.<sup>52</sup> Protected areas have also demonstrated conservation outcomes in some cases.<sup>53</sup> Nevertheless, deforestation continues in many parts of the country, driven by with expanding cattle ranching and agriculture playing a significant role in many regions, as well as tourism infrastructure in Quintana Roo and fires in Southern States.<sup>54</sup>

While protected areas and community management have both contributed to forest protection in Mexico, the lack of synergy between these approaches continues to pose challenges for effective forest management. Further, many communities still face the predominance of local "bosses", insecure tenure due to boundary disputes, and forest and conservation regulations that stifle local benefits important for organizational capacity. Protected areas, in turn, have suffered major difficulties in going beyond the management plans on paper and implementing rules on the ground. There is therefore a major opportunity to strengthen forest governance in Mexico through a more balanced approach, incorporating both government and communities.

### **German forest aid in Mexico**

Community forestry has not been a major part of German forest development cooperation in Mexico. Over the past several decades, we estimate that only USD1.9 million out of a total USD 62 million, or 3% of funds, were allocated specifically to community management projects.<sup>55</sup> Most development support has been allocated to central government initiatives, with significant funding allocated towards National Commission for the Knowledge and Use of Biodiversity (CONABIO), Environment and Natural Resources Secretariat (SEMARNAT) and National Commission For Natural Protected Areas (CONANP).<sup>56</sup> While these processes may have at times articulated with community priorities, the funding data - complemented by expert interviews - suggest that community management has not been a major part of Germany's approach in Mexico.<sup>57</sup>



Despite these trends in overall funding, German Cooperation played a critical role in supporting key community based processes in Mexico, which later had corollary effects both within Mexico and across Central America. In the early 1980s, the Governor of Quintana Roo, a forested state in Southeastern Mexico, rallied support around an initiative to curb the deforestation that had dominated the state in previous decades - and tarnished the state's image for potential tourism investors. He managed to attract German funding for a new community-based forest management approach, which came to be known as the Plan Piloto Forestal (PPF), implemented by GTZ.<sup>58</sup>

Various studies conducted on the PPF in Quintana Roo exemplify how this project positively contributed to monetary income, social and cultural capital, and forest condition in participating areas.<sup>59</sup> These were part of a broader series of results which documented a reversal in forest loss: the deforestation rate in Quintana Roo dropped from 0.4% from 1976-1985, to 0.1% during 1984-2000.<sup>60</sup> An additional study demonstrated how productive *ejidos* in Quintana Roo had performed similarly to neighboring protected areas in terms of forest conservation.<sup>61</sup>

Experts interviewed discussed the major technical progress made towards understanding sustainable forest management in the tropics through this program, as European methods of forest management were adopted to the tropics under a community management regime.<sup>62</sup> This technical progress would later contribute to community forest management processes across the lowland forests of Mexico's Yucatan Peninsula and to projects developed in Honduras, Nicaragua and Panama. However, the PPF ended in the 1990s, without additional or follow-up programming in Mexico. Thus, while the program itself was a key "seed" moment in the region, it does not appear as if any formal and coordinated institutional learning or accumulation of capacities was gained through the process, despite its many effects across the region.

## Guatemala

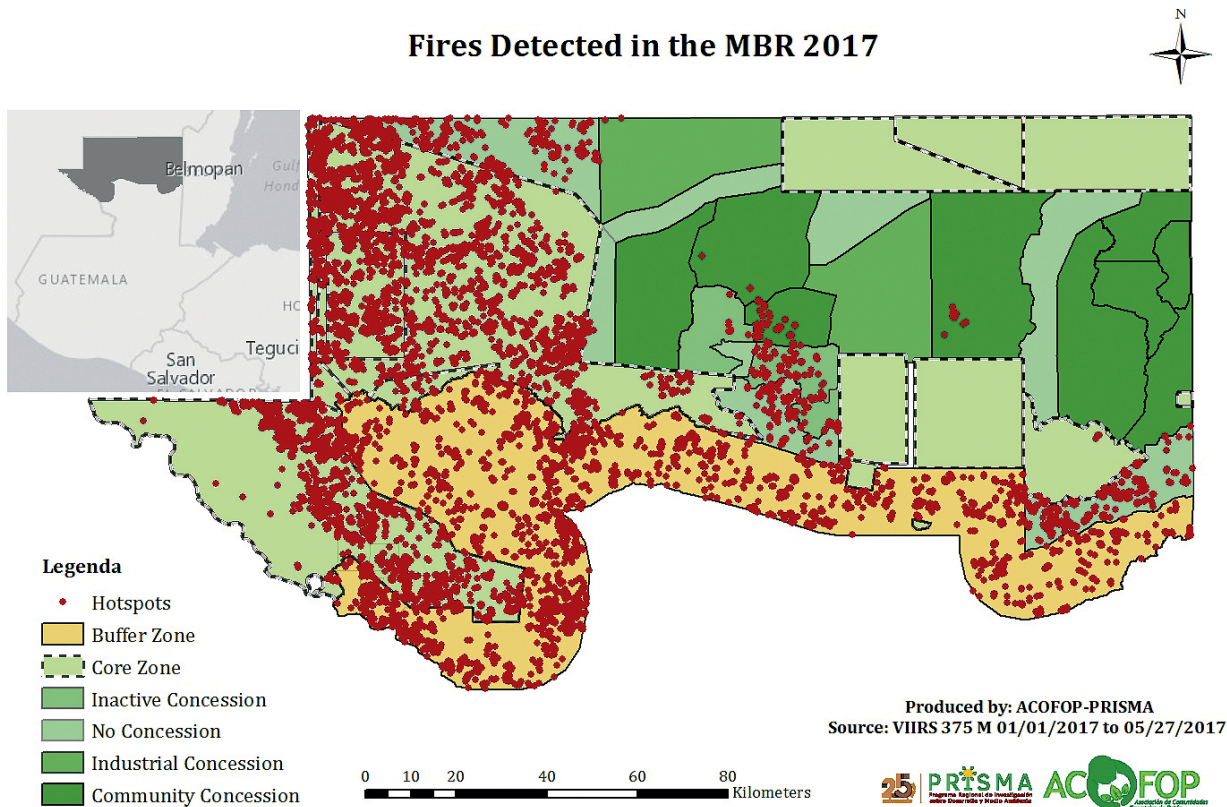
### Forest governance context

Guatemala has 3.72 million hectares of forests covering 34.2% of the territory,<sup>63</sup> the majority of which are located in the Northern Department of Peten. This department, along with northern portions of the neighboring departments to the South represents the region with the most significant deforestation dynamics of the country, a full 85% of it from 2006 - 2010.<sup>64</sup> In Petén, the principal drivers are conversion to cattle ranching, large-scale agriculture including oil palm, human settlement, and forest fires.<sup>65</sup> The coniferous forests of the central region are under pressure mainly for conversion to subsistence agriculture and for the extraction of firewood, which provides 47% of the country's total energy.<sup>66</sup>

Guatemala is a country of important contrasts in community-based governance of forests. Almost a million and a half hectares of land and forests are under active community management.<sup>67</sup> Three quarters of these lands are "communal lands" and under management rooted in ancestral institutions, virtually all of which lack secure recognition as collective territories. The departments with the largest extension of these lands are located in Petén, Quiché, Alta Verapaz, and Izabal; some of the most well-known experiences are in the Western highlands, where such management traditions have kept forests intact despite substantial market and population pressures.<sup>68</sup>

About one third of these community-managed lands are found in the Maya Biosphere Reserve, and emerged when local groups gained renewable 25-year concession rights to approximately 500,000

## Fires Detected in the MBR 2017



**Figure 4.** Fire incidence in the Maya Biosphere Reserve during the 2017 dry season, based on the VIIRS 375 M product. Each red dot indicates a vegetation fire, based on satellite detection of an anomalous hotspot. The darker green areas are forest concessions. From visual inspection, the fires seem strongly concentrated in the Core Zone (national parks) and Buffer Zone, especially toward the western edges of the MBR. Data source: VIIRS 375 M 01/01/2017 to 05/27/2017

hectares within the Reserve in the late 1990s and early 2000s.<sup>69</sup> These groups are represented by the umbrella organization the Association of Community Forests of the Petén (ACOFOP), and areas under their control remain the largest block of standing forest in Petén, as illicit actors, cattle ranching, and African palm have overrun the rest of the Department. From 1994 to 2015 the community concessions lost a total of 2.97% of their forest while neighboring protected areas lost 21.9% of their forest.<sup>70</sup> Three-quarters of the deforestation in Guatemala is now occurring in protected areas.<sup>71</sup>

### German forest aid in Guatemala

German influence played a key role in a watershed moment in Guatemala's history in the 1990s, when national and international pressures coincided to change the institutional framework for natural resource management in Petén. German and U.S. pressure contributed to a change from a previously state-run extractivist model of management based on mining, logging, and agricultural expansion towards a conservation model based largely on protected areas. This resulted in the creation of the Maya Biosphere Reserve (MBR), along with several other protected areas in the South of the Petén.<sup>72</sup> The large majority of German environmental aid since this time period has focused on Petén, in particular on the construction of new governance arrangements in the Department in the form of new protected areas, the strengthening of government capacity in planning and conservation agencies, and launching a conservation and development strategy around the archeological and ecological attractions. The major counterparts for German support included Secretariat of Planning and Programming of the Presidency (SEGEPLAN), National Council of Protected Areas (CONAP), the Institute

of Archeology, as well as organizations such as CATIE and Inter-American Institute for Cooperation on Agriculture (IICA).

Although the bulk of technical support has not been allocated to the community concession process, important assistance has strengthened this community model. Early aid from GTZ came to support the construction of FORESCOM, an umbrella enterprise organization for nine community concessions that has made important strides in economic diversification and vertical integration for the transformation of timber and non-timber forest products. Support from DED for over a decade also played an important role with these communities by providing technical support for their management schemes, and later helped them raise visibility of the concession process at a national level.<sup>73</sup>

More than 25 years after the turn toward conservation in Peten, it is possible to draw some basic conclusions regarding the outcomes of this institutional model. The Protected Areas under the management of CONAP have had mixed results. On the one hand, the administrative and technical capacities in key agencies that have received German support have improved. CONAP and its Center for Evaluation and Monitoring (CEMEC) produce high-level analyses on a variety of social and ecological patterns in Peten - though it remains heavily dependent on NGO and other external financing.<sup>74</sup> SEGEPLAN, also a major recipient of German support in the Peten, also has high levels of capacity for producing information and analysis.

Despite this progress, on-the-ground regulatory capacity of these agencies remains weak. With the exception of small areas that receive high levels of funding, the largest protected areas in the region have been over-run by illicit actors, demonstrated by the large-scale deforestation that has occurred in the Laguna del Tigre and Sierra del Lacandon National Park.<sup>75</sup> The protected areas to the south of the Department, which were the subject of major initial German financing, also collapsed, leading to the withdrawal of German support by the late 2000s. Some small protected areas, especially with high tourism value, have remained intact under this regulatory system, such as Tikal National Park (see Figure 4).

These challenges are complex and many are rooted in broader institutional problematics in state formation. It is nevertheless striking to note the largest areas where environmental regulations continue to be applied are precisely those where a strong articulation with communities has been achieved - in the Multiple-use Zone of the MBR. Current technical support provided to the ACOFOP communities through the Selva Maya program has built their capacities, but this support has made up a small fraction of Germany's support to Peten historically. The bulk of funding has gone to support a more strict conservation approach that remains ineffective, especially in comparison with community-based models in Guatemala.

## Costa Rica

### Forest governance context

Costa Rica has often been lauded in international environmental discussions for its forest transition: after losing 42% of its forests between 1960 and 1987 (dropping from 67% to 21% forest cover), by 2010, the country had regained almost a third of its forest cover, spanning 51% of the country.<sup>76</sup> The country built new institutions for forest governance, including the National System for Conservation Areas (SINAC) in 1994, as well as the well-known payment for environmental services (PES) program (FONAFIFO).<sup>77</sup> The latter program has generated a number of important lessons on Payment





*Photography: Indigenous Bribri and Cabecar Network (RIBCA).*

for Environmental Services, though the extent of its contribution to the country's forest transition continues to be debated – as broader market and institutional changes also drove significant parts of the country's forest recovery.<sup>78</sup> Deforestation continues in some areas in the Central Pacific, Southern and North Central regions of the country – though reforestation outpaces these processes, leading to a net gain in forest cover.<sup>79</sup>

The titling of indigenous territories in Costa Rica is a relatively under-recognized dynamic in maintaining the country's forest cover. The 1977 Indigenous Law formally recognized broad rights for indigenous peoples' over their territories. The law also established Integral Development Associations as the governance organs of these territories; the dissonance between this form of government and traditional authorities continues to drive challenges today.<sup>80</sup>

Twenty-four territories were ultimately titled, though many of these territories were small, with low forest cover, or by the time titling arrived, had lost the organizational capacity to exercise effective control within their territory. The most important impact over forest governance was felt in Talamanca and the Caribbean Slope in 12 indigenous "reserves" – where strong processes of territorial appropriation ensued at different times following the 1977 law. These territories belonging to the Bribri and Cabecar Peoples make up the heart of the most biodiverse and largest contiguous forests of Costa Rica, playing a key function in protecting their ancestral territories contained in the International a Amistad Park. These regions' forests have remained stable over the past 20 years, and have fended off a number of successive attempts to implement mining, hydroelectric projects, and tourism interests over the past 20 years.<sup>81</sup>

### **German forest aid in Costa Rica**

Germany's environmental aid to Costa Rica since the 1990s has been distinct from the rest of the region. A large portion of financing since 1990 has actually been dedicated towards developing a sustainable forest industry in Costa Rica, in particular when national priorities favored such development in the 1990s. During this decade, over 11 million Euro was invested in developing capacities for sustainable forest management in Northern Costa Rica.<sup>82</sup> These projects were accompanied by small-

er investments in agriculture and forestry in the Puriscal and Acosta regions. Both processes were cited by experts as important for moving beyond traditional conservation approaches focused on preservation solely through protection, and moving towards conservation through sustainable use.<sup>83</sup>

As national priorities shifted towards biodiversity conservation and climate change, so did German support. They allocated significant financing towards protected areas and biological corridors (approximately 11.5 million Euro between 2002 and 2014).<sup>84</sup> This work included special support to protected areas in the Osa Peninsula as well as support to sub-national biological corridors, present throughout most of the country – with a notable absence in Bribri and Cabecar territories of the Southeastern part of the country.

German forest aid has also supported the Payment for Environmental Services Program in the country, including over 1 million Euros of support for the implementation of PES in the Northern Huetar region,<sup>85</sup> as well as over 6 million towards the Biodiversity Fund, aimed at ensuring the long term viability of the PES program in the country, and boosting biodiversity funding to private landholders in biodiverse areas.<sup>86</sup> More recently, Germany has announced major new funding of 15 million dollars to contribute to the national climate change mitigation and adaptation plans.

German aid has not had a significant articulation with the strengthening of indigenous Bribri and Cabecar processes in Talamanca and the Caribbean slope. Though technical contributions from GIZ developed through CATIE have supported these groups' capacity building, the total funds committed make up a small fraction of German Cooperation.<sup>87</sup> Local leaders cite positive experiences with German support in recent years through the Cultural Mediators Program, implemented by the regional GIZ REDD+ program in partnership with FONAFIFO and CATIE. In this case, negotiations between the Bribri and Cabecar Indigenous Network (RIBCA) and the national government have allowed for RIBCA territories to be involved in the planning process from the beginning, with indigenous representatives treated as equal partners with government in the process. One expert cited this experience as evidence of a positive shift away from previous practices, where communities were not treated as equal partners in project design and implementation; however, this expert attributed this shift more to the relationship developed between indigenous communities and FONAFIFO than to a clear shift in German policy.

## Honduras

### Forest governance context

Honduras is known as the region's "forestry" country, given the large size and influence of its forest industry, and since the vast majority of its soils are not apt for agriculture. The forest industry has consistently exercised significant control over the country's forests and forest policies, though sporadic progress on community rights has been made since the 1970s.

Community forest management has had a long history in the country, though it has struggled from low institutional support from the national government, weak market conditions and asymmetric power relations. Today, approximately 231 community forest enterprises exist<sup>88</sup> actively managing 495 thousand hectares of forest in the country.<sup>89</sup> The 2007 Forest Law ensured long-term contracts for community forests, ending one of the most important historical obstacles for effective community management. As described in the following section, German support was important in the develop-

ment of this law, which also dissolved the semi-autonomous state agency COHDEFOR, and created the Institute of Forest Conservation (ICF) as the main forest and conservation regulatory body.

As with the other countries in our study, Honduras has also seen a major trend towards expanding efforts to build protected areas, expanding from 3,657,100 ha<sup>90</sup> in 1990 to 5,056,368 ha in 2015 summing 91 protected áreas.<sup>91</sup> These protected areas continue to be a central part of the conservation strategies supported by governments and NGOs in the country. The Rio Platano Biosphere Reserve, the largest protected area in Honduras, is the subject of the deeper analysis provided in section IV. The most important processes of indigenous titling have also developed in the Muskitia region. Weak institutions, corruption and dominance of illicit actors have far-reaching effects on almost all aspects of public policy. The forest industry linked to national elites continues to wield important influence over the country's forests, and governmental supervision is still inadequate. Protected areas are chronically understaffed and underfunded, and face significant land pressures. Despite recent frameworks recognizing rights on paper, the realization of these rights in both community forests and indigenous territories remains partial and contested. These challenges have hampered efforts to stabilize the loss of the country's nearly 6 million hectares of forest, under any strategy and governance varies widely by region.<sup>92</sup> Deforestation continues at rates estimated between 55,000 - 150,000 hectares annually, principally around the Muskitia, Olancho and Northern Comayagua.<sup>93</sup> The main deforestation drivers are the conversion of forests for small scale agriculture and agroindustry, illegal logging, uncontrolled urban growth, forest fires and diseases.<sup>94</sup>

### **German forest aid in Honduras**

Taken in its entirety, the bulk of German forest assistance has been allocated towards nationally managed protected areas and the strengthening of state agencies, representing approximately 75% of the funds allocated to environment protection.<sup>95</sup> Over time, German forest aid has included support for national agencies, and forest policies, with concrete local work in three general areas: 1) Rio Platano in the remote Muskitia; 2) Western Honduras; and 3) more geographically varied support for community forestry in Olancho, the Muskitia, Yoro, El Paraiso, Francisco Morazan, and Santa Barbara. In Rio Platano, as the case study in the following section analyzes in detail, early approaches beginning in the 1990s focused on state-led implementation, with some emerging work with community forestry in the late 2000s, though German cooperation has struggled with its engagement of indigenous communities until very recently.

In Western Honduras, many years of support were allocated towards the Celaque National Park; this project had little relationship with any of Honduras' community management experiences, and was



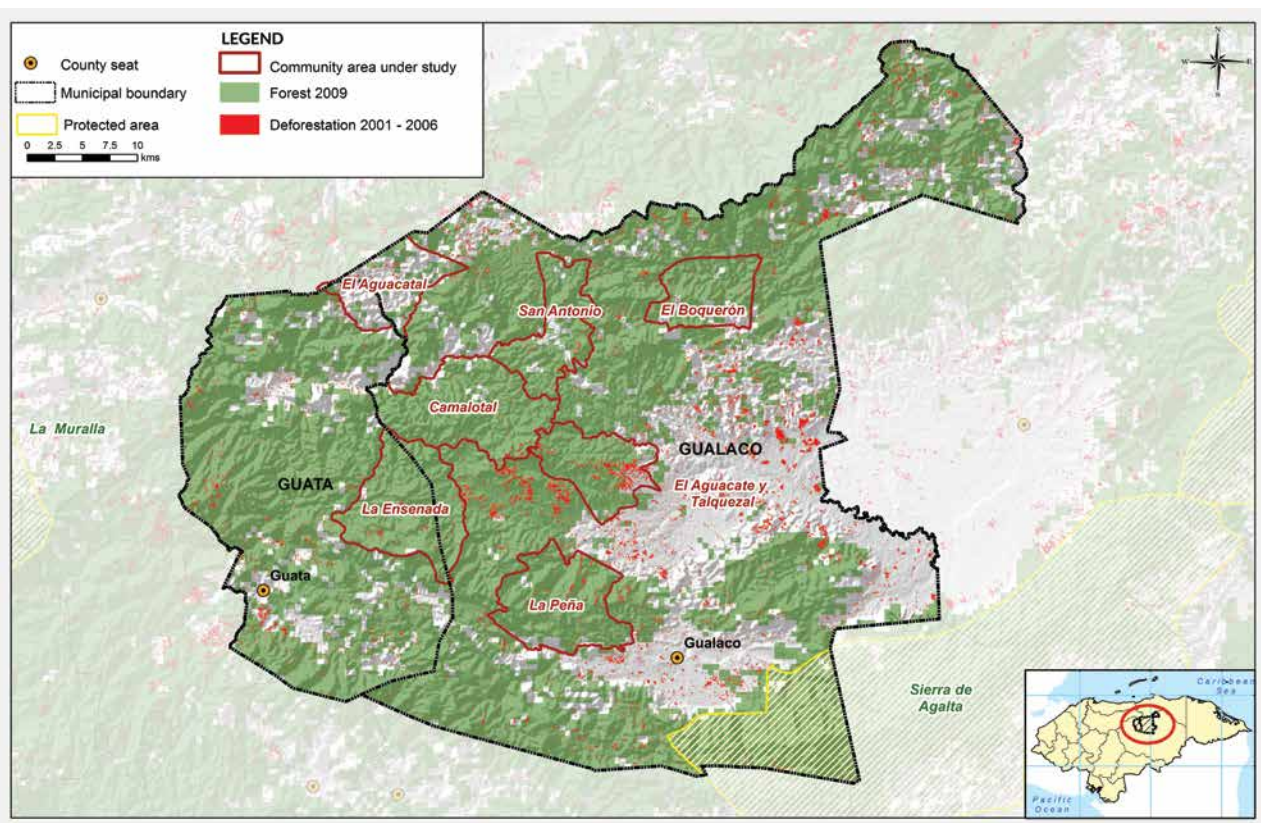
in fact severely criticized in one study for forced displacement of communities within the protected area.<sup>96</sup> Work continues in this region under a new category of climate change and protected areas, in addition to a regional project in the Trifinio region. None of these projects involve community-based forest management.

*Photography: Andrew Davis*



It is through a combination of local-level projects and national level policy support that German cooperation has most significantly contributed to the emergence of community management in Honduras - even though this funding makes up only a small portion of overall aid. This support began in 1994 with a new pilot project for community forestry in Yuscaran, which, according to project staff, drew on lessons of Mexican and Guatemalan community forestry and adopted new approaches to the Honduran context with special emphasis on integrated agriculture and forest livelihoods. The process generated considerable lessons learned, though the prevailing legal framework still deprived most communities of secure rights to forests - an issue that became increasingly part of a national discussion as deforestation, conflict, and violence spread over large parts of the country.

By the late 1990s and early 2000s, national community and civil society movements were clamoring for forest sector reform, a process which German cooperation supported through policy advice. According to a number of experts, the project staff working with Yuscaran had an important impact both in the national policy discussion and through new territorial work. Following the successful implementation in Yuscaran, this GTZ project managed to engage policymakers and influential figures in the legislative process, and sought to scale-up the community forestry approach in other regions, while also securing long term rights for communities. GTZ's work in in the Municipalities of Gualaco and Guata provided the site for the local implementation of the model of community rights and largely inspired the incorporation of long-term contracts into the legal reforms (see box 1).<sup>97</sup>



**Figure 5.** Community areas of Gualaco y Guata, Honduras. Source: Created by PRISMA based on SINIT (2009) and Documento de Sistematización (2013)

### **Box 1. Community forestry in Gualaco and Guata: Strategic technical support from GTZ**

The late 1990s and early 2000s, Honduran forest communities were facing enormous pressures from the illegal privatization of forests and the sacking of timber resources by illegal loggers tied to elite interests in the country; the Eastern provinces of Olancho and Gracias A Dios (the Muskitia) were especially hard hit by these pressures.

In Northern Olancho, conflict was erupting from illegal logging of local forests, which threatened water reserves of local communities. In 1998 the recently elected mayor formed a “Forest Forum” which convened all of the involved parties, including the forest industry, local ranchers, illegal loggers, and forest communities. The creation of such a forum directly challenged powerful interests related to logging, in an audacious and uncommon step for a local Mayor. Though the large scale interests soon left the process, the forum provided a key opportunity for communities to dialogue regarding the ongoing threats to their forests and resources.

Gualaco and Guata soon received the attention both of COHDEFOR and GTZ, which viewed the process as an opportunity to scale-up the Yuscaran model, building on the process of dialogue initiated by the Municipality.

In 2004 GTZ began supporting the existing dialogue process through financing for inter-community dialogue - helping to resolve conflict and build social cohesion between communities with historical conflicts. This support also introduced the model of community forestry developed in Yuscaran, providing technical support for enterprise administration, technical methods of fire prevention, timber and non-timber forest management, in an area where community management of forests had previously never existed.

This process was linked to the support to the Forest Law of 2007, which would eventually hold provisions to recognize community rights through long term community contracts of up to 40 years. These contracts were ultimately signed for seven inter-community cooperatives representing over 50,000 hectares of forest. These cooperatives - inspired by the community concession model of ACOFOP in Guatemala - would later form a second-level organization both as a political platform and to improve their negotiating position with timber companies.

Key in this process, as highlighted by Davis (2014), was the recognition of the key moment opened by political agreement between communities and the municipal authorities; this opportunity was seized by GTZ officials which opened the pathway for truly transformative change towards social inclusion and sustainable management of forests. The process was also later recognized by the FAO as a model for sustainable forest management.<sup>98</sup>

Despite this progress, communities in Gualaco and Guata have continued to face major challenges, in particular from low market prices for timber driven by illegal logging in other parts of the country. Discretion of local ICF officials also poses challenges for communities in obtaining permits in a timely fashion. These challenges have posed major challenges for the sustainability of these processes.

The cumulative experience of GTZ 's community forestry programs, along with other community processes in the country, led to the adoption of a national community forestry policy in 2011, expanding community forest areas under contract to 495 thousand hectares of forest in the country in 2013.<sup>99</sup> Expansion of this work included the formation of cooperatives in the buffer zone of the Río Platano Biosphere Reserve, which demonstrated important successes in curbing deforestation. In 2014, German support continued as part of a broader European Union initiative for forests and climate change called CLIFOR, which is working in Yoro, Olancho, Francisco Morazán, el Paraiso, the Muskitia and inside the Río Plátano Biosphere Reserve. with the goal of integrating 550 thousand hectares of forest under the community control through 30 community contracts.

The legacy of German support to community forestry enterprises includes key support to the national level policies that have provided a legal framework for greater security for the rights of communities in the country. This has supported the estimated hundreds of community forest enterprises that continue to operate, with a number of notable experiences in timber and non-timber forest management. Nevertheless, many of these communities suffer from enormous obstacles, including markets flooded with illegal timber that undercuts local enterprise opportunities, local power "bosses", and low levels of government support. These challenges have meant that in general, the CFEs of Honduras have not yet attained the high levels of organization and influence that they have in regions of Guatemala and Mexico.

## Nicaragua

### Forest governance context



In 1987 Nicaraguan Autonomy Law recognized approximately one-third of Nicaragua's territory to the indigenous peoples and Afro-descendent communities of its Caribbean Slope, which until recent decades remained largely isolated from the major population centers on the Pacific side. The Miskitu, Mayangna and Afro-descendent peoples gained legal autonomy in the Northern and Southern Caribbean Autonomous regions of Nicaragua (RACCN, RACCS) in the midst of the Contra war as a



concession from the national government.<sup>100</sup> The bulk of the country's forests are contained within the RACCN and RACCS.

Following the conflict in the 1990s, new dynamics unfolded with the resettlement of ex-combatants and displaced communities to the region. This included both indigenous and *campesino* communities in land redistribution programs. Conflicts soon emerged as small farmers, often financed or otherwise supported by large ranchers, pushed further into the Autonomous Regions. Much of this conflict emerged in the Bosawas Biosphere Reserve – which had previously been declared in 1979, though was virtually a paper-park until the mid-1990s when German and U.S. aid entered with support for its implementation.<sup>101</sup>

Despite 1987 law, no specific processes for ensuring collective property of the communities of the Caribbean was achieved until 2003, following a landmark case in front of the Inter-American Court of Human Rights supporting indigenous titling in the country, and subsequent support from the World Bank (among others). Titling ensued with the arrival of the Sandinista government in 2007, leading to the titling of 23 indigenous territories across 3,725,200 hectares by 2016.<sup>102</sup>

Despite titling, the implementation of land rights afforded has been plagued by severe encroachment pressures. Maneuvers by the national government have also undermined local governance processes, including administrative delays that undermined territorially elected leaders and the promotion of parallel decision-making bodies (municipalities, local partisan organizations) that have contradicted or confounded local attempts to build strong organizations with control over territories. Today, the failure to reconcile these differences and the continued disinterest of the national government to finalizing the Law 28-mandated implementation of rights has led to ongoing deforestation and heightened conflict in the Caribbean region.

### **German forest aid in Nicaragua**

The most consistent long-term forest aid in Germany has focused on the Bosawas Biosphere Reserve, the largest protected area of the country and an iconic national symbol of Nicaragua's immense natural and cultural wealth. The case study in the following section analyzes the work in Bosawas in detail, ranging from the initial years in which German support provided the first resources to begin to implement the Reserve in the 1990s; an important evolution occurred over the years that would lead to a change in approach, and ultimately an encounter with the national government that would bring an effective end to the program.

In addition to support for Bosawas, German aid – this time listed under the sector of rural development, though which also included significant forest interventions – expanded support to other regions in 2005 with its project Programa Manejo Sostenible de los Recursos Naturales y Fomento de Competencias Empresariales (MASRENACE), which supported community forestry activities in the RACCN (outside of Bosawas), as well as productive projects and territorial zoning planning in Rivas and Carazo. This work was reduced to focus once again on Bosawas in 2011, a process described in the following section. The efforts to support community forestry in Nicaragua generated important experiences, though the lack of institutional support, combined with external invasion pressures, hampered the progress of these enterprises.

The most substantive engagement on forest rights occurred specifically in the Bosawas Reserve with Mayangna and Miskitu territories, as well as through support for Law 445. These experiences are discussed in depth in the following section.



## IV. German Aid in Place: Comparing support for forest governance in two Biosphere Reserves

*Photography: Mayangna territory containing Bosawas Biosphere Réserve. Allam Ramírez Zelaya*

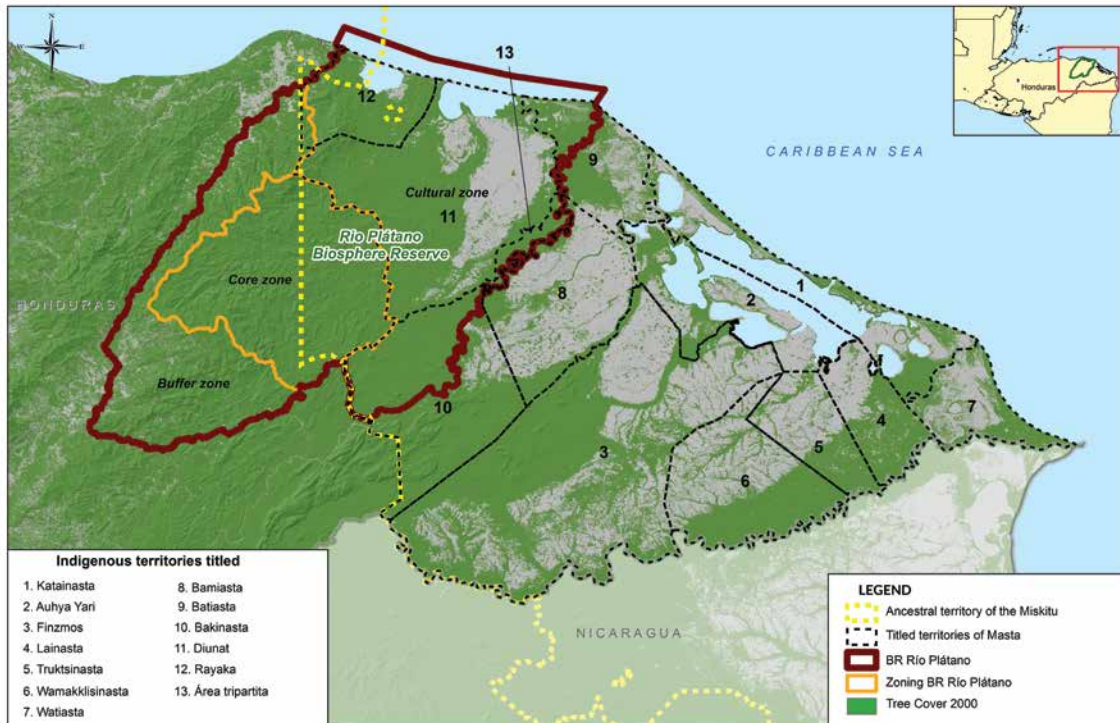
Comparing the different trajectories of the Rio Platano and Bosawas Biosphere Reserves presents an important opportunity to analyze divergent modalities and strategies for German forest aid in tropical forests. Both Reserves have been the target of long-term and sustained development finance since the 1990s from German Development Cooperation, in addition to other financing from USAID, the World Bank, and the Global Environment Facility, among others. These two reserves are also the most well-recognized, long-term, place-based projects receiving German support in the entire region; local, national, and regional experts and leaders recognize the influential role of German cooperation in these two Reserves.

Both Biospheres are also composed of remote frontier forests, which have become increasingly accessible to large population centers in recent decades. While they had existed on paper previously, the first attempts to meaningfully implement the Reserves began in the 1990s, just as new migration pressures emerged from post-conflict resettlement in Nicaragua and from government sponsored colonization in Honduras. The bi-national indigenous zone of the Muskitia contains both of these Reserves, and the Miskitu, Mayangna, Pech, Tahwaka, Garifuna and Afro-descendent peoples of Honduras and Nicaragua have historically governed and conserved this vast region of lowland tropical forests, savannahs, and mountain ranges. While local governance systems vary, Mayangna and Miskitu traditional resource management institutions share many fundamental similarities in regulating local resource use.<sup>103</sup>

Both countries have also undergone territorial titling processes of indigenous peoples since 2000;. In Nicaragua, Law 28 technically granted autonomy to the indigenous peoples in 1987, though these rights remained largely on paper until 2007, when titling began on the basis of Law 445 passed in 2003. In Honduras, titling in the Honduran Muskitia did not begin until 2012, and most territories within the Rio Platano reserve did not receive title until 2015 or 2016. These titling processes have also occurred concurrent with severe pressures from an expanding agricultural frontier. Nevertheless, indigenous institutions have evolved and strengthened in the process of seeking, and ultimately achieving, territorial titles.<sup>104</sup>

The overlapping institutional forms and contested claims to resource rights has made the implementation of regulatory regimes complex. National government agencies, municipalities, indigenous territorial governments, and local cooperatives are among the many institutional forms that offer possible nodes for forest governance, though each of these have also changed over time and been the subjects of competing interests and agendas. German cooperation has responded to these changes in both cases - revealing important lessons on how forest aid relates to complex and evolving scenarios, particularly where indigenous rights play a major role in forest governance.

**Box 2. Profile of the Rio Platano Biosphere Reserve**

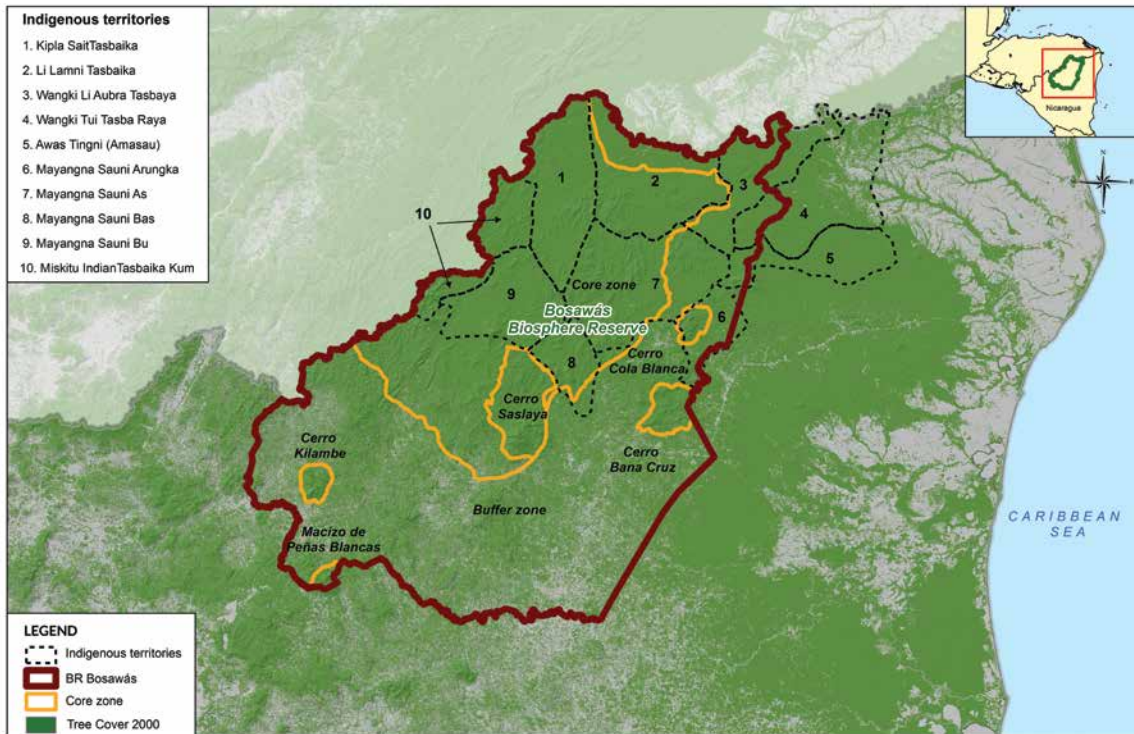


**Figure 6.** Rio Platano Biosphere Reserve. Source: Created by PRISMA based on Hansen et al (2013), Del Gatto, F. (2015) and Integral Monitoring System of ICF (<http://simoni.icf.gob.hn/>)

The Río Plátano Biosphere Reserve, declared to the UNESCO in 1980 and located between the departments of Gracias a Dios, Olancho and Colón, is the largest protected area in Honduras with 500,000 ha. It is divided in three areas: 1) the Core Zone, including lowland tropical forests rising up to 1,300 m above sea level that provide a natural barrier against encroachments from the west; 2) the Cultural Zone to the east of the reserve, including lowland tropical forests, wetlands and mangroves; and 3) the Buffer Zone to the west, made up of pine forests and mixed pine/broadleaf forests, while in the north there are wetlands and mangroves. The Reserve is located on ancestral indigenous lands of Tahwaka, Garífuna, Pech and Miskitu peoples, who now have title to the bulk of the Cultural Zone, while the Core Zone is claimed by the state, though is partially contained within Miskitu ancestral territory. The Buffer Zone was settled by farmers decades ago. Five Miskitu territories are located totally or partially inside the Cultural Zone.



### Box 3. Profile of the Bosawas Biosphere Reserve



**Figure 7.** Bosawas Biosphere Reserve. Source: Created by PRISMA based on Hansen et al (2013) and cartography of the GIZ-MASRENACE project (<https://masrenace.wikispaces.com/>)

The Bosawas Biosphere Reserve, declared in 1979, is located in the north of the country between the departments of Nueva Segovia, Jinotega, Matagalpa and the RACCN. It is the largest protected area in Nicaragua with over 2 million ha. It is divided in 2 areas, the Core Zone and the Buffer Zone. The reserve contains wet tropical forests from lowland to mountain elevations. The Bosawas Reserve is located on the ancestral lands of Miskitu and Mayangna indigenous peoples, with most of the land under control of the latter group. Inside the Core Zone there are 7 indigenous territories - two Miskitu (Li Lamni Tasbaika Kum and Kipla Sait Tasbaika), four Mayangna (Mayangna Sauni As, Mayangna Sauni Bu, Mayangna Sauni Bas and Mayangna Sauni Arungka), and a mixed territory with both peoples (Miskitu Indian Tasbaika Kum).

## Building Biosphere Reserves: the early stages

The initial strategies for the Biosphere Reserves in both countries focused on government-led agencies to lead the new regulations to govern the conservation areas. While both areas had previously been designated as conservation areas in some form, both remained largely “paper parks” until German support arrived in the 1990s with the Bosawas project (1994-2004) in Nicaragua and the Río Plátano Biosphere Reserve component of the Social Forestry Program (1997- 2005) in Honduras. The bulk of these initial efforts focused on the construction of the legal and institutional framework for both areas.

Perhaps the most important legal implication of the influx of German support, was the immediate claim of state rights over the reserve. In Honduras, one of the first actions of COHDEFOR-AFE following the inception of the project was to claim management rights over the Reserve.<sup>105</sup> In Nicaragua, new legislation passed that also asserted state management rights over Bosawas, despite the existence of the Autonomy Law 28 of 1987. The project ended up supporting Law 407 in 2001 which declared the Biosphere Reserve and specified its geographical boundaries.<sup>106</sup>

This changing legal landscape included the creation of new institutions to serve as coordination, cooperation, and decision-making mechanisms for the protected areas. In Nicaragua, this involved the creation of the National Bosawas Commission (CNB for its Spanish initials), as well as the Bosawas Technical Secretariat. This commission is led by the Environment Ministry and includes participation from the director of the Agrarian Reform Institute, the Agriculture Ministry, the President of the North Atlantic Autonomous Region Council, the mayors of the 6 municipalities that overlap with Bosawas, and representatives from each of the seven indigenous territories in the Reserve.<sup>107</sup> In Honduras, the government handed all management rights over the biosphere Reserve to AFE-COHDEFOR. The reserve was then managed by the Biosphere Project, which wielded the formal right to all management decisions over the park.<sup>108</sup>

Municipalities in both Bosawas and Rio Platano were initially prioritized as important agents for territorial zoning and the application of management plans. In Nicaragua, an early effort focused on developing municipal management plans based on environmental land zoning.<sup>109</sup> In Honduras, efforts to build the Reserve were accompanied by the re-districting of the Muskitia, moving from two Municipalities to six, beginning an important line of German financing for municipalities that would last at least 15 years.<sup>110</sup>

## Engagement on community and rights in early stages of Bosawas and Rio Platano

In both Rio Platano and Bosawas, German program designs prominently featured community participation and the importance of ensuring local benefits. Nevertheless, while both processes involved financing for the participation of community members in the development of management plans and development projects, the actual decision-making power by these communities was subject to varying informal processes.<sup>111</sup>

In Nicaragua, communities enjoyed a somewhat greater degree of decision-making power than in Honduras, and the former saw some long-term financing for indigenous initiatives. For example, the development of a two-year diploma for indigenous leaders provided lasting results by strengthening a generation of young leaders who could later take the helm of local organizations.<sup>112</sup> Indigenous leaders and experts also cite the importance of financing to local NGOs in Nicaragua, which helped build the indigenous organizational capacity that would later be formally recognized as Indigenous Territorial Governments (GTI) in the titling process.<sup>113</sup> Other community-level engagement focused on agroforestry activities designed to improve local livelihoods.

Despite these notable projects, the actual mechanisms of decision-making over Bosawas were reduced to the CNB, where communities could exert a limited degree of decision-making power. Resistance to the initial management plan of 1998 (criticized by indigenous communities as too technical) was revised with community input, producing the management plan of 2001 which was agreed upon

with indigenous communities;<sup>114</sup> this type of iteration on formal rules marks a stark difference with the experiences of the Miskitu communities in Honduras.

In Honduras, the process to develop the Rio Platano management plan included a serious effort to incorporate community input. A number of meetings were held where Miskitu communities were able to voice their proposals for the management of the Reserve. Yet just as the initial management plan in Nicaragua, the ultimate product which emerged - according to community sources, and as documented by Hayes (2007) - did not reflect the rules agreed upon during the process. Further, the plan privileged municipalities and newly proposed municipal committees as implementers of the management plan, sidelining the Miskitu Territorial Vigilance Committee (CVT) that had emerged locally to defend the region from encroachment along the Northern portion of the Cultural Zone (especially in the territories of Rayaka and Diunat). It is important to note that the municipal governments were viewed critically by many Miskitu as a foreign system of government, which had also been a source of historical tensions.<sup>115</sup> This delegitimization of the local population's conservation organization would ultimately hamper subsequent management efforts.<sup>116</sup>

## Implementation of the new management regime in Bosawas and Rio Platano: struggles of nascent institutions

In both Rio Platano and Bosawas, implementing the management plans proved immensely challenging. In both cases, the lack of coordination between the conservation agencies with other governmental policies complicated implementation; as conservation agencies set up plans to curb deforestation, other branches of the governments enacted social policies that accelerated these pressures - through development programs in Nicaragua and a colonization project in Honduras.<sup>117</sup> These pressures made defense of the Biosphere Reserves a daunting proposition, regardless of the strategy utilized.

In Honduras, early implementation of the Reserve was weaker than in Nicaragua. The main implementing agency, COHDEFOR, had been penetrated by powerful interests linked to illegal logging, and did not have the trust of local populations, as a 2005 Environmental Agency Report (EIA) revealed.<sup>118</sup> These actions from COHDEFOR were well known at local levels, further damaging the legitimacy of the agency to lead the conservation of the Reserve; despite the substantial funding from KfW as a part of the project, the agency was not able to demonstrate significant ongoing presence to curb the expansion of the agricultural frontier. In the Cultural Zone, the local CVTs disbanded in frustration from lack of support - opening a governance vacuum in the Rayaka and Diunat territories.

In Nicaragua, despite the enhanced participation in the final management plan, the institutional architecture built for the Reserve also faced enormous obstacles. Posterior analyses would reveal a lack of dissemination of the management plan, even to municipalities. Although the plans were created in a more participatory way, many components remained unimplemented; some elements received substantial attention, for example in control and surveillance actions, in particular related to illegal logging, but many remained paper aspirations.<sup>119</sup> Similarly to COHDEFOR in Honduras, MARENA never managed to achieve a significant presence in Bosawas.<sup>120</sup>

The evidence gathered on the lack of regulatory presence is congruent with the surging deforestation patterns that coincided with the project periods in both areas. In Rio Platano, the Core Zone remained relatively intact due to formidable natural barriers and a handful of removals of settlers from inside



the area, which saw a reforestation of 0.19% during the time period of 2002 to 2005. The collapse of the Miskitu CVT and the absence of alternative regulatory bodies is revealed in the inroads made into the Northern portion of the Reserve: these areas saw a four-fold increase in deforestation rate from 2002 to 2005 to 0.39%. In the Buffer Zone, a brief lapse in deforestation between 1997 and 2001 was followed by a spike between 2002 and 2005 to 2.41%.

In Bosawas, rates of deforestation in the Buffer Zone increased fourfold from 1999-2005 to 5.2%, while the Core Zone experienced a continued rate of 0.7%. In indigenous territories, the net reforestation achieved during the 1990s of 16,000 hectares was dramatically reversed, with 18.5 thousand hectares deforested during the same time period of 1999-2005.<sup>121</sup>

## Changing contexts, rights and strategies: diverging pathways for rights and conservation in Bosawas and Rio Platano

After the first round of projects in Bosawas and Rio Platano, German Cooperation continued their work in both countries under new programs. This included MASRENACE (Programa Manejo Sostenible de los Recursos Naturales y Fomento de Competencias Empresariales) in Nicaragua, and PRORENA (Programa de Fomento al Manejo Sostenible de los Recursos Naturales y Desarrollo Económico Local) in Honduras. Both represented efforts to reach beyond the Biosphere Reserves, focusing heavily on *campesino* areas of the Buffer Zone while also continuing to depend on municipal governments as key actors in the implementation of territorial zoning initiatives. Despite accelerated deforestation rates in indigenous territories after a decade of work in the Reserves, neither project initially included a shared agenda of work with indigenous territories inside the Reserves.

### Bosawas: progress on rights reveals weak national support for conservation

In Bosawas, MASRENACE did not initially include any dedicated support for indigenous territories, either inside or outside the Reserve, even given the aforementioned spike in deforestation between 1999 and 2005.<sup>122</sup> Our investigation could not determine the rationale for this lack of engagement, though it is largely consistent with the first decade of the Reserve, which included some support for indigenous initiatives, but did not engage the organizational capacity to defend and manage their territories against invasions.<sup>123</sup>



Photography: Andrew Davis

A series of interrelated factors led to a turn towards substantive engagement with these territories in 2008, when the Mayangna and Miskitu territories in Bosawas were beginning the titling process (Box 4). The following year, new evidence of extreme levels of invasions threatening the Core Zone of the Reserve, including indigenous territories, and an internal evaluation of the German environmental program led to a change in strategy by MASRENACE. This change involved a turn to working more intensively with the local GTIs, specifically Mayangna Sauni Bas and Mayangna Sauni As in 2008, and later Mayangna Sauni Arungka/ Matumbak in 2010 (upon the fusion of DED and GTZ into GIZ).<sup>124</sup>

**Box 4. German technical support for titling process in Nicaragua**

In Nicaragua, continued lobbying by the Mayangna and Miskitu People paired with the ruling in the Awas Tigni case (2001), along with conditionalities imposed by the World Bank drove increasing pressure on the government to implement the territorial rights guaranteed in the 1987 Law 28.<sup>125</sup> Doing so required a new law to outline the process of establishing collective rights at a territorial scale. GTZ, through its Bosawas Project, did not take a position on the law, though it provided operational and logistical support for dialogues, negotiations, and legal deliberations, including funding the legal experts providing guidance to indigenous leaders.

These deliberations would ultimately lead to Law 445 of 2003, which outlines the process for implementing inter-community indigenous titles. This titling process finally began in 2007, and would have important implications for the operational scenarios of German Cooperation in its subsequent project, MASRENACE. This project focused on land planning (at the beginning mainly with municipalities in the south east of the country), sustainable production (livestock, cocoa and forestry) and policy advice in the forestry sector.

The Mayangna Territorial Governments were able to negotiate the conditions of joint work with GTZ, stipulating that the Germans would have to support the process of *saneamiento* (the resolution of third party claims, largely in reference to encroaching farmers and ranchers in indigenous lands). Project officials also report that the program had concluded that deforestation could not be stopped if *saneamiento* was not carried out in a meaningful way.<sup>126</sup> This agreement set off an important new set of work, in which GTZ, through the territorial planning component of MASRENACE, performed substantial new research on the illegal occupation of indigenous lands, establishing 360 complete files of violations that were handed over to the police. In Mayangna Sauni As, mediation with 35 families achieved the voluntary abandonment of encroached lands, along with judgments against two land-traffickers from the local tribunal justice. In Mayangna Sauni Bas, 276 families were registered as encroaching in the territory, and 38 families were removed by an order from a Jinotega judge.<sup>127</sup> MASRENACE later supported trips of indigenous leaders to the General Prosecutor's office in Managua to lobby for a more active prosecution of cases violating indigenous rights and for a law to strengthen the position of the GTIs.<sup>128</sup>

DED supported the acquisition of the Mayangna Sauni Arungka (Matumbak) territorial title in 2010, and later began a process of dialogue and negotiation between the GTI and farmers on the agricultural frontier. This included parallel week-long workshops on conflict resolution for Mayangna and non-native farmers, prior to the commencement of a local negotiation process. GTZ and DED remained neutral within that process, providing merely logistical support for the meetings.<sup>129</sup>

The implementation of these rights was congruent with the government's public position on the importance of safeguarding the country's resources, but this rhetoric rang increasingly hollow with

the expansion of the agricultural frontier – revealing what is widely considered to be low government interest in actually supporting forest conservation or indigenous rights.<sup>130</sup> The government would not prosecute most cases reported by the Germans, and the Matumbak dialogue processes – which echoed a previously successful effort in Miskitu Indian Tasbaika Kum – were halted by partisan influence exercised through the local municipality.<sup>131</sup>

German support also turned to more drastic actions, after much internal debate eventually supporting the formation of an “Ecological Battalion” – a branch of the National Army charged with enforcing environmental law, in particular in Bosawas. In some cases, monitoring by Mayangna communities brought the Ecological Battalion to effectively respond to illicit marijuana cultivation within the Reserve and decommissioned illegally felled trees.<sup>132</sup> Ultimately, though communities consider the Battalion to have a fairly low impact due to lack of funds and its limited legal capacity to dislodge illegal occupants.<sup>133</sup>

By 2012, the efforts German Cooperation were revealing uncomfortable facts about the lack of genuine interest on the part of the government in supporting rights and conservation in Bosawas. International and national political factors that worsened relations between the two countries augmented this strain. Criticism from the European Union towards the re-election of Daniel Ortega soured relationships between the two countries.<sup>134</sup> In a move to centralize control of international cooperation, the Government of Nicaragua made a new requirement that all cooperation go through the Ministry of Foreign Relations. In 2013, a new agreement for the Mesoamerican Biological Corridor was made; yet the content of this project was watered down, and eliminated the critical support for *saneamiento* and indigenous territories, curbing support down to only projects focused on agroforestry. Moreover, German Cooperation was prohibited from interacting directly with the GTIs. Though MARENA selected 37 communities for the project, the terms of the bilateral agreement mean that German cooperation cannot directly contact the communities or travel to the GTIs. This project will end this year and will not be renewed.<sup>135</sup>

## Rio Platano: new community rights strategies in buffer zone, impasse in indigenous territories prevails until Miskitu titling

In Honduras, German support following the initial Rio Platano project, continued through the PRO-RENA program, which extended support for previous cadastral work in the Reserve supported by KfW. This work included the removal and resettling of families from inside the Core Zone to the Buffer





Zone, and the project built functioning cadastral offices in 2 of the 6 municipalities of the region.<sup>136</sup> Nevertheless, continued difficulties with cadastral projects with indigenous communities would stall relationships with these territories. In theory, the cadastral support provided by German Cooperation could include collective or individual titling, though municipal and state officials discouraged collective titling, arguing that it would not be feasible to implement; they instead promoted individual titling as part of an initiative to raise funds for municipalities. Such proposals were deeply contradictory with traditional Miskitu communal social institutions, and were met with fierce resistance from the Miskitu People.<sup>137</sup> Disputes over this issue led to a rupture of relations between the project and local indigenous authorities in 2004, which would last until 2011.<sup>138</sup>

Despite this break in relations, PRORENA continued to work in as-of-yet untitled indigenous territories, albeit without indigenous organizations. It worked with municipal committees, on productive projects such as cacao, and on community forest enterprises. The work with community forest enterprises mirrored similar work carried out in the Buffer Zone with *campesino* communities, based on the new Forest Law of 2007 (Box 5).<sup>139</sup> This work in the Cultural Zone suffered from the historical disenchantment of Miskitu communities with German aid, in addition to the adoption of cooperatives as the organizational configuration promoted in these efforts, which was considered foreign to local Miskitu institutions. Some local families did engage with this support, which ultimately resulted in elite capture of these enterprises, often driving internal conflict until the areas were overwhelmed by external invasions, halting productive activities by the mid 2010s.<sup>140</sup>

#### **Box 5. New community forest enterprises in the Buffer Zone**

The Buffer Zone of the Rio Platano Biosphere Reserve was one of the key areas where German forest aid attempted to build community governance institutions, based on the long-term community contracts enshrined in the 2007 Forest Law (see Box 1). The effort to build community forest enterprises by German forest aid is a notable departure from previous efforts dedicated to protected areas in the country. From the initial stages in the mid-2000s, these initiatives faced serious pressures for land conversion. For the few years where these enterprises operated at capacity and achieved FSC certification, they were able to resist pressures from the agricultural frontier and withstand problematic management from COHDEFOR, demonstrating lower deforestation rates than areas not under community forest management.<sup>141</sup>

However, these cooperatives struggled with both on-the-ground pressure to convert to forests and a contested relationship with the national institutional architecture. Some of these cooperatives were complicit in illegal extraction of wood tied to a corruption case involving the country's political and economic elite, in which COHDEFOR had used local cooperatives to illegally extract wood. To its credit, the German forest aid office actively lobbied to draw attention to this situation.

Work continued with these cooperatives throughout the 2000s and into the 2010s. Many generated considerable income for community members, and an attempt was made to launch a second level organization (UNICAF). Yet these cooperatives struggled to resist the onslaught of pressures over land which became especially severe in the late 2000s as African palm and narcotrafficking pressures enveloped the region. Experts note that institutional support from the state was never forthcoming, further deepening the challenges for these cooperatives still face today.<sup>142</sup>

For nearly seven years - between 2004 and 2011 - no institutional relationship existed between Miskitu organizations and German Cooperation.<sup>143</sup> During this time, deforestation continued into the Cultural Zone of the Biosphere Reserve, which later accelerated with the onslaught of narco-deforestation which spiked in 2009. These pressures encouraged new proposals from German Cooperation, though they remained controversial within the region. KfW launched a new program, PROTEP (Territorial community zoning and environmental project in Rio Platano), in order to implement territorial zoning and protection of the Reserve, though absent an agreement with the Miskitu People, it could not focus on indigenous territories. In 2011, a new PRORENA attempt at engagement proposed the implementation of a new institutional form called Consultative Committees (Consejos Consultivos) - based on the 2007 Forest Law - though after meetings, Miskitu communities once again rejected the proposal, claiming their right to self-government protected in ILO 169.<sup>144</sup>

A shift in engagement with the Miskitu People came in 2012, following a historic agreement between the Honduran Government and MASTA for the titling of Miskitu territories (Box 6). At this point, PROTEP provided technical support for the titling process, although Miskitu leaders observed that the program did not result in the issuance of any titles inside the Biosphere Reserve, which were eventually achieved by MASTA with the ICF in 2016.<sup>145</sup> Little public information on PROTEP and its results exists.

Overall, titling marked an important turning point for aid in the region, where - for the first time - German cooperation began to constructively engage with Miskitu territorial authorities, now recognized as Territorial Councils. The Biological Corridor Project, initiated in 2012, for the first time implemented a formal process of consultation with the Miskitu People regarding the project activities. The process was based on the Indigenous Biocultural Protocol developed by the MASTA, which provides communities with the opportunity to express discontent with previously implemented projects where communities felt their voice was not heard, and created the first steps towards an improved dialogue between the ICF and MASTA. Further progress was made on the basis of this dialogue, including the implementation of an indigenous forest protocol, with the support of the CLIFOR project - a process designed to restore indigenous control over their forests. Observers of the process also noted that the government in this process recognized its own lack of capacity to manage forests and the critical role of indigenous people in protecting the forests.<sup>146</sup> The consultation also set an important precedent for free, prior and informed consent (FPIC) protocols for the engagement by external interests with the Miskitu.<sup>147</sup>

### **Box 6: Miskitu Mobilization for Territorial Titling**

Miskitu struggles for recognition of their territorial sovereignty date back to the colonial era, and include legal victories dating back to 1859 when the Cruz-Wyke Treaty signed between Honduras and England recognized the autonomy of the indigenous peoples of the Muskitia.

Renewed efforts to achieve legal security began in the 1990s when encroachment threats were growing over the Reserve - beginning a new period of struggle lasting over twenty years. This struggle would include sustained efforts to defend Miskitu territories through Territorial Vigilance Committees, in addition to decades of lobbying the national government. By 2010, Miskitu organizing efforts would result in the consolidation of 12 inter-community territorial governments, which would come to form Miskitu Asla Takanka (MASTA), the maximum authority of the Miskitu People in Honduras.

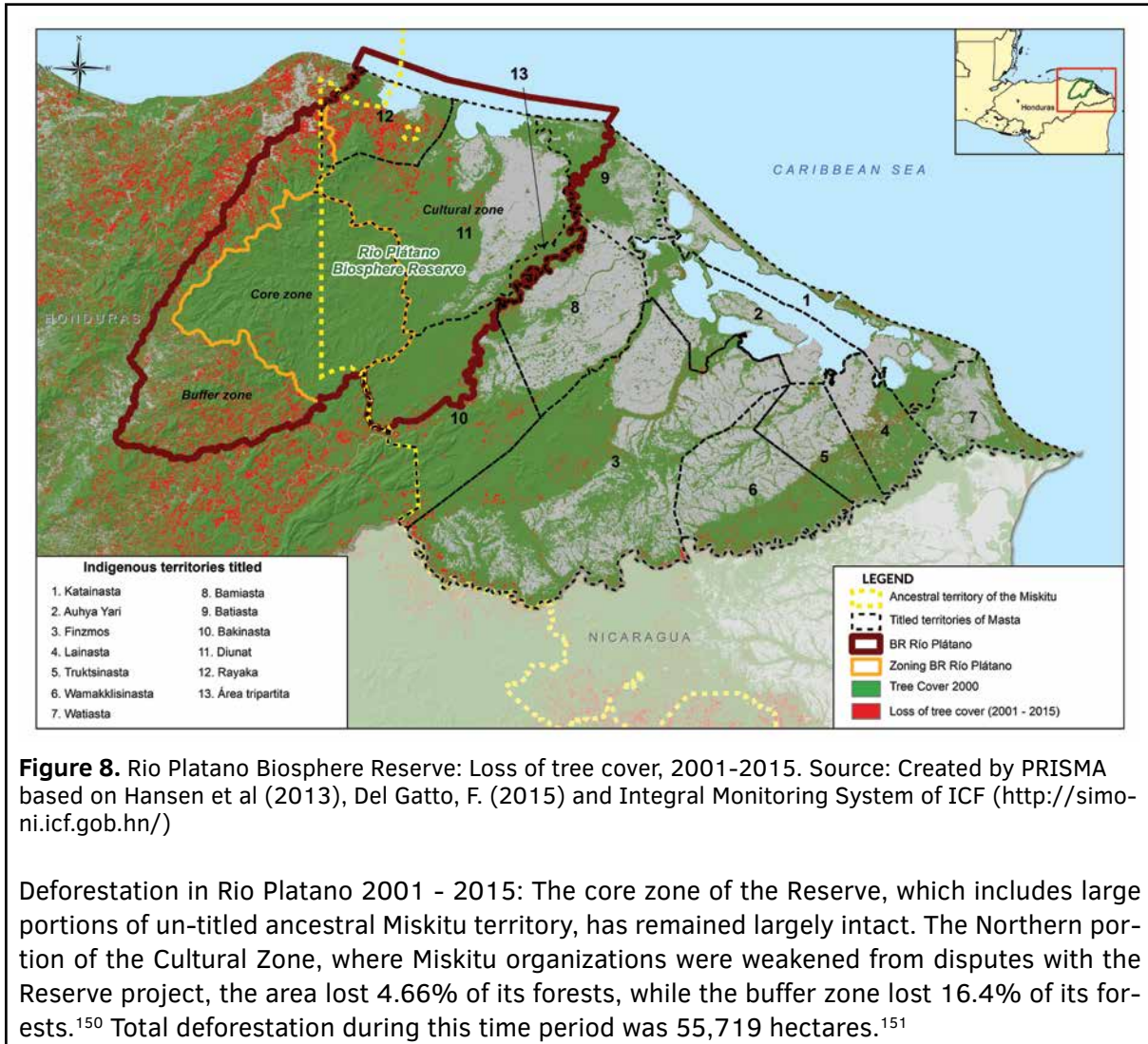
These efforts went largely unrecognized and unsupported, as threats from extractive projects, cattle ranching and narco-trafficking grew in the late 2000s, and came to a head in 2011, when the Miskitu People – gathered in a MASTA General Assembly meeting – made the decision to mount a massive protest over the continued violation of Miskitu territorial rights, especially in light of the Patuca hydroelectricity project. In October 2011, several hundred Miskitu people took to the streets of Tegucigalpa, marching outside the Presidential Residence and the National Congress for a month, in addition to constant protests in the major population centers of the Muskitia. Their persistence paid off; the President finally agreed to meet with MASTA. While the hydroelectricity project was not halted, during negotiations, the government made a commitment to title Miskitu territories, a historic agreement that was finally brought to fruition by 2016.<sup>148</sup>

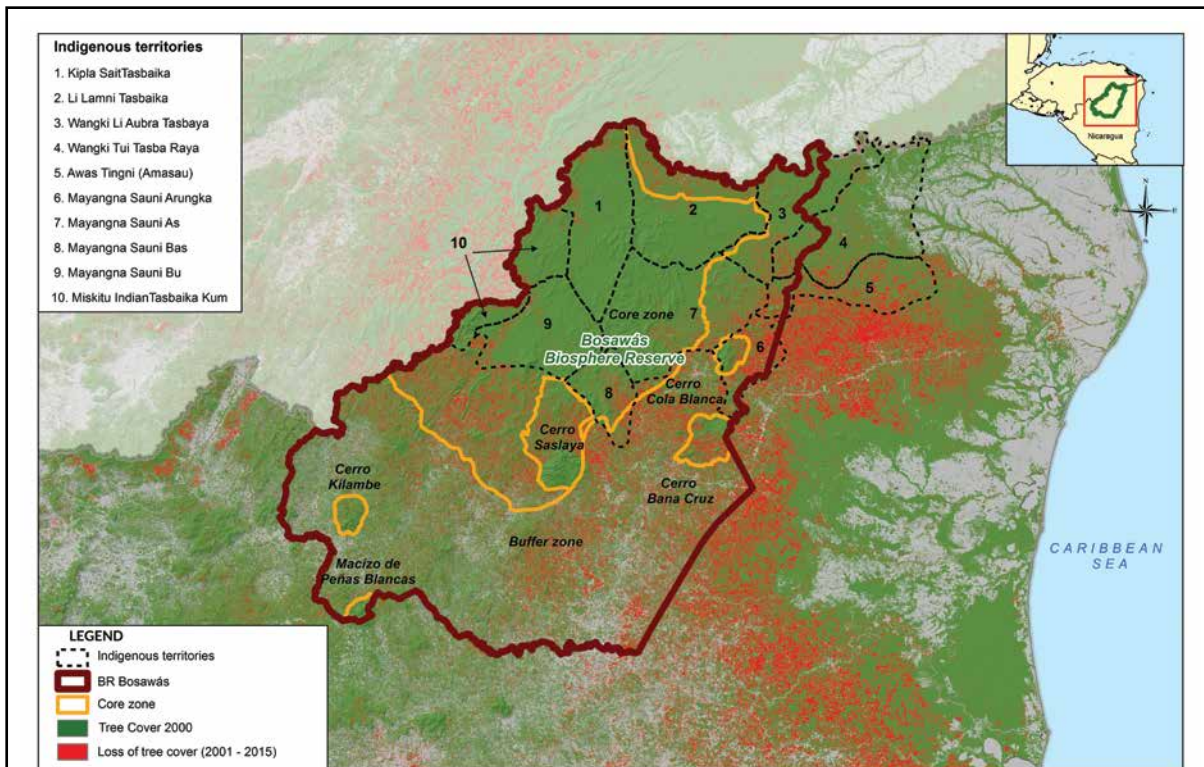
Despite this progress, significant challenges remain in the Honduran Muskitia and Rio Platano Biosphere Reserve. While the Mesoamerican Biological Corridor Project, which constructively engaged Miskitu institutions, has left a positive legacy, other projects continue with parallel organizational forms. This is the case with CLIFOR (Programa Adaptación al Cambio Climático en el Sector Forestal), which is moving forward with important work in other regions of the country, though in the Muskitia it continues to promote the institutional form of cooperatives that has been the source of so much historical controversy; local organizations claim this continues to drive conflicts over territorial institutions and resources.<sup>149</sup> Moreover, the arrangements for how to govern the Rio Platano Biosphere Reserve post-titling are still underway, and the outcome of these negotiations are still unclear.

### **Governance today in Rio Platano and Bosawas Biosphere Reserves: 20 years on**

A number of lessons can be drawn after two decades of experience in these Biosphere Reserves. German Cooperation has spent more than US\$100 million over this time period between the two. Today, both Reserves continue to face grave threats, as the national governance bodies constructed to manage them remain unable to halt the patterns of invasion on their own. In Honduras, recent titling has brought about a number of favorable changes that have opened the door for true coordination between the indigenous Territorial Councils and the ICF, though this process is still incipient (see figure 8); government-community relations in Nicaragua, on the other hand, have soured in the past several years, and land invasions are on the rise (see figure 9).







**Figure 9.** Bosawás Biosphere Reserve: Loss of tree cover, 2001–2015. Created by PRISMA based on Hansen et al (2013) and cartography of the GIZ-MASRENACE project (<https://masrenace.wikispaces.com/>)

Deforestation in Bosawás. Between 2001 and 2015, the core zone lost approximately 2.7% of its forest cover, while the buffer zone lost 7.66%.<sup>152</sup> Complementary studies between 2005 and 2015 break down these patterns inside and outside indigenous territories. During this period, annual deforestation in non-indigenous territories in the Reserve was 2.26%, in comparison with 1.07% in indigenous territories.<sup>153</sup>

In both countries, German technical staff demonstrated a tendency to opt for formal institutions and national government agencies - despite an underlying lack of local legitimacy. This preference meant that projects invested time and funds in building governance regimes that did not meet local needs and that led to muddled institutional arrangements in both Reserves. German Cooperation also focused on strengthening the municipal organizations and associated committees while paying scant attention to the importance of legitimacy in the construction of such institutional forms, especially in indigenous territories. With a few exceptions, German Cooperation limited their investments in indigenous communities to livelihood activities, which did little to bolster the capacity of indigenous organizations and governments to defend and manage their territories.

Despite a rhetorical emphasis on supporting local communities, in practice, the indigenous peoples living in and adjacent to Biosphere Reserves were often left to their own devices in the face of a violent and expanding agricultural frontier. While German development institutions allocated millions to the Bosawas programs and eventually moved toward supporting indigenous governance, the political situation by that time had become untenable and the window for enhancing community-led governance had closed. While the results in Nicaragua thus far suggest that important learning and adjustments in programming can happen over time, possibilities for engagement are still fraught in regards to the Rio Platano Biosphere Reserve. Long-term funding of institutions that explicitly competed with traditional institutions (and may be responsible for illegal land sales and facilitating deforestation) and a top-down approach to project consultation - rather than consent - have made local Miskitu leaders wary of German programming, even as they desperately need funds to support institutional development and forest monitoring and protection programs.

Neither of these experiences with German forest aid in two major biosphere reserves are wholly positive or negative, though both suggest a persistent focus on formal rules and building new institutions, rather than engagement with possibilities for governance from the ground up. Efforts to support integrated management plans and “planes de vida” (territorial “life plans”) in Honduras suggest new emphasis on directly supporting community priorities - although effective engagement with representative authorities is still in process. These experiences pose important questions for the methods and guidelines provided for German forest aid - which will be taken up again in the final section.





# Conclusions

*Photography: Andrew Davis*

This analysis provides insights into the nature of German forest aid in Mesoamerica and potential lessons for future forest aid in the region and more broadly. First, national governments clearly remain the central institutional nodes of action for German Cooperation. Framework agreements are negotiated directly with governments every two years guide the implementation of German forest aid, which has clearly influenced program content towards national government agendas and priorities. Based on quantitative figures from AidData and basic project information, we estimate that less than 15% of total German financing to the region has focused on community-based programs.

Across the region, we were able to identify a large set of economic or productive projects aimed at smallholders and communities focused on improving local income as part of a broader strategy to address environmental degradation. These projects sought to make forest use sustainable both economically and environmentally, incorporating a market orientation into incentivizing specific types of productive activities, or in ensuring the provision of ecosystem services (as in Costa Rica's PES work). German approaches to livelihoods programming call on both market and "local empowerment" discourses; however, the experiences in Mesoamerica suggest that "local empowerment" cannot be interpreted as simply "local economic projects" - despite donor tendencies to do so. Efforts to improve livelihoods in the region respond to a clear demand, but the lack of engagement with the institutions that underpin long-term resource governance calls into question the sustainability of these livelihoods interventions, suggesting a need to think more systemically about how economic activities fit into territorial processes writ-large.

This can be witnessed in Rio Platano, where local productive projects continued with local communities, despite a lack of agreement with the (at that time) largely unrecognized Miskitu authority structures. Productive projects were linked to cooperatives with little local legitimacy, and were also connected to efforts to strengthen the municipal governments and committees. These initiatives increased inequality, drove tensions, encouraged elite capture, and did little to strengthen the rule and coordination systems necessary for defending and managing the Cultural Zone against external pressures. Not only did these activities fail to address the central issues hindering territorial governance, they actually undermined Miskitu efforts to manage and defend their territory.

This case provides one of the clearest examples of how ignoring informal institutions can damage relationships and hinder the development of governance processes and sustainable livelihoods. That these issues improve post-titling raises questions for German forest aid's work in areas where rights are not yet recognized. Ignoring local authorities can be challenged on ethical and international legal grounds – yet much less recognized are the practical consequences of undermining these rural systems of authority and regulation. In the context of weak states, a failure to address such systems in a constructive fashion runs the risk of erecting complex and ambitious state-driven models which have low presence and legitimacy to local communities. Such a policy is likely a far more costly and risky proposition than investing in a process for a shared agenda between these communities and national governments.

To its credit, German forest aid in Mesoamerica has been willing to invest in communities – particularly in cases where institutions must be built from the ground up (as opposed to building on existing customary systems). It has also been bold, seeking to build new community institutional arrangements under challenging circumstances. Despite making up less than 10% of German forest aid to the region, programs that provide targeted technical support to community organizations, including in the context of ongoing community empowerment (for example, in ACOFOP and in Quintana Roo) have proved important lessons for enhancing capacity and strengthening governance processes. Of note, virtually all of this support has occurred only after rights were formally recognized.

In these cases, support for local economies is also tied to the broader rules of decision-making, resource access and management. In Gualaco and Guata, knowledge of these elements was in full display, as German support provided for meetings, deliberations and conflict resolution in order to develop the arrangements for a new community management model. Early support for technical management schemes in Quintana Roo also fall in this category, as technical knowledge was mobilized in a framework of community organization. This knowledge would later contribute to other forestry processes across the region – though largely without German coordination or support.

It is also notable that in these processes, Gualaco and Guata, Quintana Roo and the community concessions of Peten, German forest aid was able to identify contexts in which communities and governments had achieved shared agendas. The strategic technical support mobilized for these opportunities was an important part of the success in these cases. In the Peten, despite the limited support provided to ACOFOP, it nevertheless turned out to be the most effective of the considerable investment in the Department.



*Photography: Paul Redman*

Where this agreement between communities and governments is not achieved, the Bosawas program provides an unfortunate yet instructive lesson for governance. Here, after identifying the need to strengthen local organizations and implement *saneamiento*, German cooperation has limited its activities to agroforestry projects, and may be moving towards withdrawal. This demonstrates a lamentable, though preferable, option to the alternative of continuing project activities approved solely by government authorities in detriment to local organizations, as witnessed in Rio Platano in the 2000s. Notable alternatives in such scenarios also include support for dialogues to overcome obstacles in achieving shared agendas between communities and governments.

### **Reflections on aid effectiveness, legacy and the future**

The zones that have been major recipients of German forest aid continue to encounter serious difficulties. As demonstrated in the Bosawas and Rio Platano, longstanding government recipients of German forest aid (as well as very considerable complementary funding) still do not have the capacity to govern the protected areas that they declared nearly 40 years ago. In Guatemala's Peten, the state infrastructure designed to manage the region's vast forested areas, conceived and built with German support, have proven inadequate as regulatory bodies against the expansion of cattle ranching, agroindustrial expansion, and narcotrafficking. With the exception of a few small areas funded by tourism, the only place where environmental regulation functions is in the approximately half-million hectares managed by Petén's forest communities.

In Mexico, similar patterns have emerged. Vast funding has been allocated to state agencies that have relatively high capacity in comparison with their Central American neighbors, yet the institutional approach remains highly centralized, bureaucratic, and often with inadequate presence in local territories. In many cases, parallel government rules have stymied community regulatory efforts. Costa Rica is an exception in these cases, as the government has maintained a reasonable regulatory presence in enforcing protected areas and in monitoring PES contracts with landowners. Notably, their presence and capacity is weak in indigenous territories, where agreements on management have not been achieved through SINAC, though agreements have been made with the PES program (FONAFIFO).

The sum of these experiences suggest that a more integrated strategy of forging linkages and strengthening relationships between state agencies and non-state actors, in particular indigenous peoples and local communities, may be a much more effective and efficient allocation of resources. Some of the most successful experiences have emerged from such initiatives.

These conclusions are broadly consistent with calls for more resources to arrive to local communities; yet our study emphasizes that the *method* for channeling these resources to local actors is paramount. Beneath the broad and somewhat opaque project descriptions of "community engagement" and "organizational strengthening" lie the difficult job of discerning which organizations actually have regulatory capacity, which have legitimacy, a presence and a working relationship with communities, and which are merely propped up to receive donor financing. Crucially, this distinction cannot be made with a uniform policy or prescription, but can rather only be made with deep local knowledge; this local knowledge is then critical for deploying effective forest aid.

Many project staff, communities and other experts involved with German support have already learned these lessons and applied them in their work, shifting the lens through which environmental problems are defined and devised. This involves an approach that views legitimacy of the organiza-



tion as equally important as the livelihood benefits they deliver, as well as the importance of valuing communities' agendas and knowledge, whether or not they have been formally recognized. It also involves a greater understanding of institutional overlaps, interactions and pluralism, and requires a shift away from regulations as merely coercive measure from above towards an approach that cultivates cooperation among and between social groups. Many of these individuals also demonstrate important knowledge on the evolution of collective governance processes, including understanding the social and economic context in which rights are recognized, and the implications for how communities come to govern their forests.

Our research revealed, however, that this knowledge has not been mainstreamed within German forest aid networks. In a number of cases, major projects, at regional and national levels, with direct interaction with large scales of community forests, for example, demonstrated little awareness of the lessons learned from these decades of experience. This finding suggests an important opportunity not only to scale up financing to such initiatives, but make existing support much more effective through a deliberate coordination of these lessons within the ranks of German forest expertise. Such work would be relevant both for Mesoamerica as well as the many parts of the world that are beginning to consider or are already implementing stronger community governance models, with large forests that are critical for climate change and biodiversity, such as in Peru, Colombia, and Indonesia.

## Recommendations:

German cooperation has some of the deepest experience across the region in working with governance, incorporating the institutions of indigenous peoples and local communities. This experience will be key in meeting the ongoing challenge of making sure that financial and technical support actually translate into on-the-ground changes. The following recommendations seek to amplify the impact of this work and make it more efficient and effective:

- Engage the organizations that are legitimate and accountable in the eyes of local communities as full partners in conservation and forest governance. These indigenous and traditional authorities have long histories of conservation and struggle to defend their territories; providing technical and productive support within the framework of agreements with such territorial authorities is a major opportunity to enhance the impact of forest aid.
- Prioritize assistance to areas where such territorial authorities have achieved shared agendas with national governments.
- Where agreements have not been achieved, avoid engagement in local territories approved only by national governments, especially when involving potential competition with endogenous local organizations; such efforts have shown to be ineffective or counterproductive. Alternatives for such situations include promoting dialogue between such actors to arrive at shared agendas.
- Ensure careful investigation and monitoring of local processes to allow for deep knowledge and discernment for supporting complex multi-actor scenarios.
- Mainstream knowledge regarding dynamics of community-rights processes to more fully incorporate such lessons into program development. This can be applied both to engagement with communities, as well as in policy advice at national levels which frequently remain disarticulated from community management processes. It can also contribute to learning within and between forest aid programs, as well as to strengthen global knowledge on this issue, especially where community-rights models are just emerging.

## APPENDIX

**Table 3. German Projects in Bosawas, 1994- present.**

Start	End	Name of Project	Agency	Counter-part	Total Amount (in US\$)*
1994	2004	Resource Protection and Rural Development in the BOSA-WAS Region (Bosawas Project)	GTZ	SREC/MARENA	12,303,681
2000	2003	Resource Protection and Rural Development in the BOSA-WAS Region (Bosawas Project)	KFW	SREC/MARENA	2,699,008
N/A **		Resource Protection and Rural Development in the BOSA-WAS Region (Bosawas Project) agroecoeconomic buffer zone management	DED	SREC/MARENA	1 expert
2004	2007	Strengthening the Capacities of Indigenous Decision-makers in Meso-America for the Implementation of Article 8j of the Biodiversity Convention'	GTZ	URACCAN / IREMADES	163,416
2005	2013	Sustainable Management of Natural Resources and Strengthening of Entrepreneurial Capacities (MASREN-ACE)	GTZ	SREC / MARENA	18,102,331
N/A**		Conservation and Sustainable Use of Natural Resources Agroforestry in the area of Siuna-Bonanza-Rosita	DED	INAFOR	2 experts
2006	2011	Land planning program	DED	Mayang-na Sauni Arungka	1 expert***
2011	2012	Development with indigenous identity (INAP) application of the AVAR methodology	KFW	Nuevo FISE	8,434,400
2013	2017	Biodiversity conservation and local development in the Mesoamerican Biological Corridor	GIZ	CCAD	6,632,580****

Source: BMZ Report "Biodiversity in German development cooperation" 2002 a 2016 / GIZ Website

\* The amounts originally in euros were converted to dollars with the average conversion rate of decembre 2016.

\*\* BMZ reports does not give dates for DED support

\*\*\* Alternative Source: Interview N 9

\*\*\*\* Shared budget in bi-national project

**Table 4. German Projects in Río Plátano, 1997- present.**

Start	End	Name of Project	Agency	Counterpart	Total Amount (in US\$)*
1997	2007	Protection of the Río Plátano Biosphere Reserve (as a part of the Social Forestry Program / PSF)	KFW	COHDEFOR	9,393,813
1997	2005	Protection of the Río Plátano Biosphere Reserve (as a part of the Social Forestry Program / PSF)	GTZ	COHDEFOR	5,308,400
2004	2011	Program “Promotion of the Sustainable Management of Natural Resources and Local Economic Development” - PRORENA. Phase I and Phase II, Río Plátano component	GTZ	ICF	10,396,346**
2011	2013	Program “Promotion of the Sustainable Management of Natural Resources and Local Economic Development” - PRORENA. Phase III, Component of Natural Resources Management	GIZ	ICF	4,430,250**
2006	2012	Rural Municipal Development and Conservation of Río Plátano	KFW	Secretariat of the Presidency	15,287,350
2010	2016	Project of communal territorial ordering and protection of the environment in Río Plátano (PROTEP)	KFW	Secretariat of the Presidency	7,063,810
2013	2017	Biodiversity conservation and local development in the Mesoamerican Biological Corridor	GIZ	CCAD	6,632,580***

Source: BMZ Report “Biodiversity in German development cooperation” 2002 a 2016 / GIZ Website

\* The amounts originally in euros were converted to dollars with the average conversion rate of decembre 2016.

\*\* Alternative source: Secretaría de Finanzas de Honduras

\*\*\* Shared budget in bi-national project



## Acronym list

AA:	German Federal Foreign Office
ACOFOP:	Association of Community Forests of the Petén
AFE-COHDEFOR:	Honduran Corporation for Forest Development
AVAR:	Result Based Learning
BMUB:	Federal Ministry for Environment, Nature Conservation
BMZ:	Federal Ministry for Economic Cooperation and Development
CAC:	Central American Agricultural Council
CADPI:	Center for the autonomy and development of the indigenous people
CATIE:	Tropical Agricultural Research and Higher Education Center
CCAD:	Central American Commission on Environment and Development
CCMSS:	Mexican Civilian Council for Sustainable Forestry
CEJUDHCAN:	Center for Justice and Human Rights of the Atlantic Coast of Nicaragua
CEMEC:	Center for Evaluation and Monitoring
CBM:	Bi national Mesoamerican Biological Corridor
CLIFOR:	Climate Change adaptation in the forestry sector program
CNB:	National Bosawas Council
CONABIO:	National Commission for the Knowledge and Use of Biodiversity.
CONADETI:	National Commission for Demarcation and Titling
CONANP:	National Commission for Natural Protected Areas
CONAP:	National Council of Protected Areas
CVT:	Territorial Vigilance Committee
DED:	German Development Service
EIA:	Environmental Agency Report
EU:	European Union
FISE:	Emergency Social Investment Fund
FAO:	Food and Agriculture Organization
FONAFIFO:	National Forestry Financing Fund
FORESCOM:	Community Enterprise
FPIC:	Free, Prior and Informed Consent
FSC:	Forest Stewardship Council
GIZ:	German Society for International Cooperation
GTI:	Indigenous Territorial Governments
GTZ:	German Technical Cooperation
IACHR:	Inter-American Commission on Human Rights
IARNA:	Institute of Agriculture, Natural Resources and Environment
ICF:	Institute of Forest Conservation
IICA:	Inter-American Institute for Cooperation on Agriculture
ILO:	International Labour Organization
INAFOR:	Forest National Institute
INAP:	Development with indigenous identity
IREMADES:	Institute of Natural Resources, Environment and Sustainable Development
MARENA:	Nicaraguan Ministry of Natural Resources and Environment
MASRENACE:	Sustainable Management of Natural Resources and Strengthening of Entrepreneurial Capacities
MASTA:	Mosquitia Asla Takanka

MBR:	Maya Biosphere Reserve
NGO:	Non-Governmental Organization
ODA:	Official development assistance
ODETCA:	Territorial Planning and sustainable Development in Central America
OECD:	Organization for Economic Cooperation and Development
PES:	Payment for environmental services
PPF:	Plan Piloto Forestal
PRORENA:	Promotion of the Sustainable Management of Natural Resources and Local Economic Development
PROTEP:	Project of communal territorial ordering and protection of the environment in Río Plátano
PSF:	Social Forestry Program
RACCN:	Northern Caribbean Autonomous regions of Nicaragua
RACCS:	Southern Caribbean Autonomous regions of Nicaragua
REDD:	Reduction of Emissions from Deforestation and Forest Degradation
RIBCA:	Bri Bri-Cabecar Indigenous Network
RRI:	Rights and Resource Initiative
SEGEPLAN:	Secretariat of Planning and Programming of the Presidency
SEMARNAT:	Environment and Natural Resources Secretariat
SICA:	Central American Integration System
SINIT:	Honduran National System of Territorial Information
TNC:	The Nature Conservancy
SINAC:	National System for Conservation Areas
SREC:	Secretariat for Economic Relations and Cooperation
UNESCO:	United Nations Educational, Scientific and Cultural Organization
UNICAF:	Union of Agroforestry Cooperatives of the Rio Plátano Biosphere Reserve
URACCAN:	University of the Autonomous Regions of the Nicaraguan Caribbean Coast
USAID:	United State Agency for International Development

## Notes

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- 144 Interview N 20
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- 149 Interview N 15, 17
- 150 Deforestation data produced by Clark University, based on Hansen et al. (2015) and World Database on Protected Areas
- 151 Calculated by authors based on Hansen, M. C., P. V. Potapov, R. Moore, M. Hancher, S. A. Turubanova, A. Tyukavina, D. Thau, S. V. Stehman, S. J. Goetz, T. R. Loveland, A. Kommareddy, A. Egorov, L. Chini, C. O. Justice, and J. R. G. Townshend. 2013. "High-Resolution Global Maps of 21st-Century Forest Cover Change." *Science* 342 (15 November): 850–53. Data available online from: <http://earthenginepartners.appspot.com/science-2013-global-forest>.  
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This results are congruent with previous studies highlighting lower deforestation rates of indigenous territories as opposed to non-indigenous lands, for example in Stocks et al (2007) Indigenous, colonist, and government impacts on Nicaragua's Bosawas reserve. *Conservation Biology* 21(6): 1495-1505



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