CIF CLIMATE INVESTMENT FUNDS

TREE TENURE, LAND TENURE, TIMBER, AND AGRICULTURE: GHANA'S HUMAN-FOREST NEXUS

Dissecting the legislative, economic, and social transformations in Ghana's agriculture and forestry symbiosis

// January 2023

CLIMATE DELIVERY INITIATIVE SERIES //

Case Study

CIF Program: FIP

TOPICS

- Forestry
- Climate-Smart Agriculture
- Rural Poverty Reduction

ACKNOWLEDGMENTS

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PROJECT DATA

PROJECT TITLE	Engaging Local Communities in Reducing Emissions from Deforestation and Forest Degradation (REDD+) / Enhancement of Carbon Stocks (ELCIR+)
PARTNER ORGANIZATION/S	Climate Investment Funds' (CIF) Forest Investment Program (FIP) and the African Development Bank (AfDB)
COUNTRY	Ghana
SECTOR/S	Forestry, Climate-Smart Agriculture, and Livelihoods
TOTAL PROJECT COST	USD15.826 million — comprising the following amounts: USD5.328 million (African Development Fund, Grant) USD9.75 million (CIF's Strategic Climate Fund [SCF], Grant) USD0.748 million (Government of Ghana, cash & kind)
PROJECT DURATION	Jan 24, 2014 – Dec 31, 2020 (6 years, including 1-year extension)
DELIVERY CHALLENGES	• Insufficiencies in early-stage analytics — loss of support for the pre-project preparation grant component • Beneficiary targeting — competing interests and evolving incentive structures • Risk and reward perceptions — reluctance of uptake due to perceived costs of tree integration • Incongruent procedures for realignment, procurement, and financial management
DEVELOPMENT CHALLENGE	• Rapid deforestation driven by agriculture (cocoa) and logging • Rural poverty and lack of alternative livelihoods
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EXECUTIVE SUMMARY

KEY MESSAGES

The ambitiousness of the multimodal intervention, and its delivery at both the macro-policy and micro-practice levels, proved effective in accommodating the full gamut of variables across the forest-human nexus.

Coaction, aligning multifaceted and competing climate, economic, and environmental objectives, was feasible because all constituent parties had voice and agency in design and decision-making.

Beneficiary-centricity, including clear identification of opportunity costs and their drivers, supported by continuous feedback from end-recipients, was a crucial determinant of relevance and long-term sustainability.

At time of approval of AfDB's ELCIR+ project in 2014, Ghana had an estimated annual deforestation rate of two percent, driven largely by agricultural expansion and wood harvesting, and generating a host of risks: environmental degradation leading to ecosystem stresses, soil and nutrient erosion, and watershed losses; and the depletion of carbon sinks contributing to global climate change and localized climate vulnerabilities.

Of the Ghanaian population, more than 13.3 percent still lived below the poverty line, despite significant natural resource endowments (gold, oil, fertile lands) and rapid economic growth in the recent decades. Gains had been concentrated in urban areas, deepening income inequalities, and rural incomes remained heavily dependent on agriculture and forestry, both offering minimal incomes, and both driving deforestation and forest degradation.

Faced with a dearth of alternative income sources, rural farmers relied on forest-extractive fuelwood and charcoal production for subsistence and livelihood, particularly during the "hungry months" between agricultural yields when incomes and capital were low. Frequent wildfires resulted in costs amounting to three percent of Ghana's gross domestic product in 2006, driven by autogenous combustion of desiccant vegetation in dry seasons, and by anthropogenic slash-and-burn fires spreading uncontrolled. Alongside the rapid decline of tree cover and enlarging swaths of degraded land in non-forest reserve areas, there remained also a sustained and significant demand for timber. However, despite the widespread rural poverty, there was limited community participation in the industry, and therefore, ownership of timber resources, with incomes accruing only to industrial, and sometimes illegal, agents.

Members of the soap-making startup enterprise of Tanoano community, Ahafo Region

Within this frame, the CIF-FIP funded ELCIR+ project sought to establish a sustainable human-forest symbiosis in Ghana, with measures to increase household earnings while shifting rural income generation away from dependencies on unsustainable forest-extraction, and buttressing procedures for regenerative timber harvesting, equitable timber benefit sharing, and yield-increasing agroforestry systems. This case study examines the challenges encountered, and significant wins made, in delivering this via a collaborative and ambitious all-stakeholder, multi-modal approach.

BOX 1. Lessons for Future Interventions

- **Multimodal interventions are worth the effort**
  The ambitiousness of the multi-modal intervention, and its delivery at both the macro-policy and micro-practice levels, proved effective in accommodating the full gamut of variables across the forest-human nexus, thereby initiating a system-wide paradigm shift that far outweighed the early complexities in design and management.
- **Grants allowed for the establishment of a multistakeholder, collaborative approach that will outlive the program**
  Coaction, aligning multifaceted and competing climate, economic, and environmental objectives, was feasible because all constituent parties had voice and agency in design and decision-making. The cohesiveness and dynamism engendered by the all-party steering community was a hallmark of the project's success. Strong leadership on part of government and civil society, along with a resolute commitment to outcomes, remain the primary drivers behind the success of Ghana's forestry sector transformation.
- **Understanding beneficiaries is key to program success and sustainability**
  Beneficiary-centricity, including clear identification of opportunity costs and their drivers, supported by continuous feedback from end-recipients, was a crucial determinant of relevance and long-term sustainability, underscoring the case for early-stage validation via piloting, surveying, and thresholds setting.

LIST OF ABBREVIATIONS

AfDB	African Development Bank
AD	Adaptation Fund
BUCAD	Bureau of Community Action and Development
CIF	Climate Investment Funds
COCOBOD	Cocoa Board
CREMA	Community Resource Management Area
CRI	Crop Research Institute
CRIG	Cocoa Research Institute of Ghana
CSIR	Council for Scientific and Industrial Research
ELCIR+	Engaging Local Communities in REDD+/ Enhancing Carbon Stocks Project
ENFAL	Enhancing Natural Forest and Agroforest Landscapes
EU	European Union
FC	Forestry Commission
FIP	Forest Investment Program
FMNR	Farmer Managed Natural Regeneration
FORIG	Forest Research Institute of Ghana
FSC	Forest Services Division
GFIP	Ghana Forest Investment Plan
GHG	Greenhouse Gas
GIS	Geographical Information System
GPS	Global Positioning System
HFZ	High Forest Zone
IFC	International Finance Corporation
MDB	Multilateral Development Bank
MLNR	Ministry of Lands and Natural Resources

MoFA	Ministry of Food and Agriculture
MRV	Measurement Reporting and Verification
MTS	Modified Taungya System
NDC	Nationally Determined Contribution
NGO	Nongovernmental Organization
PPG	Project Preparation Grant
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RMSC	Resource Management Support Centre
SCF	Strategic Climate Fund
SRI	Soil Research Institute
TTL	Task Team Leader
TUC	Timber Utilization Grant

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1. INTRODUCTION

This case study examines the Engaging Local Communities in Reducing Emissions from Deforestation and Forest Degradation (REDD+) / Enhancement of Carbon Stocks (ELCIR+) project in Ghana — a multimodal intervention designed to buttress the country's ambitious targets for reforestation and rural poverty reduction. The lines of delivery focused on forest-adjacent communities, where sustenance, livelihoods, and habitation patterns remain closely intertwined with the forest ecosystem. In a context where the expansion of rural economies (largely agriculture and timber-based) was inseverable from forest encroachment, ELCIR+ aimed to establish a synergistic and viable architecture that supported livelihoods, the environment, and climate resilience in Ghana, at both the policy and practice levels.

Within ELCIR+'s ambitious design, a multitude of foci (tree tenure; economic diversification; climate-smart agriculture; agroforestry-based afforestation; timber plantation-based reforestation; ecosystem enrichment; and woodland protection), coalescing a multitude of actors (national ministries and agencies; research institutions; smallholder farmers; cocoa industrialists; and timber industrialists), would cofunction to elevate rural incomes, while increasing forest cover. The approach proved effective: ELCIR+ surpassed its targets on nearly all performance indicators, often by large margins.

The complexities of such a heterogenous approach, however, raised significant barriers that bridled the project's progression toward maximal results, and required adaptiveness, innovation, and resolution to address.

Beehive, apiary startup enterprise of Kwarte Community, Bono Region

This study seeks to identify and examine these challenges, honing in on the barriers to implementation *unforeseen* at project design, either in manner or magnitude. In addition, it aims to dissect their contexts, drivers, and characteristics, and those of the solutions used to address them. As such, this study provides concrete instruments and safeguards that may be of use for future interventions and actors.

Francis Cudjoe (Project Manager, BUCAD) speaks with members of the soap-making startup enterprise of Tanoano community, Ahafo Region

2. CONTEXT

2.1. The Political Economies of Forest Carbon

Policies and actions on forest carbon often traverse the intersection and fault lines between the economic dividends from forest-extractive industries, on the one hand, and the climate, environmental, and ecological dividends from reforestation, on the other. Crucially, whereas gains from forest extraction accrue directly to the domestic population immediately, dividends from reforestation are distributed to the global population at large and over a more protracted timeline. All costs, however, are incurred locally. **As such, localized incentives for generating globalized reforestation dividends need to be augmented sufficiently to surpass any curtailment of incomes from forest extraction.**

For Ghana, a country with a poverty rate of 24 percent at project inception,[1] the related arbitration of marginal benefits is a pivotal determinant of national policies and local behaviors. The agriculture and timber sectors, both of which compete for forest land use, employ 45 percent of the workforce but at less than half the national average wage rate.[2] It is thus vital for any forest regeneration actions, particularly those that reshape entrenched but unsustainable extractive practices, to ensure equitable and attractive alternate income pathways for rural participants, while formalizing a reorientation of policies, perceptions, and behaviors with regard to agri-timber-forest symbioses. **In order to establish an autonomously regenerative human-forest alliance, the Ghana Forest Investment Plan (GFIP) needs to establish legislative, economic, and social transformations in Ghana's forestry architecture.**

2.2. Forests and the Ghanaian People: Agriculture, Timber, and the Human-Forest Nexus

Forests have long been the backbone of Ghanaian society. It is, for some, a source of income, and for many, a source of history, religion, and faith. Economic and population growth in Ghana, however, have produced in-step growth in forest-encroaching production with significant environmental and livelihood externalities:[3] the World Bank estimates that the country's economic cost of deforestation was over USD400 million in 2017.[4] The reduction in its forest cover has been significant in recent decades — 2.7 million hectares (ha) (over 60 percent) lost from 1950 to 2000,[5] and a further 20 percent lost from 2000 and 2021.[6] This translates into an annual loss rate of 2 percent, or 135,000 ha, as of 2021 — one of the highest in Africa. **The resulting reduction in carbon stocks, along with carbon-intensive transport and processing systems, makes the forestry sector the largest contributor to greenhouse gas (GHG) emissions in Ghana**.[7]

Deforestation is driven largely by unsustainable agricultural expansion practices (primarily with cocoa), illegal logging, illegal mining, charcoal production, and wildfires,[8] and exacerbated by policy and practical challenges in addressing them. The prevalence of small-scale, community, and subsistence-based forest encroachment in Ghana is marked by pervasive and incremental forest degradation, gradually leading to deforestation, in contrast to the large-scale, industry-led frontier deforestation of many REDD+ countries.[9] **This underscores the importance of individual- and community-level afforestation approaches in the Ghanian context.**

2.3. Cocoa Cultivation — Shade or Sunlight?

Cocoa cultivation is responsible for two-thirds of forest loss in Ghana,[10] which is congruent with its role in the national economy: Ghana is the world's second-largest cocoa producer, and the crop ranks third in the country's exports, providing annual revenues of approximately USD1.28 billion in 2020.[11] The burgeoning global demand for chocolate has spurred the use of faster- and higher-yielding but less forest-conducive crop varieties: **"full-sun cocoa" that thrives in direct sunlight, and therefore requires the removal of native trees in agricultural tracts, has been displacing traditional, "shade cocoa" that is cultivated beneath the canopy of larger trees due to its preference for the shade.**

Moreover, full-sun cocoa also exhibits greater sensitivities to external shocks — temperature fluctuations, pests, and pathogens. In contrast, shade varieties provide plenty of benefits, with mounting evidence of more stable yields in the long run. Its cohabitation with carbon-sinking tree stocks enhances soil fertility, biodiversity, and groundwater tables, while creating functional ecosystems better able to thwart parasitic infestations. **This has provided greater license for state and international climate, agricultural, and environmental actors to invest in and advance the uptake of tree-integrated, agroforest cocoa systems.**

BOX 2. Who Owns Ghana's Trees?

While both land tenure and tree tenure are well established in Ghanian law, the latter is often tenuous in practice.

- **On-Reserve Areas,** accounting for 15-16 percent of the country's woodlands, fall under the purview of the state: **while allodial titles may be held by local chieftains, governance of land use and ownership of inhabitant natural resources fall fully within the mandate of Ghana's Forestry Commission (FC).**
- **Off-Reserve Areas** are fully owned and managed by the general populace, under individual, family, or community (chieftain or stools) tenure. However, by law, the state owns the commercial rights to all naturally occurring trees in Ghana, including in off-reserve areas. As such, **off-reserve landholders can only claim commercial rights to those trees propagated explicitly by them, with proprietorship established by formal registration with the FC.**
- **Sacred Groves, demarcated** across the country, but more predominantly in High Forest Zones, are sometimes the last remaining forest enclaves in human habitant landscapes, thereby constituting important sanctuaries for endemic flora and fauna. **These virgin forests are preserved and protected by nongovernmental religious and/or cultural groups seeking to safeguard communities' age-old relationships with the forest.**

2.4. Benefit Sharing from Timber Harvests as an Equitable and Catalytic Driver for Reforestation

A primary modality of reforestation in Ghana is the establishment of plantation-timber forests in degraded woodlands, allowing for periodic, agglomerated tree growth, while also providing dependable and demarcated supply lots for the lumber market. Another is the introduction of canopy trees into agricultural systems, thus allowing for the integration of carbon sinks into Ghana's vast agrarian territories, with potential secondary dividends, if and when shade trees are eventually felled for timber.

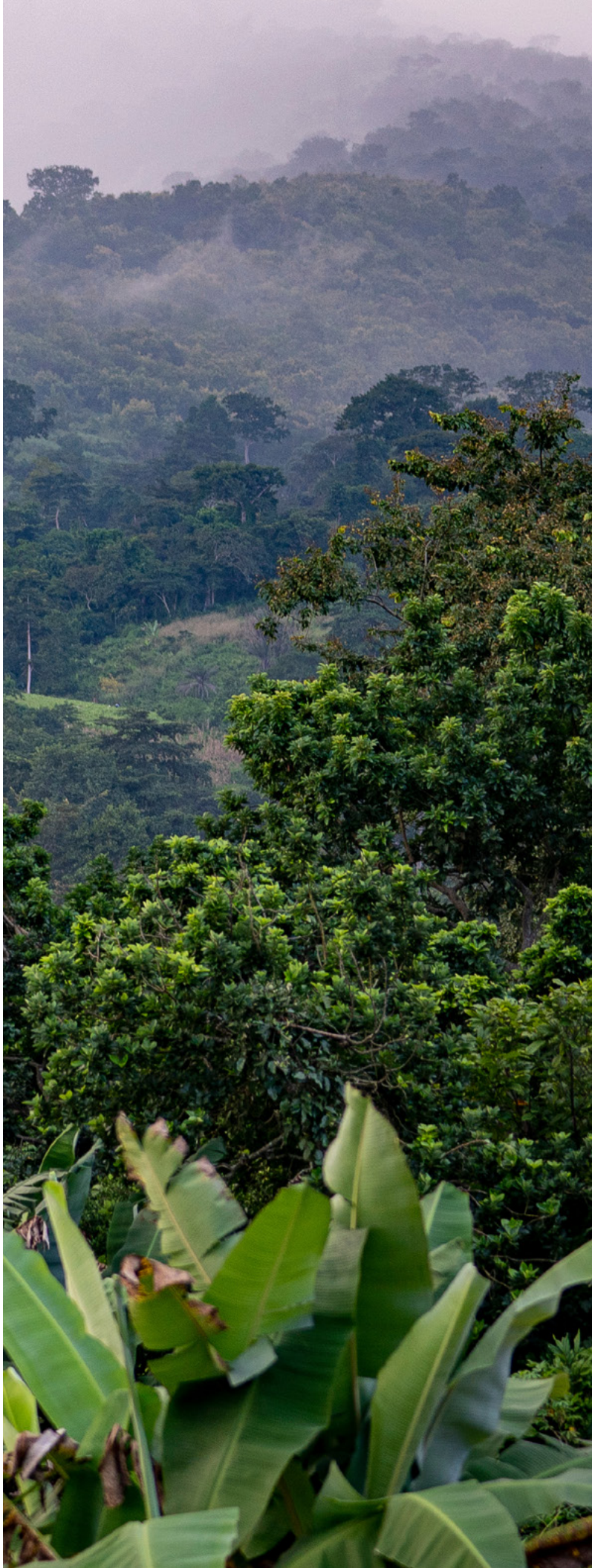
Key to ensuring community participation in such programs is a formalized and enforceable benefit-sharing protocol that fairly apportions monetary and non-monetary gains among participant entities. Here, **Ghana faces challenges on multiple fronts: the timber industry has skirted the formalization of benefit-sharing mechanisms; state agencies lack the workforce to enforce the schema ubiquitously; and the all-party agreement on the apportionment of commensurate values has been stuck at a drawn-out impasse.**[12]

The Timber Resource Management Act of 1997 and its amendment in 2002 are the first-of-its-kind laws defining tree dividend distributions in Ghana.[13, 14, 15]

Ghana is also expected to be one of the first African countries to issue timber licenses in accordance with the European Union's (EU) Forest Law Enforcement, Governance and Trade Regulations, ensuring that timber exported to the EU, accounting for over 40 percent of all Ghanaian timber consignments, meet threshold requirements.[16] However, **tracking and managing the vast geographic distribution of individual timber assets and the benefit-sharing arrangements are mammoth tasks, and given that a large share of logging happens outside of the law, so also do the arrangements for benefit sharing.**

The resultant informal and ad-hoc settlements among timber companies, landholders, and farmers have been rife with issues: **industrial loggers hold the most sway (if not all) in determining the share of value paid to rural landowners; compensation to landowners for property and crop damage during logging is often absent or insufficient; and the entrenched economies and recurrent practices of exploitation have stunted the appetite for, or created perverse incentives within, formalized reforestation programs.**

Furthermore, while legislation on tree tenure exists, clear and direct definitions or legislation on carbon rights do not.[17] In consequence, the capture of additional benefits, such as through carbon pricing in forestry projects, is very limited. This suggests that there is still a vast array of untapped tools to incentivize private sector participation in sustainable forestry.[18] **In sum, at the time of ELCIR's inception in 2014, the potential for spurring carbon stocking via benefit sharing remained largely underexploited in Ghana.**



BOX 3. The 5 Major Context-Specific Benefit-Sharing Mechanisms Operationalized

CONSTITUTIONAL TIMBER REVENUE-SHARING ARRANGEMENT (1992, GHANIAN CONSTITUTION)

Ensuring distribution of dividends to state and local communities

FC: 50% (management fee); District Assemblies: 25%; local chiefs / stool and related traditional / administrative offices: 25%

Successes: **Revenue share provided to district assemblies highly useful and in delivering distributive, locally driven development projects / solutions**
Challenges: **Absence of provisions for benefit sharing with farmers / tenants stunting incentives for tree interspersion in agriculture.**

TAUNGYA SYSTEM (1928)

Coupling plantation establishment with agroforestry

(Distribution of commercial rights unchanged)

Success: **Improved carbon stocks while addressing shortages in arable lands.** Farmers were offered degraded forest areas, if they also cultivated fast-yielding timber seedlings, provided by FC, alongside crops.

Challenges:
1. Growing timber to full maturity competed with incomes: Canopy trees reduce light penetration to understories, thereby constraining crop varieties / yields.
2. Transitory nature of tenancy involved recurrent latency periods and costs: A 3-year limit required the relocation and reestablishment of farmlands.
3. No tree tenure or commercial rights were provided for farmers: This curtailed incentives to support growth to maturity.
4. The formidable governance requirements proved untenable as the system expanded in acreage, and where expansion resulted in a degree of elite capture: The entry of large-scale commercial farmers, operating with hired labor and at a larger scale, compounded challenges in both oversight and control.

MODIFIED TAUNGYA SYSTEM (MTS, 2002)

Adding provisions for tenant farmers

FC: 40% (management fee); Farmers: 40%; Landowners: 15%; Forest Fringe Communities: 5% (protection against encroaching, illegalities, wildfires, etc.)

Success: **More nuanced distribution of commercial rights** spread across a range of stakeholders (farmers, communities, government, and landowners), in lieu of sole state ownership

Challenges: **A lack of detailed knowledge about MTS and uncertainty regarding its enforceability hindered uptake** by rural smallholders, while competing interests from private commercial forest plantations acted to displace smallholder-centric MTS schemes.

COMMERCIAL PRIVATE PLANTATION REVENUE SHARING (2002)

Incentivizing private sector participation in forest plantations

Via FC's Forest Plantation Development Fund —Developer: 66.6% (if land not self-owned), Landowners: 33.3%
On-reserve — Developer: 90%; Landowner: 6%; FC: 2%; Community: 2%

Successes: **highly attractive incentive structures**
Challenges: **benefit sharing minimal for local communities**

COMMUNITY RESOURCE MANAGEMENT AREA (CREMA, 2000)

Utilizing collective, community forest management

First established by the Wildlife Commission to enable communities' autonomous balancing of trade-offs between hunting and wildlife conservation, the model was reoriented and redeployed for forest management by GFIP's Enhancing Natural Forest and Agroforest Landscapes (ENFAL) project.

Built on traditional democratic governance structures and values, CREMAs rely on **communities' independent assessments, negotiations, and enactments of holistic resource management strategies, which are buttressed by the legislative and capacity support of relevant agencies.** Revenue generation and self-sustainability for operations and community development are embedded in the design. **The devolution of decision-making to ecosystem participants, in place of prescriptive, top-down strategies, has seen enhanced relevance and growth that are likely to be sustained in the long term.**

3. THE PROJECT

3.1. Development Challenge: Rural Economic Growth and Acute Deforestation

High Poverty Rates and Worsening Inequality. Despite significant natural resource endowments (gold, oil, and fertile lands) and rapid economic growth in recent decades, more than 13.3 percent of Ghanaians still live below the poverty line. Income inequality has also worsened –the country's GINI coefficient increased from 35.3 in 1987, reaching 42.4 in 2016, with Ghana ranked 66th out of the 82 countries measured.[10]

Uneven Sectoral Transformations and Widening Rural-Urban Divide. Much of Ghana's economic growth has been marked by a shift from traditional agriculture to wage employment and non-agricultural self-employment, with services (45 percent) replacing agriculture as the dominant sector.[19] Gains are concentrated in urban areas, with rural growth limited, particularly in the agri-dominant North, Upper East, and Upper West. For example, in urban Greater Accra, the poverty rate more than halved (13.5 percent to 5.6 percent) from 2006 to 2013, whereas in the Northern region, it declined modestly (55.7 percent to 50.4 percent). Nationally, the urban-rural poverty gap doubled between 1990 and 2016, even though rates have continued to drop in all regions.[20]

Modest Agricultural / Forestry Incomes and Rural Poverty Traps. Rural incomes remain heavily dependent on agriculture and forestry, both offering minimal incomes. This dependence, along with slower rural rates and limited access to infrastructure and public services, has worsened households' prospects of breaking out of poverty cycles.

Francis Cudjoe (Project Manager, BUCAD) and a beekeeping entrepreneur from the Kwarte community, Bono Region

Livelihoods-Driven Deforestation and the Rapid Depletion of Carbon Stocks. At project approval in 2014, Ghana had an estimated annual deforestation rate of 2 percent, driven largely by agricultural expansion, particularly in cocoa (50 percent) and wood harvesting (35 percent),[21] along with wildfires and mining. The reductions in tree cover have raised all associated risks, with environmental degradation leading to ecosystem stresses, soil and nutrient erosion, watershed losses, etc., and the depletion of carbon sinks contributing to global climate change and local climate vulnerability.

Intercropping, Kwarte, Bono Region

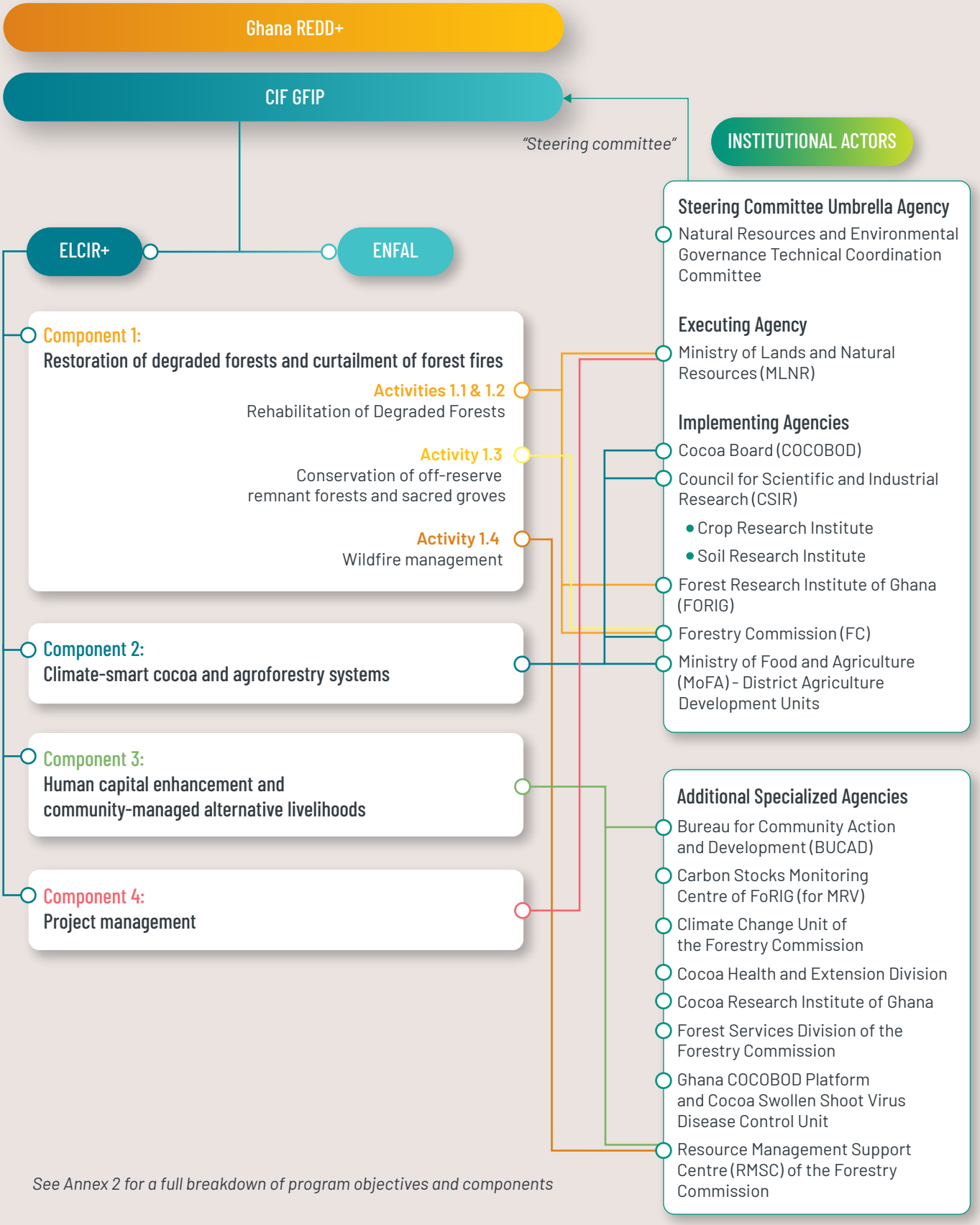
3.2. Intervention: ELCIR+, Buttressing Household Incomes while Incentivizing Reforestation

Over the 6 years of its implementation (2014–2020), ELCIR+ sought to achieve institutional, economic, and social transformations in Ghana's human-forest nexus, supporting national agencies to (1) reforest via the establishment of forest plantations on degraded community lands; (2) strengthen tandem land use by increasing the prevalence, viability, and vitality of agroforestry systems, with a weighted focus on trees in cocoa farms; and (3) displace unsustainable forest dependencies by diversifying or enhancing rural economies. Implicit within all the approaches was the mobilization of the communities' historic guardianships of forest and agricultural ecosystems, with the long-term aim of institutionalizing symbiotic agricultural, industrial, and environmental associations.

3.3. Results

ELCIR+ exceeded its targets on nearly all indicators, often with large margins, reflecting the potential gains from multistakeholder collaborations across economic fault lines. Cocoa farmers are now active agents of forest cover additions in Ghana, and forest agencies are enhancing rural incomes, as well as the health and resilience of agricultural ecosystems. By project completion in 2020, ECLIR+ had re-established 5,053 ha of degraded forests, increased tree density in 42,652 ha of farming systems, enhanced 832 ha of off-reserve remnant forests and sacred groves, and established 1,117 ha of woodlots, thereby securing a total of 49,654 ha of forests and agroforests. In the process, it also improved the livelihoods of 15,226 rural beneficiaries, of which 7,488 were women.

FIGURE 1. From REDD+ to GFIP to ELCIR+ and ENFAL, an All-Stakeholder, Multi-Modal Approach



See Annex 2 for a full breakdown of program objectives and components

4. DELIVERY CHALLENGES

This study differentiates between delivery and development challenges: the former refers to barriers encountered in *operationalizing* a project designed to address the latter. Specifically, development challenges refer directly to the core objectives that are defined at the project's conception and that drive the implementation (outlined for ELCIR+ in section 3, above), while delivery challenges refer to the non-technical problems that hinder interventions and practitioners in translating the technical solutions into results on the ground.

The case focuses on the following four delivery challenges:

1 **[Jan 2014] Insufficiencies in Early-Stage Analytics — Loss of Support for the Pre-Project Preparation Grant Component**

A change in the national administrations following the 2016 elections and the agencies' resultant unfamiliarity with the full value of a pre-project component led to ELCIR+ proceeding to implementation without the crucial piloting phase. A conservative spending orientation on the part of the new administration, challenges in allocating reimbursable pre-project funds from stringent government budgets, and a perceived absence of immediacy of results might have compounded the reluctance in executing a pre-project component.

2 **[Nov 2014- Feb 2018] Beneficiary Targeting — Competing Interests and Evolving Incentive Structures**

The communities' uptake of allocating plots for forest plantations was stunted by emergent competitive land use offerings with more immediate financial returns than timber's protracted yield times, thereby engendering new opportunity costs. The collective-action approach, focusing on community-led rather than individual participation, was dampened by emergent perceptions of collective-action risks. Areas earmarked for plantations during project appraisal had therefore become less compatible at time of implementation, with the evolving economic drivers displacing the assumption that expected future incomes from plantation timber would provide sufficient incentive for communities to convert plots to plantations.

3 **[Nov 2014 – Feb 2018] Risk and Reward Perceptions — Reluctance of Uptake Due to Perceived Costs of Tree Integration**

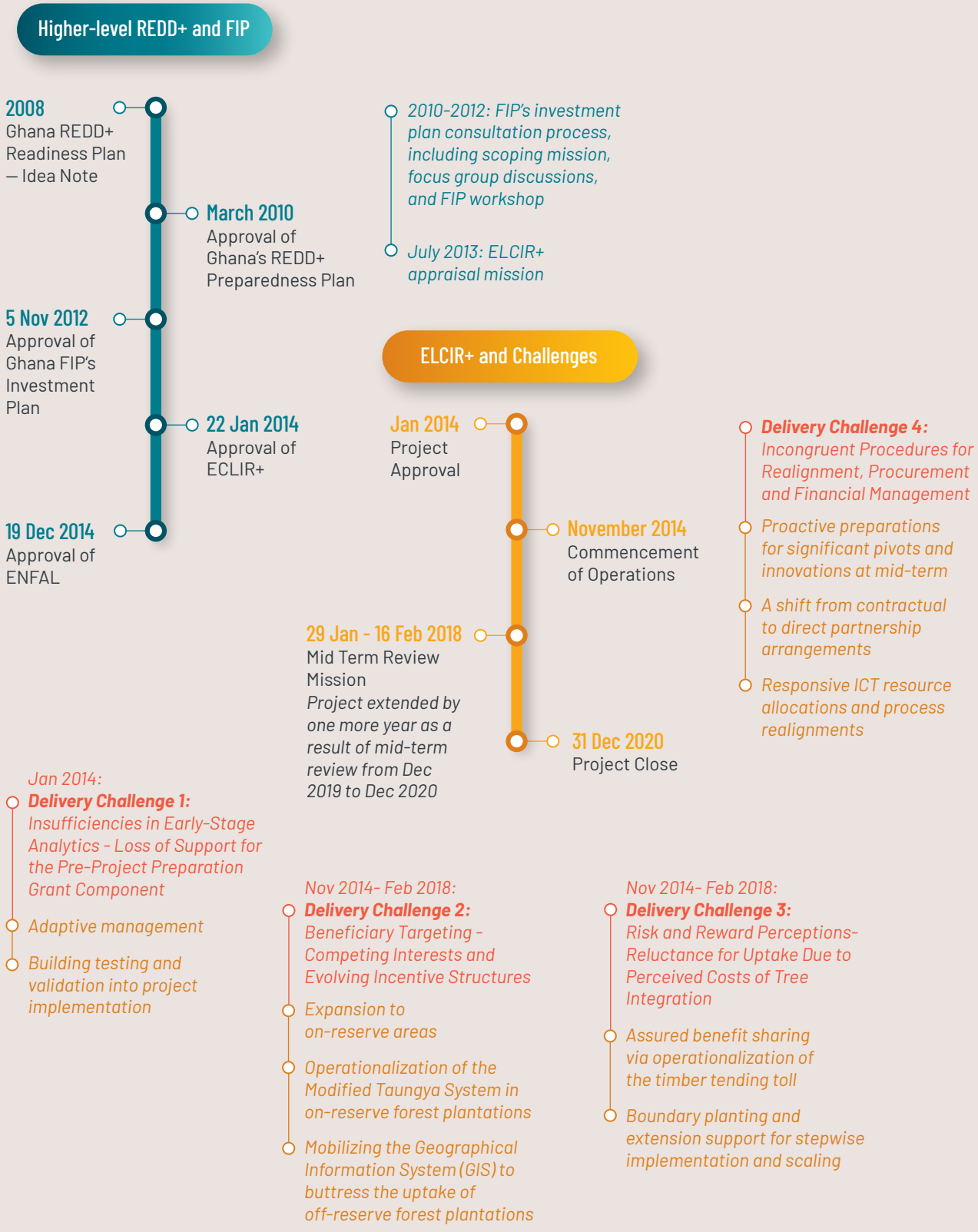
The perceived lack of recourse for negligent or illegal logging activities and skepticism about the enforcement of timber benefit-sharing schemes, combined with limited capacity in differentiating between state and local communities with regard to tree ownership, deterred the cultivation of timbering shade trees. Essentially, farmers foresaw lower losses (and faster yields) from growing cocoa without shade or from cutting down shade trees before they reached maturity that would have made them lucrative for loggers.

4 **[Life of Project] Incongruent Procedures for Realignment, Procurement, and Financial Management**

Given the multitude of actors involved in project delivery, and the multitude of new and yet untested workstreams and organizational arrangements, several of the implementation and procedural strategies set at inception proved incongruent or overly complex at operation. Ultimately, conventional, stringent, and well-founded realignment, financial and procurement procedures, though valid in concept, proved to be cumbersome, when they had to be coupled with national governance architectures.

The following section takes a deep dive into the contexts and drivers of these challenges as well as the response strategies that were utilized to address them, with key lessons provided for practitioners, designers, and decision-makers.

FIGURE 2. Timeline of Implementation



5. TRACING THE IMPLEMENTATION PROCESS

ELCIR+, designed and delivered by the African Development Bank (AfDB) over the Jan 2014–Dec 2020 period, was one of two investments within the Climate Investment Funds' (CIF) Ghana Forest Investment Plan (GFIP), with the second intervention delivered by the World Bank. It was also Ghana's first intervention under its REDD+ Strategy.

5.1. Challenge 1: Insufficiencies in Early-Stage Analytics – Loss of Support for the Pre-Project Preparation Grant Component

The initial ELCIR+ design included a pre-project preparation component, with USD250,00 earmarked for this work. Its objective was to establish baselines, as well as validate the relevance of ELCIR+'s multimodal, complex and frontier lines of delivery, involving new technologies, new models of deployment, and new target beneficiaries.

Uncertainties and volatilities were inherent to the project's ambitious goals of creating impact through knowledge creation and behavioral change amidst fast-evolving, emerging market conditions: the contextual drivers (comprising, among others, individual priorities, institutional priorities, available technologies, and market dynamics) were constantly shifting in response to exogenous drivers.[22] As such, and being Ghana's first major REDD+ intervention, the successful delivery of ELCIR+ stood to benefit significantly from early-stage pulse-taking and foundation setting. As such, pre-project procedures would have allowed the project to achieve the following objectives:

Members of the soap-making startup enterprise, Abofrem community

1. **Understand beneficiaries' incentives and opportunity costs in relation to the different models of delivery** (for example, beneficiaries' trade-offs in establishing seedling-to-timber plantations in lieu of agriculture and feasibility of benefit sharing as an incentive for shade-tree integration in cocoa)

2. **Evaluate the applicability of new technologies** (further testing of tree varieties for shaded cocoa, building on initial testing done by the Cocoa Research Institute of Ghana [CRIG]; providing startup options for alternative livelihoods, etc.); and

3. **Test inter-institutional arrangements** (effective modalities to engage in new, ambitious, or untested partnerships or contracting arrangements; personnel capacities and geographic reach, etc.)

Since the early design of the project, all partner institutions had endorsed and espoused the pre-project preparation component: it was built into the implementation plan, with all relevant stakeholders, including government personnel, briefed on the value of this approach.

However, Ghana's general elections of December 2016, which resulted in a change in presidential and parliamentary leadership, led to a revaluation of the significance of the pre-project component. While the previous administration had been closely involved in the GFIP and ELCIR+ design processes, the more granular details of the program were unfamiliar to some of the new leadership; and as such, the full value of the pre-project component might not have been readily apparent. More specifically, stakeholders presented three factors as contributing to the new administration's reluctance to invest in pre-work:

1. **Conservativeness in spending:** The costs of early-stage validation might have appeared extraneous, with the full gains not apparent. It might have been perceived that the learning could be captured, and adjustments made, just as effectively during implementation.

2. **Need for government to foot initial funding:** In many cases, pre-project costs are initially borne on the books by ministries and / or implementing partners, with reimbursements issued only once a project comes into full operation; this then triggers the release of funds by multilateral development banks (MDBs) and/ or funders. In complex budgeting and allocation arrangements, as are sometimes common in government agencies, such an approach then creates a challenge. Essentially, funds need to be freed up from already allocated or strictly managed ministerial budgets, engendering opportunity costs and requiring additional staff time and resources. There is also a perception of reimbursement-risk were actualization of the project to stall.

3. **Perceived lack of immediacy of results:** Pre-work would lag the start of full operations. A new administration taking office may then have prioritized the commencement of tangible results-producing activities over those that appear presumptive in their potential gains. The gains from pre-project components are sometimes intangible, particularly in nascent stages, with an underestimation of the proffered results. What is often not recognized or prioritized about the value of the pre-project work is that diagnosing incongruencies or bottlenecks and revealing yet-unidentified evidence or data gaps can help prevent protracted lags at more advanced stages of deployment.

In sum, the project proceeded to implementation without a pre-project component, and therefore, without validating whether the multitude of innovative activity-level theories and assumptions of change would, in practice, hold true on the ground. This then gave rise to a host of teething issues that required a significantly greater expenditure of time and expenses when reorientations were necessary during full-scale operations. The more significant effects are presented within Delivery Challenges 2, 3, and to some extent, 4, below.

Solution: Building Flexibility, Testing, and Analytics into Implementation

While the AfDB team initially proposed the option of utilizing consultants to conduct the pre-project work, thereby allowing for direct payments from the MDB's own accounts and circumventing the need for the allocation of funds from the government, this did not prove to be a satisfactory resolution. The team, therefore, used several strategies to overcome the lack of early-stage analytics:

- **Approaching the delivery of project components with flexibility and a learning orientation, understanding that some of the resulting dynamics and feasibilities were yet unknown.** Stakeholders were uber-cognizant of the implications of deploying untested activities[23] and prepared for the need for multiple realignments. The resultant strategies of all implementers

demonstrated a perseverance and commitment to consistently gauging findings and adapting to them.

- **Utilizing innovations and alternative channels to integrate the analytics into project implementation activities, thereby building validation and testing mechanisms into the delivery structures and auxiliary operations.** For example, for the livelihood component, the AfDB team capitalized on synergies with other AfDB investment activities in Ghana, thereby utilizing the analytical work conducted by a separate project focusing on road and economic access to take stock of dominant and potential economic activities in the target areas. A benefit-sharing study was conducted to identify how target communities can equitably take advantage of the planned agroforestry activities, and some of the planned activities under the project preparation grant were directly integrated into the project. AfDB also built on its previous experience from similar projects in Ghana, with lessons learned integrated into the ELCIR+.

5.2. Challenge 2: Beneficiary Targeting – Competing Interests and Evolving Incentive Structures

The project's Component 1 — Community-Led Restoration of Degraded Forests and Curtailment of Forest Fires — included, centrally, the establishment of plantation forests. It targeted off-reserve areas, where lands are held under private individual or community tenure, and as such, serve as an economic resource for the holder. Any activities should, therefore, consider all available opportunity costs, with the returns from reforestation needing to be equal to or greater than those offered by other land uses. The first and fundamental assumption of the activity was that expected future incomes from plantation timber should provide a sufficient incentive for communities to convert plots to plantations. However, several factors distorted the trade-off:

1. **Unforeseen competition to land use and protracted timber yield times:** While significant in value, timber yields involve long maturities — at least 10–12 years for first thinning even with the fastest-growing trees such as teak and full-term yields due at about 40 years.[24] Concurrently, a scarcity of land for agriculture has seen cashew cultivation expanding quickly into degraded off-reserve forest tracts, alongside continued offers for mining exploration. Both offer far more immediate returns with less (perceived) uncertainty than those of ELCIR+'s plantation-based reforestation models; a cashew crop, for example, provides yields in approximately four years. The high prevalence of poverty among the target population and their need for immediate incomes, compounded by the comparatively higher capital requirements of investing in longer-gestation plantation activities, served as strong deterrents to project participation. ELCIR+ found that plots earmarked for plantations at design and appraisal stages were competing against evolving economic drivers that increased opportunity costs and stunted uptake at implementation stages.

2. **Incentive Challenges in the Community-Led rather than the Individual Participation Approach.** To enhance collaboration and inclusion, reforestation interventions established a practice of targeting community-owned tracts, rather than aggregating individual-owned plots. ELCIR+ was therefore designed along this vein. However, the model only generated buy-in in limited locales. Uptake was stunted by evolving ownership dynamics, with participants showing a greater affinity for activities where individual returns were directly commensurate with individual effort and investment, which avoided collective-action risks.[25] The team found that the suitability of the community-led approach needed to be assessed on a case-by-case basis, thus responding to each locale's prior experiences and evolving dynamics.

At the mid-term review in January 2018, less than 15 percent of target areas had submitted requests to develop plantations.

N.B. In both these cases, both the Ministry of Lands and Natural Resources (MNLR) and AfDB project teams confirmed that the dropped pre-project preparation component (Delivery Challenge 1, above) was intended to expose such challenges early on, thereby circumventing time and resource investments in untenable approaches which could thereafter only be amended via the formal realignment protocols at mid-term.

Solution: Flexibility, Innovation, and Bold, Beneficiary-Centered Redesigns

- **Flexibility — Expanding Geographic Focus to On-Reserve Areas, while Maintaining Granular Beneficiary-Targeting Objectives.** An expansion to also include degraded forests in state-managed, on-reserve areas proved highly successful in circumventing landowners' competing economic pressures. To still maintain the initial poverty alleviation-related beneficiary targeting, participants for plantation establishments were drawn from the initial target groups, thus effectuating the intended income generation without requiring trade-offs with agriculture.
- **Innovation — Operationalization of the Modified *Taungya* System (MTS) in On-Reserve Plantation Forests.** Capitalizing on the opportunities offered by deploying the plantations on state-managed lands, the project operationalized MTS *(Ref. Taungya System and Modified Taungya System, Box 3).* It provided participants with an assured 40 percent stake of the timber's value when felled, thereby mitigating participants' uncertainty regarding final dividends and streamlining the benefit-sharing procedure.
- **Innovation — Mobilizing the Geographical Information System (GIS) to Buttress the Uptake of Off-Reserve Forest Plantations.** To provide participants greater security – and therefore also greater confidence – in the timber revenue-sharing arrangements with regard to off-reserve plantations, the project undertook a cadastral mapping process to geotag planted trees. The GIS Unit at the Resource Management Support Centre (RMSC) — the technical support wing of FC — was supported with GIS equipment; an extensive sensitization of the target populations to the project was also conducted. In place of the previous technical capabilities that was exclusively supported by a global positioning system (GPS), which is insufficient for mapping off-reserve areas, the GIS Unit could then capture satellite imagery and generate detailed maps. Subsequently, RMSC personnel ground-truthed each allocated area. Finally, the composite data was combined with existing cadastral registries to generate maps of all planted trees in off-reserve plantations, with copies held by farmers/landowners, MNLR, as well as FC and its district and regional offices. This information thus provided assurances to participating landowners of (1) an unambiguous and ubiquitously held data source supporting the ownership of plantation trees and therefore revenue shares; as well as (2) long-term security over tree ownership, even well past the potential lifespans of forest plantations, and any future agricultural or land management practices.

Implemented in concert, the strategies were highly successful. Despite the significant delays, as adjustments could only be made mid-term, thereafter the project established approximately 3,508 ha of small- to medium-scale community plantations, with a total of 5,053 ha degraded forests rehabilitated. The latter figure exceeded the initial target of 5,000 ha and highlighted the power of bold and perspicacious reorientations.

5.3. Challenge 3: Risk and Reward Perceptions – Reluctance of Uptake Due to Perceived Costs of Tree Integration

The project's Component 2 — Climate-Smart and Environmentally Responsible Cocoa and Agroforestry Systems — focused on integrating natural forest production systems into agricultural landscapes, while increasing the uptake of yield-enhancing climate-smart practices. The integration of trees, however, encountered several challenges:

Remnants of slash-and-burn incineration for agriculture, Bono region

1 **Rule of law challenges — negligent and/or illegal logging on private lands.** All naturally occurring trees in Ghana are fully and solely owned by the state (Section 16 of Concession Act, 1962 Act 124). Both the proceeds from their timber and the jurisdiction over their felling are thus deemed as relevant between (1) Timber Utilization Contract (TUC) holders operating in off-reserve timber production areas; (2) the district offices of the Forest Services Division (FSD) of FC; and (3) where relevant, traditional authorities (chiefs).[26] Neither prior permission from landowners nor compensation for incidental losses were enforced protocols, and individual landowners and tenant farmers did not receive any direct financial benefits from the logging. Furthermore, the heavy felling machinery used by TUC holders resulted in the destruction of property (including agricultural crops), with no enforceable recourse for the adequate level of compensation. Where logging was carried out illegally by chainsaw operators, often at night, farmers were unable to trace infracting parties, much less request indemnity for losses.

The resultant risk of costs had discouraged farmers from planting shade trees or cultivating such trees to timbering height, along with farmers felling mature trees as a preventative measure or for self-use. Although a benefit-sharing scheme for self-planted trees was already in process in Ghana *(Ref. Benefit Sharing, above)* as well as a previous tree-tending benefit scheme, scepticism about the scheme's enforcement had stunted its ability to incentivize tree interspersion. Essentially, farmers foresaw lower losses from growing cocoa without shade, or from cutting down shade trees before they became lucrative for logging.

2 **Weaknesses in risk and reward perception.** For farmers rehabilitating erstwhile plots, the interspersed planting of timber trees with cocoa did not involve significant trade-offs, as this sequence enabled all seeds / seedlings to grow and capture light contemporaneously. However, in plots where the cocoa crop was already well-established, tree interspersion would require the pruning of produce-yielding cocoa trees to allow for sufficient light for seedlings. Where the full benefits of shade-tree integration were still not established, the need to prune already yielding crops would be a deterrent to making space for shade tree cultivation.

Solution: Technological Solutions to Guarantee Tree Rights; Stepwise Implementation

- **Assured Benefit Sharing via the Timber Tending Toll.** With on-farm timber (1) adding invaluable carbon stocks to the agricultural landscape, (2) providing significant benefits to the yields and health of farming systems, and (3) serving as an important timber source for the logging industry, MLNR worked to streamline benefit flows to farmers and landowners from on-farm timber, and to support previous efforts to regularize the unofficial payments being made by TUCs to farmers.

A study commissioned by MLNR found that:[27]

1 Farmers had greater interest in utilizing on-farm timber trees for their own needs than to sell them onward for timber revenues, with the related benefits – for shade provision, crop / medicinal yields, or self-use timber – superseding immediate timber income gains.

2 While most farmers did sign consent letters before TUC holders felled trees legally, they did so because they felt helpless in preventing the logging, not because they were interested in the felling of the trees at such a time.

3 Even in the aforementioned case, farmers expressed that the damage compensation payments were insufficient to cover crop / yield losses, crop replacement costs, or the costs of productivity losses from soil disruption.

TUC holders agreed that a measure to allow farmers to sell trees directly to permit holders would increase timber production and reduce tree destruction, while acknowledging that the regularization of the current multi-nodal benefit flow process was still too cumbersome to motivate farmers to retain trees to maturity. Built on extensive consultations with farmers, TUCs, traditional authorities, state agencies, and CSO, and based on stringent analyses of cost distributions and incentives among stakeholders, the MLNR developed formalized standards for a *timer tending toll,* whereby farmers receive assured and commensurate incomes from the nurturing of timber trees on their agricultural plots, with consensus among all key participants in the forest and timber sectors.

N.B. While this component was initially to be delivered via the ELCIR+ project, it was later nested within its sister ENFAL project for more streamlined delivery, as the latter carried a greater focus on the development of policy and practices for timber benefit sharing. This adaptive redistribution of activities based on project specialization, while capturing impacts across both projects and beyond, builds on the programmatic and end-goal focused approach of the umbrella GFIP architecture.

- **Stepwise Implementation.** To allay the reservations undermining uptake, FC tested a strategy of promoting boundary planting, which proved to be successful as a first-line approach to tree integration. This strategy, along with the provision of lesser-shade seedling varieties, initiated uptake, thus allowing for the scaling of integration once the full gamut of benefits of tree integration was widely established.

5.4. Challenge 4: Complex Procedures for Realignment, Procurement, and Financial Management

Given the multitude of actors involved in project delivery, and the multitude of new and yet untested workstreams and organizational arrangements, several of the implementation and procedural strategies set at inception proved incongruent and overly complex at operation. Balancing the security of established protocols with the dynamism of real-time responsive solutions was, therefore, an intricate and weighty balance, particularly in three key spheres.

1 **Balancing stringency with dynamism within realignment protocols.** According to conventional MDB operating procedures, realignments often occur at mid-term, wherein a thorough assessment enables MDBs and implementers to dissect bottlenecks, and thereafter follow stringent protocols and approvals for reorientation. The case for mid-term-only realignment is well-founded: it reduces frictions and risks from constant directional changes, binds projects to a degree of ramp-up commitment, and provides a formalized procedure for evaluation and thresholds for alternation.

However, when delivering innovative, untested and / or frontier interventions, particularly those altering (and dependent on) markets and behaviors, balancing a rigorous assessment of alternative options and significant pivots to the approach with the need for bold, adaptive action can often be a delicate process. With ELCIR+, such pivots also required a reassessment of related development target values; a stringent on-the-ground validation of the relevance of revised approaches; a need to avoid duplication and overlap with the World Bank's FIP ENFAL project happening in tandem; along with significant procedural realignments of budgets and institutional arrangements. While the adaptive project management of implementing agencies is indeed encouraged, in this project, the degree of change required resulted in the need for an in-depth review and robust administrative realignment procedures. As such, a drastic realignment could only take place the during mid-term field missions and assessments in accordance with MDB operating protocols, thereby leading to the adoption of holding patterns until the mid-term.

2 **Incongruent and overly complex contracting arrangements.** Likely driven by a simple documenting or procedural mismatch, the project's procurement protocols required that its agricultural research partnerships be established via competitive tender. However, the relevant agencies — Crop Research Institute (CRI) and Soil Research Institute (SRI) — had already been stipulated to be the implementing and collaborating partners at project appraisal. In fact, they were the leading institutions conducting such research and the *only* organizations working on bio-char[28] in Ghana. Here again, protocols required a protracted wait until mid-term for realignment, with CRI and SRI brought on board only in Year 3 of implementation.[29]

3 **Need for decentralization of flow of funds as well as decision-making and financial management challenges.** The arrangement for the flow of funds included multiple administrative layers that differed from those agreed at project design. Funds had to pass through multiple government agencies before reaching the implementing entities, thereby encumbering the flow of funds. The same complexities affected disbursements, as the documentation for the retirement of advances and the replenishment of funds had to pass the same channels.

MLNR, as the implementing agency, was tasked with overseeing the entire project. However, implementers noted that implementation arrangements, with more devolved decision-making in granular and non-material aspects, would have eased the capacity burdens on MLNR. Furthermore, it would have enabled greater maneuverability and more expeditious/

responsive decision-making for partners closer to the ground.

Compounding the complexity of the administrative strata, high staff turnover within the accounting departments of implementing agencies and a shortage of IT equipment resulted in delayed or inadequate submissions. This in turn triggered delays in the processing of withdrawal applications and the replenishment of special accounts, as the quality of documents submitted to AfDB was often inadequate. Such delays had amplified impacts in instances where activities were sensitive to seasonal changes inherent in agricultural and forestry interventions.

Solution: Receptive Action and Procedural Overhauls

- **Proactive preparations for significant pivots and innovations at mid-term.** All the stakeholders were highly cognizant of the challenges that would arise from the cancellation of the pre-project preparation and validation component.[30] This led to a commitment to proactively formulate and prepare for course-corrective solutions that would be ready for implementation at mid-term. It also led to a transparent and end-goal-focused approach that was founded upon learning from and among the partners, beneficiaries, and research institutions, with a constant drive for adaptiveness and holistic problem-solving. These qualities were the hallmark of the project's success. The ingrained and proactive commitment by project personnel to ensure responsiveness to the beneficiaries' challenges and reservations, and to plan in-step course corrections, enabled swift turnarounds and recoveries after mid-term. Despite having initially lagging results, the project was able to far exceed its targets. **However, the case for future accommodations — both in proactively pushing for pre-project validation mechanisms and establishing a higher frequency of interim checkpoints at entry, coupled with more astute thresholds for reorientation — remains; this is a key takeaway of the study.**
- **A shift from contractual to direct partnership arrangements.** At mid-term, the project amended implementing arrangements to establish the Council for Scientific and Industrial Research (CSIR) (and within it, CRI and SRI, in addition to the Forest Institute of Research in Ghana [FORIG]) as direct partners. Despite their late involvement, the institutions made significant strides within six months of operations — implementing randomized control trials, setting up demonstration plots, publishing guidance manuals, and providing extensive training and sensitization that also included extension agents.
- **Responsive resource allocations.** At mid-term, district and regional offices were issued additional laptops and scanners to expedite the processing of the reporting on and the reconciling of spending. Both MLNR and RMSC noted the need for activity-specific allocations and swifter responsiveness to bureaucratic bottlenecks, such that tandem streams of delivery are not impeded due to delayed or laborious administrative processes of other components. AfDB also highlighted the need for greater design responsiveness to the bureaucratic systems of implementing agencies when setting implementation arrangements, with the inclusion of innovations or arrangements to circumvent bottlenecks. Finally, the project brought on a private Ghanaian contractor to manage the transfer of payments through the different government agencies, thus expediting the process.

6. FINAL RESULTS AND OUTCOMES

COMPONENT 1:
Community-Led Restoration of Degraded Forests; Curtailment of Forest Fires

5,053 ha of degraded forests rehabilitated and woodlots established, exceeding the target of 5,000 ha, of which 3,508 ha were achieved as a result of the MTS implemented after the mid-term review.

175 fire volunteer squads established, and wildfire management guidelines established and implemented via the Wildfire Policy for Off-Reserves Areas and Institutional Support for Development of Wildfire Plans for Plantation and Agricultural Landscapes. This is consistent with the targets set out at project restructuring.

832 ha of sacred groves demarcated as dedicated forests and brought under management plans via by-laws sanctioned by the district assemblies, surpassing the target of 800 ha.

COMPONENT 2:
Climate-Smart and Environmentally Responsible Cocoa and Agroforestry Systems

Shade trees incorporated into 38,658 ha of cocoa landscapes, thereby increasing yields, enhancing resilience to climate change and pathogens, and improving longevity of farms. This component far surpassed the target of 16,000 ha.

11,687 ha of climate-smart agroforestry systems established, aimed at limiting deforestation and forest degradation in traditional agricultural tracts. Results exceeded the target of 10,000 ha.

3,000 farmers (consistent with the initial target) deploying improved fallow management practices to enhance soil carbon stock, via research and technical backstopping from the Crops Research Institute and Soil Research Institute.

COMPONENT 3:
Alternative Livelihoods and Capacity Building

40 community managed enterprises (consistent with the target) were supported, aimed at assisting entrepreneurs to add value to timber and non-timber forest products. This included the **establishment of more than 1,117 ha of woodlots** for fuelwood and charcoal production, slightly short of the target of 1,200 ha.

560 (38% women) government staff trained in REDD+, carbon stocks management, and climate-smart agriculture. This figure exceeded the government's target of 526.

12,956 beneficiaries (53% women) received training on building sustainable alternative livelihoods and deploying climate-smart agriculture. These achievements exceeded the beneficiary target of 12,000 and the expectation that 50 percent of the beneficiaries would be women.

7. KEY LESSONS AND RECOMMENDATIONS

7.1. The Importance of Established Protocols for Piloting in Frontier and Untested Interventions and the Full Capitalization of Project Preparation Grants (PPG)

Project designs are built on context analyses (such as social, economic, and conflict dynamics, as related to countries, industries, and markets), stakeholder consultations, and in large part, on previous experiences deploying similar interventions in similar contexts. In the case of ELCIR+, all these aspects were well-executed, with all case study interview responses underscoring the judiciousness, robustness, and inclusivity of the project's appraisal and consultation processes. However, when delivery takes place in economically vulnerable contexts and entails venturing into new and untested spheres and approaches, some parts of the envisioned impact pathways would inherently be built upon untested theories of change, assumptions, and risk calculations, with each part modulating how impact pathways will advance and evolve.

Pre-project pilots and testing can help significantly in such scenarios by ruling out incongruent project assumptions to refocus on more tenable pathways. They also aid in collating crucial baseline data that can then inform scenario analyses with greater cogency. As pilots and testing are often deployed on a small scale, any ineffective strategies deployed or failures encountered at this stage would involve far lower monetary and human costs than at full-scale implementation, as well as smaller losses of time and credibility.

Valerie Fumey Nassah (Manager, Plantation Department of FC) with maps relating to the Geographical Information System

This study finds that the deployment of such pre-project components could be increased and enhanced by the following features:

- **Formal protocols / frameworks for assessing the cost-to-benefit trade-offs of pre-project testing.** With many decades of MDB and multilateral interventions in development, sufficient evidence and experience exist to support the formulation of a formal framework to assess the need for pre-project work. Such a framework can encompass both quantitative and qualitative markers, such as the availability of baseline data; the level of novelty of interventions and the number of unknown variables; the level of risk in the assumptions and potential costs associated

with such risks were they to materialize; the net costs of piloting (such as time, financing, and credibility) versus net potential gains (multi-project usage and the enhancement of granularity/targeting); along with the economic values of research outputs, human capital development, early outputs/impacts, etc.

Such a framework that can provide cogent analyses to capitalize on task team leaders' (TTLs) previous experiences and expertise could enable donors, implementers, and governments to assess, negotiate, and decide on various preliminary pieces of work. This could then negate the speculatory aspects when valuating such components and provide decision-makers with the evidence to argue for such allocations at inception, along with a robust framework for monitoring, evaluating, and tailoring pilot activities. In doing so, pre-project analytics could be set to stringent standards and designed to deliver outcomes (rather than only outputs); have clearly defined of lines impact leading to eventual project implementation; and set out future thresholds / goalposts for stocktaking and fine-tuning. These analytics, along with the monitoring and evaluation of pilots, would also aid in informing similar or subsequent interventions.

- **Pre-emptive allocation of funds where necessary — case-specific accommodations for effective distributions of costs and risks of pre-project work.** In cases where the financial structures of recipient agencies make it untenable for them to bear the costs of pre-work, funders should be proactive in allocating and releasing resources. The risks and costs of such allocations, were they to be needed, could be assessed on a project-by-project basis, with clear articulations of roles and responsibilities; objectives, outputs and outcomes; and the ways in which findings will inform project design / delivery.

These practices are not new: MDB lines of delivery are expanding in their upstream, advisory, and/or technical assistance support, often at the sectoral or programmatic level. **More ubiquitous, deliberate, and formalized approaches to assess the need for project-specific pre-work, particularly in novel project designs, along with more robust cost-to-benefit-based assessments and allocations of resources, may provide greater agency for TTLs and implementers to readily advocate for, build in, and deploy the required analytics and testing.**

7.2. Alternative Livelihoods: The Potential for Scaling and Sustainability

7.2.1. Rapid Assessment and Cost-Benefit Analyses

The introduction of new economic ventures and technologies — often utilized in community-centric and resilience approaches, and as such particularly relevant to forestry interventions — entail significant validation, training, ramp-up, and post-support for sustained uptake and viability. Particularly when introducing ambitious and novel enterprises, starting-up bottlenecks may appear or manifest as being insurmountable without additional support, aside from the more acute cases where they prove to be incompatible with local contexts. As such, the case found that two approaches, summarized by project teams for future ventures, may circumvent the prevalence of startup fallouts in alternative livelihood workstreams:

- **Mechanisms for rapid assessments, responsiveness, and reorientation.** Akin to startup characteristics even in established economies and markets, the assumption of incongruency and failure-to-launch must be built into the calculus for impact. Therefore, target values for successful enterprise creation should accommodate commensurate percentages of failed uptakes; and as such, one should be more ambitious in reach and more conservative regarding expected results vis-à-vis the overall desired impact and cost-to-benefit calculus. This then would engender more pragmatic and credible arguments for the sustainability and value of investing in enterprise generation (versus alternative measures such as through

cash transfers); this would thus enhance the foundations of development finance effectiveness in this sphere at large. Where enterprises face bottlenecks or failures of fit, the readiness to provide suites of solutions or the option for reorientation remains integral for delivering genuine, long-term impacts. On the latter count, within Ghana's FIP programming, learning from ELCIR+'s initial suite of livelihood activities thereafter informed those instituted by ENFAL (see section 8.4, below). The need for nuanced and advanced ambitions and action, both here and in the broader forestry architecture, continues to be emphasized in the interviews and findings.

- **Follow-on Training.** The Bureau of Community Action and Development (BUCAD), in charge of implementing the livelihood activities for ELCIR+, found that that the initial training of participants was highly effective in setting the foundation, but could be further supplemented by follow-on support and the introduction of community experts. In response, the team deployed a program for the training of trainers, within which select community members received additional apprenticeships, thereby creating technically specialized anchors within the community. The value of this program was underscored in beneficiary interviews, along with a call for more ongoing technical specialization, particularly for addressing evolving challenges and the progression from community to micro and then to small / medium enterprises. The need for a long-term engagement strategy in capacity and specialization development, with clear thresholds and goalposts akin to enterprise development in all contexts, was found to be crucial for resource and time allocations from inception onward.

7.2.2. Timely Capitalization of Opportunities for Scaling

Due to capacity constraints and protracted procurement processes — both for the engagement of an implementing partner and the sourcing of starter kits, the delivery of this activity only commenced during the last year of the project. This development thus impeded opportunities for the communities to test several production cycles, identify challenges, and access project expertise and resources for fine-tuning. The scaling and sustainability of activities were also constrained: interventions, according to the design, had been intended to migrate microenterprises to more established and / or corporate entities by building on labor associations and harnessing marketing and branding support. Therefore, for future interventions, allocating the necessary time for ramp-ups and fine-tuning, and thereafter scaling and institutionalization, would be needed to ensure more robust, resilient, and transformational impacts; support to strengthen business, product, and market developments would also be important in this regard.

7.2.3. Nominal Participation Costs as a Targeting Mechanism

According to the MLNR team, a key modification may enhance long-term sustainability, if the introduction of new livelihoods was to be replicated. While all interested persons should be allowed to participate in trainings, interested participants might be asked to pay a nominal cost for the starter kit. The strategy builds on two potential benefits:

- **Enhanced continuity.** While many communities have continued to utilize their starter kits, some of the participants utilized the starter kits only for a short period. They either lost interest after some time, thereafter discontinuing production or utilizing the kits only intermittently. According to the team, the lesson derived from this experience builds on the theory that people tend to value what they pay for. As such, they will make an extra effort to recoup costs and maximize the returns in situations where part of the losses of not participating also includes their own initial investment.
- **Enhanced beneficiary self-selection.** The team also noted that the inclusion of a cost for participation would, in large part, ensure that only those who are interested in and committed to sustained usage would opt into the program. This would thus allow for the better targeting of the most suitable recipients.

8. SUCCESSES AND POTENTIAL FOR REPLICATION

8.1. PROJECT DESIGN – From REDD+ to GFIP to ELCIR+: Testaments to Collaborative Governance Structures

REDD+ and the Genesis of the All-Stakeholder Steering Platforms. Approved in March 2010, Ghana's REDD+ architecture established crucial foundations for the Ghana FIP Investment Plan (GFIP) and, in turn, ELCIR+. In particular, the National REDD+ Working Group set a precedent in convening all forest-related parties at the same table, enabling mediation among highly varied and siloed actors with occasionally competing operations and objectives. Hosted by the Ministry of Lands and Natural Resources (MLNR), **this forum served as a mechanism for coordinating priorities and strategies toward a common end: economic benefit-yielding and climate-positive landscape management.**

The proof-of-concept of the working group lies in its replication: GFIP and its underlying projects — ELCIR+ and ENFAL *(Ref. section 8.4, below)* — replicated the platform by instituting an all-stakeholder Steering Committee, meeting regularly to coalesce feedback from all participating agencies and beneficiaries. This thus ensured that the national objectives in relation to the Nationally Determined Contributions (NDC) were interwoven with the national, industrial, and civil society objectives for inclusive agriculture- and timber-driven economic growth. Interviews consistently emphasized the effectiveness of the platform in generating a paradigm shift in how (previously siloed) actors perceived and realized collaborative planning.

The proof-of-concept is also in its successes: In convening the entire suite of relevant actors, the GFIP Steering Committee, replicating the approach of the National REDD+ Working Group, did well to reflect the complexities of the national forest capital. This capital is a national ecological resource and a national carbon stock on the one hand, but also a land-use competitor for some industries and a source of inputs for some others on the other hand. The role of the Steering Committee was to promote open and robust discourse on how these different forms of capital could simultaneously be sustained and / or distributed. Its aim was to create a balance among the complex, and sometimes unquantifiable, trade-offs between individual, industry, and national interests. The strong and open collaboration of the GFIP Steering Committee served as a driving force for the project execution. It also served to build strong inter-institutional and interpersonal relationships: interviews conducted for this study repeatedly affirmed the value created by establishing a collaborative national front for ELCIR+, indicating that the multiple implementing partners were thoroughly attuned to each other's activities, with direct and open lines of collaboration and strong interpersonal trust and support. Through these efforts at the institutional level, organizations were able to adapt their implementation in response to the implementation challenges and opportunities encountered by others; and at the interpersonal level, the frank liaising between sector experts allowed for expeditious and mutually beneficial problem-solving. **The success of the approach supports its replication; furthermore, it offers key lessons for building more inclusive, cohesive, and coherent national climate strategies.**

8.2. PROJECT DESIGN – GFIP'S Programmatic Approach: Testaments to Inclusive, Local-led, All-actor Interventions

FIP's Country Programmatic Approach: Country Workshops and Extensive and Iterative Consultations. The seeds for GFIP were first sown in September 2010, when MLNR began its engagement with CIF in the wake of Ghana's REDD+ Proposal approval. After two years of broad-spectrum consultations, GFIP was approved in November 2012. The inclusiveness in design was driven by the CIF-FIP programmatic approach that centers on developing country-led investment plans built on rigorous and collaborative planning processes. This is to ensure **coherency among policy priorities set at the national level; beneficiary priorities evolving at the community level; and investment relevance, with targets set to effectively and cohesively meet the aforementioned aspects.**

Through the scoping missions in September–October of 2010, joint CIF-MDB missions in May–June 2011, and FIP's first Ghana country workshop in August 2012, feedback was elicited from the multitude of institutional actors and stakeholders operating in the same landscape. They included the Cocoa Board (COCOBOD); the Ministry of Food and Agriculture (MoFA); the Council for Scientific and Industrial Research (CSIR — mainly the Forestry Research Institute, Soil Research Institute [SRI] and the Crop Research Institute [CRI]); the Forestry Commission (FC, including their regional offices, district offices, rangers, and the frontline staff); the private sector (the timber industry, woodworkers associations, plantation developers, cocoa farmers, and those involved in charcoal production, agriculture, and finance) and civil society actors (forest-fringe communities; and nongovernmental organizations [NGOs] specializing in the environment, climate change, natural resource management, and community development).[31] **The subsequent objectives of GFIP are a composite of all the stakeholder priorities and agreements, and drove the objectives and design of the consequent package of interventions.**

Intercropping, Kwarte, Bono Region

FIP's Country Programmatic Approach — Multi-Project Synthesis. In transitioning from design to delivery, the CIF-FIP programmatic approach utilizes multilateral development bank (MDB) collaboration, delivering a portfolio of synergistic interventions that are buttressed by predictable and assured funding streams. Upon the approval of the GFIP Investment Plan, focusing on Ghana's fertile and carbon-rich high forest zones (HFZs) in the Western North, Western, Bono East, Ahafo, and Bono regions — the principal cocoa-producing regions, and therefore also the most prone to deforestation, three projects are poised to deliver their outcomes:

1. AfDB's ELCIR+ project, focusing on **reforestation and climate-smart cocoa / agriculture in off-reserve areas;**
2. World Bank's ENFAL project, focusing on **reforestation in on reserve areas and climate-smart cocoa / agriculture and on overall national policy reform;** and
3. International Finance Corporation's (IFC) project **mobilizing private sector participation to establish large-scale and sustainable commercial teak plantations in degraded forest reserves.**[32]

(Ref. Figure 1, above, for a cascade of key deliverables from GFIP through to the projects).

ELCIR+'s Ecosystem-Wide Approach — Multimodal Synthesis. After an extensive consultative process[33] that took place in January 2014 — one that was akin to that of GFIP, AfDB designed and approved the

first major Ghana REDD+ and GFIP investment. It deployed USD5.32 million of financing, alongside USD9.75 million from CIF's FIP, and an additional USD0.75 million from the Government of Ghana. The executing agency of the entire project was the Ministry of Lands and Natural Resources (MLNR) — the institution spearheading Ghana's ambition to restock its forests and ecosystems. As executor, MLNR oversaw the delivery of a system-wide amalgam of interventions, managing partnerships with sector-specific implementing institutions. **While the task to ensure that these collaborations flourish fully is a work-in-progress, the commitment and actions of Ghanaian officials to create a fundamentally cohesive pro-economy-climate-people governance roadmap has been exceptional by global standards.**

8.3. PROJECT DESIGN: Horizontal Synergies in the Multimodal Architecture

ELCIR+ carried three tandem operational components (see Figure 1)— each working via different modalities toward the same goal. It focused simultaneously on (1) the addition of forest cover (via the restoration of degraded forest landscapes); (2) the symbiosis of agriculture and carbon stocks (via the integration of timber into otherwise tree cover-reducing cocoa landscapes); and (3) the reduction of anthropogenic pressures on existing forest resources (via alternative human capital enhancements and livelihoods). Essentially, the project approached the addition and preservation of national carbon stocks through multiple channels, with components designed to act in unison to add forest cover, while also shifting practices away from non-regenerative forest resource consumption.

Ultimately, it was found that the envisioned (and also sometimes unforeseen) horizontal reinforcement of the components flourished in implementation. Farmers introduced to climate-smart cocoa practices served as a sensitized, ready, and established target group for the introduction of alternative livelihood packages. Livelihood beneficiaries either utilized cocoa by-products as inputs in their production (for example, producing soap from cocoa husks) or captured symbiotic gains in yields. In the latter case, the volumes of both honey and cocoa pods rose due to increased pollination — both as a result of the new apiaries and due to the enhanced biodiversity through intercropping in climate-smart cocoa.

> *"Wildfire in cocoa farms in Brong Ahafo is now reduced. Wildfires used to raze cocoa, and therefore, cocoa cultivation had been reduced in many of the areas. We now see cocoa return to Brong Ahafo. The trees in farming systems are all coming back."*
>
> *Valerie Fumey Nassah*
> *Manager, Plantation Department FC*

More downstream synergistic impacts include the following:

- **Increased Food Security and Rural Incomes from Forest Plantations.** The MTS model stipulated that, for the first year, participating farmers would intercrop trees with food crops. This stipulation has a twofold benefit. First, the planting of food crops helps to enrich the soil, preparing it for tree planting. Second, the approach is highly advantageous for farmers, who are able to generate a strong produce yield for both consumption and sale, thereby boosting their incomes.
- **Reduced Risk of Wildfires in On-Reserve Areas.** Farmers participating in the MTS model became active participants in preventing wildfires in the

Daniel Nsowah (M&E Officer, MLNR) with members of the MLNR team

areas in which they operate, including mitigating fires from the uncontrolled spread of slash-and-burn incineration. Furthermore, apiarists highlighted the reduced risk of wildfires in the dry season due to the replacement of the customary night-time foraging for natural honey and the increased management of combustible vegetation in the dry season to allow continued access to forest-nested hives.

8.4. Complementarity Within GFIP: Cross-Fertilization Between ELCIR+ and the World Bank's Enhancing Natural Forest and Agroforest Landscapes Projects (ENFAL)

While ELCIR+ focused on degraded off-reserve forests, ENFAL targeted on-reserve areas. ENFAL implemented climate-smart cocoa and agroforestry and livelihood components, mirroring ELCIR+'s scope. The GFIP Steering Committee was positioned to actively feed learnings from one project to the other. Here are some examples:

- **From ELCIR+ to ENFAL: fine-tuning of alternative livelihood approaches.** Challenges and wins — encountered in ELCIR+'s startup enterprise component — informed the selection, design, and delivery of startups in ENFAL, thereby capitalizing on the demonstrations of viability and step-wise beneficiary experiences.
- **ELCIR+ to ENFAL: CREMA, established by ENFAL (ref Box 2, above), benefitted from the distribution of agroforestry tree-seedlings by ELCIR+.** The Forest Services Division (FSD) distributed seedlings in all of the 13 off-reserve forest districts in the Western and Brong Ahafo regions. The reach also included CREMA corridors, thereby allowing these community organizations to mobilize their institutional arrangements to capture and enhance agroforestry impacts effectively.
- **ENFAL to ELCIR+: policy-level impacts supported the enhanced operationalization of benefit-sharing schemes.** ENFAL's substantial policy reforms and institutional strengthening advanced the implementation of benefit-sharing policies, as well as the improvement of the enabling environment for the forestry sector. Areas of focus included tree tenure; the devolution of farmer / community resources management rights; the institution of more equitable benefit-sharing arrangements; and the strengthening of institutional capacities, procedures, guidelines, and models to promote and achieve sustainable forest management. Given that considerable resources were allocated for this work under ENFAL, it was deemed more efficient to absorb upstream the benefit-sharing objectives of ELCIR+, thus capturing efficiencies through specialized focus. ENFAL's work on this front subsequently buttressed ELCIR+'s deployment of MTS as a key solution in mid-term course corrections.

8.5. Institutionalization and Replication – COCOBOD

ELCIR+ was COCOBOD's first large-scale institutional partnership toward climate objectives. Capitalizing on lessons learnt, subsequent to ELCIR+, COCOBOD has institutionalized and championed inclusive, climate-smart approaches by:

- **[Institutionalization] Developing climate-smart standards and publishing a climate-smart cocoa manual,** currently used by cocoa extension agents. The manual includes guidance on the use of organic fertilizers and the establishment of accompanying demonstration plot farms. For example, chicken droppings, now utilized as fertilizer by a majority of cocoa farmers, are readily available in the local market, thereby serving as a buffer against import shocks associated with the use of mineral fertilizers. This is a highly relevant development: at the time of the writing of this report, the Ukraine crisis has resulted in significant spillover effects in import-dependent emerging economies.
- **[Institutionalization] Developing a cocoa management system** that collects the coordinates of the farms, creates records of cocoa trees, and issues each farmer a unique identifier within which this data is recorded. The system is also capable, if needed, of linking shade trees to this registration system, thus buttressing FC's efforts in registering shade trees.
- **[Replication] Deploying an environmental and social sustainability project** that is built on the successes of ELCIR+'s farmer business schools and drawing on lessons from FIP, but now with an increased focus on women. The emphasis on women-led businesses aims to enhance women's participation in the cocoa industry, ensure women have equal representation in business planning, and reduce child labor. The weeklong school was responsive to women's daily schedules and successfully achieved a female participation rate of approximately 80 percent.

ANNEX 1: STAKEHOLDERS INTERVIEWED

NAME	POSITION	ORGANIZATION	PROJECT ROLE
AfDB Project Team			
Bekale Ollame	Country Program Officer	African Development Bank (AfDB) – Ghana	Current multilateral development bank (MDB) Team
David Quaye Annang	Agriculture Expert	AfDB – Ghana	Current MDB Team
Kader Sanfo	Monitoring and Reporting (M&R) Officer for CIF projects	AfDB – Headquarters	Current MDB Team
Rivaldo Kpadonou	Climate Change Expert	AfDB – Headquarters	Current MDB Team
Tabi Karikari	Agricultural Engineer	AfDB – Ghana	Task Manager at closure
Implementing Partners			
Akosua Ajyenta	Coordinator, Environmental and Social Sustainability Project	Cocoa Board (COCOBOD)	Lead on post-project replication activity, Component 2
Daniel Nsowah	Monitoring and Evaluation (M&E) Officer	Ministry of Lands and Natural Resources (MLNR)	Executing Agency
Eric Amengor	Principal Research Officer	COCOBOD	Implementer, Component 2
Dr Ernest Foli	Chief Research Scientist	Forestry Research Institute of Ghana (FORIG)	Implementer, Component 2
Francis Cudjoe Aheto	Project Manager	Bureau of Community Action and Development (BUCAD)	Implementer, Component 3
Hugh Brown	Director for Plantations	Forest Services Division of the Forestry Commission (FC)	Implementer, Component 1
Justice Odoi	Senior Environmental Specialist	World Bank	Co-Task Team Leader (TTL), Enhancing Natural Forest and Agroforest Landscapes (ENFAL) Project
Tabi Ajyarko	Project Manager	MLNR	Executing Agency
Valerie Fumey Nassah	Manager, Plantation Department	Resource Management Support Centre of FC	Consultant for Ghana Forest Investment Plan (GFIP); Implementer, Components 2 & 3

NAME	POSITION	ORGANIZATION	PROJECT ROLE
Beneficiaries			
Abofrem Community	Startup participants	Enterprise: Soap-making	Beneficiaries of Component 4
Adentia Community	Startup participants	Enterprise: Soap-making	Beneficiaries of Component 4
Ahyiresu Community	Startup participants	Enterprise: Mushroom Growing	Beneficiaries of Component 4
Boaso Community	Startup participants	Enterprise: Apiary	Beneficiaries of Component 4
Borkukruwaa Community	Startup participants	Enterprise: Apiary	Beneficiaries of Component 4
Kwatre Community	Startup participants	Enterprise: Apiary	Beneficiaries of Component 4
Nuamaakrom Community	Startup participants	Enterprise: Soap-making	Beneficiaries of Component 4
Tanoano Community	Startup participants	Enterprise: Soap-making (Women's Cocoa Cooperative)	Beneficiaries of Component 4
Techiman-Aita Community	Startup participants	Enterprise: Apiary	Beneficiaries of Component 4

ANNEX 2: MULTI-MODAL APPROACH

Ghana REDD+

Objectives
- Reduce emissions (from deforestation, degradation)
- Enhance carbon stocks (via forest management, forest restoration)
- Expand platforms for collaboration
- Transform agriculture and non-timber forestry (NFTPs) to climate-smart production systems
- Sustain forest ecosystem services, biological diversity, and cultural heritage
- Improve livelihoods

CIF GFIP

Ghana Forest Investment Plan, via CIF

Objectives
- Provide investment support for the implementation of the REDD+ strategy
- Address underlying drivers of deforestation
- Generate information and experience for policy and regulatory changes

ENFAL

Enhancing Natural Forest and Agroforest Landscapes, via the World Bank

Objectives
- Restore degraded on-reserve forest landscapes
- Support policy reforms and institutional strengthening in:
  - Tree Tenure/Benefit Sharing
  - Wildlife
- Support climate-smart cocoa and agroforestry
- Develop alternate livelihoods
- (Extension) Provide on-lending for private sector timber plantation establishment

ELCIR+

Engaging Local Communities in REDD+/ Enhancing Carbon Stocks Project, via AfDB

Objectives
- Restore degraded off-reserve forest landscapes
- Support climate-smart cocoa and agroforestry
- Introduce sustainable fuelwood harvesting, charcoal production, and alternate livelihoods
- Institute measurement reporting and verification (MRV)

See breakdown of all ELCIR+ components on the next page

ELCIR+

Component 1: Restoration of degraded forests and curtailment of forest fires

Activities 1.1 & 1.2: Rehabilitation of Degraded Forests

PPP models and manual
- Options and viabilities of joint government-citizen participation options
- Radio broadcasts and community forums for foundation setting

Operationalization of national tree seed center (NTSC)
- Infrastructure upgrades
- Capacity building
- Expansion of cold storage inventory
- Expansion of nurseries

[Currently serving areas well beyond ELCIR+ and AfDB target zones]

Model plantations
- Participant trainings
- Sensitization visits
- Learning exercises
- Seed provision
- Continued learning laboratory

Seed orchards
- Testing, selection, and sustenance of seed supplies for NTSC
- Seedling seed orchards
- Clonal seed orchards
- Vegetative multiplication gardens

High-quality seed and seedling procurement
- Prioritization of species
- Sourcing, testing and expanding of domestic propagation stock
- International sourcing of well-suited, higher-quality, and more resilient tree variety provenance seeds

Forest plantations
- Forest-fringe communities as participants
- 1 year of food crop cultivation for soil enrichment and household income generation
- Operationalization of the MTS

Activity 1.3: Conservation of off-reserve remnant forests and sacred groves

Conservation of off-reserve remnant forest and sacred groves
- Migration of sacred groves to the role of dedicated forests via bylaws sanctioned by the District Assemblies
- Endorsement by the Forestry Commission as akin to existing dedicated forest reserves

Activity 1.4: Wildfire management

Wildfire management
- Mobilization, training and sensitization with Ghanaian fire service, district assemblies, farmers, and wildfire personnel
- Establishment of fire volunteer squads
- Implementation of Wildfire Policy for Off-Reserves Areas and Institutional Support for Development of Wildfire Plans for Plantation and Agricultural Landscapes

Component 2: Climate-smart cocoa and agroforestry systems

Extension support
- Training, mobilization of extension agents
- Field demonstration areas
- Multi-day farmer workshops
- Capacity building for MoFA, Cocoa Health and Extension Division, and Forest

Farmer business schools
- Farmers' transition from subsistence to enterprise cropping
- Training on business decisions, break-even timelines, expansion, reinvestment, etc.
- 50% female participation

Integration of shade trees into agricultural landscapes
- Provision of well-suited timer and shade-tree seedlings
- Provision of food and medicinal yield seedlings

Farmer managed natural regeneration manual
- Systemic regeneration/ management of trees and shrubs in farming landscapes
- Impacts re. food security, biodiversity, soil, water, etc.
- Academic/org primer

Soil fertility enhancement
- Randomized control trials: organic fertilizer use vs. crop varieties
- Farmer field days for sensitization/feedback
- Biochar User Manual: crop yield, crop resilience, soil-carbon stocks; guidance on building biochar barrels

Component 3: Human capital enhancement and community-managed alternative livelihood

Establishment of alternate livelihood enterprises (non-timber forest products)
- Enterprise selection and validation (apiary, mushrooms production, soap making)
- Training of potential communities
- Starter kit provision
- Training of trainers and establishment of community experts

Sustainable charcoal production
- Establishment of community woodlots
- Organizing of beneficiaries into charcoal growers' associations (labor-based associations)
- Provision of efficient kilns per organization

Component 4: Project management

- Carbon monitoring
  - Measurement, Reporting and Verification (MRV)
  - Reference Emissions Levels
  - Certification
- Monitoring & Evaluation (M&E)
- Reporting

ENDNOTES

CLICK ON ANY NOTE TO GO BACK TO THE REFERENCED PAGE

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→ 31 AfDB, 2013, *Appraisal Report for ELCIR+.*

→ 32 Ultimately, the International Finance Corporation (IFC) project was dropped, and the private sector component integrated into the World Bank's project architecture. Essentially, an extension of the Enhancing Natural Forest and Agroforest Landscapes (ENFAL) project in 2019 transferred the USD9.89 million to its financing pool, including the USD7 million slated for a concessional on-lending facility for the private sector's forest plantation establishment.

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THE CLIMATE INVESTMENT FUNDS

The Climate Investment Funds (CIF) is one of the largest multilateral climate funds in the world. It was established in 2008 to mobilize finance for low-carbon, climate-resilient development at scale in developing countries. 14 contributor countries have pledged over US$10 billion to the funds. To date CIF committed capital has mobilized more than $62 billion in additional financing, particularly from the private sector, in 72 countries. CIF's large-scale, low-cost, long-term financing lowers the risk and cost of climate financing. It tests new business models, builds track records in unproven markets, and boosts investor confidence to unlock additional sources of finance.

CIF CLIMATE INVESTMENT FUNDS

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