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A Critical Analysis of Carbon Finance in Ethiopia

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**GREEN ECONOMY FOR CLIMATE CHANGE MITIGATION AND  
POVERTY REDUCTION IN SUB-SAHARAN AFRICA:  
A CRITICAL ANALYSIS OF CARBON FINANCE IN ETHIOPIA**

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## **Abstract**

The green economy as an ‘inevitable’ alternative development path has been dominating global environmental governance debates aiming at reconciling both economic growth and environmental sustainability. As an emerging concept, the arguments and counterarguments reflected in this research are built on current debates about neoliberal ideals – the financialisation of nature and market solutions to poverty reduction and sustainable development in the sub-Saharan Africa context. Indeed, the idea incorporates two conflicting logics, prioritising corporate profits and reducing poverty. This dissertation argues that the financialisation of nature and its instruments, including carbon finance in greening, have brought shortfalls in local communities’ political and socio-economic priorities, including food security, resilience and local economy strategies. Despite its relative success in generating additional green funds from the private sector, the carbon finance within the green economy is lagging far behind realising its core objectives of ensuring carbon-neutral development and poverty reduction. This research argues that the commercialisation of nature, and particularly carbon offsets in forestry, may positively contribute towards global climate change mitigation, but without bringing evident livelihood improvements among smallholder farmers. The research, based on analysis of the ecosystem services of the Humbo communities of Ethiopia, illustrates this line of argument and reveals the polarised and conflicting interests of local and global actors in the Clean Development Mechanism initiative. This research’s contribution, therefore, is to enrich debates on greening by considering further empirical studies on carbon finance within the broad national green strategy of Ethiopia and implication of its green fund, in an attempt to improve the livelihoods of the Humbo farmers. Therefore, highlighting these findings, which underlined the intervention’s emphasis on physical regeneration and not poverty reduction, the reorientation of development through the green economy, and in particular through the financialisation of nature, remains questionable.

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## Abbreviations

ADLI	Agricultural Development Led Industrialisation
AfDB	African Development Bank
A/R	Afforestation and Reforestation
AU	African Union
BAU	Business As Usual
C40	Cities Climate Leadership Group
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> e	Carbon dioxide equivalent
CDM	Clean Development Mechanism
CERs	Certified Emission Reductions
COP	Conference of Parties
CRGE	Climate Resilient Green Economy
DANIDA	Danish International Development Agency
DFID	Department for International Development (UK)
DNA	Designated National Authorities
EB	Executive Board of the CDM
EEFRI	Ethiopia Environment and Forest Research Institute
EESP	Energy Efficient Stoves Program - Ethiopia
EPA	Environmental Protection Authority - Ethiopia
EPI	Environmental Performance Index
ERPA	Emissions Reduction Purchase Agreement
ETS	Emissions Trading System
EU ETS	European Union Emissions Trading System
FCPF	Forest Carbon Partnership Facility
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus Group Discussion
FMNR	Farmer Managed Natural Regeneration
GCF	Green Climate Fund
GDP	Gross Domestic Product
GEF	UN Global Environmental Facility
GHG	Greenhouse Gas
GGEI	Global Green Economy Index
GGGI	Global Green Growth Institute

GTP	Growth Transformation Plan
HFC	Hydro-fluorocarbon
HoA-REC&N	The Horn of Africa Regional Environment Centre and Network
ICC	International Chamber of Commerce
ILO	International Labour Organisation
INDC	Intended Nationally Determined Contribution
ISFL	Initiative for Sustainable Forest Landscapes
JACO	JACO CDM Co., Ltd
JI	Joint Implementation
KIC	Key Informant Cooperative Leader
KIE	Key Informant Expert
LULUCF	Land use, land-use change and forestry
MEA	Multilateral Environmental Agreements
MEF	Ministry of Environment and Forest - Ethiopia
MEFCC	Ministry of Environment, Forest and Climate Change - Ethiopia
MoFED	Ministry of Finance and Economic Development - Ethiopia
MtCO <sub>2</sub>	Million Metric Tonnes of Carbon Dioxide
NAMAs	Nationally Appropriate Mitigation Actions
NDC	Nationally Determined Contribution
NF	Nairobi Framework
NGO	Non-governmental Organisation
NVivo	Qualitative Data Analysis software
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
ODA	Overseas Development Assistance
p.a.	Per Annum
PDD	Project Design Document
PES	Payments for Ecosystem Services
PFM	Participatory Forest Management
PIN	Project Idea Note
PoA	Programme of Activities
PPP	Public-Private Partnership
PSNP	Productive Safety Net Programme
QUIC	Qualitative innovations in CAQDAS
REDD	Reduced Emissions from Deforestation and Forest Degradation
REDD+	Extends REDD by including sustainable forest management,

	conservation of forests, and enhancement of carbon sinks
RBCF	Results-based Climate Finance
RBP	Results-based Payments
RINA	RINA Services S.p.A.
SAP	Structural Adjustment Programme
SDGs	Sustainable Development Goals
SDM	Sustainable Development Mechanism
SIM	Sudan Interior Mission
SNNPR	Southern Nations, Nationalities and People's Region of Ethiopia
SOAS	School of Oriental and African Studies
SRM	Sectoral Reduction Mechanism
SSA	Sub-Saharan Africa
tCO <sub>2</sub>	Carbon-dioxide in tonnes
tCO <sub>2e</sub>	Carbon-dioxide equivalents in tonnes
UK	United Kingdom
UN	United Nations
UNCSD	United Nations Conference on Sustainable Development
UNDESA	United Nations Department of Economic and Social Affairs
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNEP-DTU	UNEP - Technical University of Denmark
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly
UNITAR	United Nations Institute for Training and Research
US	United States of America
USAID	United States Agency for International Development
USD	United States Dollar
VCS	Verified Carbon Standard
WVA	World Vision Australia
WVE	World Vision Ethiopia
WWII	World War II
<b>Symbols</b>	
°C	Degrees Celsius
€	Euro
Birr	Ethiopian Currency

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## **Chapter 1 Introduction**

### **1.1 Rationale**

Many academics consider the concept of the green economy, adopted by policy makers and practitioners, to be a vital animating principle, or set of ideas, in addressing globally linked socio-economic, environmental and climate change issues. Despite differences over how to address these global challenges, most of these actors are aware of the need to take intergenerational impacts into account when making decisions (Pearce et al., 1989:vii; Brundtland, 1987). As stated in a document produced by the United Nations Environment Programme (UNEP), the green economy is meant ‘to turn resource constraints and climate crisis into an economic opportunity that generates a double dividend’ (2012) through enhancing resource utilisation and efficiency, and boosting investments in natural resources. Unpacking the concept, this involves reducing the risks associated with various environmental issues as well as a carbon-intensive economic approach and creating a form of low carbon-based, clean development. As Romani et al. underscore, this is assumed to be a far more attractive approach than a high-carbon development path (2012:11). In this line of thinking, green economy development strategies are considered crucial to unleashing the global South’s economic potential (including low and middle income countries) and creating sustainable growth for decades to come – achieving economic growth and making ‘poverty history without stressing the planet’ (Wreford, 2012:6). Studies conducted by national and international institutions, including the World Bank and various policy entrepreneurs, have indicated that there is a move towards considering the green economy as an ‘inescapably’ sustainable development path for these countries (UNECA, 2012). However, the adoption of the green economy approach remains challenging due to its comprehensive and transformative nature, which ultimately affects the entire political economy of a country – including its societal culture,

technology and economic system (Bullard and Müller, 2012:54). A green economy approach requires the alignment of the national strategy with international treaties governing natural resources and their contribution to economic growth, as well as its alignment with communities' livelihoods and priorities. This differs from an economic development approach that relies on carbon burning and involves a shift in an individual's daily habits in order to reduce carbon usage together with a reconfiguration of a country's mode of economic growth. This 'new' development agenda is coined as the green economy, and in a nutshell, adopting a green economy for effective natural resources and poverty reduction requires systemic rather than incremental change.

Effective environmental policies and institutions are central to global sustainable development, however, the associated treaties and frameworks which ensure global-local interlinkages are highly technocratic and very complex to deliver (see Pfeifer et al., 2008:22). This is evident in the global climate change initiatives that aim to mitigate global warming, sea level increase and ecological degradation. Therefore, the effective execution of global environmental treaties relies upon the development of adaptive policies and institutional capacity at all levels of governance: international, national and local (Ivanova et al., 2012:469). However, despite the increasing number of global treaties and initiatives, the major global issues remain unsolved. One of the reasons is a lack of enforceability arising from the divergent interests of state and non-state actors (Romani et al., 2012). This makes the goal of a 'clean economy' unattainable at both national and international levels.

There have been ongoing debates and ambiguity about which development path the global South should take (Barbier and Markandya, 2013; Brockington, 2012:409; Klein et al., 2013:9). But, influenced by global climate change thinking and mindful of their domestic needs, the countries of the global South are considering the green economy path as these countries come to realise that carbon-intensive growth cannot be a long-

term development solution. The move towards a vision of resilient and low-carbon economic development has been attractive to some African countries. Although they are still in the early stages of a policy shift, prominent countries in sub-Saharan Africa (SSA) which wish to advance this agenda and to ‘invest in sustainable infrastructure, better manage natural resources, build resilience to natural disasters and enhance food security’ (AfDB, 2012:5) include Ethiopia, Ghana, Rwanda, South Africa and Uganda. However, despite their interest in advancing this new development thinking, these countries face policy and institutional challenges, with an acute scarcity of resources and a lack of institutional models for the adoption and the governing of this new economic path (Romani et al., 2012:11; Clare et al., 2012:234). This challenging green economy agenda requires a high degree of inter-sectoral and multi-sectoral coordination among the various institutions, policy entrepreneurs and local communities involved.

With largely neo-liberal economic policy environment, and with untapped potential for growth, Africa has witnessed a substantial improvement in its economic performance over recent decades. Africa’s Gross Domestic Product (GDP) grew by an average of 4.6 per cent over 2000–2016, a rate higher than that of Latin America and the Caribbean, a comparable region (AUC/OECD, 2018:19). This growth has contributed to an improvement in the livelihoods of many low-income families (UNECA, 2012). Unless there is a dramatic shift in global economic conditions, this growth is expected to continue, possibly at an even faster pace. However, it is being achieved at a high cost in terms of environmental degradation, high-carbon emissions, human displacement and widened societal inequalities. Policy makers have failed to use economic growth as a means to address these societal issues, in particular inequality (Odusola et al., 2017:1; Piketty, 2014:1). This has led to a widening of the rich-poor gap, with little improvement in the quality and availability of social services and social security systems, and inadequate investment in human capital.

The green economy approach, with climate change mitigation accompanying economic growth, is highly dependent on the carbon finance model, which underpins the Ethiopian strategy. Beyond its role in climate change mitigation and resilience building, Ethiopia's Climate Resilient Green Economy (CRGE) strategy considers the carbon finance model to be a means for boosting the national economy by actively engaging in the existing carbon market platforms. The Federal Democratic Republic of Ethiopia (FDRE) government's high expectations are made clear in the following statement by the Ethiopian Environmental Protection Authority (EPA):

Under a carbon neutral growth trajectory, Ethiopia could offset in the region of 320 million tonnes of carbon a year. Even with the low current carbon price of USD 10-20 per tonne, that could generate billions of dollars for the country (EPA-FDRE, 2011a:16).

Forestry-based carbon sequestration, as part of the emerging green economy concept, aims to address both local ecological degradation and global climate change crises. However, the global South, in taking such a development path, faces multiple policy and governance challenges to absorb this economic model and turn it into an opportunity (Klein et al., 2013:21). There is now almost a decade of experience in carbon finance in Africa, but, although some case studies exist, a comprehensive analysis that covers states' green economy policies together with a livelihood improvement impact review is required. So far, available analyses have shown the missing links in terms of local-national-global engagement at both policy and governance levels in enhancing food security, ecological sustainability and poverty reduction (Olsen, 2007; Dirix et al., 2016:844; Pécastaing et al., 2018:198). This indicates a knowledge gap in conceptualising this approach. Therefore, to advance this discussion and examine the emerging development path that links ecology, economic growth and poverty reduction, this dissertation analyses the carbon finance approach that is being implemented in Ethiopia. It uses the Humbo Natural Regeneration Project

(hereafter the Humbo initiative), as a case study, exploring the potential contributions and drawbacks of carbon sequestration projects from the point of view of rural smallholder farmers. The empirically supported research results from Humbo can have implications to the carbon finance and green economy agendas in Africa.

Through its CRGE strategy, adopted in 2011, Ethiopia aims to build a ‘resilient, low-carbon and resource efficient middle-income economy by 2025’ (FDRE, 2011a:7). The lead coalition party – the Ethiopian People's Revolutionary Democratic Front (EPRDF) - leaders consider climate change to be a threat to the national economy, since a temperature increase of 2°C could result in ‘shifting many current coffee [the main export commodity] production areas out of their optimal range, and reducing quality and yield ... from 2030 to beyond 2050’ (FDRE, 2015b:52) and ‘under some extreme scenarios’ its impact ‘on all sectors could reduce 10 per cent or more of GDP by 2050’ (Ibid:17). Although ‘climate change is a new policy concern’ to Ethiopia (Eshetu et al., 2014:14), the country’s decision to advance a strategy that ‘addresses both climate change mitigation and adaptation’ made it one of the ‘early adopters of the low-carbon resilient agenda’ (Fisher et al., 2014:5). So far it has prioritised four strategic sectors for intervention – agriculture, forestry, energy and transportation. Run by a Ministerial Committee within the Office of the Prime Minister, the CRGE strategy is a nationwide set of policy actions, with key initiatives including the development of Africa’s biggest hydropower dam; an afforestation and reforestation (A/R) programme in Oromia regional state; soil and water conservation; and the introduction of smart agricultural practices that reduce carbon emissions. The strategy has been widely praised, but an essential element is putting the necessary institutional infrastructure in place.

Ethiopia’s transition to becoming an ‘emerging’ green economy, and its goal of framing the entire economy on carbon based development, has encountered significant barriers. These include: inadequate knowledge and awareness; lack of human and institutional

capacity; difficulties in mainstreaming the agenda; inadequate coordination between various actors and pooling of resources; lack of knowledge on the potentials for job creation and economic growth; unfavourable geographic conditions; and inadequate statistical data (Klein et al., 2013:26). This list of challenges aligns with the argument put forward by Romani et al. on the global South's acute need for know-how, technology, investment and financial support in greening the economic mode of production (2012:11). This is evident in the area of policy design and in its requisite functional modalities. The case of Ethiopia in general, and that of carbon finance under the Humbo initiative of assisted natural regeneration, exemplify the importance of local, national and global actors and institutions working together to advance the greening agenda.

## **1.2 Research Question**

This research seeks to contribute towards knowledge and practice on pursuing a carbon finance based green economy agenda in sub-Saharan Africa (SSA). It explores experience in one SSA state, Ethiopia, with respect to institutional and policy capacity, with a case study of the Humbo initiative, aimed at reducing poverty, and the measures taken to generate the required changes in the economy at large to accommodate this new path. Thus, the central research question is:

*Why and how does Ethiopia implement carbon finance within its green economy policy, aiming at both global climate change mitigation and poverty reduction?*

Unpacking the central research question, four sub-questions have been developed:

- Why and how has the carbon finance policy design and development process in Ethiopia come about? Where are the strengths and weaknesses of the processes and what are the roles and influences of the multiple local, national and global actors?
- What carbon finance governance frameworks within the green economy concept are being explored to address the interdependence of climate change and

poverty, and how are they influenced by the global neo-liberal economic and market approaches?

- What impacts has the Humbo carbon finance initiative had for the communities, in terms of improving their livelihoods and ensuring long-term environmental sustainability?
- Building on Ethiopia's experience, what are the key institutional governance and policy lessons, positive and negative, and learning processes that other SSA countries could draw on for institutional and policy capacity building towards realising effective forestry-based carbon finance?

To address these questions, the core objective of the research is *to investigate the green economy concept in general and carbon finance in particular, and determine their contribution to climate change mitigation and poverty reduction among the Humbo farmer communities of Ethiopia.*

The specific research aims are:

- a. To systematically review the local-national-global policy linkages that, either positively or negatively, impacted the outcomes of the Humbo initiative.
- b. To review the effects of the local natural resources governance framework, including the Farmer Managed Natural Regeneration (FMNR) approach, being implemented among the Humbo communities to enable local institutional governance and capacity building.
- c. To review the initiative's impact on the physical regeneration of the ecology, in order to either prove or disprove claims about its outcomes – reflecting the aims of green economy and carbon finance policies.
- d. To assess the changes brought about in terms of asset accumulation, skills, incomes and community capacity building in ensuring long-term impacts of the intervention.
- e. To explore the interlinkages between the Humbo local carbon finance initiative, the national climate resilience strategy, and global post-Kyoto Protocol climate change agendas.

## **Research Methodology**

This research work largely deployed qualitative methods supported by a case study approach, involving the review of available materials and visits to project sites. Empirical data was mainly collected through primary qualitative interviews (both intensive and elite interviewing), with key green economy policy actors at the national level and with the carbon finance implementers at the Humbo community level, to assess the effectiveness of the strategy pursued and its benefits to the communities. The interviews were also used to determine the level of support and influence of the global actors – from developing a greening strategy to financing challenges.

Interviews and semi-structured questionnaires were used to collect data from actors formulating and implementing policy, and from the communities. Interviews were, mainly, conducted over 2016-17. Empirical material was collected from in-depth interviews with 119 respondents including 58 Humbo initiative beneficiary households, 10 non-beneficiary households, 30 focus group discussants, and with 21 key informants, comprising local, national and global actors and drawn from cooperatives, NGOs, local authorities, ministries and international development partners. These were complemented by an analysis of Humbo initiative and carbon finance related documents. In this study, along with descriptive statistics to determine the demographics of the respondents, an interpretive research approach was taken as the overarching method of analysis. The basis for using this methodological approach emanates from the understanding that crosscutting issues, such as climate change and poverty, require to consider human experiences and social setting based analysis and policy framework (see Bhattacharjee, 2012). In short, the research assesses to what extent Ethiopia's greening process, institutional capacity and partnership modalities are sufficiently buoyant and effective to enable the country to implement the required changes in support of the carbon finance framework within its green economy strategy.

### **1.3 The Framework in Focus**

Within the overarching goal of advancing a sustainable development agenda, the need to devise an inclusive and need-responsive institutional framework for poverty reduction has been a central concern in exploring alternative modes of ecosystem governance and the promotion of resilience among smallholder farmers in the global South. In the 1970s, scholars devised the Ecosystem Services framework (Wilson and Matthews, 1970; Schumacher, 1973), which was later developed to systematically conceptualise the complex issue of global warming and associated climate change mitigation processes, while simultaneously addressing the global South's socio-economic challenges. Carbon finance, an approach to environmental services initiated in 1996, is a concept 'applied to resources provided to a project to purchase greenhouse gas (GHG) emission reductions' (World Bank, 2018a). This implies the 'financialisation of nature' (Smith, 2007), quantifying carbon emissions and attaching price tags to them. The Carbon Finance framework has been growing conceptually from the emergence of the Kyoto Protocol, with regional carbon markets like the European Union's Emission Trading System (EU ETS), and national emission reduction schemes as in Canada, Japan and the Republic of Korea. Initially, despite some contention, this framework was seen to be a significant change of approach in comparison to traditional carbon reduction measures (Voss, 2007; Wara, 2007), which emphasised non-market approaches to emissions reduction, without the assignment of monetary values. These traditional approaches were considered obsolete and inadequate to meet the scale of the challenge that the Earth faces.

Embedded within neo-liberal political economic thinking (Harvey, 2005; McAfee, 2012b:105; Fairhead et al., 2012:238), the green economy, through the Clean Development Mechanism (CDM) of the Kyoto Protocol, is seen as the means to address global warming through a 'carbon market' (Olsen and Fenhann, 2008:2819; Liverman,

2004:734; Polanyi, 2001:168). Unpacking the CDM concept, it is about enhancing global climate mitigation through carbon reduction while supplying the global South with the necessary finance and technologies to generate economic growth and reduce poverty (UN, 1998; Schneider, 2007:5; Olsen and Fenhann, 2008:2819). Considering the model's potential contribution, Boyd et al. acknowledge that the CDM approach and its initiatives might potentially 'imply a steady source of supplementary income in a context where these are extremely rare' (2007:257). It is assumed to be a global climate governing architecture while ensuring clarity in its guidelines and procedures. Although the CDM has been promoted as the key tool, as Newell described, it has faced challenges related to the decline in both carbon prices and investment in 'low-carbon technology' (2011:135), and its failure to make a significant contribution to poverty reduction (Hepburn, 2009:5; Boyd et al., 2009:820; Olsen and Fenhann, 2008:2819; Jindal et al., 2008:116). Moreover, some critics argue that it ignores social spaces and may play a role in 'destabilising the sustainable development of local communities' (McAfee and Shapiro, 2010:3). The CDM also faced regional distribution discrepancies as more than 80 per cent of its resources went to Asian and Latin American countries (Lecocq and Ambrosi, 2007:146) which most notably those countries in sub-Saharan Africa were left out. Pursing a contested approach and with its future uncertain, the CDM is attracting more critics than ever.

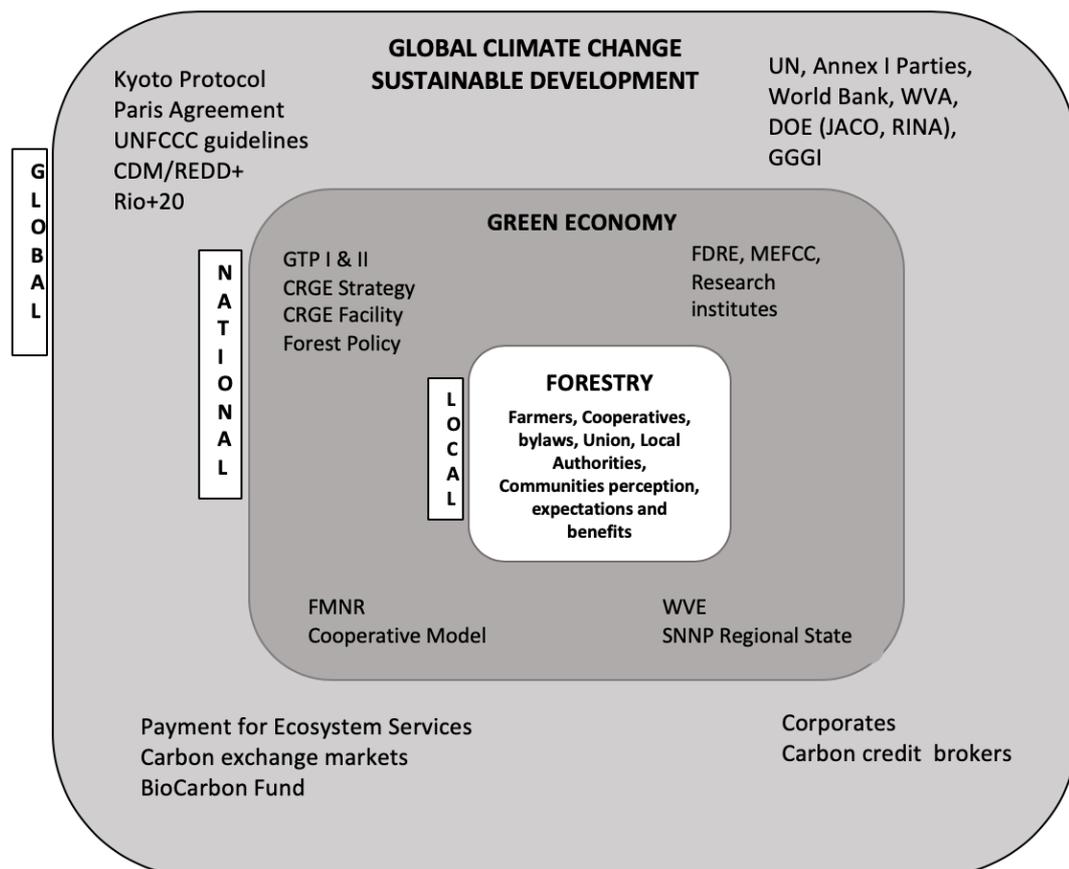
To fulfil its mandate, the Carbon Finance framework, in particular the CDM, has brought multiple actors together in its process and used an institutional structure that links the investors (mostly the companies in the Annex – I parties of the Kyoto Protocol) and the communities of the global South. For instance, in Mozambique's United Nations Framework Convention on Climate Change (UNFCCC) CDM certified commercial plantation, the Norwegian company Green Resources AS and the local communities implemented a forest initiative together (Grieg-Gran et al., 2015:33). As

well as its 'innovative' climate mitigation mechanism, the CDM has the ability to work beyond national boundaries, covering a wider geographical span. However, it has also attracted scholarly criticism, for example, of its inability to include 'avoided deforestation' and to 'significantly improve livelihoods' (Seymour and Busch, 2016:90). These elements are fundamental, as without them the approach misses the critical issue of the sustainable development for the poor and is mainly focused on the 'profit' element valued by the corporate world (Redman et al., 2012:2; Sullivan, 2012:201). Reviewing green economy and climate finance literature and practice, which are highly influenced by neoliberal thinking, McAfee argues that 'economic rationality and market mechanisms' are leading to an environmental crisis (2016:333). Similarly, Resnick et al. noted that, despite the fact that 'long-term environmental benefits [of the low-carbon economy] could be sizeable, this naturally will prove extremely costly in the short-term' (2012:216).

Furthermore, there is the risk that the financialisation of nature may be used as a pretext for 'eco-protectionism' that ignores the interests of the poor and marginalised communities in the global South (Klein et al., 2013:9). It is to be noted that in realising the objectives of the carbon finance, institutional partnerships are being created by corporate entities, with their market and profit oriented motives, coming into association with state structures and civil society organisations (Backstrand, 2008:76). The functional lines become blurred and the different actors' interdependencies are heightened, while motives and incentives become questionable. So, the effectiveness of the carbon finance model as a pro-poor rural development approach has been questioned and is under debate. A much greater research effort, with empirical analyses, is required to determine its effectiveness and its relevance to contemporary international development paradigms.

Carbon finance within the green economy concept and in the context of SSA requires empirical reassessment in order to inform future policy and specify the development implications. Charting the path forward, tackling poverty and environmental crisis simultaneously, involves addressing a series of complex issues and the polarised interests of various policy actors. Mutually fulfilling partnerships are needed if carbon finance is to be adopted as a ‘transformative’ development paradigm. While assessing carbon finance as well as the institutional capacity of policy makers, this research considers an inclusive, climate change based, rural development paradigm as a convergent rather than divergent process (see Figure 1 for how the research is framed in showing the global treaties, multi-level actors and their complex approaches).

Figure 1. Framing the Analysis: Global treaties, national policies and local interactions on the green economy, climate change and carbon finance



Source: Developed on the basis of the Institutional Model of Moore and Dausey (2015).

## 1.4 Case Study Selection

This study assesses the effectiveness of carbon finance in the SSA context by analysing the first Gold Standard CDM-certified A/R initiative in Africa – the Humbo initiative in Ethiopia – within the overarching green economy policy approach. That is, through its resilient and low-carbon CRGE strategy, Ethiopia is committed to emit 145 MtCO<sub>2</sub> less than its current amount in 2030 in reaching its Nationally Determined Contributions (NDCs) targets where carbon finance model based initiatives like Humbo become relevant to its endeavour.

In 2005, Ethiopia ratified the Kyoto Protocol and agreed to host the Humbo assisted natural regeneration initiative under the CDM of the UNFCCC, joined by development partners such as Canada from the Annex I parties, the World Bank as a trustee of the BioCarbon Fund and the emitting companies from Japan and France. The greening initiative focuses on alleviating poverty through community-based A/R of degraded land (Klein et al., 2013:26; WVE-PDD [Project Design Document], 2009).

This research explores the relevance of the initiative, the potential carbon and non-carbon benefits, as well as any undesirable impacts of carbon sequestration for the Humbo communities from 2006 to 2017, on the basis of the most recent accounts and information, as of December 2019. It looks at the state's roles and support to non-state actors and the globally induced local greening activities, the new institutional approach to forestry and resource governance deployed, as well as the challenges that are being faced in the intervention, including those related to the neglect of agriculture in the climate change mitigation mechanism (Kabore, 2013:6), and the overemphasis on carbon emissions rather than poverty reduction. The latter points reflect the Kyoto Protocol's design flaws and emphasis on forest-focused off-setting rather than context-based cross-sectoral integration. In addition, the research assesses the initiative's impact in terms of reducing poverty levels and in mitigating global emission rates, while

looking at the policy and institutional elasticity that exists to absorb both the carbon finance and green economy agenda (see Figure 1).

This research contributes to the consolidation of the carbon finance narrative in Africa by critically engaging with the framework's correlation to smallholder farmers and the governance model's viability and sustainability (see Pfeifer and Stiles, 2008:24). At the same time, it advances the discussion on the globally agreed climate mitigation treaties and the institutional framework at the local level that comprises intra-communal relationships and partnerships developed with the regional state, federal government, non-governmental organisations (NGOs) and international development partners as well as a carbon credit buyer. The case study undertaken not only looks at the effects of the initiative on Humbo's rural communities, but also at the spill-over effects on other communities in localities nearby. The institutional set up (both traditional and carbon finance induced), the character of institutions, the effectiveness of networking and partnerships, communities' access to resources and power, and also the learning process are investigated and critically analysed in the research.

The Humbo initiative regenerated 2,728 hectares of degraded common land naturally (Serkovic, 2013). It is one of the biggest CDM carbon credit producers in Africa, and has been selling carbon credits to polluting companies (of the Annex I parties) through the World Bank's BioCarbon Fund for a decade. Similarly, Ethiopia also runs the Reducing Emissions from Deforestation and Forest Degradation plus (REDD+) programme which is only recently completed its readiness package. Comparing both frameworks, CDM has been implemented for about 10 years and got relative strength to having a solid case to examine within the Ethiopian context.

In further scrutinising the carbon finance model, a number of important questions are addressed. Why was the Humbo locality aligned with the Kyoto Protocol and what were the driving forces behind this? Does carbon finance facilitate the transformation of

households' livelihoods among the Humbo communities? Does the initiative result in increased burdens or profits for the farmer communities? How does the carbon revenue distribution mechanism fulfil farmers' expectations, and does it live up to its promises? What are the impacts or implications for national green economy policy development processes?

According to project plans, and as per the Emission Reduction Purchase Agreement (ERPA) signed in 2009 with the World Bank and a sub-emission contract with the seven Humbo cooperatives, the lead implementing organisation, World Vision Ethiopia (WVE), was expected to hand over the project to the farmers in 2012/13. This implies that after the 10-year carbon compliance-based agreement elapsed in 2018, the Humbo Agro-forestry Union, along with its seven cooperatives, was supposed to assume full responsibility for the governance of the forest area and for its carbon market apparatus. This includes exploring potential carbon buyers, and negotiating highly technical and lengthy carbon deals with prominent global financial institutions, such as the World Bank, with their complex bureaucratic mechanisms; tedious carbon credit validation and verification processes; mitigating any transaction costs; as well as meeting the farmers' expectations. As indicated in the Project Design Document (PDD), WVE was to provide back up and help to institutionalise and consolidate the Union, enabling it to take on these responsibilities. However this task proved to be difficult for the agro-forestry union, which is lacking in technical competence and not familiar with the carbon finance markets, as the key informants of the study emphasised. So a key question is: At what transaction cost can WVE sustain its support, and for how long, to the point where a fully-fledged and viable union is able to deal with powerful global actors? Other questions that come into the analysis and discussion include: Is the carbon offset revenue enough to both satisfy the expected benefits of the communities and enable them to reach the point where they become technically competent and

independent carbon credit actors? Beyond Kyoto's carbon off-setting, will Ethiopia have the potential to develop a domestic carbon market alongside the global market, where national companies (like Ethiopian Airlines) purchase locally produced carbon credits? Is this an effective way to reduce carbon emission or are carbon markets legitimising the constant rise of emissions across the globe? And, has the Humbo initiative been designed with an almost exclusive focus on carbon-based forestry at the expense of, relatively resilient, agriculture, which might bring more immediate benefits for communities? This empirical analysis addresses the core research question related to climate change, as well as broader and related questions with respect to the improvement of rural livelihoods.

### **1.5 Research Significance**

An in-depth analysis of the Humbo assisted natural regeneration initiative demonstrates the influence and impacts of macro-level green economy policies on local communities, and the reciprocal influence of micro-level greening interventions on state policies. This research has the following societal, scientific and personal aims:

*Societal objective:* To provide analysis-based findings on Ethiopia's adoption of carbon finance within the green economy which is being considered as its developmental path. Noting local-national-global partnerships, the research assesses how this engagement impacts the climate change regime and supports evidence-based policy development and learning processes. It generates insights that might enhance efforts to bring local people into global climate change mitigation effectively.

*Scientific objective:* To further investigate carbon finance in the context of climate change and the green economy, exploring local-national-global partnerships and systemic change processes. The carbon finance model of A/R within the green economy agenda is reviewed in order to produce evidence-based policy findings. A core objective here is to assess the effectiveness of current models in terms of both regeneration

outcomes and benefits to communities. It is expected that these findings will be essential reading for policy makers, technocrats and practitioners who are engaged in the search for alternative development approaches focused on the green economy, and also for academics and students of environmental governance and development studies.

*Personal objective:* By engaging in this academic exercise, the researcher aims to become equipped with the necessary research and analytical knowledge and skills to contribute to sustainable development debates on a solid scientific basis. The skills gained are also intended to fill a professional gap in relation to the emerging concept and practice of the green economy in the global South. This work is submitted in fulfilment of the PhD Degree in Development Studies.

## **1.6 Research Structure**

The research work is organised into nine chapters. Chapter 1 gives an overview and introduction and presents the rationale of the research work, including its objectives, the research question to be addressed, an overview of the carbon finance framework under analysis, the justification for the case study selection, and describes the research's significance and organisation. Chapter 2 critically reviews the debates around the green economy, the financialisation of nature, and carbon finance, notably the climate change mitigation instrument of the CDM and its evolution. It includes arguments and counterarguments on the financialisation of natural resources – 'nature' as 'natural capital', and the implications of a market approach as a solution to the societal crises of the SSA region. Chapter 3 outlines the rigorous methodological approach applied and the processes followed in carrying out the research. It also gives a description of the Wolayta people, as well as the Humbo assisted natural regeneration initiative and its objectives. Chapter 4 briefly reviews Ethiopia's initiatives in building an 'emerging' green economy model as part of state building, and becoming a leader among the countries of the global South, exploring both the radical and incremental greening

policy and governance reforms that were injected into the national development agenda. Chapter 5 looks at translating the policy into practice by analysing the interplay of multiple local, national and international actors and their power dynamics and influences on environmental rehabilitation and poverty reduction. Chapters 6 and 7 look critically at whether or not the claims made under the Kyoto Protocol have brought structural, physical and livelihood changes to the Humbo communities. As the intervention was closely linked to the financialisation of nature, Chapter 8 looks at global trends with respect to the carbon finance model and its impacts among the Humbo farmers, as well as its legacy in Ethiopia and beyond – including the Paris Agreement. Chapter 9 gives concluding remarks, with policy implications and lessons learned. Finally, the references consulted in support of the empirically based research work are included.

## **Chapter 2 Critical Reflection on the Green Economy, the Financialisation of Nature and Carbon Finance**

### **2.1 Introduction**

The core objective of this chapter is to explore the conceptual understandings of the green economy within the financialisation of nature and carbon finance framework, as well as the potential challenges and opportunities for sub-Saharan Africa (SSA). As an emerging development agenda, the green economy aims to be a pathway to sustainable development by integrating socio-economic and environmental values – in the context of a high degree of global interdependency. The green economy builds on the major contribution made to sustainable development by the ‘*Limits to Growth*’ work of Meadows et al. (1972), Brundtland et al. (1987), as well as Pearce et al. (1989) who used the phrase ‘green economy’ for the first time in their *Blueprint for a Green Economy* report. The Rio+20 conference held in 2012 advanced the green economy by mainstreaming it into international development discourse.

This systematic review links the green economy with the current debate on environmental governance and the interplay of multiple actors through a range of partnerships and alliances. The central analytical perspective looks at the role of carbon finance in shifting societal structures to fit the green economy. This study neither contends nor agrees with the idea that articulates the green economy as ‘an inevitable path’ (Kallis, 2011:873). Rather it explores its potential, both in mitigating atmospheric carbon and in reducing poverty, using the case of the Humbo communities in Ethiopia, where a carbon finance framework was applied to analyse the forest governance regime. As the conceptual and operational challenges of the framework are not yet clear, this investigation could potentially contribute to addressing the dearth of green economy literature and to reframing carbon finance in the context of economies in transition.

## **2.2 Global Environmental Governance Regime: Debates, Concerns and Responses**

The global environmental governance regime has been changing in response to the shifting of dialogues, conversational themes and motives of the actors involved. This section examines the environmental governance dynamics in response to green economy thinking. It highlights the prevailing global environmental concerns and the initiatives being taken, debates on the green economy as a development path, and its relevance to the global South, particularly to SSA.

Discussions around environmental concerns emanate from the absolute dependence of human beings on the environment for their survival. The human-nature interlinkages and synergies are crucial for ensuring sustainable development, since human economic activities depend on natural resources. It is well accepted in political ecology that the 'earth system acts as a single and self-regulating system' (UNEP, 2012); however compared to the 1900s, the fourfold increase in human population, the twentyfold increase in GDP, and the mismanagement of natural resources have led to ecological crises (Maddison, 2001; 2009). The earth systems' capacity, as the anthropogenic account shows, is not able to respond and neutralise the mounting pressure and crises; and as a consequence there is an increase in global temperatures and emission rates, a rise in sea levels, and an increase in human health concerns (UNEP, 2012). Due to global resource mismanagement and the abundance of 'free riders', overall world economic growth has caused 'constrained conventional development' (UNEP, 2012; Jouvét et al., 2013:29; Hardin, 1968:1244). For instance, an increase in consumerism in the post-WWII period in the global North created 'rapid environmental degradation of soil, water and air quality' that necessitated institutionalising a regulatory environmental governance regime (Loorbach, 2007:169). Augmenting this, Meadows et al. in their '*Limits to Growth*' work, raised the alarm that irresponsible growth would lead to the collapse of the global

ecosystem (1972), but the promotion of local-global environmental linkages has only gained momentum recently.

Humans are now envisioning a common future that surpasses national boundaries and interests by devising a global resource governance system which considers the fate of future generations. Indeed, it was in 1972 when the United Nations Conference on the Human Environment took the first steps to address global environmental consequences, and since then various attempts have taken place, albeit with questions about their effectiveness. As part of the growing trajectory, the United Nations Conference on Sustainable Development (UNCSD) – Rio+20, held in 2012, resulted in the ‘*Future We Want*’ outcome document – which has promoted the ‘green economy’ in realising ‘sustainable development’. The global negotiations have enhanced an understanding of the human-nature relationship and, beyond the remit of the scientific communities, given policy makers’ position in addressing societal crises (Vazquez-Brust et al., 2014; Pearce et al., 1989), although a consensus on how to address the issues remains distant.

### **Green economy: Background and Conceptual Definition**

*Blueprint for a Green Economy* took *The Brundtland Report* (Brundtland et al., 1987) a step further, not only by integrating environment into sustainable development, but also by underlining the ‘misguided economic policy’ consequences of the brown economy on nature (Pearce et al., 1989:vii) and calling for an effective environmental policy instrument. Since then, an improvement in global environmental awareness, coupled with the recent global financial crisis of 2007/8, has contributed to the advancement of the agenda. Bina argues that global environmental actors prioritised efforts ‘to build a case for green economy’ as a solution to the economic and environmental crises, which is seen as ‘a pragmatic choice’ in ‘promoting rapid action at a time of crisis’ (2013:1042). Though it remains ‘a nebulous concept, too easily misinterpreted and misused’ (Jouvet et al., 2013:31), the following definitions illustrate how it has evolved since the 1980s.

Although the *Blueprint* report used green economy in its title, it did not provide a specific definition of the concept. Later on, one of the authors of the report, Pearce, defined it as ‘a rethink of ... economic systems to meet the unconstrained desires of *Homo economicus*, whereby the economic person is assumed to weigh up the costs and benefits to himself or herself and to act so as to maximise the net benefits to the self’ (1992:3). However, as Pearce argues, *Blueprint*’s intention was ‘to decouple economic activity and environmental impact’ within ‘the UK environment, not about the global environmental problem or the developing economies’ (1992:6-8). But the latest green economy definitions seem to be wider in scope and scale. For UNEP, it is about ‘improv[ing] human well-being and social equity, while significantly reducing environmental risks and ecological scarcities’ (2011a:16), while for the African Development Bank (AfDB) it is about ‘pursuing inclusive economic growth ... invest in sustainable infrastructure, better manage natural resources, build resilience to natural disasters, and enhance food security’ (2012). The green economy definition has evolved through time by emphasising the significance of reconciling economic growth, environment and social inclusiveness.

The trajectory of the green economy’s conceptual development has witnessed the inclusion of various ecological and financial mechanisms, institutional set-ups, as well as actors’ unique interests. Countries that advance the green path are being required to make systemic changes in defining growth and social development, including to their GDP, to consider ‘pollution, resource depletion, declining ecosystem services and distributional consequences of the natural resource loss to the poor’ (UNEP, 2011a:16). Furthermore, considering its wider impact, Death explains its potential to ‘revolutionise many aspects of contemporary society’ (2014:6). However, this low-carbon path along sectoral links is elusive, less fully understood, and with little agreement on how proposed modes of implementation would help to realise prosperity (Klein, 2013:5; Wentworth and Oji, 2013:10). Furthermore, since its results are ‘highly intangible’, as described by Resnick

et al. (2012:218), taking its programmes further to communities may be difficult to win the hearts of the poor, as Duffy's research conducted in Madagascar shows (2008:340).

Though the terms 'green economy', 'green growth' and 'circular economy' look similar, they differ considerably (Kasztelan, 2017:487). Green growth is about 'an improvement of production modalities using efficient technology and collaborative approach in the value chain' (the International Chamber of Commerce -ICC, 2012), but circular economy focuses on products, reusability and recycling through 'transforming the production and consumption processes' (Jouvet et al., 2013:29). The 'green economy' aims to address systemic challenges at the strategic and macro-economic level – beyond GDP (ICC, 2012:10). Besides these three concepts, the most recent phrase is 'Inclusive Green Growth/Economy' which explicitly emphasises the improvement of social well-being, social inclusion and human rights (Mearns and Norton, 2009). For the relevance of this research, 'green economy' is used consistently with this inclusiveness in mind.

### **Green economy and Sustainable Development**

The Rio+20 Summit was a landmark in contemporary sustainable development thinking. Making the '*Green Economy in the Context of Sustainable Development and Poverty Eradication*' one of the two agendas contributed to the laying down of a strong foundation for the green economy (UNEP, 2011a:17). However, what constitutes the green economy is debatable, for instance, Greenfield et al. drew up nine guiding principles, namely: sustainability, justice, dignity, inclusion, governance, resilience, planetary boundaries and precautionary principle, efficiency and intergenerational principles (2012:1-3). Bringing all these concepts into one basket, however, can make it a complex process and resemble 'sustainable development', rather than be a 'way' to realise it (Kasztelan, 2017:493). That is why Allen (2012) advises exploring areas where the green economy expects to deliver added value. Thus, 'does the green economy supplant sustainable development?' has been a critical question to many scholars and policy makers. UNEP's

comprehensive explanation shows that it is not aiming to substitute sustainable development, however, ‘achieving [it] rests almost entirely on getting the economy right’ (2011a:17). The fundamental claim is that the green economy should be a substitution for the centuries-long carbon-intensive economic model which has failed to bring socially-inclusive economic growth and a sustainable environment.

There are fundamental arguments of the Rio+20 green economy results. Despite the ‘considerable derailment of traction’ (Vazquez-Brust et al., 2014:5) and being ‘a source of controversy and disagreement’, governments agreed that the green economy was a critical means to advance the global sustainable development agenda through economic growth, viable ecosystems and inclusive development processes (Allen, 2012:2; see also Resnick et al., 2012:215). The *Future We Want*, Rio+20 and its subsequent gatherings have shown an explicit emphasis on the ‘social dimension’ (Mearns and Norton, 2009; see also UNGA, 2012). Nonetheless, there is huge disparity between which greening policy options to take, as it is creating confusion for the global South which has less capacity to identify the right low-carbon path. This has led to ‘little consistency’ about which pro-green policy measures to follow.

### **2.3 Reflections on the Green Economy: Critical Arguments**

Economic development path embraces two paths; one in which the scenario depends on the traditional carbon-intensive mode, and the other involving the new low-carbon model, that is, the green economy. Despite the preference being given to the green economy as a path for sustainable development by global leaders, there are still very persuasive underlining counterarguments to consider it as ‘inescapable path’ for the global South, based on conceptual and empirical studies (McAfee, 2012b; Fairhead et al., 2012).

## **Greening the Economy: Is it an inescapable development path?**

As explained, the green economy is about creating resilience, low-carbon growth and clean development (UNEP, 2012) and is considered as ‘far more attractive than the high-carbon path [business-as-usual – BAU]’ (Romani et al., 2012:11). To be effective, as van der Ploeg and Withagen argue, the new regime requires shifting the economic mode to clean growth, without creating ‘large and irreversible negative impacts on the environment’ and depriving the size of the economy (2013:117). The proponents of the green economy (Pollin et al., 2008; Jenkins and Simms, 2012) claim to maintain local sustainable resource utilisation through effective management and efficient usage. However, though the BAU can ‘deliver development’ [it is] at a high price’ (UNITAR, 2014:33). Under this scenario, the global North and South are expected to emit 32 per cent and up to 70 per cent respectively in 2030 (Naucclér and Enkvist, 2009) while the ‘ecological footprint [is] expected to be more than two times the available bio-capacity of the earth’ and can be unsustainable, as it is inefficient, and has ‘led to rising costs, loss of productivity, disruption of economic activity’, and generated increasing systemic economic instability manifested by ‘poverty, inequality, malnutrition and food insecurity’ (Jouvet et al., 2013:30). Addressing these issues, the green economy with social inclusion, pro-poor policy and the rights approach resonates to many policy makers.

As an emerging economic model and a global response to economic and environmental crises, several approaches to periodising the steps involved in moving towards a full green economy are offered. For instance, Bina (2013:1028) puts it as a three-stage process: *Almost BAU* (boost the market using a ‘stimulus package’); *Greening* (low-carbon economy and efficiency); and *All Change* (transformative greening process). Similarly, Death (2014:6) puts the discourse in four forms according to their degree of greening scale and intensity: *green revolution*, *green transformation*, *green growth* and *green resilience*. Allen also gave four approaches: the *desired pathway*; *the type of policy*

*measure; the target sectors; or a mixed approach* (2012:7). These refer to the scope of the greening, either to aim at its highest or lowest degree, or follow a hybrid model.

Studies conducted by national and international institutions, including the UN, World Bank and other policy entrepreneurs, have indicated that there is a move to consider the green economy as an ‘inescapable’ sustainable development path (Romani et al., 2012:11), where it is being seen as a ‘gateway to new opportunities for trade, growth and sustainable development’ (UNEP, 2013:18). Putting this into perspective, uniformity is not expected as these countries are at different levels of economic development, have various political choices, and differ in the opportunity costs they may have. Furthermore, adopting its transformative nature requires a systemic rather than incremental change.

Creating opportunities for the global South to access global resources that can be injected through forestry and agricultural abatement opportunities into their economies is also another pro-green economy argument (Nauclér and Enkvist, 2009:19). Ecosystem services, as defined by Costanza et al., are ‘ecosystem goods and services together’ that include the functions of ‘habitat, biological, or systems properties or processes of ecosystems’ (1997:253). As per the UNFCCC guidelines, a forest refers to ‘a minimum area of land of 0.05-1.0 hectares with tree crown cover of more than 10-30 per cent with trees with the potential to reach a minimum height of 2-5 metres at maturity in situ’ (2001:58). It is argued that ‘agriculture, forestry and land use’ have a 24 per cent abatement potential and with afforestation/reforestation (A/R) efforts this can provide ‘up to 30 per cent of the climate solution’ (Solheim et al., 2018). With the expansion of the Payments for Ecosystem Service (PES), especially since 1996, carbon finance has been dominating the global climate change regime. Carbon finance can be ‘applied to resources provided to a project to purchase greenhouse gas (GHG) emission reductions’ (World Bank, 2018a). Based on the ‘inclusionary’ neoliberal development thinking, it is thought that these ‘global carbon markets can slow climate change’ while stimulating local

economic growth (McAfee, 2012b:105 and 109; see also Fairhead et al., 2012:238). The low carbon model supporters, however, tend to see the successes made at project level, for instance, looking at job creation opportunities in particular contexts or communities, rather than on the broader spectrum (Resnick et al., 2012:216).

The forest carbon offset example from Sofala in Mozambique that engaged 1,510 farmers gives an illustration on the claims made and the challenges faced (Grace et al., 2010; Kill, 2013). As the UNEP report shows, the project, which started in 2003, has positively contributed to improving the communities' livelihoods (2012:243). Though the cost-benefit analysis has not been revealed, within six years (2003-2009), about USD 1.3 million was earned from carbon credits sold (for '156,000 tCO<sub>2</sub>, at a price that averaged USD 9.0 per tCO<sub>2</sub>') (Grace et al., 2010). Literacy rates improved, entrepreneurship was boosted, rural employment jumped (8.6% to 32%)', and there was also a more than twofold increase in the number of households engaged in commercial crops (that is, from 23% to 73%) (Grace et al., 2010; UNEP, 2012:243). However, the critical view of other authors like Kill defy the claims, saying the initiative had a substantial grant amounting to Euro 1.5 million from the European Commission between 2003 and 2008 and failed to be 'self-supporting through the sale of carbon credits' (Kill, 2013:13). It only covered '42 per cent' of ... [the running] expenses with carbon offset sales revenues' and this forced the managers to look for philanthropists to cover the remaining costs (Hall, 2012:3). In general, such conflicting reports do not show the long-term impact of cash crops on the food sovereignty of the communities and the sustenance of the jobs created.

In the green economy, affordability remains challenging. For instance, Uganda requires 'USD 1.8 billion annually to 2020' to 'unlock the identified green growth interventions' (Government of Uganda, 2016:vii). Its strategy further considers this investment as manageable where 'these new investments could generate USD 3 of economic benefit for every dollar invested, even excluding wider benefits'. As these sources depend on many

other economic, political and international development factors (including from green funds and the private sector), the intended targets can be directly affected.

To conclude, the green economy transition occurs in existing structures as either radical or incremental societal policy and institutional change. Therefore, it cannot occur in a vacuum, as societal structure and deeply inherited social values need to adapt to the new economic model. Thus, in the highly interdependent contemporary world, global-local actions need to be integrated under the global agreements umbrella. This involves creating institutional partnerships as critical frameworks for bringing together the polarised interests of actors towards an effective transition to the green economy.

### **Beyond Greening the Economy: Neoliberalism and Marketisation**

The arguments below are generated based on academic critics as well as empirically grounded discussions from the neoliberal, market model and globalisation viewpoints.

Unlike the above pro-green economy arguments (Pearce et al., 1989; Pearce, 1992), there are many scholars who see it critically as a neoliberal and neoclassical economic approach (Harvey, 2005; McAfee, 2012b:105) that tends to undermine the growth of the global South, that is, by disallowing them to burn carbon. It is considered as dealing with the crisis created by the global North where climate change, which disproportionately burdens the poor, is likely to worsen their ‘social polarisation and volatility’ (Ostrom, 2009). Conversely, in development thinking, there are ‘inclusionary’ neoliberal claims supporting those marginalised groups who lack an equal footing while promoting ‘greener economic growth’ with multiple-win outcomes for both the rich and the poor through ‘mitigating market-failures’ (McAfee, 2012b:109). Furthermore, McAfee, calling the ‘post-neoliberal environmental economic paradigm’, ‘*Green Developmentalism*’, where nature is being valued in terms of currency and the ‘complex eco-social system’ is ignored, argues that nature is left ‘to survive through international trade’ and the ‘spoiling of Eden by industrialism’, which give a license for pollution

(1999:131-135). Advancing the critics, Agarwal and Narain (1991:17) phrase the green economy as '*environmental colonialism*' – entering another phase of colonialism through halting the growth of the global South by reducing their energy production capacity, such as from coal. But they argue this neither reduces their engagement in saving the globe nor advances their priorities on 'poverty, injustice and inequality' and 'ensuring equal access to the natural resource' (Ibid). Pursuing the argument, apart from the fact that it is illogical to expect them to be moralistic in the fight for climate change, they note that the global North has never been prepared to pay the true ecological costs of the goods they consume. Sometimes greening helps states, non-state actors and corporate bodies to 'conspire against nature and the poor' (Liverman, 2004:734). Moreover, some social movements like *Terraviva* hold an extreme view and oppose the 'green economy', seeing it as 'The New Enemy' that promotes 'green capitalism' for 'transnational corporations' (2012:1). Environmental market services are becoming central to devising new approaches that address environmental issues. However, as discussed above, the challenge remains in creating a merger between the commodification of nature and the social domain (for example, the farmers' rights, welfare and justice) (Liverman, 2004:735). Reflecting this move, Polanyi describes 'fictitious commodities' (2001 [1944]:168) to include land, labour and money which the market is able to grasp only as 'part of their social existence' (Brockington, 2012:419). Besides the claims that markets can promote innovation, in practice it fails to serve poor communities (Ibid: 414) and is very detached from society. The root argument is that markets alone cannot define human livelihoods. Peck and Theodore (2007:741) also reveal market weakness as follows:

Real-world markets ... are persistently vulnerable to failure and, far from exhibiting a self-sustaining, autonomous logic, depend critically on a range of nonmarket coordination mechanisms, governance regimes, and regulatory frameworks, within which they are deeply embedded.

The underlying neoliberal market presumption that creating a ‘socially desirable allocation of private and public goods’ can be realised through applying ‘monetary incentives to influence behaviour’ (Gsottbauer et al., 2011:264) is not feasible. This argument ignores non-economic factors and the bounded rationality of consumer choices, and it is naive to expect ‘optimal behaviour’.

Carbon finance, and particularly carbon trading, reflects the above discussion. Besides the fact that carbon being traded as a commodity is scarce, McAfee provides an example that shows the declining value of carbon where ‘in the absence of rigorous ... regimes that enforce strict limits on GHG emissions’, the carbon credit price per tonne of carbon dioxide equivalent (tCO<sub>2</sub>e) has been declining to ‘even less than’ a USD dollar (2012a). This harshly nullifies the Kyoto Protocol claim of creating additional carbon credit revenues to the poor in the global South. Besides, there is also another solid argument – whether the interventions are able to deliver communities’ expectations, especially in sustaining farmers’ interests in conservation activities. As Shames et al. (2012:5) findings show, the Humbo Ethiopia case demonstrates that the farmers are happier with physical regeneration than actual financial support. Thus, cash payments do not necessarily motivate poor people either to be part of the climate change mitigation initiative or to sustain the initial greening results. Moreover, under pure economic parameters that consider investment and rates of return, farmers incur a far greater cost than reward. The carbon model is therefore failing to fully compensate their efforts.

The neoliberal model within the international climate regime, referred to as ‘free market environmentalism’ (Vazquez-Brust et al., 2014:9) and ‘world-as-market paradigm’ (McAfee, 2011:19), misinterprets sustainable development by excluding social equitability and creating ‘uneven social consequences’ that can cause a ‘new series of [societal] problems’ (Ibid). Furthering this argument, Bakker branded the green economy as ‘greenwashing’, since it aims to maximise the benefits of the corporate body through

using the ‘environmental commons’ and ‘deepen[ing] socio-environmental inequities’ (2010:715). This leads us to the critical question of ‘can markets bring equitable sharing through inclusive processes to society or not?’, an argument that is repeatedly pronounced by green economy opponents, which this research intends to address.

Another counterargument from scholars like McAfee (2012b:105) and Fairhead et al. (2012:238) for advancing a market solution to the global climate crisis focuses on ensuring efficiency; although some argue that once ‘poverty reduction’ becomes the target, efficiency can be compromised (Pascual et al., 2014). The decade-long PES experience demonstrates this fact (McAfee, 2012b:105; Fairhead et al., 2012:238). Indeed, the core element of advancing carbon finance in the global South entails conservation efficiency through investing scarce financial resources ‘where pollution reduction or avoidance can be achieved most cheaply’ (McAfee, 2012b:106; see also Stern, 2006:245). For example, as Pascual et al. (2014:1033) argue, PES may favour large-scale carbon initiatives but it may ignore ‘map[ping] out the broader relationships between benefit flows at multiple scales and different actors’ well-being’. This is created when more time is given for participation and engagement with the farmers in dealing with their natural resources. This takes us to the question: ‘Would efficiency be compromised in delivering poverty reduction?’ The underlying argument is that carbon-based development for poverty reduction does compromise efficiency.

The green economy is assumed by some critics to be an extended version of globalisation, which has already failed to deliver the expected outcomes, including that of reducing poverty through economic growth (Harvey, 2005; Wade, 2005); rather it widened the gap between the rich and the poor and deepened social crises. This implies that the new model would not be able to combat poverty and realise economic development, thereby failing to be an effective form of global economic governance. Thus, framing the green economy as part of globalisation is expected to be a zero sum (McAfee, 2012b:107); that is,

repeating a failed approach and failing to learn from the agony it has helped to create.

The aggressive promotion of the financialisation of nature should be seen as ‘selling nature to save it’ (McAfee, 2012b:105; see also Fairhead et al., 2012:238). This argument bases its premise on the fact that human–nature interactions should not be determined by global markets as they may inevitably favour some places over others. Though there is a general consensus on ‘one-size does not fit all’ thinking, the system ‘ignores culturally specific ... values unless these can be quantified’ (McAfee, 2012b:126). However, this is far from the orthodox environmental economist systemic thinking which focuses purely on nature valuation and no other heritages. Thus, responding to the climate crisis through the pro-market approach cannot be effective (Liverman, 2004:734), as there are discrepancies in assigning values to nature because of its complexity. Valuing nature is based on assumptions and ‘calculated with reference to actual or hypothetical markets’ (McAfee, 1999:134) which fail to reflect real societal value and costs.

‘Green grabbing’ – a practice common since the time of colonisation to capture land and resources under the pretext of ‘greening’ – has been rejected as it does not favour ‘more efficient farming’ or ‘food security’, rather it merely ‘alleviates pressure’ on forest conservation, ecosystem services and ecotourism (Fairhead et al., 2012:237, see also Corson and MacDonald, 2012:264). The change in entitlements brought about through green grabbing can undermine local practices and the implications need to be looked at from ‘ecologies, landscapes and restructuring of livelihoods’ perspectives (Ibid).

Summing up, the critique of defining the green economy as a new ‘business as usual’ discourse is rejected by Vazquez-Brust et. al. as they claim it is based on a ‘false conflation of distinct interpretation of the concept’ (2014:3). Considering the possible drawbacks of the green economy narratives, there is a potential to revive conversations on sustainable development (Bina, 2013:1042), where it is very indicative that the search for development does not only rest with the green economy.

## **2.4 Financialisation of Nature and Carbon Finance within Forestry**

As a plethora of reports issued by the UN and other research institutions shows, the green economy in the global South, particularly in Africa, has been overwhelmingly dominated by proponents of carbon-based initiatives, which are broadly characterised by the financialisation of nature. This section reviews the financialisation of nature, for and against carbon finance arguments on forestry, the relevance of the CDM as a development tool, and the critical role of institutional capacity within the context of SSA.

Financialisation has been a dominant factor in our day-to-day activities as it is embraced within liberal ideology and is expanding to other modes of production. Arguably it was predicted by some scholars and reflected in the works of Marx, Polanyi and others (for more discussion see Castree, 2010; Wanner, 2015:24), though their emphasis was on other modes of production (labour). Generally, the attempt to interpret human life as a commodity goes far beyond the goods and services we see, to the environment. The works of Clark and Hermele (2013:3) show how far our non-economic factors are being shaped by the financialisation of nature. According to them, financialisation of nature refers to:

...neoliberalisation and accumulation by dispossession within the broader context of intersections between political economy and political ecology, highlighting the distinction between use-value/object-oriented investments and exchange-value/investor-oriented investments, the right to inhabit place, and the shift from control and command to economic incentives, drawing out implications for sustainability.

Reflecting the depth of the issue, this explanation provides a broader construction of the concept and its implications for the financialisation of nature's prevailing goods and services. By promoting profit-seeking actors' interests, it dismisses states and movements' declining roles which link nature to socio-political dimensions. Arguably, nature is being left to the market and its instruments. The overreliance on 'incentives' to

protect and support nature in playing a part in sustainable development has its own risk, as ‘speculative activities’ can lead to ‘volatility and price fluctuations’ (Ibid:37).

Among such market approaches, ecosystem services include the functions of nature as well as the provision of goods and services which contribute to the welfare and survival of human beings (Costanza et al., 1997:253). The financialisation of nature sees natural resources as ‘capital’ (Schumacher, 1973) which implies ‘physical forms’, including materials and atmosphere. Wunder puts ecosystem services into four categories: *carbon sequestration and storage*; *biodiversity protection*; *watershed protection*; and *landscape beauty* (2005:2) which range from compensating farmers for protecting their forests to engaging them in tourism services (Duffy, 2008). The core essence of PES is to help the beneficiaries gain from it through ‘direct, contractual and conditional payments to local landholders and users’ (Wunder, 2005:1) for restoring nature. PES, having dominated the global conservation debate, is creating a platform for both carbon sequesters and creditors, while being praised for its ‘absolute advantages... over traditional conservation approaches’ (Ibid). However, there are many scholars and activists who are sceptical about PES’ claims of creating a lasting impact in reducing poverty, as discussed below.

Considering conservation in the context of ‘production and circulation of virtual commodities’, which is entailed in the conceptualisation of carbon credits, buyers tend to focus on the ‘abstraction of nature rather than nature itself’ (Corson and MacDonald, 2012:268). Financialisation and its ‘growing power of money and finance’ in humans’ ever-changing livelihoods, as French et al. argue, impact on the social fabric and the human-nature relational construction (2011:17). It is evident that considering the abstraction of natural resources and carbon markets in global exchanges along price fluctuations is far beyond the control of the farmers in SSA and may affect them adversely.

Over the last two decades, the global North has been aiming at maximising opportunities

created through continued carbon emissions, increased industrial growth and their companies' profitability. As a result, while engaging with the global South, reconceptualising nature within financialisation has become the lingua franca among the global actors. In line with this, various market models have been generated, with the underlying presumption that carbon finance would address both global and local economic, social and environmental threats.

As has been critically reviewed, ecosystem services and carbon finance may encourage 'free-riding' by the global North, especially if projects are executed within certain boundaries where the international community may gain from actions supported by national governments (Bishop, 2015:58). Free-riding may harm poor people who exert a lot of effort but receive little in return. However, Bishop puts carbon finance as an exception as it has the ability to 'span the globe'. Thus, the introduction of the 'non-geographical form of carbon storage', as Jindal et al. put it, may contribute to climate change mitigation through forests by sequestering atmospheric carbon (2008). Thus, the global North emit CO<sub>2</sub> while purchasing carbon credits from the global South, which in turn is expected to bring a financial boost and cash to the poor communities who engage in carbon sink programmes (Hepburn, 2009:2). In carbon finance, many actors involve including corporate bodies and the example below shows their motives behind this.

Furthering the claim made by companies about their 'offsetting' of GHG emissions, Clark and Hermele (2013:42) give an account of the Marriott Hotel chain in Brazil. Although the chain looks as if it is tackling climate change through contributing to the Brazilian government's *Programa Bolsa Floresta* (Forest Fund) where community members get USD 50 per month for protecting the Amazon forest, it is using the claim to legitimise its charges to its clients – 'an extra dollar per night'. The fund is collected from its customers and is used purely for 'green marketing'. It is a superficial form of support, but is intrinsic to the corporate strategy of goodwill, positive image and profit.

### **2.4.1 Carbon Finance and Emission Reduction: History, Trend and Trajectory**

The experimentation of including carbon finance in various emission reduction and climate change mitigation frameworks has been going through different phases. The carbon market, as defined by Lecocq and Ambrosi, is ‘the sum of all transactions in which one or several parties pay another party or set of parties in exchange for a given quantity of GHG emission credits’ (2007:139). This price-based emission trading remedy entails adopting a market approach to mitigating the global climate change crisis. Considering market solutions to environmental concerns go back six to seven decades and looking at how emission trading has evolved give us a contextual premise.

According to Jan-Peter (2007:332; see also Tietenberg, 2010), the emission trading journey can be framed in four phases:

- i). The gestation period that set the theoretical and conceptual foundations, including the works of Coase (1960) on markets for determining property rights, Crocker (1966) on markets and its implications for air, Dales (1968) on its applicability to water resources, and Montgomery (1972) on the importance of a cost-effective permit market equilibrium;
- ii). Proof of principle (the introduction of a certification process among the polluting companies related to the US Clean Air Act in 1977);
- iii). The Prototype phase (the 1990 Clean Air Act and embracing the ‘cap-and-trade’ system within the US Acid Rain Programme that was enacted in 1995, aimed at 50% reduction of sulphur dioxide [SO<sub>2</sub>] compared to the 1980 levels); and
- iv). the Regime formation (consolidating its influence on global climate policy).

Such market-oriented US experience played a vital role in shaping the political economy of carbon finance trends since the 1990s, including the Activities Implemented Jointly (AIJ) and Kyoto Protocol instruments.

Following the UNFCCC decision 5/CP.1 (COP1 in Berlin - 1995) and before the emergence of the Kyoto instruments, the AIJ pilot phase was implemented to ‘enhance

removals of GHGs by sinks, in addition to what would have occurred otherwise, in the territories of other Parties' (UNFCCC, 1995). During 1997-2000, AIJ project activities were hosted in both non-Annex I parties with 57 initiatives (~ 40%) and Annex I parties, including economies in transition with 83 (~ 60%) projects (UNFCCC, 2000:7). However, AIJ had showed huge regional distribution discrepancies as Africa had only 6 (4.3%) of the total 140 projects (in Burkina Faso, Mauritania, Mauritius, Morocco and South Africa - with 2 initiatives). AIJ's non-Annex I parties were dominated by the Latin America and the Caribbean region (26.42%) followed by the Asia and Pacific region (10%) (Ibid). A lesson was not learned as the failure continued to the other carbon emission reduction frameworks which followed, particularly the CDM.

Reconceptualising ecosystem services and market mechanisms aimed at making climate change 'more cost-effective' have produced instruments to contribute to this end (Jindal et al., 2008:116). As a result, a variety of similar, but different, market-based instruments, of which the CDM is one, were developed (McAfee and Shapiro, 2010:4). The CDM came a few months before the Kyoto COP3 in 1997, when the Brazilian delegation was pushing for the G77 and China endorsed 'Green Development Fund' modalities that require the global North to support the global South in tackling the climate change crisis (Lecocq and Ambrosi, 2007:134). However, this was rejected by the industrialised countries as it did not depart from the development assistance model and was attached to penalties. Alternatively, after extensive negotiations, both the Brazilian and the US delegates came up with a scheme called the CDM of the Kyoto Protocol. The Protocol introduced three models – International Emissions Trading (IET), CDM, and Joint Implementation (JI), with the aim of reducing global carbon emissions through a 'win-win situation' between the global North and South (UN, 1998; Dirix et al., 2016:842). Comparing the models, while both JI and CDM are 'project-based mechanisms', JI assists the global North by having a joint implementation initiative with other global North or

emerging economies (UNFCCC, 2011:1) like the ‘alliance [created] between Germany’s Ruhrgas and Russia’s Gazprom to reduce losses in natural gas pipelines’ (Anderson and Bradley, 2005:211).

The World Bank, before the full implementation of the CDM, established the Prototype Carbon Fund (PCF) in 1999 (becoming effective as of April 2000), and managed a ‘USD 180 million mutual fund’ which brought 6 governments and 17 companies together onto its system (Kelly and Jordan, 2004:2). All the involved actors had a deep interest in ‘learning about this emerging market, gaining competitive and strategic advantage over competitors, influencing ongoing negotiations ..., and acquiring emission reductions’ (Lecocq and Ambrosi, 2007). Simultaneously, carbon-oriented exchange platforms, such as the Chicago Climate Exchange and Emission Trading Systems (ETS), emerged while some companies in the US and Canada took measures to reduce emissions.

The expansion of the carbon market was considered to be the ‘Fast-Growing Market’ (with 717 MtCO<sub>2</sub>e between 2004-06) as it was uplifted with the entry of the EU-ETS (January 1, 2005) and the Kyoto Protocol (February 16, 2005)’ (Ibid:140). Indeed, the emergence of the CDM and JI with their international credits boosted the carbon market, despite the price variability causing a conflict between the EU-ETS and CER – which was more than three to fourfold. Being questioned for its poor performance in reducing poverty, such a promising carbon market trend started to diminish and saw a drastic decline in the unit price of the tCO<sub>2</sub>. For instance, the Executive Board of the CDM registered only 183 initiatives (1 September 2015 to 31 August 2019) compared to 4,576 initiatives (2008 to 31 August 2012), a decline of about 25-fold for almost the same period of four years (UNFCCC, 2019d:5). The CER issuance for the same period was reduced also by more than 2.5-fold. The total registered initiatives up to 31 August 2019 were 8,137 - including both project activities and Programme of Activities (PoAs) (see the next section for a critical discussion of the CDM).

Table 1. Global-level Carbon Finance Instruments (1990s to 2019)

Year	Period/Event	Mechanisms/Modalities	Brief Description
1995	Pre-Kyoto Protocol	Activities Implemented Jointly (AIJ) of the UNFCCC	Prototype emission reduction projects implemented in both Annex-I and non-Annex Parties.
Dec 1997 (Effective as of Feb 2005)	Kyoto Protocol First Commitment (2008-12) Second Commitment (2013-20)	Carbon Development Mechanism (CDM) BioCarbon Fund (BioCF) BioCF Plus	Article 12: To assist Parties not included in Annex I in achieving sustainable development and ... to assist Parties included in Annex I in achieving compliance with their quantified emission limitation and reduction commitments.
		Joint Implementation (JI)	Article 6: Any Party included in Annex I may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing ... or enhancing anthropogenic removals by sinks of GHGs.
		International Emissions Trading (IET) E.g. EU ETS	Article 17: The Parties included in Annex B may participate in emissions trading for the purposes of fulfilling their commitments.
1999 (Enacted in April 2000)	Kyoto Protocol	Prototype Carbon Fund (PCF) – World Bank	A USD 180 million mutual fund implemented by six governments and 17 private companies.
Negotiated since July 2005 and approved in 2013-2015	Montreal COP11 to Paris COP21	REDD/REDD+ Forest Carbon Partnership Facility (FCPF) (2008) and BioCF ISFL (2013)	Proposed by Papua New Guinea and Costa Rica for The Coalition for Rainforest Nations (CfRN). Approach: Results-based climate finance (RBCF)
2009 (Adopted in Durban COP17)	Copenhagen Accord	Green Climate Fund (GCF)	Established to support global South climate change adaptation and mitigation (with a goal of raising USD 100 billion a year by 2020).
Dec 2015 and post 2020	Paris Agreement	Internationally Transferred Mitigation Outcomes (ITMOs) for meeting the Nationally Determined Contributions (NDCs)  Katowice Climate Package (Implementation Guideline of NDCs 2018)	Article 6 (2) Parties shall, where engaging on a voluntary basis in cooperative approaches that involve the use of ITMOs towards NDCs, promote sustainable development and ensure environmental integrity and transparency.  Article 6(3): The use of ITOMs to achieve NDCs under this Agreement shall be voluntary and authorised by participating Parties.

Source: UNFCCC reports and dataset (1995-2019); Lecocq and Ambrosi (2007).

Founded on results-based performance, the Reducing Emissions from Deforestation and Degradation (REDD)+ is another predominant and global South relevant emission reduction instrument. Vindicating the empirically-supported CDM gaps, it has been emerging in A/R governance, particularly since 2013.

Furthermore, despite the US withdrawal, the Paris Agreement is advancing the NDC and market-based mechanisms that are based on the voluntary cooperation of parties to engage in the Internationally Transferred Mitigation Outcomes (ITMOs) of post-2020.

The other ever-expanding national emission reduction instrument is the Carbon Tax, as the World Bank's *State and Trends of Carbon Pricing 2019* report shows. Across the globe, governments' carbon revenue reached its highest in 2018 – generating more than USD 22 billion, while South Africa became the first African country to develop an economy-wide carbon tax (Ramstein et al., 2019:9).

As the above discussion shows (see summary in Table 1), the current emission reduction instruments were heavily based on the price-based remedies for addressing the global climate change dilemmas which all struggle to show themselves as the best options.

#### **2.4.2 Carbon Finance: Critical Reflection on the CDM**

Facing manifold poverty and development challenges, some global South countries such as Ethiopia and Cambodia are attempting to build a low carbon society (Hepburn, 2009:2) that lifts rural communities out of poverty and brings prosperity. The majority of these countries insist on the conventional model of neoliberal growth. Thus, carbon finance is considered to be the key tool to transform socio-economic structures (World Bank, 2018b). Carbon trading functions in two main ways: 'cap and trade' and 'off-setting' (see Karumbidza, 2015:4). Analysing its implementation, however, Redman et al. (2012:2) found there to be a mismatch between theory and practice, where carbon finance aims to limit GHG by capping through 'cheap and efficient means', but actually it has 'rewarded

major polluters with windfall profits' and failed to ensure a more equitable and sustainable economy. The CDM, being the focus of this research work, is the largest offsetting scheme globally. This section explores the debates on the CDM as a carbon finance framework for climate change mitigation, poverty reduction, and for promoting sustainable development.

As McAfee and Shapiro argue, the 'commodification of nature', as a key environmental policy, assumes nature's services to be 'tradable commodities' (2010:2). Reviewing the trend, the authors further show that 'market-oriented projects' on carbon, conservation and biodiversity have been extended from industrialised countries to both emerging and developing economies. Following more than two decades of environment and climate change related dealings, and cementing the financialisation of nature, the UNFCCC's Kyoto Protocol (1997) came into existence as an 'international effort', with the aim of reducing GHG emissions for climate change mitigation (Zomer et al., 2006:v). The CDM was adopted as a carbon finance model at COP3 in Kyoto, Japan; it requires industrialised countries to stabilise GHG emissions by placing a commitment under the principle of 'common but differentiated responsibilities' (UN, 1998:9). As outlined in the Protocol, Annex I parties, the Organisation for Economic Co-operation and Development (OECD) and economies in transition, need to offer 'new and additional financial resources' to the global South by fully covering their costs and meeting their commitments where they are required to reduce their emissions by about '5 per cent against 1990 levels' from 2008 to 2012 (UN, 1998:3-10). As Article 12 (2) of the Protocol stipulates, the CDM aims to help the global South in their endeavour towards 'achieving sustainable development' (UN, 1998:11; Boyd et al., 2009; Hepburn, 2009:5). Thus, the CDM supports industrialised countries and their companies in reducing emissions or developing carbon storage efficiency mechanisms 'more cheaply abroad than at home' and by engaging in forest-based carbon sequestration in the global South (Jindal et al., 2008:116; see also Hepburn,

2009:2; McAfee and Shapiro, 2010:4; Stern, 2006:245). The global North, in turn, can contribute to CO<sub>2</sub> emission reduction by ensuring their commitment to the Protocol targets, while compensating the efforts of smallholder farmers in the global South.

The CDM requires the fulfilment of a very strict emission reduction validation and certification if an initiative is to be considered for CERs. This comprises three key factors: the voluntary participation of the parties; measurability and ‘long-term’ in line with climate change mitigation; and not to include reductions that can be achieved without ‘the certified project’ (UN, 1998). Accordingly, guidelines including project appropriateness, transparency, conservative baselines and adherence to rigorous monitoring processes were added to ensure that the expected standards are met. However, it is difficult to see its effectiveness and additionality, as Schneider (2007:7) explains, carbon reduction is worked out based on ‘hypothetical and counterfactual’ decision factors, even in the absence of a carbon base year. Carbon payments can be made to ‘individuals, communities, enterprises, or governments who have sovereignty over or property or access rights to forest, pasture, wetland, or other ecosystems’ to sustainably govern their natural resource or dispose them from accessing it (McAfee and Shapiro, 2010:4).

Evaluating the overall global carbon market, forest credits assume less than 0.1 per cent due to low demand for the carbon, which excludes forest-based carbon credits from accessing bigger markets (O’Sullivan et al., 2012:4). The EU ETS is the biggest market, taking more than a 70 per cent share, while the CDM, being the world’s biggest offset approach, accounts for around 25 per cent. Smaller schemes, including that of JI and voluntary markets, assume the rest (Brinkman et al., 2009:4). As Hepburn (2009:3) has put it, among the mechanisms (market-based or multilateral fund) devised to serve the purpose, the CDM can be said to be a good start in transferring carbon finances from rich to poor countries. However, besides such appealing features, it has continued to be controversial as it failed to realise the livelihoods impact.

## **The Nature of Carbon Markets**

As the climate finance shows, there are two carbon sequestration interventions classified under the Kyoto Protocol's CDM as 'Kyoto-compliant' which produces carbon offsets identified as CERs, and the other, known as voluntary (non-Kyoto compliant), where corporate bodies support carbon initiatives to improve their goodwill (Jindal et al., 2008:122) and use it as a testing ground for those that have not yet been accepted by the CDM (Redman et al., 2012:2). However, the process of certification has the critical issue of 'impermanence', as it divides offsets as 'temporary CER (t-CERs)' for projects until the previous commitment of 2012 or 'long-term CER (l-CERs)' for projects with a lifespan of 30 years (Jindal et al., 2008:123). Reviewing global carbon finance, the authors state that unlike the small CDM-approved initiatives, most of the emission offsets are being exchanged under the voluntary emission reduction markets (Ibid:116). Under its Gold Standard level A/R initiatives, Ethiopia has experienced both carbon markets through its Humbo (compliance) and Sodo (voluntary) initiatives (see Chapters 7 and 8 for the impacts of both carbon market frames among the farmers in Ethiopia).

## **CDM as a Resource Stimulator**

Initially there was a high expectation of CDM generating investment for the global South, especially from the private sector, while promoting the 'transfer of environmentally friendly technologies' and 'sustainable development' without diverting Overseas Development Assistance (ODA) (UNFCCC, 2003:21). This means, as Jindal et al. (2008:116) argue, carbon sequestration investments may create a 'win-win situation' and bring valuable financial inflows to the global South and reduce the levels of poverty among farmers (see also Lecocq and Ambrosi, 2007:145; Boyd et al., 2007:250). Furthermore, the Annex I parties are also required to minimise the climate-related impacts on the global South. This is through improving their technologies, building their capacities, and also assisting them in diversifying their carbon-intensive economies

(UNFCCC, 2003:21), or as Zomer (2006:2) puts it, accomplishing ‘multiple goals of poverty reduction, environmental benefits and cost-effective emission reductions’. However, the claims made and the practice itself have diverted; Pfeifer and Stiles (2008:4) observed that CDM can only have a ‘minimal impact’ on sustainable development considering the additional transaction costs it might bring to the investor, which undermines Africa’s progress on climate resilience. This observation is similar to the findings of the research conducted in Humbo, Ethiopia (see Chapter 7).

### **Carbon Finance Performances: Claimed Impacts and Criticisms**

The carbon finance and its CDM in particular, are being contested, either for their alliance with neoliberal ideals or/and their empirical results. However, despite its weaknesses, the Kyoto Protocol, which resulted in the CDM, is considered a significant move in developing a global carbon emission reduction tool (UNFCCC, 2011a:1). Its achievements include the development of climate change policies by governments, private sector investment on carbon finances, and the creation of environmentally-friendly business models. Being a controversial framework, its opponents have however raised some critical points. This section discusses the arguments and counterarguments of the CDM as a tool for poverty reduction and climate change mitigation which are used broadly as impact factors in analysing the Humbo case in the later stage of the analysis.

The CDM, as an international carbon finance framework, is one result of the ‘innovative’ Kyoto Mechanisms (UNFCCC, 2011:1), where forestry- and agroforestry-based activities can significantly contribute to mitigating global warming. The argument given is based mainly on the financial inflow factor to the global South. Similarly, Hepburn refers to the mechanism as a ‘cost containment device, reflecting the relatively low-cost opportunities to prevent lock-in of fossil-fuel-based production and consumption’ (2009:2) while contributing to building low-carbon societies. Assuming the financial resource point of view, markets in ecosystem services are aimed at generating revenues

for the global South while achieving conservation and clean development, that is, ‘a triple-win solution for nature, private investors, and the poor’ (McAfee and Shapiro, 2010:2). This is assumed to be a great achievement, despite the bottlenecks facing the framework, ‘insecure land tenure’ with the risk of deterring investment inflows and communities’ access to forests, and ‘smallholders’ high transaction costs’ (Jindal et al., 2008:116).

For neoliberal scholars, the carbon finance trading mechanism has also been appreciated for being market-oriented rather than relying on multilateral funds. Their empirics on the success of multilateral carbon funds, including that of the UN Global Environmental Facility (GEF), is found to be ‘less encouraging’ and poor, as such funds are considered very centralised, donor-dependent and politically influenced, and there is an inability to secure the required level of funding. Indeed, the resource raised through the carbon fund can be a ‘legitimate and coherent rationale for financial transfers on the scale necessary’ (Hepburn, 2009:20). Despite procedural delays in the CDM’s implementation, it is being considered a ‘success story of the Kyoto regime’. As the latest data of August 2019 show, it has 8,137 initiatives on the system in ‘111 countries and has led to the issuance of over 2 billion CERs’ (UNFCCC, 2019d:6). Crediting the CDM’s dynamics, Boyd et al. argue that although at its early stage it was dominated by ‘a few technologies and sectors’ (2009:820) aiming for Hydrofluorocarbons (HFC) and nitrous oxide gases, it has now moved on to renewable energy initiatives. This argument becomes credible as ‘over two-thirds’ of the credits were awarded for simple changes to such gases which are not common in Africa, with the exception of South Africa and Egypt (Redman et al., 2012:2). Summing up, CDM’s key claimed successes include its ability to deliver vast numbers of emission-reduction initiatives, mobilise a substantial amount of private capital, deliver substantial emission reductions, and change company behaviour and dynamism by shifting from HFC and N<sub>2</sub>O to renewable energies (Hepburn, 2009:6).

Unlike the pro-financialisation of nature and its instruments, the carbon finance model has faced fierce criticism due to its multifaceted limitations. Its counterarguments and key areas of criticism include its overreliance on neoliberal and market approaches and the compelling empirical results of not focusing on pro-poor approaches. As Costanza et al. (1997:257) argue, it is difficult to value 'natural capital and ecosystem services' merely through market systems. Complementing this line of argument, neoliberal environmentalism decouples conceptually and empirically both nature and society and is founded on economic aspects, ignoring the social space of societies (McAfee and Shapiro, 2010:3). Moreover, attempts to include various actors may create conflicts, as society is stratified through structured power dynamics and 'inequalities' which are difficult to mitigate through the 'neo-classically based economic discourse' (Ibid; see also Atela, 2012:32). This implies that societal problems go far beyond economic and monetary interpretations.

Following the broad counterargument views, carbon finance with the CDM as a means to achieve sustainable development has further critical perspectives. The carbon-focused Kyoto Protocol requires industrialised countries to support emission reduction initiatives among poor countries and contribute towards their sustainable development (Hepburn, 2009:5), however its effectiveness in achieving this milestone has been questioned as it has 'fallen short of its potential' (Boyd et al., 2009:820). For instance, the global North's unwillingness to provide financial support, especially during its 2008/9 'financial crisis and recessions' (Hepburn, 2009:8) and its market emphasis, has led to it contributing less to sustainable development' (Olsen and Fenhann, 2008:2819). Agreeing on partial resource generation, the carbon fund has brought a change to local incomes and has improved aspects of physical nature, but the damage caused to local ecosystems and livelihoods is huge (Jindal et al., 2008:116). Reviewing the empirics of the Mexican PES, McAfee and Shapiro (2010:2) showed that its role 'in destabilising the sustainable

development of local communities' has resulted in the commodification of nature. For these authors, the 'decontextualisation and desocialisation' of the ecology for the sake of commercial motives as well as a generic framework have created conflicts in defining local/national development priorities and have failed to reflect local realities.

Geographical disparities and inequitable distribution of the CDM are also among its criticisms. Showing uneven distribution, Boyd et al. (2009:821) explain that China, being the second largest GHG emitter after the US, benefited greatly from the mechanism. As the latest data show, China and India are leading in the CDM process, making a total of 80 per cent of the global volume of the CERs (UNFCCC, 2018a). Nonetheless, SSA has benefited little from the financial and technology transfer, only securing a portion of it; that is, it is only able to access 2.4 per cent of the small-scale and 3.0 per cent of the full-scale CDM at global level, which makes a total of 238 initiatives, assuming 2.8 per cent of the global CDM share (Ibid). As a consequence, Africa has been unable to access the claimed resources.

There is also a clash of efficiency with pro-poor project initiatives. There is a clear link between an increase in political intervention and a reduction in economic efficiency as the motives and priorities differ, thus, as Hepburn argues, 'the multilateral or sectoral funding schemes are clearly inefficient', especially if the funds get lost due to corruption or 'generate diluted incentives' (2009:13). However, Boyd et al. argue that market-based mechanisms can 'achieve some cost effective emission reductions in developing countries' (2009:820). This can undermine poverty reduction actions as the communities only get the subsidiary benefit of carbon finance. The issue of equity as a 'primary objective' and 'ecologically sustainable development' should be addressed by the state and should not be left to the private sector and markets (McAfee and Shapiro, 2010:16).

The other counterargument being expressed is the question of environmental integrity (Schneider, 2007:5) as some of the credited carbon activities may happen without the

CDM, making their reference to the unreliable BAU baselines result in ‘uncertain and asymmetric information’, providing unrealistic incentives and a lack of coherence with national policies (Hepburn, 2009:4). With this understanding, most credits are generated by industrial gas-reduction initiatives using cheap technologies that make far more money from carbon credits than they cost to buy and run (Redman et al., 2012:2). Hence, there was a call for the post-2012 international carbon finance, including that of the 2015 Paris Agreement, to achieve the required level of emission reductions in the global South and compensate their efforts. Moreover, the opponents of CDM have also criticised the model for its failure to deter carbon intensive investments, where China and South Africa increased their coal power generation capacity (see Hepburn, 2009:10; Death, 2011:469; Resnick et al., 2012:216). The question then becomes what would be the point of on the one hand reducing, and on the other hand generating more carbon? This is a critical issue which even the Paris Climate Agreement is failing to address.

Disturbing communities’ resilient networks and livelihoods is also another criticism of CDM-based forest initiatives, and this creates adverse effects on the dynamics of local economies, given communities’ heavy reliance on natural resources (Li, 2011:283). For instance, indigenous communities are not given fair land contracts, with ‘land grabbing’ displacing them from their land which may violate their human rights and result in an inequitable distribution of resources (Ojulu, 2013:196). Henceforth, the project design stages need to review how the communities’ livelihoods and social fabric will be affected and cope in the absence of alternative sources of income-generating activities. As Zomer et al. underscored, the integration of carbon initiatives into local sustainable development which can partly address its possible trade-offs is needed (2006:3). This is crucial, as in some cases there has been an overemphasis on ‘carbon as a solution’. This has been true with the Humbo of Ethiopia where agriculture – known for being the most resilient livelihood among the communities – was side-lined (Kabore, 2013:6).

### **2.4.3 CDM and REDD+: Mutually Exclusive or Re-enforcing Frameworks?**

In forest governance, besides CDM, REDD+ has been a commonly-used framework. Initiated in COP11 Montreal climate negotiations (2005) and accepted in 2013-2015, REDD+ came into existence by making deforestation a key agenda point and to remedy gaps in the CDM which exclude emission reduction from deforestation (O'Sullivan et al., 2012; Neeff et al., 2014:149). Although there have been attempts to include a REDD+ framework and its principles in further climate change agreements, as of now it has been excluded from the Kyoto Protocol (Jindal et al., 2008:122). REDD+ has passed through several adjustments – spanning from Reducing Emissions from Deforestation (RED) to REDD+ incorporating 'forest degradation, conservation and enhancement of forest carbon stocks and sustainable management of forests' (O'Sullivan et al., 2012:9; Bhullar, 2013:1). Framed with the landscape approach, this can potentially contribute to global South mitigation. Though not included yet, the attempt to make land use, land-use change and forestry (LULUCF) part of the CDM is a continuous effort (Lange and Torrico, 2009:153).

As part of multilateral efforts to overcome the global environmental crisis, the UNFCCC has played a 'crucial role' in promoting REDD+ and supplementing it with necessary 'guidance and frameworks' (O'Sullivan et al., 2012:4). However, looking at the purposes of CDM and REDD+, the global South, including Ethiopia, has been avoiding the multiplicity of the carbon models and attempting to create harmony and coordination among them. Reviewing REDD+ potentials, Bhullar argues that, as an emerging framework in climate change policies, employing the lessons gained from CDM and being supported by multilateral and bilateral programmes, it is expected to be 'the key climate change mitigation mechanism' for the global South (2013:1). This can be a 'flexible means' for the global North to reach their targets (O'Sullivan et al., 2012:37). Summarising the advantages of REDD+, it could contribute to sustainable development

and climate change mitigation as it is considered to be a ‘cost-effective emission reduction’ mechanism. However, REDD+ has associated risks, including ‘oversupply and price collapse’ of the carbon market, and ‘risks to indigenous groups, local communities and biodiversity’ (Ibid). The UNFCCC Decision 1/CP.16, para. 70 calls on the global South to take action in the ‘... sustainable management of forests; and enhancement of forest carbon stocks’ where these support the REDD+ initiative (UNFCCC, 2011b:4). Unlike the compliancy-based CDM, REDD+ credits are being traded in voluntary markets, for instance, assuming less than 0.1 per cent of the global carbon market, and 0.31 per cent of the offset market (Kossoy and Guigon, 2012). However, given volatile global carbon markets and uncertain global climate negotiation outcomes, the permanency of the framework has been consistently questioned. The Ethiopian forest governance case shows how these markets are functioning and the challenges being faced by the farmers (see Chapters 7 and 8). Indeed, both the CDM and REDD+ cannot be mutually exclusive, rather they can reinforce each other if integrated into one system.

#### **2.4.4 Post-2020: Towards Reforming or Burying the CDM?**

Debates around carbon finance for sustainable development have become heated as more empirical works and smallholder testimonials come into play. Despite CDM’s challenges in measuring its performance, it has a lot to offer in terms of learning and ways forward for any similar approaches to come. That is, will the CDM survive and stay reformed or will it be buried alongside its contested legacies? ‘Good-bye Kyoto’ as Kachi (2017:1) underscores, the CDM can be left out of the post-2020 climate regime. However, besides the critics of market-based approaches, as Hepburn argues, opponents have failed to come up with a ‘credible and politically feasible alternative’ (2009:13). Although some with radical perspectives call for the burying of the CDM and closing the chapter as a ‘global mitigation mechanism’, there are some suggestions that call for reforming it to fit the post-2020 climate and development regimes, including the Paris Agreement. Indeed, the

trend and call are to reform rather than to completely outstrip it. Reflecting the global South's interests, the framework is not adequate to handle the multiple activities occurring in forestry, agriculture, energy and similar sectors where it has shown only minimal progress (Hepburn, 2009:6). Though not promising, with some changes it can serve as a 'transitional function', but as many agree, CDM cannot be the 'first-best' mechanism, and reform seems inevitable (Ibid:4-13). In reforming CDM and mitigating its shortcomings, there are some suggestions being put forward.

*Hybrid Model:* Generic market-based approaches rarely work in practice, as shown by the Mexican experience, among others (McAfee and Shapiro, 2010:1). This case has proven that, in the presence of strong local community-based actors, the World Bank-designed CDMs have clashed with local priorities and political contexts. Thus, a *new hybrid model* is required which results in 'market-like mechanisms, state regulations, and subsidies' and is 'reshaped by social movements' that call for the reconfiguring of neoliberal approaches to nature (Ibid). The model reassures conservation policies in the global South, indicating that if imposed from the North and shaped by neoliberal logic, they are highly likely to clash with local development contexts.

*Sectoral and Programmatic Models:* Intersectoral CDM is now being actively discussed and is expected to bring 'practical solutions' to some of the existing project-based gaps (Pfeifer and Stiles, 2008:15). Similarly, the 'Programme of Activities (PoA)' or programmatic CDM is being proposed by the World Bank and others including Hepburn who argues 'to allow large numbers of small, distributed projects' to systematically monitor and verify their processes (2009:14). This reform aims to put together multiple but related carbon-based initiatives and achieve effectiveness (Pfeifer et al., 2008:ii). Mexico's energy efficient bulb distribution initiative was the first to be certified under this approach (UNFCCC, 2012). Though at small scale, the World Bank has already started working with this approach, including in its REDD+ projects in Ethiopia.

*Agroforestry*: The call for integrating agroforestry into the CDM has been promoted by the countries of the global South and NGOs with the intention of supporting smallholder farmers' food security efforts. This can promote carbon finance significantly in rural and agricultural domains by ensuring an increase in household food security levels (Zomer et al., 2006:31). It can also mitigate the problem of promoting large-scale forest plantations as well as intersectoral trade-offs by bringing ownership and engagement to communities. Summing up, global carbon finance has inherited more than eight thousand initiatives which have been developed and implemented based on the CDM, and now an action is needed either in integrating the new performance-based payments of the Paris Agreement, or in dealing with its legacies. However, the most worrying issue is that global development actors and COP state parties remain divided about which model to follow.

## **2.5 Green Economy and Carbon Finance in SSA: Nature, Actors and Institutions**

As an evolving concept, it is a challenge for the global South to find a model country that has achieved notable success pursuing the green economy regime. Given the wider impact it brings to the political economy of the state, pursuing this development path requires a systemic change in both policy and institutional set-ups (Dalal-Clayton and Bass, 2002:15). Systemic transformation in 'unleashing' the global South's economic potential and creating sustainable growth for generations to come requires a buoyant policy and an effective governance system to be in place (Newton and Cantarello, 2014; Preston, 2012). However, the global South, in taking such a development path, faces multiple policy and governance challenges to absorb this economic model and turn it into an opportunity (Klein et al., 2013:21). As it is an emerging concept, research on the green economy in SSA has not yet been fully exploited, and there is a huge demand for it.

### **2.5.1 Green Economy: A New Concept in SSA**

During the last six decades, most of the global South and SSA countries have been at a crossroads in choosing and adopting new forms of economic models. Being ambitious on their development path, many have begun to see the green economy as an opportunity; however, it is also being considered by some as a new phase of previously unsuccessful neo-colonial policy transfers: the Structural Adjustment Programme (SAP), marketisation, privatisation and the export-oriented economy (Bakker, 2010:723). However, dissatisfied with existing development approaches, global South leaders have been keen, although cautious, about adopting alternative sustainable development models. Thus, there is considerable interest in the policy arena as to whether, as a new path, the green economy can accelerate the global South's development process. This further leads us to the question of 'can [it] be a "cost or an opportunity" to development?' (Kastrinos, 1995:905). Although the potential response could be both, if carefully embedded in the national development agenda, it might also be an opportunity by boosting slow growth (Kastrinos, 1995:905; Vazquez-Brust et al., 2014:5). Generally, due to it entailing 'economic development, improving resource efficiency, lowering carbon intensity, and job creation' (Resnick et al., 2012:215), the green economy is becoming attractive to the global South.

There is an environmental crisis in SSA, as the Intergovernmental Panel on Climate Change (IPCC)'s 2014 report on Africa has indicated, showing the region to be in a very alarming situation where there is an evidence of increased warming, reduction of precipitation, depletion of ecosystems, shortage of water supplies, drought and desertification (Niang et al., 2014:1202). Given the pressure from non-climatic forces such as population growth, and compounded with climate change, the situation is expected to worsen and adversely affect agricultural production and the food security of millions (Ibid). This is becoming evident in Ethiopia, where smallholder farmers and

pastoralists are exposed to high rainfall variability and food insecurity (Klein et al., 2013:10); and this could potentially lead to resource-based conflicts. However, with climate change being the ‘major motivation for green growth’ (Sperling et al., 2012:6), this can lead to robust natural resource management. Understanding the potential impacts, Klein et al. advised the continent not to follow a ‘grow first – clean up later’ model, as this can lead to the ‘irreversible destruction of natural resources’ (2013:12). Thus, regardless of the global South’s low emission rates, proactive measures on climate change are resonating.

The green economy in the SSA context is ‘still quite vague’ and is being ‘discussed and defined in different ways by different institutions’ and there is a fear it can be used as a pretext for ‘eco-protectionism’ to ignore the interest of the poor (Klein et al., 2013:9). Assumed as the ‘fashionable term for sustainable development’, it lacks coherent strategies and political will, and often politicians tend to see it more as a set of ‘green initiatives’ rather than ‘a strong engine and opportunity to propel economic development’ (Ibid:29). The initiative for greening SSA countries has been influenced by several critical factors, including the abundance of natural oil and gas, subsidy policy and pricing, efficiency levels and energy saving policies which can either promote or demote carbon emission rates (Nauc ler and Enkvist, 2009:73). This process requests SSA countries to integrate the mutually re-enforcing and crosscutting elements across the sectors. Even though it is ‘neither mentioned specifically and nor is central to the[ir] vision’, it has ‘secured central focus on poverty eradication’ (Ethiopia, Benin, Uganda and Rwanda) and on economic growth and the generation of prosperity in middle-income countries (Namibia, Nigeria and Ghana)’ (Klein et al., 2013:15).

The continent’s major financial institution, the AfDB (2012) promotes the green economy as an instrument for the sound management of natural resources, especially as the majority of the population depends on natural resources for their immediate livelihoods,

and it can reduce vulnerability and maximise the benefits. Among SSA countries there is a huge difference in putting the green economy on the national political and development policy agenda – with not a single exemplary country that can be taken as a model. Klein and her team have drawn a lesson based on the greening trends of five African countries; namely Benin, Ethiopia, Ghana, Namibia and Nigeria (2013:5). Based on their findings, apart from Ethiopia [recently also Rwanda and Uganda], which have developed an ‘overarching greening strategy’, all the remaining countries are only able to partially integrate and implement some of its components. Moreover, they also discovered that ‘the legal and regulatory framework’ is at the ‘infancy stage’. Furthermore, Klein et al. highlight the key market potentials related to the green economy to include ‘biotrade, sustainable tourism and renewable energies’ (2013:5), however, the inclusion of biofuel is being rejected as it ‘ignores ecological realities’ and affects the food security of the global South (Jideani et al., 2011). Such empirical findings are making the new initiative unattractive to some countries.

Despite this fact and although very fragmented and sector based, empirical works show that there are some initiatives being undertaken in SSA. For instance, as Klein et al. show, Ghana has produced the ‘*Ghana Goes Green*’ policy that focuses on climate change and efficiency; Benin has developed instruments to phase out polluting motorcycles and is promoting sustainable hunting tourism; Ethiopia has improved its financial facility; in Nigeria although climate change mitigation is not ‘high on the political agenda’, CDM is expanding; and Namibia is promoting sustainable tourism (2013:4). Besides Ethiopia (in 2011), other countries – Rwanda (in 2011), Mozambique (in 2015) and Uganda (in 2016) – were able to launch their national strategies, advancing the new agenda in Africa. This is being pushed in an increasing trend on the African continent, with more countries expected to follow.

### **2.5.2 The Nature of Carbon Finance in SSA**

Reviewing the nature of the carbon finance initiatives in Africa provides an understanding of their size, intention and timeframes. The following accounts by Jindal et al. (2008:122) highlight several key elements where most of the carbon finance initiatives, being non-Kyoto compliant, ‘offer at least some level of benefit to local communities but others largely excluding local people’. Unlike the implicit corporate motive in Ethiopia’s Humbo case, initiatives such as in Uganda and Tanzania are aiming for commercial gain by generating revenue to timber companies. In terms of carbon sequestration potential, it stretches from 7.1 MtCO<sub>2</sub> (in Mount Elgon and Kibale National Parks, Uganda) to 0.05 MtCO<sub>2</sub> (Participatory Environmental Management Programme, Tanzania). As to the project life span, it can be over 30 years in Kenya or Ethiopia, or over 99 years in Uganda. Regarding their compliance with the Kyoto Protocol, most of the interventions are voluntary and non-Kyoto compliant. However, the recent World Bank BioCarbon fund engagement with more than six carbon initiatives has increased the compliancy markets in Africa (Jindal et al., 2008:122); Humbo’s certification falls within the Kyoto compliance with a 30-year lifespan. As the UN reports show, in pre-2012 carbon finance, Africa as a continent lost opportunities by not engaging with such projects, with an assumption of that it could gain from carbon finance shares (Ibid:117). Despite SSA’s critical need for financial inflows, most of the CDM fund went to the relatively resourceful countries in Asia or Latin America and this shows the framework’s drawback and a mismatch between the Kyoto Protocol’s aims and results.

### **2.5.3 Institutional and Policy Challenges: Towards Functional Interdependence**

The green economy requires an integrative approach to environmental, social and economic policies, as it can either promote or hinder economy-wide greener growth. A deeper understanding of these sustainability policy links is vital to enhance domestic and international inter-policy coordination of regulatory frameworks (ICC, 2012:38). As

Habtezion argues, the ‘deficit in governance at the local, national and international scales ... can adversely affect the pathways for successful greening’ (2014:38). However, the SSA countries’ ‘weak governance’ (Clare et al., 2012:234) and the lack of ‘mature, efficient and sustainable technologies’ (Klein et al., 2013:12) are deterring their economies from realising environmental and social development. Therefore, in initiating the green economy, the ‘costs, risks, benefits and opportunities of different policy options’ need be reviewed within the political economy of a country that consider its overall socio-economic and political development (Allen, 2012:5).

Policy synergy and harmonisation through ‘innovative institutional arrangements’, as Clare et al. argue, can ensure ‘social, ecological and economic benefits, reduce trade-offs’ and bring ‘multiple paths for addressing common drivers and pressures’ (2012:234). Functional partnerships can increase policy actors’ participation and reduce potential conflicts. Reconciling the needs and special interests of the manifold actors in the process may harm the ‘short-term efficiency’ and the ‘equity and long-term effectiveness’ (Forsyth, 2009:122). Global actions, such as climate change mitigation focused institutional frameworks, need to promote the adaptive capacity of local livelihoods rather than cripple them. As the emphasis on ‘connected systems’ has been gaining momentum, the need for a new system that works with ‘functional interdependence’ or ‘polycentric governance’ is being recommended (Watts, 2012). Unless micro-level activities are able to be seen in the context of the macro, or vice versa, the level of synergy would be harmed significantly and may create resentment among local stakeholders.

Understanding the power dynamics of the actors and their institutional basis is critical, as the design and development of the partnership largely depends on the level of influence each actor brings into the green economy. Thus, the technical knowledge, the ability to negotiate on critical issues, as well as the financial position, can greatly shape the outcome of the institutional power relationship in carbon finance. Furthermore, actors, including

technical experts, validation bodies and carbon stock exchange houses can shape the carbon value chain market (Schneider, 2007). The role of the global actors in influencing carbon prices is significant. The farmers who are responsible for generating the carbon credits and who exert their labour and time in mitigating the carbon emissions, however, are neither able to dictate nor influence the carbon exchange market decisions.

The successful transition to a greener economy, transforming risks and challenges into opportunities, requires a huge technical and financial backing. In SSA, as numerous research works and reports show, population growth, rapid urbanisation, climate change, unsustainable development choices and weak governance persist as critical challenges in reaching environmental sustainability and high social aspirations (see AfDB, 2012:14). Institutional synergy is being considered as a key factor in the utilisation of scarce resources to reconcile the potential sectoral trade-offs. For instance, the investment being made in sustainable land governance affects the performance of the forestry, agriculture, tourism and other sectors, while maintaining ecosystem balance. Lack of capacity among the wider green economy implementers and key stakeholders is considered a key institutional gap. Furthermore, other major barriers evidenced in the region include: a knowledge and awareness gap; lack of understanding of the impacts on society; human and institutional capacity; lack of organisational systems and modalities; harsh environmental landscapes; and the absence of data to help make the right decisions (Klein et al., 2013:26). Ethiopia's green policy and Humbo's carbon finance case have shown such major institutional and policy gaps (see Chapter 5).

### **Building Strong Institutional Capacity**

Governance capacity is considered an essential element in ensuring the success and sustenance of carbon initiatives. As Pfeifer and Stiles emphasised, lack of capacity is a key barrier to the expansion of CDM initiatives in Africa (2008:22). By having a strong institutional set-up and installing easily understandable procedures and guidelines, Jindal

et al. (2008:116) argue that transaction costs can be reduced, which potentially enable governments to attract relevant opportunities. Furthering their argument, Jindal and his colleagues state that institutional infrastructure might attract and sustain carbon investment along with 'long-term economic and political stability', whereas a volatile political system and erratic governance structures may put carbon investments at risk.

The successful implementation of a carbon initiative requires the presence of adequate national institutional capacity in proactively assessing its potential impacts. However, most SSA countries lack institutional capacity, supporting policy and legal frameworks, and awareness about carbon payments. In line with this argument, governments' role as intermediary actors in the carbon market is often to build a strong governance system. So as to mitigate the identified gaps and improve the institutional capacity in the region, the UN, with the help of the World Bank, the AfDB, UNDP, UNEP, UNFCCC, UNECA and the global North governments, launched the Nairobi Framework (NF) in COP12 in 2006 (Pfeifer and Stiles, 2008:22). As an initiative, the NF and the other UNEP complementing programmes of CD4CDM (Capacity Development for CDM) and the World Bank's Carbon Finance Assist were expected to promote the CDM; nevertheless, with few exceptions, all have failed to expand Africa's share of CDM (Ibid). Consolidating this move, there is a new trend of embracing capacity building into the carbon initiatives, for example, the Japan-supported Western Kenya Integrated Ecosystem Management Project aims instituting carbon assessment and certification (Jindal et al., 2008:127). However, this measure is not favourable to the investors as it adds a transaction cost to investment.

In building a strong institutional set-up and capacity that support carbon finance, Pfeifer and Stiles (2008:24) suggest that the governments of Africa play a lead role in regulatory, policy, and institutional capacity building. Therefore, Africa should learn from China in building a designated institutional set-up that explores the opportunities and minimises unintended exploitations. As Hepburn shows, China's ability to dominate the global CER

market was ‘driven by strong institutional support’ by the Chinese National Development and Reform Commission (NDRC) (2009:6). Thus, if SSA countries need to compete in the unfair global carbon market, promote its potential role and reduce its associated risks, the presence of such an institutional framework could be inevitable.

#### **2.5.4 Actors Interplay: State, NGOs and Global Actors**

A green state path attracts multiple actors across the scales and levels of governance, where the state, NGOs and other global actors tend to maximise their gains. The current debate on which actor should lead the green economy in the global South in the presence of ‘weak state structures’ is critical. Thus, the debate: ‘Is the state’s role in attenuation?’ is not only particular to the green economy; rather it has been a classic but live argument reflecting a state of ‘market failure’ or ‘state failure’ (Harman and Williams, 2014:928). Recently, there are some convincing arguments being raised in relation to the green economy for the state to either create ‘enabling factors’ or ‘lead the transformation process’ (UNEP, 2012). Due to a wider acceptance of the ‘market-based policy prescriptions failure’, as Harman and Williams highlight, there needs to be a rethink on the active role of the state in the green development process (2014:926). Economic growth is interpreted narrowly as efficiency rather than ‘structural transformation’, and this argument rejects the substitution of government autonomy with market rules (Ibid). Understanding the role of the state in supporting the market and the private sector, Brockington emphasises the need for ‘substantial investment and reshaping of the economy’ (2012:416). Supporting this line of argument, Vazquez-Brust et al. agree that ‘the most paradigmatic successful examples of developmental transition’ has been led by the state (2014:30). However, African states face challenges in ‘getting the national policy, regulation and investment framework right; actions to increase the national capacity to deliver new technology approaches and to encourage private sector involvement and the political will’ (Doig and Adow, 2011:35). Indeed, as Cerny argues,

due to the multiplicity of interactions and the dispersion of power among the various actors, ‘the authority, legitimacy, policy making capacity, and policy-implementing effectiveness of the state’ (1995) is expected to decline; that is, it is failing to cope with the pressure. Complementing the state’s role, it is argued that ‘multi-level, value-driven multi-stakeholder governance’ can significantly help in ensuring inclusiveness (Vazquez-Brust et al., 2014:32). The call for a new form of governance seems undeniable.

Experience over recent decades has shown that NGOs are becoming highly dynamic and influential actors in the global green regime. This is because of their ability to hire professional staff and devise new forms of collaborative institutional set-ups with research institutions. The actions of these actors, although criticised for being ‘biased’, have been influential, as the biggest NGOs have been dynamic and vibrant enough to grab the emerging opportunities by adopting drastic governance modalities including being able to reduce individual expansion and form networks; closely work with corporates and governments; adopt and creatively engage with the systems; emphasise results rather than problems; embody governance principles; and work at multi-levels with various actors (Liverman, 2004:735-6). Despite such successes and being able to ‘accumulate’ a body of knowledge and practice and become a ‘good information source’ for policy development, as Klein (2013:25) explains, NGOs are challenged for being very focused on ‘natural resource management’ rather than its entire socio-economic system. Moreover, as Brockington argues, NGOs are ‘good at raising money effectively’ but ‘less good at spending it’ (2012:418). Despite the criticisms levied at them, NGOs are expected to continue taking micro-level initiatives that can inspire governments to explore the opportunities attached to greening.

Global actors, including the UN and global and financial institutions, have been key advocates of the green economy through commissioning studies and organising scientific and epistemological bodies. It is being articulated and advanced by powerful global actors

who are key to channelling green funds and carbon certification. For instance, UNEP's 'Global Green New Deal' played a big role in promoting the concept of economic transformation and creating viable systems (Klein et al., 2013:9). International organisations, particularly the UN and the World Bank, played a role in propagating the green economy as well as carbon finance's implication for development, first in Asia and then in Africa (Klein et al., 2013:9; Jouvet et al., 2013:30). It has also gained support from the G20; the London communiqué called for its acceleration in securing more green jobs and increasing outputs (G20, 2009). Multilevel governance models may also help in creating policy platforms, as these global institutional set-ups have been creating 'political space for local-transnational alliances', such as the movement against 'biopiracy' and the 'commodification of life' (McAfee, 1999:135; Luke, 2009:18).

Reviewing the role of the leading actors in carbon finance helps to understand 'who does what' in the sector. The key actors have been the Kyoto Protocol parties on carbon finance and international financial institutions, which have been at the forefront of promoting and guiding the overall process. Though the list is long, state and non-state actors, including conservation NGOs, for-profit and social enterprises and UN environmental bodies can be mentioned. Moreover, the engagement of UNDP, UNEP, USAID, EU and global North governments demonstrates the diversity of the actors who are driving the move through financing carbon initiatives in SSA. Through its BioCarbon Fund and the GEF, the World Bank is found to be 'the biggest carbon investor in Africa' (Jindal et al., 2008:123). In rural development focused initiatives, local communities act as service providers and share the carbon revenue; whereas in others, the project owner retains the carbon rights while community members may have rights to access only non-timber forest products. In the case of Humbo, Ethiopia, the government's role was facilitatory while WVE acted as intermediary, assuming the responsibility of 'organising communities, building the capacity of community representatives, monitoring and supervision, and

obtaining funds from investors' (Jindal et al., 2008:123) (see Chapter 5 for a detailed analysis of the actors and discussion of the Humbo case).

## **2.6 Conclusion**

This chapter has outlined the current debates around the green economy as a development path in general, and its relevance to the SSA context in particular. Climate change trends have been dominating global development thinking, as well as local-global linkages in addressing societal problems. This is because activities at local or global scales greatly influence each other. Based on this systematic review, it is clear that this transformative process needs a dynamic policy and governance framework that enables societal change through that creation of an environmentally, economically and socially viable system. As an emerging path for sustainable development, the green economy aims to address the global climate change crisis and reduce poverty among the global South. The model's attempt to consider the environment in the context of the whole economy – not piecemeal – can be taken as a positive initiative. However, bringing market logic crystallised by neoliberal ideals and the financialisation of nature to climate change governance raises multifaceted questions. Monetising carbon and its speculative nature, such as through the CDM, despite being considered an 'innovative' approach, has been facing critical challenges; by not focusing on social fabric, it has been ineffective in reducing poverty among the communities of SSA who are struggling to address multiple development challenges. The power disparities among the parties involved, such as the World Bank versus the communities in the region, are very indicative in predicting the outcomes of such a disingenuous partnership. With policy and institutional capacity gaps, these globally- induced carbon finance frameworks need critical engagement through empirical works, showing that these approaches are living up to their promises of generating financial inflows and reducing poverty, while boosting local communities' resilience to shocks and mitigating global climate change challenges.

### **Chapter 3 Methodology**

This chapter elaborates on the methodological approach used with the Humbo communities in the Southern Nations, Nationalities and Peoples' (SNNP) Regional State of Ethiopia to assess the carbon finance framework within the context of a green economy. It outlines the usage, implication and practicality of the selected methods applied in research design, data collection and analysis, rather than engaging in a philosophical discussion of the social science research methods. Choosing the right method can significantly contribute to generating original data or empirical material to help address the research questions and present the research results.

The overall qualitative methodology used in the study links the current debates on the green economy, the financialisation of nature, and green-based resource generation for poverty reduction in Ethiopia. While mainly using a qualitative approach, the research also used descriptive statistics to determine the demographic nature of the sampled respondents from seven villages in the Humbo area. To explore these critical development issues within the global South, the research was built on a *case study approach*. For the rationale in selecting the Humbo carbon finance case in Ethiopia and its relevance to the wider discussion of the green economy, see Section 1.4 Case Study Selection in Chapter 1. Furthermore, an overview of the Humbo case study and its key facts in the context of the need for a social inquiry are given at the end of this chapter.

The methodology was applied to explore the key themes under discussion and Ethiopia's experience with a case study of the Humbo carbon finance initiative aimed at climate change mitigation and poverty reduction and the measures taken to generate the required changes in the green economy. The undertaken method aims to answer the key research question: Why and how does Ethiopia implement carbon finance within its green economy policy, aiming at both global climate change mitigation and poverty reduction?

### **3.1 Analytical Approach: Qualitative Method**

Qualitative research methods are one of the key approaches used when looking at development issues and interpreting their discourses within a given political economy. As a field of social inquiry, qualitative research has been dominant in revealing interconnected societal issues and, as Taylor et al argue, it is a method that goes beyond data gathering and is ‘a way of approaching the empirical world’ by synthesising the facts and generating findings (2015:7). Applying such methodology helps in acquiring and analysing data, as well as in systematically understanding the body of knowledge of the subject area. Furthermore, in this study, descriptive statistics were used to generate household demographic and socio-economic data through a questionnaire administered to 58 households. This also determined the levels of engagement with the greening initiatives, the benefits gained from the intervention at both household and community levels (including ecological, economic and social dimensions), the observed gaps and the understanding in ensuring the sustainability of the greening initiative.

### **3.2 Research Data Sources and Collection Methods**

Data collection was carried out using various target group-focused research tools. To complement these, both primary and secondary sources of data were used. For the primary data collection, semi-structured interviews (of both experts and community leaders), Focus Group Discussions carried out. A total of 119 people participated in the study, including 58 beneficiary households, 10 non-beneficiary households, 30 focus-group discussants and 21 key experts from various institutions (FGDs) among the various social groups, a rural household survey, and site observations were.

The secondary data consisted of a previously produced body of knowledge in published and unpublished forms. These comprise academic journals, national development policies and strategies, policy briefs, agreements and working papers. Published articles based on carbon finance models, as well as Ethiopian state policy and strategy documents, were

the most useful sources for framing the research design and checking the validity of the data collected from the field. A triangulation process for crosschecking the reliability of data helped the researcher come up with robust data that significantly support the analysis of the research, and also ensured relevant research findings and concrete policy-oriented recommendations.

### **3.2.1 Data Collection: Primary Sources of Research Data**

#### **Qualitative Interviews**

Multiple actors were involved in designing, implementing and evaluating the Humbo initiative – ranging from the farmer cooperatives to the World Bank. Qualitative interview methods, including both intensive and elite interviews (Hochschild, 2009), were carried out to collect data from community members and key informants, including policy makers, public servants, NGOs and global organisations. Elite interviewing is used as a key method of data collection to ‘uncover the complex and sensitive power dynamics of policy making’ that are not easily found in policy documents (Duffy, 2008:331). This tool was used to conduct interviews with a politically appointed cabinet member and key bureaucrats engaged with the CRGE strategy. Semi-structured questionnaires were used for the key informants. For the interviews, the primary tool was face-to-face questioning, but on some occasions, telephone and email interviews were used to avoid any data deficiency.

Data were collected on the impact and implications of the forest-based greening intervention and the Kyoto Protocol among the farmer communities. Questions included: why and how were the farmers involved in the forest carbon initiative? Does it contribute to improving their livelihoods? What benefits did the farmers receive during or after its completion? Do the farmers have the motivation to sustain the protected forest area? The household survey respondents were very open in answering the questions and shared some critical aspects with the researcher related to the carbon initiative which were not

raised by the top project managers. In rare cases, the respondents showed a tendency to let the researcher play an advisory role.

### **Focus Group Discussions (FGDs)**

In the context of research dynamism, the role of FGDs as ‘collective conversations or group interviews’ has been greatly praised for being a ‘fruitful method for thinking through qualitative research’ (Kamberelis and Dimitriadis, 2011:545). The method stimulates relevant information and issues from the different socio-economic groups. While applying this method, a scrutinised sampling technique can help to reduce self-selection and avoid overrepresentation of a specific group. In Humbo, careful selection and chairing prevented domination by extroverts. Three FGD sessions were conducted – one each among the cooperative units of elderly, women and youth, with an equal number of 10 participants in each session reflecting their particular demographics, social status and interests. Creating an open forum for the women provided valuable information and revealed a gender bias reflected in the initiative (Kabore, 2013:6). Given women’s lower social status among the Wolayta ethnic group, the FGD created a platform for them to speak openly about gender and non-gender issues. Questions on women’s level of participation and decision making roles included: Why are there fewer women than men? Do women have decision making powers and are they able to influence the forest governance? Do women share the same benefits as their male counterparts? The FGDs thereby contributed towards understanding the gender dynamics.

### **Case Study Preliminary Visit**

A case study as an ‘intensive study of a single unit’ (Gerring, 2004:342) brings empirical evidence that can support the development of or interrogate a theoretical framework. The intensiveness refers to, as Flyvbjerg argued, the researchers’ engagement with the case in ‘more detail, richness, completeness and variance – that is, depth – for the unit of study than cross-unit analysis’ (2011:301). He underscored a ‘concrete case knowledge’ as

critical in developing predictive research results. As Gerring put it, the case study as a method needs to be ‘correctly understood as a particular way of defining cases, not a way of analysing cases or a way of modelling causal relations’ (2004:341). Therefore, applying a case study approach requires an early-stage knowledge of the case being undertaken and this helps to make a decision on the relevance of the case study and can avoid any potential problems early on.

In November 2014, a week’s mission trip was carried out in Addis Ababa with the aim of exploring and getting preliminary case study information and building an informal network. Experts from World Vision Ethiopia (WVE) – the implementing agency working in Humbo – and the forestry sector were interviewed. The data collected strongly supported the selection of the Humbo Assisted Natural Regeneration Project as it included the various national and international greening policies, the global-local interdependencies as well as the institutional experiments (Biryahwaho et al., 2012:14).

## **Fieldwork Phases in Ethiopia**

### **Phase I: Conducting a Pre-test and Building Networks**

Phase I of the fieldwork was conducted in March 2016, when the researcher visited Addis Ababa and the Humbo communities. The site visit helped in understanding the physical regeneration, the physical and vegetation coverage changes, the forest protected area within the broader ecosystem, the rehabilitation mechanism used and its results. During the fieldwork, the feasibility of the case study selection was explored by consulting with the target groups and key informants; a qualitative questionnaire pre-test was conducted and a network to potentially facilitate the actual data collection process was created. From 2010, the researcher visited Ethiopia several times for different but related reasons, and was able to build up networks which eased access to government sources.

## Phase II: Data Collection

Phase II of the fieldwork was carried out from February to March 2017. The time was proportionally allocated to conduct the community-level surveys and to interview the policy makers, bureaucrats and professionals.

### Rural household survey and respondents' demography

A fieldwork-based household survey was carried out to generate descriptive data of the forest initiative beneficiaries. This, alongside the household roster, generated household-level information. In this research, a multi-stage systemised sampling technique was deployed to identify the target groups that reflected the seven village cooperatives responsible for forest governance and their membership size on an approximately proportional basis.

Table 2. Respondents' age and marital status

Age group	Percentage	Marital status	Percentage
21-30	12.41%	Single	0.00%
31-40	43.10%	Married	96.55%
41-50	23.80%	Widowed	3.45%
51-60	17.24%	Divorced	0.00%
61-70	3.45%		
Total	100.00%	Total	100.00%

Source: Data collected by the researcher (2017).

The total 5,168 forestry cooperative members were proportionally stratified into groups, based on their distribution in the villages. Following this geographical stratification and the number of beneficiary allocations, a proportional sampling method was applied as follows: Abala Gefeta 6 (10.34%), Abala Longenna 10 (17.24%), Abala Shoya 6 (10.34%), Bola Wanche 9 (15.52%), Bossa Wanche 8 (13.80%), Hobicha Bada 10

(17.24%) and Hobicha Bongota 9 (15.52%). Of the 58 total household beneficiaries, male and female comprised 77.6 per cent and 22.4 per cent respectively, with the majority between the ages of 31 and 50 (66.90%). In terms of marital status, two of the respondents were widowed and the rest were married (see Table 2). As Chapter 6 outlines, marital status affected the composition of the membership – there is a gender underrepresentation with male-headed households mainly represented by men only.

Table 3. The seven cooperative members and sampled size (by village and gender)

Cooperative names	Cooperative Members (Gender)				Total	Sample Size (Gender)				Total	
	M	%	F	%		M	%	F	%	Total	%
Aballa Gefata	473	81.27	109	18.73	582	5	8.62	1	1.72	6	10.35
Aballa Longena	741	83.16	150	16.84	891	8	13.79	2	3.45	10	17.25
Aballa Shoya	369	73.21	135	26.79	504	4	6.90	2	3.45	6	10.35
Bossa Wanche	629	77.27	185	22.73	814	7	12.07	2	3.45	9	15.52
Bola Wanche	449	61.85	277	38.15	726	5	8.62	3	5.17	8	13.79
Hobicha Bada	745	87.85	103	12.15	848	9	15.51	1	1.72	10	17.23
Hobicha Bongota	661	82.32	142	17.68	803	7	12.07	2	3.45	9	15.52
<b>Total</b>	<b>4,067</b>	<b>78.70</b>	<b>1,101</b>	<b>21.30</b>	<b>5,168</b>	<b>45</b>	<b>77.59</b>	<b>13</b>	<b>22.41</b>	<b>58</b>	<b>100</b>

Source: Hombo Cooperative Union Office and Updated Data collected from the Cooperatives, 2017.

**Note:** Produced based on the list of participants used by the cooperatives and the Union but not updated to include the number of members who died during 2006-2017. Their number, however, is statistically insignificant at less than 1.7 per cent of the total membership size, as interviews with KICs show [figures are rounded to the nearest tenth].

Scoping the demographic nature of respondents provided an opportunity to look at their characteristics and their means of livelihood. Table 3 shows the demographics of the beneficiary interviewees along with their geographical dispersion and gender. In selecting the respondents, ethnicity was not taken as a determining element as there was a high

degree of homogeneity (96.33% being Wolaytas, see Section 3.6.1 for the demographic data). As Table 3 depicts, the sampling system used was proportional to the numbers of village cooperative members and gender. In ensuring gender parity in the targeting process, a percentile allocation was made among the villages; a systematic random sampling was taken from the roster of cooperative members and this enabled the researcher to see the perspectives of women in an initiative overwhelmingly dominated by men. Besides the beneficiary respondents, 10 interviews were conducted among a non-beneficiary sample group to capture the inclusiveness and exclusiveness factors of the carbon and non-carbon-based benefits.

### **Stakeholders' and policy makers' interviews**

During the data collection phase, 21 key stakeholders and policy makers linked to the initiative were interviewed to determine the overall national and international environmental and forestry policy and governance agendas. These were: the cooperative chairmen (7); the Union manager (1); the Humbo District Office representatives (3); World Vision Ethiopia (2); the Ministry of Environment, Forest and Climate Change (MEFCC) staff (3); an independent researcher (1); the World Bank staff (1); and NGOs active in the carbon business model in Ethiopia (3).

### **3.2.2 Data Collection: Secondary Source of Research Data**

#### **Subject-based literature**

To gain an in-depth understanding of the research concepts, a range of research outputs and policy documents were consulted. Current debates on the green economy, carbon finance and the Humbo case study were reviewed. A critical analysis of the literature helped to shape the research design and identify any knowledge or policy gaps. The overwhelming majority of sources for the current debates on these core concepts were generated from London libraries, digital book outlets and a range of e-sources, including

journal articles, books and publications from other global organisations.

### **Country-based documents (Ethiopia)**

The majority of the documents related to Ethiopia's CRGE strategy and the Humbo forest initiative were digitally accessible from the Ethiopian government official websites, the UNFCCC and World Bank publications, WVE and other sources. In addition, the researcher collected written materials from the Humbo initiative actors and visited a number of Ethiopia-based national academic institutions. Materials from the MEFCC were very useful in generating more data on Ethiopia's greening agenda.

Organisations with secondary data sources and key policy documents included the Office of the Prime Minister, the Growth and Transformation Plan (GTP), the CRGE strategy, Ethiopian legal documents and gazettes, the MEFCC, the UNFCCC, the Humbo Project Design Document (PDD), the cooperatives, the Union and Humbo district administrative offices, Humbo project evaluations conducted by various consultants, carbon validation and certification documents, and global environmental indexes.

### **3.3 Data Organisation: Data Cleaning and Refining**

Transcripts of the interviews were stored and organised using the Computer-Assisted Qualitative Data Analysis method (CAQDAS). As Sliver and Lewins show, this is a tool 'designed to facilitate a qualitative approach to qualitative data [which] includes texts, graphics, audio or video' (2009). The data collected in interviews and FGDs were entered and coded into NVivo, a useful data storing tool for extracting and analysing the data. The coding framework reflects the research project's key variables of livelihoods impact and policy perspectives. NVivo assists in systematically managing 'raw data including interviews, observations, ... and links them with memos and databases where researchers might make codes and analytical notes, and then edit and rework ideas' (Walsh, 2003:253). This gives more freedom in comparing and exploiting the data.

Fifty five per cent of the interviews were conducted in the *Amharic* language, and the remaining percentage was carried out in *Wolaytegna*, with the help of two fieldworkers. After the completion of the transcription and translation process, a data-cleaning process was passed through and the transcripts were inputted into NVivo and made available for data analysis. Prior to this stage, codes of analysis were developed and categorised thematically and geographically. Coding was allocated based on the type of interview, the cooperative village name and the number of the interviewee. For instance, as Table 4 shows, for the first household interview (HH) that took place in Abala Gefata (AG), the coding takes this format – HHAG01. Similarity, KIE refers to the Key Informant Expert interview – KIE01 being the first respondent. KIC refers to Key Informant of Cooperative leader; each of the seven interviewed chairpersons were allocated a specific number. For the FGDs, the same format was followed with the name of the village and attendant group – the first FGD in Abala Longena is coded as FGDALM01.

Table 4. Research participants: Coding/referencing and description

<b>Coding with Interviewee Range</b>	<b>Description</b>	<b>No. of Participants</b>
HHAG01-06	Household Survey of Abala Gefata	6
HHAL01-10	Household Survey of Abala Longena	10
HHAS01-06	Household Survey of Abala Shoya	6
HHBL01-09	Household Survey of Bola Wanche	9
HHBS01-08	Household Survey of Bossa Wanche	8
HHHD01-10	Household Survey of Hobicha Bada	10
HHHT01-09	Household Survey of Hobicha Bongota	9
KIC01-07	Key Informant Cooperative leaders' interview	7
KIE01-14	Key Informant Expert interviews including staff from government, NGOs and international organisations	14
FGDALM01	Focus Group Discussion (men) – Abala Longena	10
FGDBLW02	Focus Group Discussion (women) – Bola Wanche	10
FGDHB Y03	Focus Group Discussion (youth) – Hobicha Bada	10
HHNM01-10	Household Non-Cooperative member interview	10
Total		119

Source: Researcher, 2017.

### **3.4 Research Limitations and Ethical Considerations**

This section discusses the limitations the research project faced, including scope, resources and methods, as well as the measures taken by the researcher to meet academic standards. The research aimed to analyse multi-stakeholder interventions to advance global climate change mitigation and reduce poverty through ecosystem services. Local, national and international actors across different scales played a critical role in achieving the forest regeneration. In supporting the research empirically, the Humbo case was used to highlight the interdependence and interplay of the institutions engaged in the process of creating sustainable forest ecology and promoting rural development.

The Humbo case study represents a particular geographical coverage and specific target groups, so was limited in scope. Had the research included other similar sub-Saharan Africa (SSA) case studies, it would have provided a better understanding of where a comparative analysis of how carbon finance initiatives with multi-actor support are promoting or hindering livelihoods and shaping rural development. However, although useful, this was not applied due to financial and time constraints. If it had been possible, an econometric method would have complemented the qualitative research approach by providing an in-depth analysis of household income changes and the project's costs and benefits, and would have given a fuller understanding of efficiency and effectiveness.

Ethics in qualitative inquiries assumes a critical position as it affects the research process and its outcomes, and this dimension was taken seriously throughout the project. The Code of Ethics in research embraces fundamental ethical values and standards, including informed consent, avoidance of deception, ensuring privacy and confidentiality, as well as accuracy (Christians, 2011:65). If ethical values are ignored, it can result in an adverse effect on the researcher and the target groups, hence, they were applied rigorously.

In the Humbo study, the following measures were taken to carefully address any potential ethical dilemmas, including securing a research permit, obtaining informed consent, and

adhering to the SOAS Ethical Standards. The aims of the study were explained to the respondents and they were also informed that it would be up to them to voluntarily engage with the research and that their views would only be used anonymously to avert any potential consequence by the security authorities. It was vitally important to maintain the participants' neutrality and respect their right to confidentiality, and to conduct the study rigorously and with full integrity. The interviews were only conducted once the researcher had participants' confirmation, either by signing the form or adding their thumbprint.

### **3.5 Risk Analysis and Mitigation**

During the last six decades, the Horn of Africa has experienced a volatile political ecology, including frequent intra-state and inter-state conflicts, and proxy wars. This has influenced the movement of their citizen, as what followed after the Ethio-Eritrea border conflict in 2000. For this PhD study, the researcher chose to carry out the fieldwork in the southern region of Ethiopia. Had the researcher not secured a visa, his ability to get a research permit and access the fieldwork would have been halted. In the case of a visa denial, the researcher had a plan to shift the fieldwork to either Kenya or Uganda which feature similar carbon finance initiatives. Fortunately, it was not necessary to employ such contingencies. Furthermore, the researcher has been working in the Horn of Africa for more than a decade which contributed significantly to the smooth collection of data and accessing the key actors working in the Ethiopian climate resilient strategy processes.

### **3.6 Case Study: Humbo A Flashpoint in the Greening Experiment**

Ethiopia is among the few countries in Africa that are aiming to achieve a low carbon society (Fisher et al., 2014; Fikreyesus et al., 2014). In order to explore the progress and implications of carbon finance in green policy and institutional transformation in Ethiopia, the Humbo Assisted Natural Rehabilitation initiative was selected for its empirical research insights. Humbo is the 'first large-scale' Clean Development Mechanism (CDM)-certified forest initiative under the UNFCCC on African soil (large-

scale refers to a net anthropogenic GHG removals by sinks of more than 16,000 tCO<sub>2</sub> per year and implemented in non-Annex I Parties, UNFCCC [2018f:263]), and its many aspects fit with the objectives of the research as it comprises the important features of experimenting with carbon finance in the emerging green economy context within SSA. There is growing global interest in carbon-based forest development that can sequester large amounts of atmospheric carbon dioxide to mitigate global warming and climate change while contributing to the sustainable land management of smallholder farmers. This entails a critical review of the role of an ‘emerging’ Green State and its engagement with communities and global actors, including the World Bank, NGOs and Kyoto Protocol Annex I parties. Humbo’s geographic area was selected for the CDM because of its decades-long degraded land which falls within the Kyoto Protocol requirement (a land with no substantive investment since 31 December 1989, UNFCCC [2001:58]). This section gives an overview of the Wolayta people, culture and traditions; demographic and geographic synopsis of Wolayta Zone and Humbo District, the traditional and existing governance systems and the Humbo CDM initiative.

### **3.6.1 The Wolaytas and Humbo: Demographic and Geographic Overview**

#### **Wolayta Society, Culture and Traditions**

The Wolayta ethnic group, belonging to the Omotic and Cushitic people, live in the most socio-ethnically diverse regional state located in the Great Rift Valley of Ethiopia - the SNNP. They predominantly live in the Wolayta Zone, one of the 12 zones of the region. Geographically located between 6°4’N to 7°1’N latitudes and 37°4’E to 38°2’E longitudes, the zone has an area of 4,471.3 km<sup>2</sup>. Wolayta Zone has 12 districts, namely Boloso Bombe, Boloso Sore, Damot Gale, Damot Weydie, Damot Pulasa, Damot Sore, Diguna Fango, Humbo [research site], Kindo Koysha, Kido Didaye, Offa and Sodo Zuria. Demographically, as the recent CSA and ICF 2017 estimate shows, the Wolayta people represent about 2.31 per cent of Ethiopia’s population, numbered at 2.4 million.

Following Sidama Zone's exit from SNNP at the end of 2019 and based on the CSA 2007 report, the Wolaytas are the largest group, with 13.13 per cent of the over 44 ethnicities residing in the region. They border with the ethnic zones of Gamo Gofa and Borena (south), Dawro (west), Kembata Tembaro (northwest), Hadiya (north) and Sidama (east). Though a derogatory term, the Wolaytas used to be called the Wolamo, in Amharic '*Wey lam o o*', mean 'Oh, what cows you are!' (Balisky, 1997:125).

The Wolaytas speak *Wolaytegna*, an Omotic part of the Afro-Asiatic language family, spoken by 96.82 per cent of the Wolayta Zone inhabitants (CSA, 2007), and its first script was made by the Christian pastors of the Sudan Interior Mission (SIM) in 1927. In 1998, the SNNP Regional State created a new artificial administrative and educational language – the WoGaGoDa, based on the North Omotic languages of Wolayta, Gofa, Dawro and dialects, but withdrawn after a 'civil resistance' (Dea, 2005:141). The Wolaytas' influence on Ethiopia's music and dance is significant (KIE14).

The Wolayta ethnic group has over '90 patrilineal clans' (Abbink, 2006:13), but despite their diversity and 'hierarchical relationship', they retained their 'unity and corporate identity' (Balisky, 1997:36). Social stratification followed: the 'leading clan (the *tigre* or *kawona*, i.e., 'those of the king'), the descendants of the two other leading, prestigious clans, and the common people or the lower social groups (caste group, craft workers and slave descendants)' (Abbink, 2006:10; see also Aalen, 2011). For instance, people who have names with the suffix '*malla*' belong to the '*Wolaitamalla*' which indicates that they are related to 'an ancient royal dynasty' (Planel, 2008). They still hold the nominal 'master of land' title, as Planel stated, even after the 'confiscation of land by the Emperor Menelik II [in 1894] and the nationalisation operated by the *Derg* [the 'Coordinating Committee of the Armed Forces, Policy and Territorial Army]' (Ibid). Furthermore, such traditional categorisation of 'clan division and social stratification' seems 'silent' as it was 'challenged by the egalitarian ideas' of socialism of the *Derg* regime and

‘Protestantism’ (Aalen, 2012:91, 111-112). But EPRDF’s ethnic federalism has ‘revitalised the ideas of traditional hierarchies and social stratification’ (Ibid).

The Wolayta Zone is a ‘densely populated and intensively cultivated mid-altitude area’ (Tonga and Said, 1992:309) with ‘an average density of 600 persons/km<sup>2</sup>’ (Chinigo, 2015:199), and its population doubled during the 1970s-2000s (Abbink, 2006:3). Landlessness is common where ‘land holdings [per household] are very small’ (Tonga and Said, 1992:310), with an average of 0.5 to 0.96 hectare (Ibid; Rahmato, 2007:11). As a consequence, agricultural produce is inadequate to feed one’s family (for the historical *Mayza-Maiya Gadya* land system and recent developments in land governance dynamics, see Section 6.2). The main crops are maize, sweet potato, *enset* (*Ensete ventricosum*), cereals, sorghum, *teff*, cassava and coffee. *Enset* has a deep ‘cultural heritage and identity for the Wolayta’ and contributes to the food security of ‘more than 20 million people’ in Ethiopia (Olango et al., 2014:1). Of the 50 Wolayta dishes, 10 are made with *enset*.

### ***Religious Practices and Belief Systems Among the Wolaytas***

Belief and religion practices among the Wolaytas have been dynamic with several conversions. Orthodox Christianity was introduced among the Wolaytas by the evangelist Takla Haymanot who converted King MotoHimi of the Kingdom of Damot during the 14<sup>th</sup> to 16<sup>th</sup> century and where the northern kings of Ethiopia considered their ‘primal religion’ with God of ‘*Tosa*’ as ‘little of value in the belief systems’ (Balisky, 1997). For instance, the German ethnographer Haberland said that the measures taken by the ‘Ethiopian emperors themselves, e.g. Sarsa Dengel ... in 1595... forced the kings of Kaffa, Inarya and Boša to accept (or to reaccept) Christianity’ and led to the creation of nobility - ‘the founders of Wolâmo (Wolâyta) who came from Tigre (about 1600)’ (1981:736). Religious expansion was followed with the full conquest of the Wolayta Kingdom by Emperor Menelik II in 1894 (see next section for changes occurring to the Wolayta traditional governance system). However, as Freeman argued, the Wolaytas

considered this ‘subjugation deeply humiliating and demoralising’ and were not keen to adhere to ‘the religion of their conquerors’, and as a consequence conversion was ‘centre[d] around the break-down of a traditional politico-ritual system under the pressure of conquest and colonialism’ (2013:2). Therefore, once the SIM arrived in the area in 1927, the Wolaytas found Protestantism appealing and it was able to ‘fill [in] the religious vacuum in the south’ (Fargher, 1996).

Furthermore, when most of the Amharas left Wolayta due to the Italian invasion in the 1930s, Protestantism was expanded (Balisky, 1997:vi), with a number of American churches investing in the Wolayta development endeavour – as Aalen said: ‘[m]odernisation through Protestant missions’ (2011:23). Despite the ‘secularisation’ of the Marxist *Derg* that made all religious practices illegal (Freeman, 2013:5), since 1991, Protestantism has expanded widely. Given such religious dynamism and unlike the dominance of Orthodox Christianity in Ethiopia, the majority in the Wolayta Zone are Protestants (71.34%) followed by Orthodox Christians (21%) and Catholics (5.35%) (CSA, 2007). Islam has had a ‘minimal impact’ (Balisky, 1997:v).

### ***Traditional Kingdoms, Power Dynamics and A Centre-Periphery Sentiments***

Historically, the people of Wolayta were governed by the ‘Kingdom of Wolayta’ and its king was known as ‘Kawo’ for many hundred years. However, the Kingdom with its last King Tona was defeated by Emperor Menelik II of Ethiopia in 1894 (Balisky, 1997:vi, 31; Aalen, 2011:88) in the ‘bloodiest campaigns of the whole period of the [Abyssinian] expansion’ (Zewde, 1991:64). The conquest ‘reduced Wolayta to a vassal state’, promoted slave trade, excessive taxes and ‘serfdom and poverty’ (Balisky, 1997:51-63). Such political control and ‘harsh economic extraction, and cultural marginalisation’ (Guidi, 2013:1) promoted the centre-periphery politics (Planel, 2008).

Following Emperor Haile Selassie’s period and the politico-administrative reorganisation of the *Derg* (in 1974), the Wolayta formed ‘the Sidamo Province, a larger political unit

in southern Ethiopia' (Chinigo, 2015:197). Subsequent to the *Derg* regime, the EPRDF advanced ethnic federalism through a new political and constitutional order in the early 1990s which made the Wolayta a sub-zone within the North Omo Zone of SNNP Regional State. Made under the 'administrative integration and containment of narrow nationalism', this forced the Wolaytas to lose the regional status they briefly enjoyed in the early 1990s, putting them into a lower political class (Aalen, 2011:23 and 101).

However, following the resistance of the synthetic language of WoGaGoDa which led to the killing of at least five people by the police (Abbink, 2006:4), the North Omo Zone was abolished and divided into Wolayta, Gamo Gofa and Dawro Zones and two special *woredas* [districts] in 2000. Given the Wolaytas' 'distinctive history as an independent kingdom' (Aalen, 2011:91) and as 'one of the very few Omotic-speaking [people]' who 'developed ... a centralized, authoritarian kingdom' (Abbink, 2006:10), as well as their identity and relative population size, they have been demanding to have a regional state status. The appointment of the former Wolayta origin prime minister Hailemariam Desalegn, the first in Ethiopia's history, was believed to partly reduce the periphery sentiment – as many Wolaytas used to say 'The Prime Minister [government] belongs to us' (KIE14). Yet, with the creation of Sidama Regional State in 2019, another former zone of the SNNP region, the quest for a regional state has been strengthened.

Ethiopia's ethnic federalism considers ethnic groups as 'uniform' and ignores 'intra-ethnic contestations and issues of representation for sub-groups within the ethnic entities', as a result, minority groups in Wolayta have experienced political marginalisation (Aalen, 2012:111-112). Indeed, the clan 'lingering rivalry ... has now been extended into the current political domain' as there is power struggle between the new elite commoners and those of royal clan lineage (Abbink, 2006:10). That is, clan politics in Wolayta is resurfacing, as the EPRDF used 'traditional hierarchies of clans and social strata' to maximise its support in the 2005 elections (Aalen, 2012:112). Given the Wolaytas'

history of social stratification and ethnicity's prominence within the new political order of Ethiopia, this clan-based intra-ethnic group power struggle could shape their future.

### **Demographics within Humbo District**

Humbo district, with a population of 119,194 (CSA, 2007), is the most densely populated rural area in Ethiopia (Vaughan, 2003:259; Lakew et al., 2011:7). The total population of the seven Humbo CDM villages is estimated to be 50,000. Unlike the country's heterogeneous ethnic demographic composition in Africa, Humbo district is homogenous, despite the hidden clan differences. Humbo's three main ethnic groups are the Wolayta (96.33%), the Amhara (1.28%), and the Sidama (0.86%); other ethnic groups make up 1.53% (CSA, 2007). The majority of the population follows the Protestant religion (87.15%), followed by Christian Orthodox and Catholicism with 7.87 per cent and 4.07 per cent respectively (Ibid). More than 85 per cent of the population depend on subsistence farming for their livelihoods, with some practicing livestock rearing, petty trading and producing commercial crops, in particular *khat* (leaves of a plant chewed for stimulation), which is becoming a lucrative and growing farming practice in Humbo.

### **Geographical Setting of the Humbo Mountain: Vegetation, Climate and Location**

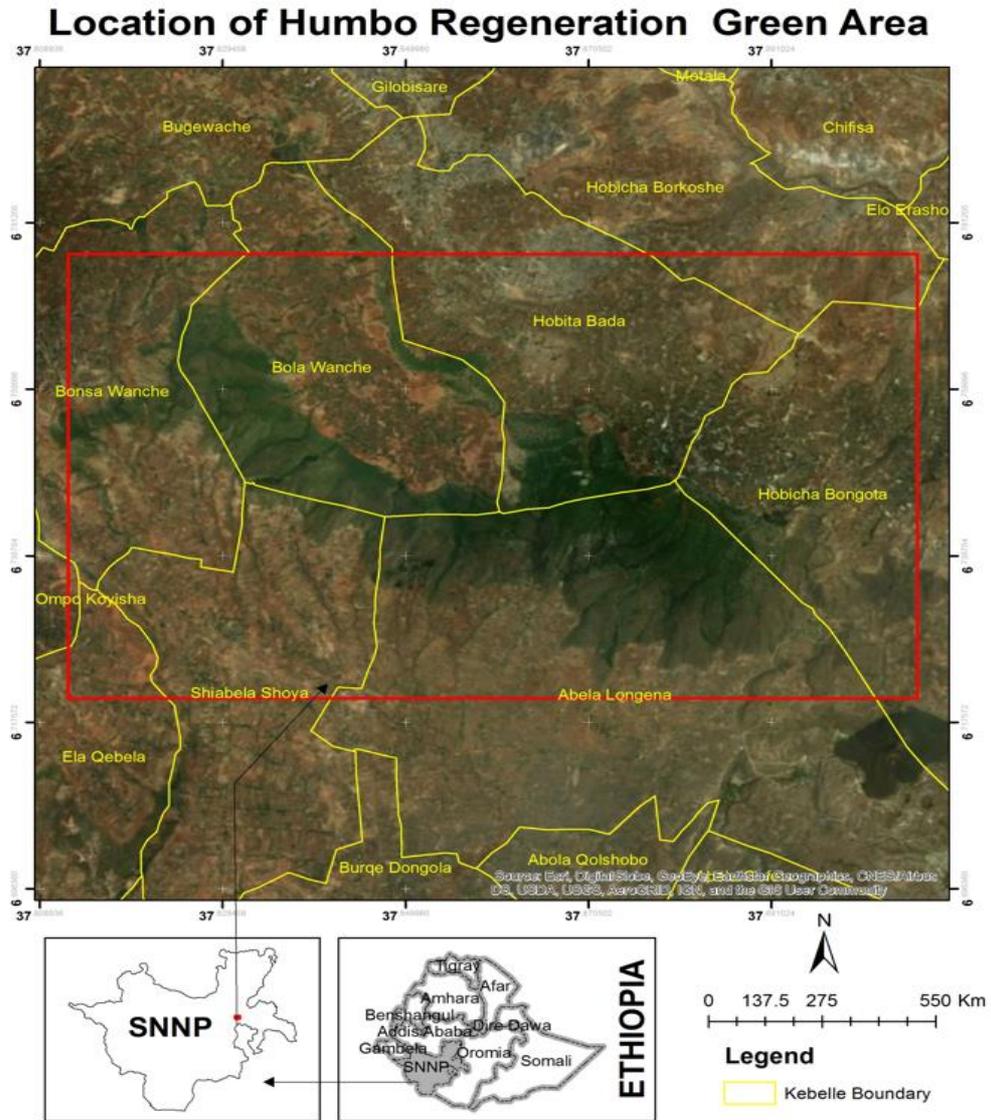
The Humbo district borders Lake Abaya and is located at the tip of the Greater Rift Valley (see Figure 2 below), about 420 km from the capital Addis Ababa. Annual rainfall ranges between 700 and 1,000mm p.a. (Humbo District Report, 2017). Being asked to describe the natural resources in Humbo, the respondents mentioned land, water (Lake Abaya and Bilate River), raw materials (cobblestone and gypsum), and biodiversity (monkey and hyena). Humbo district has also a dense natural forest (such as Abala Areqa, Abala Gefata and Abaya Chekare), however, the area of the Humbo Assisted Natural Regeneration is the only large scale manmade forest in the district, within the 86,000 hectares of the district area (KIE03).

Historically, as the FGD discussants explained, the physical surface of the Humbo Mountain has gone through a dramatic decline in its land-based resource, forest coverage, biodiversity and related environmental consequences (see also Kabore, 2013). It was once dense with thick trees, but its forest area declined sharply from 1960s-70s to the mid-2000s (see Figure 7). The ecological crisis was mainly caused by mounting population pressure, lack of land ownership rights, a weakening of the traditional resource governance system and the unsustainable cutting of trees. A farmer from Bossa Wanche described the degradation by saying ‘the mountain was like a small charcoal factory full of smoke you could see from a distance’ (HHBS05). As a consequence, the local area was highly exposed to soil erosion and floods which started to adversely affect livelihoods (KIE01). Besides the traditional food aid, there were no major rural development initiatives taking place in Humbo during the 1970s-80s. Thus, Humbo’s natural resource was ‘harvested beyond its sustainable biomass’ and soil productivity was reduced by 70 per cent, with about 85 per cent of the community living in poverty prior to the CDM-based reforestation initiative (Lakew et al., 2011; Rinaudo et al., 2009:12). As the respondents confirmed, the land vegetative coverage of the mountain at the beginning of the 21<sup>st</sup> century was reduced to almost nothing.

The high drought levels, particularly between 1984 and 1985 that led to the ‘Great Famine’, and the prevalence of persistent poverty have significantly contributed to the loss of the forest area (Shepherd et al., 2013:8; Kamara et al., 2008). This was partly due to the ‘cut and slash’ practice developed among the farmers for a ‘survival means’, the dysfunctionality of customary laws on land and natural resource governance, and population growth and density (Brown and Stigge, 2017:66). Furthermore, Kamara et al. argue that even after deforestation, ‘the community’s coping mechanisms also evolved leading them to [the] uprooting of tree stumps for charcoal- a coal-like fuel from wood’

(2008:5). Indeed, land vegetation coverage formation change reflects the communities' change of attitude towards the local ecology.

Figure 2. Humbo Mountain regenerated area and the villages involved



Source: Produced for the research project (Map credit to Zubairul Islam, Adigrat University, Ethiopia).

The Humbo Mountain's ecological deterioration and environmental crises, the intention to reach out to the poor farmers and the expansion of the carbon finance at a global level triggered WVE and its partners to carry out an environmental and livelihood situational analysis between 2004 and 2006. To address the associated socio-economic issues, WVE, together with World Vision Australia (WVA), came up with the idea of CDM and of

regaining 2,728 hectares of communal land (KIE06), ensuring community development and reducing poverty through carbon finance, using carbon-based financial inflow.

### **3.6.2 Humbo Assisted Natural Regeneration Project: An Overview and Key Facts**

This section gives an overview of the Humbo Assisted Natural Regeneration Project based on the PDD and other relevant documents to get a fuller understanding of the basic facts, the claimed results and the challenges faced (WVE-PDD, 2009). An overview of the underlying facts of the initiative provides an insight into how it came about, the key parties involved and their influences, the forest land vegetative coverage, the carbon credit deal which followed the Certified Emissions Reduction (CER) and the benefit redistribution mechanism (see Table 5). An analysis of Humbo's future, linked to the Paris Agreement, is also presented.

The initiative reintroduced a community-based cooperative institutional approach to local forest governance to ensure 'contextual appropriateness' (Shames et al., 2012:7). It was developed to address the leading causes of deforestation by introducing a sustainable mechanism that would prevent the farmers from mismanaging their forest resources. It aimed to increase the forest biomass through environmental rehabilitation of the open access communal land, and contribute to the climate change mitigation targets, sequestering over 880,295.90 metric tonnes of CO<sub>2e</sub> over 30 years (WVE-PDD, 2009). As the World Bank report on Humbo shows, the intervention focused mainly on forestry (80%), other agriculture or forestry-related initiatives (10%), education (5%) and health (5%) (2017).

While WVA mainly covered the initial regeneration capital investment, WVE, together with the communities, were the executing actors in this first CDM initiative in Ethiopia. The project's cost along with Sodo was USD 1.3 million (World Bank, 2016). Entering the compliance carbon market, WVE designed an institutional framework that brought together multiple global and local actors, all with a stake in carbon (see Chapter 5).

Table 5. Humbo Assisted Natural Regeneration Project: Basic Facts

Description	Facts
Project name	Humbo Ethiopia Assisted Natural Regeneration
Design	Kyoto Protocol - CDM-AR-PDD/tCER mechanism
Carbon market	Compliance
Area	2,728 hectares
Location	Humbo, SNNPR, South Western Ethiopia
Approximate coordinates	Latitude - From 6° 46.48.47 to 6° 41.04.28 N Longitude - From 37° 48.35.44 to 37° 55.14.51 E
Host country	Federal Democratic Republic of Ethiopia
Trustee	International Bank for Reconstruction and Development/World Bank - BioCarbon Fund trustee
Annex I Parties	Canada, France, Italy, Japan and Luxembourg
Official crediting period start date	December 1 <sup>st</sup> 2006
Purchase agreement ends	December 2018
Implementer	World Vision Ethiopia (WVE)
Project Development cost	World Vision Australia (WVA) – direct operating and maintenance cost, and the World Bank
CO <sub>2</sub> sequestration in 30 years	880,295.90 tCO <sub>2</sub> e
A/R Technology	Farmer Managed Natural Regeneration (FMNR)
Operational lifetime	60 Years
Fixed crediting period	30 Years
Carbon sequestration in 10 crediting years	330,000 tCO <sub>2</sub> e
Total budget (with Sodo project)	About USD 1.3 million
Amount purchased	About 56% of the sequestered tCO <sub>2</sub> e amount
Carbon Revenue	USD 726,000
Local partners	Seven Forest User Community Cooperatives
Validation consultant	JACO CDM Ltd and RINA Services
Verification Body	UNFCCC
Carbon credit buyer	The World Bank (BioCarbon Fund)
Methodology used for CO <sub>2</sub> baseline	AR-AM0003 Version 04

Source: Summary by the researcher from the WVE-PDD (2009).

The Humbo PDD is a comprehensive document that includes the general description of the proposed afforestation/reforestation CDM activities; the project duration and its crediting period; application of an approved baseline and the carbon monitoring methodology; an estimation of ex ante and estimated amount of the net anthropogenic GHG removals by sinks over the chosen crediting period; a monitoring plan; the environmental and socio-economic impacts of the proposed intervention and the participating stakeholders' comments (WVE-PDD, 2009). Its annexes comprise the background studies, the consultation, the Participatory Rural Appraisal (PRA) and plans in a place for monitoring, fire management and the additionality of the intervention (see WVE-PDD, 2009:1). Despite criticism of using the PDD as a reference point for assessment (Dirix et al., 2016:843), it still serves as the principal document of analysis and shows how the global climate treaties were interpreted, in particular the Kyoto Protocol's influence on the localities and the interplay of the global and local actors. However, each PDD design has both strengths and weaknesses, especially as the document is produced based on several assumptions (Disch, 2010:55). A cautious usage of the PDD data is reflected in the following chapters.

The PDD outlines the following key areas which aim to contribute towards sustainable development (WVE-PDD, 2009:3-4):

- *Regeneration of native forest, utilising the farmer managed natural regeneration (FMNR) and traditional forest establishment techniques.*
- *Enhancement of GHG removals by sinks in the project area.*
- *Promotion of native vegetation and biodiversity in the project area, which can be utilised as a refuge for local and migratory species and to improve the connectivity of fragmented forest resources.*
- *Reduction in soil erosion and flooding and help to maintain [a] supply of the subterranean streams to support the region's water supply.*
- *Provision of an income stream for communities through the sustainable harvesting of forest resources.*

These focus areas reflect the Kyoto Protocol's approach to climate mitigation (UN, 1998). The emphasis in these areas is on biophysical change and carbon sequestration, but less on livelihood improvements (only one looks at the income streams of the farmers). The project design is indicative of which developmental area is prioritised.

Furthermore, the document stipulates the following specific activities to realise the aforementioned goals (WVE-PDD, 2009:4):

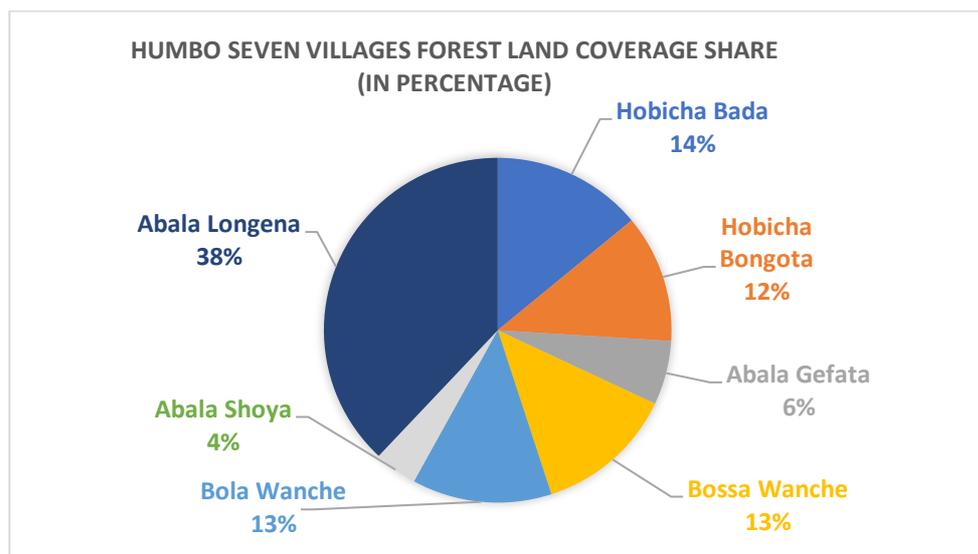
- *Restoration of approximately 2,728 hectares of biodiverse natural forest in the Humbo Woreda [District], using indigenous and naturalised species.*
- *Community management of public land with multiple objectives of promoting natural resource management, poverty alleviation and biodiversity enhancement.*
- *Development of a model of community land use that would enhance GHG removals by sinks from regenerating native vegetation, which can be replicable in other regions of Ethiopia.*
- *Formation of seven community cooperative societies and securing legal title to manage the proposed regeneration area, and adopting a constitution and by-laws to manage the project.*
- *Establishment of [an] institutional structure with [the] right to the Certified Emissions Reductions (CERs) generated from the site.*
- *Establishment of a system to monitor the carbon stocks and recording and reporting on the changes.*
- *Establishment of a system to monitor the environmental and social issues relevant to the project.*

Similar to the key areas discussed above, the emphasis of the activities is on the rehabilitation of physical nature and its management, rather than on the number of people benefitting from the intervention. Again, the points related to the environment and the specific indicators are more apparent than those related to poverty reduction. Chapters 6, 7 and 8 critically discuss this issue.

## Mapping the Humbo Mountain and Cooperatives' Land share

The Humbo Mountain villages are organised into seven agroforestry village cooperatives (FDRE, 2011b:13) which are registered as legal entities with land use rights on their delineated piece of land within the forested mountain. Of the total 2,728 hectares of the forest land, the seven cooperatives are responsible for a specific area in hectares as follows: Abela Gefata (176.42), Abela Longena (1,043.43), Abela Shoya (109.75), Bola Wanche (343.60), Bossa Wanche (341.96), Hobicha Bada (372.77), and Hobicha Bongota (340.04). Abala Longena therefore has the largest forest-covered land area at 38 per cent while Abala Shoya has the least, at 4 per cent (see Figure 3 below).

Figure 3. The seven cooperatives' land coverage within the Humbo Mountain



Source: Researcher based on the data collected from the Humbo Union, 2017.

As a WVE key informant stated, at the beginning of the project there was a rigorous process of border delimitation and demarcation of the proposed forest land to mitigate any possible future conflict on land use and its associated benefits (KIE06). From the initial stage, land was considered as an area of potential conflict between the WVE and the communities (see Chapter 6 for a detailed analysis on the land issue). Similarly, if the inter-village border issue had been not addressed in the initial stages, this could have had

a repercussion later on. As well as instigating potential friction among the villages, failing to clarify land ownership could have deterred the forest initiative from securing CER and carbon revenues (UN, 1998). Therefore, with WVE's facilitation, the seven village elders discussed which part of the mountain land belongs historically to which village – in a few cases with the help of a government expert (KIE06; KIE07). Chapter 7 discusses carbon revenues and the benefit distribution mechanism among the seven cooperatives, since the area of coverage affects the benefits that each cooperative receives from the carbon finance deal.

### **3.6.3 The Humbo Project Timeline, Processes and Insights**

The Humbo initiative is the 'first' in its kind and magnitude in Ethiopia and is known for its 'many firsts' in Africa (Kabore, 2013). It is the first CDM in Africa's large-scale A/R initiative registered under the UNFCCC, while being also the first to secure temporary Certified Emission Reduction (tCERs) on the continent. As highlighted by Biryahwaho et al. (2012), Humbo has engineered an experiment in a national laboratory for testing CDM and its implications for rural farmers in Ethiopia and beyond.

The idea for the Humbo initiative was conceived in July 2004 by Tony Rinaudo and Paul Dettmann of WVA, who saw the opportunities linked with carbon sequestration. Ethiopia was then identified as the CDM-hosting candidate country, and by the end of the year, the Humbo Mountain was selected out of the proposed 15,000 hectares of land (World Bank, 2005:3). The CDM procedure took about five years to get to the validation stage in 2009. Activities included Project Idea Note (PIN) production and submission to the BioCarbon Fund, conducting pre-feasibility assessment, PDD initiation and submission for validation, validation by the JACO consultants and securing the temporary CER certification, and finally the release of the first carbon fund from the World Bank in 2011 (WVE-PDD, 2009:32).

Reviewing its immediate impacts, the forest initiative brought significant natural rehabilitation success to the Humbo area. The efforts made for four years – with the communities being at the centre of the project delivery – ensured a ‘vibrant green blanket of vegetation’ (Kabore, 2013) on the communal land. However, as the recent project evaluation shows, although the initiative has achieved its outputs, it is facing numerous challenges in making itself a ‘showcase’ for scaling up and being replicated in Ethiopia (KIE07; KIE08). Chapters 6 to 8 analyse these key findings in detail.

### **3.7 Conclusion**

Conducting rigorous research requires careful pursuance of relevant methodologies and ethical research policies to reduce a selection bias, analyse the facts, triangulate the data collected, and deploy a research framework that links theory with practice. As this brief account of Humbo shows, the impact of the forestry intervention on the communities and the systemic institutional experimentation required research based on careful analysis. The researcher’s previous work experience among Ethiopian communities positively contributed to accessing several climate actors, as well as creating rapport within the Humbo context. Indeed, the study’s intervention brought together multiple areas of analysis, including the actors’ interest in greening versus the communities’ rejection of land grabbing that had led to low scale conflict, the difficulties in fulfilling the farmers’ expectations of economic benefits, the reinforcement of a cooperative model as a solution to local forest governance, the state’s role in reorganising the government machinery, the initiative’s contribution to the introduction of carbon as a ‘commodity’ in the Ethiopian economy, and the country’s interest in accessing green funds. The Humbo case study brought an additional dimension to the financialisation of nature in general, and the carbon finance model in particular, in the global South.

## **Chapter 4 Greening Policies and Governance in Ethiopia: Challenges, Possibilities and Initiatives**

### **4.1 Introduction**

The global South countries, including Ethiopia, are facing numerous socio-economic challenges in finding the best alternative path that brings prosperity to their societies. Since the time of their independence, SSA countries have been pursuing various economic development pathways – mainly promoted and influenced by globalisation and international financial institutions. Bearing in mind the neoliberally embedded global influence on climate change and environmental politics, as well as the SSA countries' ambition to realise fast economic growth, the interest in becoming an emerging 'green state' is evolving slowly (Death, 2014). Differing in their level and intensity of adoption, Ethiopia, Rwanda, South Africa and Uganda are among those that are basing their developmental path on the 'low-carbon economy can prosper' greening agenda. Despite their ambition and current global climate change trends, however, these countries have been marginalised and considered as low-key actors in addressing the global climate crisis effectively (Ibid, 2011). They have been sidelined in major climate negotiations, on the basis that both their emissions reduction contribution and their mitigation roles are insignificant. This is partly influenced by their agenda of adaptation, but not of mitigation. In recent years, however, despite such perceptions by influential climate change actors, the global South has been penetrating global environmental politics, triggered either by internal causes or in order to cultivate a positive diplomatic image at international levels. Given the centuries-long history of monarchy and the promotion of revolutionary democracy ideals founded on the 'developmental state' in the aftermath of the Soviet Union supported *Derg* regime, Ethiopia launched its first five-year green-centred Growth Transformation Plan (GTP I) in 2011, followed by GTP II in 2015. These strategic national economic development and poverty reduction policies take environmental

strategies into account, along with the potential costs and benefits. Following multiple economic growth focused development policies, the country has shown continuous economic growth, that is: 1990-2000 (3.8%); 2000-09 (8.5%) and 2009-13 (10.5%) (World Bank, 2015:83). This success has made Ethiopia one of the fastest growing economies in Africa. In maintaining the claimed double-digit growth (though it is contested figure, see Rodriguez and Rodrik, 2000) and boosting the economy, greening has become of national interest to Ethiopia (FDRE, 2011b; FDRE-CRGE, 2013). As Rinaudo et al. argue, ‘environmental degradation’ has a high degree of correlation to poverty in Ethiopia, where climate change-induced droughts and floods are common (2009:12). Therefore, the transition to building a climate resilient and low carbon society is being considered as a ‘critical development pathway’ rather than a mere ‘environmental issue’ (Watson et al., 2013:17), and although low scale, the orientation of every national programme is being steered towards greening. The late Prime Minister Meles Zenawi’s speech at a national climate change conference held in Addis Ababa on 15 January 2009 consolidates these arguments and shows the challenges and the new measures being undertaken. For him, in the era of climate change crisis, the country has to ‘adapt or die’.

The injustice of the whole issue of global warming and climate change lies in the fact that those who have contributed nothing to its genesis will suffer the most from its consequences because they have the least capacity to adapt to these changes. However [regardless of how] unjust it might be we have to adapt or die. We can only succeed to adapt to climate change if we fight poverty effectively and generate the resources needed for the purpose (IRIN, 2009).

The Climate Resilient Green Economy (CRGE) strategy is an ambitious political agenda (Fisher et al., 2014:6), developed on carbon abatement and technocratic economic analysis. There are, however, some determining factors which could thwart this development path; in particular state political instability which has been volatile and

susceptible to multiple forces. As the country's recent intense riots have shown (2015-2019), the low carbon growth strategies need to consider the broader political ecology of being a middle-income country, by increasing the GDP per capita from USD 354.84 in 2011 to USD 1,000 in 2025 (World Bank, 2018b; FDRE, 2011a:6). This chapter provides a brief account of how the Ethiopian greening policy was adopted, the governance system put in place during the transition to a low carbon society, and how the state developmental agenda is framing national green policies. In reviewing the greening trend in the country, it focuses on three key aspects: the national green direction and its implications for domestic and foreign policy; the horizontal and vertical institutional reform patterns; and the state's focus on the forestry sector, through the Humbo Clean Development Mechanism (CDM), which was introduced for the first time in 2006. The empirical work from Humbo on policy-practice links are analysed in the next four chapters.

#### **4.2 Ethiopia: The Prevailing Socio-economic Situation**

Ethiopia has about 80 ethnic groups and more than 104 million inhabitants, of whom 17 per cent are urban dwellers (FDRE, 2011a:8; World Bank, 2017; UNDESA, 2017). It is the second most populous country in Africa, with its population projected to reach more than 140 million by 2030, and 191 million by 2050 (UNDESA, 2017:24). Geographically landlocked, its 1.1 million square kilometre area includes various climatic zones which are on the periphery of the expanding Sahara Desert. Given the CRGE strategic sectors' focus on agriculture and forestry, it is evident that these climatic contexts are a factor in Ethiopia's bold decision to pursue a green development path. Economically, although poverty, concurrent famine and environmental degradation are associated with Ethiopia's history, during the last two decades, along with the 'Africa Rising' mantra, the country has achieved status as the 'fastest growing economy' in Africa, mainly led by the state and its extensive investment in public works (World Bank, 2017). However, even with its GDP per capita increasing from USD 325.38 in 2008 to USD 767.56 in 2017 (World

Bank, 2018b), it is still one of the poorest countries, with an undiversified economy – 40 to 45 per cent of its GDP depends on the agricultural and service sectors (FDRE, 2011a:42). Moreover, the Human Development Index 2018 report ranks Ethiopia at 173 (UNDP, 2018:24), while based on the survey conducted in 2011, its Multidimensional Poverty Index (MPI) was recorded as 0.537 (UNDP, 2016:200). Many political and financial centres have heralded the economic success the country has achieved.

Stabilising the federal system and security have been the state's key agenda during the last decade or more, as it has continuously faced challenges posed by both armed and peaceful political movements. This has tested the vulnerability of the state apparatus and the political resilience of the ruling coalition party – the Ethiopian People's Revolutionary Democratic Front (EPRDF). Since the constitutional reform of 1995, the political system and power structures have been marked by ethnicity-based rivals and constant requests for change to end the power domination by the Tigray People's Liberation Front (TPLF) – the core party within the EPRDF. These multifaceted challenges have harmed economic growth, preventing the country from realising its full potential. As the Ethiopian Investment Commission report of 2017/18 shows, the '[L]ack of foreign currency and unrest observed in some parts of the country ha[d] negatively contributed to the reduction of the FDI [foreign direct investment] inflow' (Ethiopian News Agency - ENA, 2018). This situation has been very critical, as unlike the Asian Developmental States, Ethiopian policy considers FDI as 'the main engine for growth', rather than domestic investments (Clapham, 2018:1160). As a consequence, the current government has been forced to look for budgetary sources from the Gulf States, the IMF and the World Bank.

In maintaining the momentum of economic growth, Ethiopia launched a 'new coherent inter-sectorial policy [CRGE]' nine years ago, which aimed to create a carbon-neutral middle-income country by 2025 (FDRE, 2011a:7). This development path was framed in the context of harnessing the country's abundant natural resources, its potential for

developing mega-hydropower and geothermal energy supplies, and its ambition to be a regional energy powerhouse or ‘power hub’ in East Africa (Clapham, 2018:1156; Verhoeven, 2015; World Bank, 2012c:28), including exporting electricity to Djibouti and Kenya. In addition, the recent discovery of crude oil in the south-east of the country – the Somali region – is expected to strengthen its economy, although the political instability in the region and the state’s weak capacity to deliver mega projects may adversely affect its success. For instance, the Grand Ethiopian Renaissance Dam (GERD) project, which plans to produce 6,000 megawatts of electricity, is off track due to a lack of domestic implementation and financial capacity, and the corrupt practices of the actors involved (Maasho, 2018). To conclude, Ethiopia is in a transition politically; the CRGE and its targets are susceptible to various ongoing political and socio-economic changes.

### **4.3 The Emergence of the Greening Agenda in Ethiopia’s Political Economy**

Since the fall of the *Derg* regime in 1991, the ideals of the ‘developmental state’ have driven and shaped the notion of state building in Ethiopia. The EPRDF leaders, and in particular the late premier Meles Zenawi, came up with a new development thinking that filled the political thought vacuum created by the new political dynamism in the region, which aimed to promote economic growth and reduce poverty (De Waal, 2015; 2018). The economic successes in southeast Asia inspired Ethiopia (Vaughan, 2011:623), although unlike these countries, Ethiopia ‘faces low saving rates and limited availability of domestic resources’ (World Bank, 2012:i). The responsibility lay therefore with the state to play a pivotal role in creating prosperity by guiding the overall economy and investing in infrastructural development. With the fall of the Berlin Wall, Ethiopia looked as if it was pursuing liberal economic policies. Moving away from being a socialist state, the country carried out an aggressive privatisation programme and opened its market to foreign investors, with the exception of strategic sectors which remained under state monopoly (telecommunication, airlines, banking and finance, and utilities) (Abegaz,

2011:43). Manipulating the state-led economy and advancing the party economic agendas, this economic model has created many multi-billion party-led companies and enterprises such as the Endowment Fund for the Rehabilitation of Tigray (EFFORT). Indeed, their ‘political connections’ (Clapham, 2018:1159) are making them more advantageous than other privately-owned businesses.

Despite Meles Zenawi’s rejection of the Washington Consensus, neoliberal ideas have influenced Ethiopia to some degree, especially by attracting FDI to create jobs (Zenawi, 2012; De Waal, 2018; Feyissa, 2011). However, the FDI received criticism as it has led to land dispositions (Ojulu, 2013). The statement below shows the link between the motives of the political leaders and the possible consequences of their policy measures.

[E]nvironmental green agendas are the core drivers and goals of grabs – whether linked to biodiversity conservation, biocarbon sequestration, biofuels, ecosystem services, ecotourism or ‘offsets’ related to any ... of these. ... Green grabbing builds on well-known histories of colonial and neo-colonial resource alienation in the name of the environment – whether for parks, forest reserves or to halt assumed destructive local practices (Fairhead et al., 2012:237).

In Ethiopia, since the adoption of the Agricultural Development Led Industrialization (ADLI) strategy in 1993, agriculture has been at the centre of ‘green grabbing’, as the Gulf and other countries have taken ‘millions hectares of land’ from smallholder farmers under the pretext of producing food and expanding investment (The Oakland Institute, 2011:1; see also Chinigò, 2015:194). Critical questions have been raised here as to ‘whose food is produced?’ and ‘does the investment contribute to local food security systems or not?’ (Borras et al., 2011:221). As Li said, ‘land is needed (for global production), but [not] its peoples’ labour’ (2011:283). Referring to Gambella and other regions in Ethiopia, Ojulu argues that the allotted lands are rented out as low as ‘USD 2 per hectare per year’ to Indian companies (2013:196) or ‘long term leases ... at giveaway prices’

(The Oakland Institute, 2011:3). The land issue has been highly politicised, as people have been deposed from their native land, while advocacy has been restricted.

Furthermore, despite the presence of written regulations on conducting an environmental impact assessment (EIA) in any investment, this has not been effective in deterring the negative consequences borne by the communities, including evictions, ecological harm and local food system disruption. The study conducted by Ruffeis et al. in Ethiopia showed a ‘huge gap ... between theory and practical implementation and application of the EIA process’ (2010:37). Agricultural and environmental projects were supposed to attract FDI and create decent employment that prioritised workers’ health and occupational safety. However, as Gudeta reports, the strong chemicals used in floriculture by the private companies are leading to ‘skin chemical allergies, respiratory problems and unconsciousness’ (2012:29). This shows the weak environmental regulatory and labour regimes that clash with the CRGE’s target of creating decent green jobs.

The carbon business model is framed around advancing the dual climate and development agenda. In the context of Ethiopia’s neoliberal economy, CRGE’s carbon-based development was crafted on the cost-benefit analysis of the Humbo business case. Green experts in the country still raise questions on whether the government’s driving motive in adopting the CDM was genuinely for advancing green development or for grabbing the global green resources – particularly given the declining interest in ODA (KIE06; Lecocq and Ambrosi, 2007:138). During this period, there was carbon finance policy immaturity and its additionality to the rural economy was a highly debatable and unpredictable (KIE07). As a result, during the introduction of the CDM, some technocrats questioned the relevance and value addition of this approach to rural development. Many claimed it was designed to serve the global North and not the global South (KIE08; KIE13).

Ethiopia’s interest in consolidating its green economy agenda was therefore advanced with the launch of the CRGE in 2011, the National Forest Law in 2018, implementing

REDD+ through a performance-based approach to carbon finance, and putting the necessary institutional infrastructure in place, in particular the CRGE financial facility, to manage the green finance and expand its partnerships across multi-level scales.

#### **4.4 Green Policy and Governance in Ethiopia: A ‘Transformation’ in Transition?**

Green economy policies and their implementation modalities significantly differ in their nature to fit the context of each global South country. Given the global environmental governance regime, domestic and international policies are intertwined in the roles of local and global actors (McAfee and Shapiro, 2010:2; Watts, 2012:1). This includes the political economy; the political will and commitment of the leadership on climate change; and the specific intended greening outcomes for delivering economic growth, inclusive poverty reduction and environmental rehabilitation. Thus, in pursuing a ‘one-size-does not fit all’ approach to the national green economy policy, the ‘costs, risks, benefits and opportunities’, as well as the ‘institutional and governance arrangements, level of development, and social, economic and environmental priorities’ need to be rigorously considered (Allen, 2012:21-22).

Ethiopia’s interest in focusing on greening reflects its large dependence on a ‘resource-based economy’, where the agriculture and forestry-related sectors ‘employ 80 per cent of the population’ and assume ‘45 per cent of the GDP’ (FDRE, 2015b:4; World Bank, 2012:9). According to Fikreyesus et al. (2014:3), a ‘sizeable proportion of the GDP is associated with climate-sensitive activities’ – mainly referring to the two above-mentioned sectors. Similarly, in regards to the country’s green energy potential, besides being a ‘water powerhouse in Africa’ (KIE08), the predominant sources of energy supply are biomass (91.58%) and fossil fuels (6.11%) (Trading Economics, 2018). The demand for energy is expected to increase by 27 per cent in the next two decades (MEFCC, 2017b:9). Currently, Ethiopia is using only 5 per cent of its hydropower potential; however, if it expands this energy supply source, it can generate green energy while

contributing to reducing energy poverty among poor communities (Doig and Adow, 2011:57). Ethiopia's potential to promote a climate resilient society and assert a global climate change influence on its domestic politics has been increasing.

This overview of the context and brief account of Ethiopia's role as an emerging global climate leader and its domestic green transition discourses, provide an understanding of the greening initiatives being undertaken and how these initiatives are appraised against the global green performance benchmarks. The next section looks critically at Ethiopia's domestic challenges and the measures being taken to green the economy and forestry sector.

#### **4.4.1 Domestic Greening Challenges and Initiatives**

Driven by the global trend in responding to environmental pressures and climate change challenges, Ethiopia – through its political elite – has been keen on exploring various climate-centred development options. The environmental impacts on the economic development of Ethiopia are evident (FDRE, 2015b:52; Aklilu, 2011:95; Mideksa, 2010:278; Eshetu et al., 2014:14), with increased warming, worsening droughts and increased flooding exposing communities to various shocks. The country's heavy dependence on rain and its weak coping capacity have made the situation alarming (FDRE, 2011a:42). Given that more than 85 per cent of the population depend predominately on natural resources (Mwebaza et al., 2009:4), environmental degradation has unbearable costs on rural livelihoods. The fundamental causes that are leading to ecological disaster, as Tekelemichael illustrated, include: unwise use of natural resources; short-term economic benefit focused development strategies versus long-term ecological damage and social costs; resource pressure created by rapid population growth and resettlements; forest overexploitation and deforestation; unsustainable farming; large-scale commercialisation; and encroachment of farming land by invasive alien species of vegetation and the loss of biodiversity (2003:17). These have resulted in a 'serious

degradation of natural resources and damage to the environment and human health', which are contributing to the loss of agricultural productivity, food insecurity, insecure livelihoods, and are negatively affecting citizens' quality of life (Ibid; Aklilu, 2011:95). Furthermore, based on the three risk indicators (hazard, poverty and disaster risk management), Shepherd et al. argue that Ethiopia is among the '11 countries most at risk of disaster-induced poverty' (2013:57). The recent El Nino effect that left 10 million Ethiopians food insecure can be taken as an evidence of possible scenarios (Albers et al., 2016). The environmental crisis has therefore worsened the socio-economic and ecological setting of millions of Ethiopians, and led to the loss of human and animal life and productive assets, resource-based conflicts, and climate-related migration.

Since the industrial revolution, Ethiopia's global GHG emission has been almost negligible – its total emission is ~ 150 Mt CO<sub>2</sub>e and represents less than 0.03 per cent of global emissions (FDRE, 2011a:42). This low level is due to its undeveloped industrial sector as well as renewable energy source endowments – despite its inefficiency, it generates more than 90 per cent of its total national power supply from hydropower and, unlike the global emissions from the energy sector (25%), Ethiopia's national emission share is only 3 per cent (Ibid, see also Trading Economics, 2018).

However, despite these facts and as a least developed country, Ethiopia is committing itself to building a low-carbon economy founded on the CRGE (Fikreyesus et al., 2014). This aims to reduce GHG from different sectors, reduce vulnerability to climate change and ensure economic growth (FDRE, 2011a), and has two pillars: the Green Economy and the Climate Resilient Strategies launched in 2011 and 2015 respectively (FDRE, 2015b). However, the strategic move by the political elite has led to a heated debate among policy actors who wish to achieve higher economic growth within a shorter timeframe (KIE08). For instance, although most of them agree on the new strategy, the policy makers did not 'fully support the development of synergies between low-carbon

and resilience agendas’ – referring to the adaptation and mitigation debate which also lacks clarity on the measures to be included (Fisher et al., 2014:18). However, contrary to this argument and compared to the brown economy, the Green Economy strategy of Ethiopia states:

The traditional economic development path [brown economy] could deliver the required growth, but at the cost of significant agriculture land expansion, soil erosion, and higher emissions as well as at the risk of reaching the limits to further development (FDRE, 2011a).

In Ethiopia, the green path choice seems inevitable to mitigate the potential ecological and social costs associated with the carbon-intensive traditional economic model. The new economic mode of production emphasises a shift to increase agricultural productivity and resource efficiency (FDRE, 2011a:23), and to overcome poverty through wealth creation and fair resource redistribution (Gebre Egziabher, 2013:1). Ethiopia’s CRGE is considered as a ‘key strategic direction’ of the GTP towards realising the sustainable development goals (SDGs), maintaining economic growth alongside the environmental and social aspects.

Being the driving force of the strategy, the political elite has ensured a critical leadership role in advancing the green agenda in Ethiopia. Ethiopia’s CRGE vision was aggressively promoted by its late Prime Minister Meles Zenawi who was politically a ‘defining figure’ and attempted to influence the economic development discourses in Africa (Clapham, 2018:1153). Domestically and at global level, the late premier advocated for climate mitigation and not adaptation, and criticised ‘the inequities of the global political economy and the marginalisation’ of Africa during the G20 as well as the ‘climate change summits’ (Verhoeven, 2015). As most of the key informants at Humbo agreed, the CRGE strategy also contributed to the promotion of the CDM in Ethiopia (KIE07; KIE08).

The CRGE has three interdependent and complementary objectives: to foster economic development, reduce emissions, and improve climate change resilience (FDRE, 2011a:19). Based on the economic analysis and Sectoral Reduction Mechanism (SRM) assessment (FDRE, 2015b; Fisher et al., 2014:12), the CRGE aims to reflect Ethiopia's relative strength in seven key sectors, with forestry and agriculture being prioritised, since the majority of these sectors' population depend on GHG, or they have considerable potential in effective climate mitigation, with these sectors representing 85 per cent of GHG emissions (Ibid). As climate mitigation is the core component of the CRGE, 'the business as usual' (BAU) model shows that if a typical development path were followed and taking the 2010 emission rate as a base, emissions would increase from ~150 MtCO<sub>2e</sub> in 2010 to 400 MtCO<sub>2e</sub> by 2030 (FDRE, 2011b:10; see also Gebre Egziabher, 2013:1-3). The total GHG emission of ~150 Mt CO<sub>2e</sub> occurs 50 per cent from agriculture and 37 per cent from forestry and 13 per cent from the other selected five sectors (power supply, building and green cities, livestock, transport and industry) (Ibid). Ethiopia's sector prioritisation fits with UNEP's directive of global South to focus on natural capital (2011a:7).

Beyond the sectoral focus, CRGE's development process is seen as highly 'participatory', with technical and financial support from development partners including the UK, Norway, UNDP and World Bank (FDRE-CRGE, 2013:3). For instance, although the SNNP regional state's role was limited in the Humbo initiative, as the analysis in Chapter 5 shows, there were more than 20 actors – spanning from the World Bank to the farmers. The role of these actors was crucial in moving the policy from agenda setting to implementation phase, filling and addressing gaps in state capacity building and permanence issues.

#### **4.4.2 Ethiopia an ‘Emerging’ Global Green Actor**

Ethiopia’s hegemonic ambition of creating a ‘Great Ethiopia’ contributed to its emergence as a global green leader. Domestic, regional and global ambitions have been part of its centuries-long history (FDRE, 2002a; Clapham, 2018; De Waal, 2015; Le Gouriellec, 2018). As Verhoeven argues, with relative consolidation of power by the EPRDF, this ambition aimed to realise ‘its historical destiny by casting off the shackles of poverty to lead Africa’ (2015). As he elaborates, ‘domestically secure Ethiopia’ is considered as ‘uniquely capable of ridding Africa’ – ‘the hopeless continent’. However, Le Gouriellec, based on neorealism, neoliberalism and neoGramscian analysis, categorises Ethiopia as an ‘imperfect hegemon’, as it only ‘possess some of [its] attributes’ (2018:1061). That is, despite having ambitious leaders, Ethiopia’s limited economic capacity and a region full of resistance, mean that it is still trying to hegemonise various diplomatic circles, including the UN climate change summits.

As a new ally in global environmental governance, Ethiopia has been actively engaging in various international environmental and climate change dialogues, and in several instances, it was privileged to be the principal negotiator for the African continent. The EPRDF, founded on ‘Ethiopia must recover its lost rank and dominant status’ (as the only uncolonised state in Africa), has therefore been advancing the country’s influence in its foreign policies and international relations (Le Gouriellec, 2018:1069). Furthermore, as Death highlighted, there is a global and regional climate and political leadership gap that requires emergent and global South countries, such as South Africa and Ethiopia respectively, to jump in and act as ‘the custodian of sustainable development’ (2011:460). Moving strategically, Ethiopia is now playing a critical role in filling this gap by participating in the global climate negotiations, including the Copenhagen Conference of Parties (COP15), the Durban COP17 and the African Union Committee of African Heads of State on Climate Change (CAHOSCC) meeting of 2017.

Since 2007, similar to South Africa, regional and global environmental governance has been a critical aspect of Ethiopia's foreign policy and diplomacy, including being at the forefront in creating strategic and tactical alliances with other climate clubs, such as the G77 of 134 global South nations and China. In international forums and particularly at the G20 summits, Ethiopia has been represented by its prime ministers, which has enabled it to be a global negotiator and a voice for the global South (Le Gouriellec, 2018:1059; Verhoeven, 2015). Ethiopia's leadership has contributed to promoting the country's image and political and development interests – the 'nation branding' as Death (2011:460) puts it. It is moving from a poor and weak state to a climate leader that represents the voices of Africans who are disproportionately affected by climate change, although its performance in negotiation had led to mixed results. For instance, the Copenhagen Accord did not come up with fixed targets or timeframes and some argue SSA countries failed to achieve their benchmarked financial support (Hoste, 2010:6). In line with Death's argument, this has made Ethiopia a 'middle power mediating' player – between those who are major polluters and victims – in attempting to create a policy space in climate change dialogues. To show its further commitment to climate issues, the country has adopted more than 15 Multilateral Environmental Agreements (MEAs), including that of the Kyoto Protocol, which was the result of a collective international process, promoting the facilitation of and access to green finances and technology (Mwebaza et al., 2009:11).

Hosted by Durban, South Africa in 2011, COP17 was a showcase for Ethiopia as it officially launched the CRGE, linked to its five-year GTP (Gebre Egziabher, 2013:1). Ethiopia is seen as exemplary country among other global South countries, which are unsure of which development path to choose. It is therefore worth looking at how Ethiopia's greening initiatives are appraised against global parameters and perceived by the assessors.

## **What Do Global Greening Parameters Say About Ethiopia?**

Though global rankings cannot be taken in isolation, the indicators show the overall performance of the country related to the specific sector under assessment. Recently, especially since the launch of the CRGE strategy, Ethiopia's green initiative has attracted the attention of global environmental assessors. To understand the country's perceived as well as assessed performance status, this chapter analyses the three most known global initiatives; namely the Environmental Performance Index (EPI), the Global Green Economy Index (GGEI) and the Cities Climate Leadership Group (C40).

To assess the overall environmental performance, a comparison has been made between EPI 2014 and 2018 rankings. The EPI 2014 result shows that, although Ethiopia was ranked 131 out of 178 countries in greening activities, it was performing relatively well within the SSA region (ranked 16) (EPI, 2014). The report further shows that relative improvement of 7.15 per cent (2004-2014). However, the recent EPI index ranked the country 141 out of 180 countries (EPI, 2018). So, despite its slight improvement in its index score (from the baseline of 42.46 in 2000 to 44.78 in 2018), 20 African countries are ahead of Ethiopia's EPI ranking.

Similarly, the GGEI published its ranking of 60 countries across the globe in 2014, based on both perception and performance indicators, and Ethiopia is placed 37 and 26 respectively (2014:12). This rating clearly shows the huge discrepancy between how Ethiopia is perceived and how its green initiatives are appraised (based on the four assessment pillars of leadership and climate change; efficiency sectors; markets and investment; and environment and natural capital). Comparing 80 countries, the GGEI 2016 report also shows Ethiopia's perception and performance rankings, which are 53 and 14 respectively. Moreover, the recent GGEI 2018 report that compared 130 countries placed Ethiopia at 40 with the score of 0.5294 (aggregating the overall scores of 2014 to 2018). Among the indicators, the country tops on '*Leadership and Climate Change*'

although with weaknesses in securing ‘*green investment*’ (GGEI, 2014:22), which is critical considering the huge technical and financial requirements of the green agenda. Furthermore, the presence of ‘visionary leadership’ is a precondition to choosing the green path (UNEP, 2012). Showing a relative strength on this indicator, Ethiopia’s green performance is only preceded by Kenya, Mauritius and Zambia in the African context.

Moreover, Ethiopia, through its capital city Addis Ababa, is also a member of the Cities Climate Leadership Group (C40), which is a network of 94 megacities devoted to addressing climate change challenges. Being a ‘megalopolis of some four million inhabitants’ (Clapham, 2018:1151) and as an emerging and fast-growing city, Addis Ababa has been exploring ways towards building a low-carbon urban area. For instance, the Ethiopia-China joint ventured Light Rail Transit (LRT), which started operating in September 2015, is considered to be an environmentally-friendly transport system, effective in reducing CO<sub>2</sub> emissions. For the efforts it put into tackling climate change, Addis Ababa won the C40 2016 Transportation Category award (C40, 2016:2). The report entitled ‘*The 11 Best Cities of 2016 for Addressing Climate Change*’ noted that, besides creating 6,000 green jobs, the LRT is expected to have a ‘cumulative emission reduction’ potential of ‘1.8 million tCO<sub>2</sub>e’ by 2030. Along with its CRGE, this green initiative has helped the country become an exemplary global green actor.

Indeed, despite its technical capacities and green investment challenges, Ethiopia’s active global engagement has enabled it to be an emerging ‘green state’ in the global South.

#### **4.5 Forestry within Greening Strategy: Why Top of the Agenda?**

As a plethora of reports show, Ethiopia’s forests have been under continuous overexploitation, as evidenced by the decrease in forest canopy during the later decades of the last millennium. Given Ethiopia’s enormous potential in the forestry sector, an expert from the Ethiopian Environment and Forest Research Institute (EEFRI) noted that: ‘It is an irony to see Ethiopia importing wood from other countries rather than exporting’

(KIE10). This deficit in the timber trade demonstrates a lack of investment and the mismanagement of the forestry sector and the resultant effects of degradation. As Nkonya et al. documented, the global economic costs linked to landscape change and soil quality degradation is about USD 231 billion (2016:117). In the context of Ethiopia, based on the IPCC report and comparing the level of forestry from 1990 to 2000, the country had seen an annual negative change rate of 0.8 per cent (2003). Rinaudo et al. also note that ‘over-exploitation’ has forced the country to have only ‘3 per cent of its indigenous forests’ (2009:12). Furthermore, Ethiopia’s average annual deforestation rate of 1.08 per cent (2000-10) has been far above the SSA region (0.48%) (World Bank, 2015:67-70).

In forestry, the impact of human activities is a large source of CO<sub>2</sub> emissions amounting to almost 55 Mt CO<sub>2e</sub> in 2010. Forestry emissions are driven by deforestation for agricultural land (50% of all forestry-related emissions) and forest degradation due to fuelwood consumption (46%) as well as formal and informal logging (4%) (FDRE, 2011a:12).

These figures demonstrate that Ethiopia’s deforestation rate is increasing. As an agrarian society, there is an overreliance on fuelwood energy usage. Furthermore, with the expansion of urbanisation that depends on biomass as the primary source of energy for cooking, there has been an increasing pressure on forests in Ethiopia. As Ethiopia’s national energy consumption rate report shows, biomass comprises 87.9 per cent, followed by petroleum at 9.2 per cent, electricity at 2.6 per cent, and solid fossil fuels at 0.2 per cent (Lakew et al., 2011). The gap between a sustainable fuelwood supply and demand is widening as the biomass supply dominates the energy balance. Looking at these figures, what makes it alarming is that the demand for biomass fuels is snowballing at 6 per cent annually (Ibid), where the deficit gap exceeded 58 million cubic metres in 2005 (Aklilu, 2011:98). As the projections indicate, under the traditional development path (BAU), an area of 9 million hectares could be deforested between 2010 and 2030, leading to forest degradation of more than 22 million tonnes of woody biomass (FDRE,

2011a:24). Given the enormous pressure on forestry resources, unless an effective national forest governance mechanism is in place, the potential negative impact would be catastrophic. This is critically linked with the forestry sector's governance challenge, as the World Bank staff member explained below:

Forestry in Ethiopia is the most challenging sector to work in – there is no contested area than governing forestry. That is, poverty is high and there is an interest of benefiting from it; there are land tenure and ownership issues; and planting trees and protecting them; thus managing and sustaining it is very difficult. However, its contribution to the livelihoods and national economy is remained to be high (KIE07).

The formation of a designated ministry on forestry and the policy instruments created to support the CRGE are among the positive developments undertaken in the sector to reduce the alarming state of deforestation. Together with the resurgence of state interest in greening, forestry has received considerable attention in the GTP policy agenda. The CRGE aims to protect and grow forests as carbon stocks, reduce fuelwood demand, increase carbon sequestration and improve forest management. Forestry is becoming a state agenda, particularly since, considering the forestry-water nexus, the catchments interconnected to the mega-dams [like the Grand Ethiopian Renaissance Dam] need to be continuously maintained to avoid siltation (KIE10), if not it can shorten their lifespan (KIE08).

Payments for Ecosystem Services (PES) is one key area where the government is trying to maximise the potential benefit it can bring to poverty reduction policies – as well as through the CDM and REDD+ carbon stocks (FDRE, 2011a; 2015a). There are also some initiatives that focus on low-cost energy-efficient cooking technologies (Watson et al., 2013:13; FDRE, 2011a:55). Furthermore, though at an early stage, Ethiopia is one of countries attempting to link REDD+ investment to the green economy transition. According to Watson et al., Ethiopia has explicitly regarded the forest sector as key to

potentially creating ‘carbon emission reduction, community empowerment and social equity’ (2013:ii), which contribute positively towards the rural development agenda. As noted in Chapters 1 and 2, green policies and forestry initiatives do not happen in a vacuum; rather institutional capacity is a prerequisite for transforming the economies towards a resilient and low-carbon society. The next section deals with the state of environmental policy and governance in Ethiopia.

#### **4.6 Institutions and Environmental Governance in Ethiopia**

In Ethiopia, institutionalism has been under constant reform and experiment, as it had to be ‘fit to purpose’ with the change in political ideology and powers (see Asefa, 2001). The politicisation of institutions has led to the reorganisation of government structures following the political shift from a traditional to a modern monarchy (1930s); from a monarchy to a Marxist-orientated government structure (1974); then to ethnic-based federalism of the developmental state economy (1994); and now with an ambition to expand the liberal economy (2018). As a result, Ethiopia has tested most of the governance forms – including the current structure leading to the nominal devolution of power among the ethnic-based regional states (FDRE, 1994a) and struggling to separate party politics from the state machinery – that is, a politico-administrative apparatus (Lefort, 2007:256). Ethiopia’s last century was in fact a century of institutional experiment.

Following Ethiopia’s decision to advance the low-carbon economy, the government had to review its state governing machinery as the whole economy, the national institutional system, the labour market, the private sector and societal benefits are expected to be affected (KIE08; KIE13). Therefore, the question arises of whether the existing institutional set-up advances the green agenda of the CRGE. The section below explores the institutional changes initiated to date.

#### **4.6.1 Incremental Institutional Changes to Fit the Green Economy**

Ethiopia's green pathway requires a systemic and transformational shift from current economic development practices where up to two-thirds of the entire economy is expected to be affected by 2030 (FDRE, 2011a:38). The CRGE strategy is radical in development thinking. However, given that the green policy is at its infancy stage and in reviewing the initiatives taken so far, the changes that have occurred show an incremental rather than systemic. These are not 'major institutional reforms', as argued by Eshetu et al. (2014:26). Systemic changes are fundamental pillars for creating a low-carbon economy and inherent to the shift in the country's economic, social and cultural, and environmental thinking; however the current state of green-induced changes do not demonstrate this. For instance, Ethiopia needs to reduce its overreliance on agriculture's contribution to GDP from about 45 per cent to less than 30 per cent, shifting to 'jobs in the services and industry sectors' (FDRE, 2011a:6; 2015b:4). 'Will this be within its state capacity to deliver?' is the question asked by many who study institutional buoyancy and state financial and technological capacity within the global South (Clare et al., 2012:234; Klein et al., 2013:12; Allen, 2012:21; Habtezion, 2014:38).

Ethiopia has rich experience over recent years in framing institutions and in applying 'innovative institutional approaches' to complement green policy interventions, particularly with the formation of the CRGE Facility, which uses a 'programmatic approach' to channel green funds (Fisher et al., 2014; Eshetu et al., 2014:14). As a result, in order to expand the CRGE strategy, new modes of institutional set-ups, networked partnerships, community mobilisation and multi-dimensional activities are being created (Fikreyesus et al., 2014:18). As outlined in Chapter 5, the formation of new partnerships, even at local community level, has been critical in delivering the micro-level forestry initiative in Humbo.

Table 6. CRGE induced forestry-related institutional reforms in Ethiopia (Since 2010)

<b>Governance Scale</b>	<b>Initiated Reforms</b>	<b>Specific changes</b>
Macro-level	<ul style="list-style-type: none"> <li>• Federal Governance Reform (setting up steering committees and public sector restructuring)</li> <li>• CRGE Strategy</li> <li>• Ethiopian Programme of Adaptation to Climate Change (EPACC) 2011</li> <li>• Sectoral Reduction Mechanism (SRM) Framework and Operational Manual</li> <li>• Climate Resilient Strategy (Agriculture and Water)</li> <li>• Environmental Policy (Proclamation No. 803/2013)</li> <li>• GCRE Facility</li> <li>• Ethiopia Forestry Policy</li> <li>• National REDD+ Secretariat (NRS)</li> </ul>	<ul style="list-style-type: none"> <li>• Ministry of Environment, Forest and Climate Change (MEFCC was formed from EPA) [With the recent change in the political leadership and public sector streaming in 2018, the MEFCC reduced from a ministerial to a commission level]</li> <li>• Integrating adaptation and mitigation</li> <li>• Carbon as a commodity</li> <li>• Quantification of CO<sub>2</sub></li> </ul>
Meso-level	<ul style="list-style-type: none"> <li>• Regional State Structural Reforms</li> <li>• REDD+ Oromia Regional state wide implementation</li> </ul>	<ul style="list-style-type: none"> <li>• MEFFCC Regional Structure and its relations to other ministries at region and district levels</li> </ul>
Micro-level	<ul style="list-style-type: none"> <li>• Participatory Forest Management</li> <li>• Continuation of CDM with farmer-managed natural regeneration (FMNR)</li> <li>• Engaging communities in REDD+ programmes</li> </ul>	<ul style="list-style-type: none"> <li>• Formation of grassroots-based institutions like cooperatives</li> <li>• Introducing Land Use Rights in A/R</li> <li>• Benefit redistribution model</li> </ul>

Source: Data collected from the fieldwork and relevant government documents (2017).

Since choosing a green economy as a development path is an emerging trend in the global South, there is a process of experimentation with new socio-economic structures – making some countries social laboratories. Since the launch of the CRGE, the federal government has been making some radical development policy choices and adjusting environment and climate change policies (FDRE, 2015b), including developing sectoral policies (SRM) and setting up a ‘permanent’ executive institutional body in the forestry sector. Through this transformative transition to an emerging ‘green state’ in Africa,

Ethiopia has been ‘forced’ to undergo a moderate and very critical process of reforming its government structure. The incremental reforms Ethiopia is making at macro, meso and micro levels, together with other forms of institutional partnership modalities, are presented in Table 6.

However, as the key informant interviews showed, even though Ethiopia has introduced institutional changes, the newly installed institutions are very weak (KIE03; KIE08), and the regional level structures are facing human, technical and financial shortages. This is deterring them from adequately performing their functions, including producing environmental reports (Mwebaza et al., 2009:13). The institutions are in their infancy and lack expertise, given that the green agenda is new to the country. The following sections discuss Ethiopia’s progress with the green policy and institutional changes.

#### **4.6.2 Federal to Local Governance Structure Reform**

Over the past few years, Ethiopia has been incrementally reforming its greening-related policies and federal-regional-local level institutions. The most radical policy shift was the launch of the CRGE strategy in 2011, when it became one of the few countries in Africa to have a written policy document on the green economy. Complementing this strategy, the government has been making institutional changes in the functional sectors and in the public services primarily linked to ecology, forestry, agriculture, energy and climate change. This section deals with changes at federal level, which also affect the lower levels of the regional state and local government structures.

#### **Macro-level Governance Reform**

The Office of the Prime Minister established the most influential structure – the National steering committee or council and the Sub-technical committees at the end of 2010 (Fisher et al., 2014:16; Wondemagegnehu, 2016:10). These committees comprise high-level political leaders and technical experts respectively across the spectrum of the

prioritised sectors. As the highest body in the national law-making and drafting process (Mwebaza et al., 2009:13-14), the council produces environmental directives (FDRE, 2011a:47), while the sub-technical committees focus on GHG mitigation, resilience and economic growth. These bodies assess the greening requirements and explore the resources needed, either through domestic sources, bilateral/multilateral agreements or global green funds. They serve as overarching entities that lead the overall greening strategy, aligning it with the GTP (FDRE-CRGE, 2013; Fisher et al., 2014:15).

In light of the devastating impacts of ecological degradation during the 1990s and early 2000s, the Ethiopian government launched the ‘Plan for Accelerated and Sustained Development to End Poverty’ in 2005, which focuses on urban air quality, enhancing coping mechanisms to climate change, and making important investments (Aklilu, 2011:95). It also ratified several international treaties, including the UNFCCC and the UNCCD, with Proclamation No. 97/1994 and 81/1997 respectively (FDRE 1994b; 1997). Similarly, it launched the National Adaptation Plan of Action (NAPA) in 2007. However, before the launch of the CRGE strategy, the government was giving little attention to forestry – all of its national functions were left to a single weak institution, the Environmental Protection Authority (EPA) (Tekelemichael, 2003:17; Alba, 2008:1). Since 1995 and before the initiation of the green policy, Ethiopia had the EPA, which used to be under the Ministry of Agriculture – ‘with lower organisational profile’ (Alba, 2008:1; also KIE07; KIE08). Most of the respondents of this research agreed that leaving the more than 1.1 million km<sup>2</sup> area to this Authority was a strategic mistake, which possibility contributed to further degradation of the country’s forest landscapes. Despite its limited capacity, however, at the initial green policy agenda setting, the EPA played a key role in overseeing the ‘development of the climate resilient green economy strategy’ and joining ‘global efforts to address climate change’ (Eshetu et al., 2014:26).

As a result of increasing the political leadership's stake in the green agenda and steering the strategic direction towards the low-carbon development path, the Authority was moved to ministerial level [Proclamation No. 803/2013] and became the Ministry of Environment and Forest (MEF) in 2013 (FDRE, 2013). This resulted in more power in the forestry and environment domain being transferred to it – expanding its mandate, particularly in monitoring national environmental situations, dealing with resourcing green policies and managing the multimillion REDD+ programme. Similarly, although Proclamation No. 295/2002 re-established the EPA and was able to introduce some degree of decentralisation (FDRE, 2002b); it is the current reform that gave the EPA full executive status (Mwebaza et al., 2009:13). The statement below shows the functional shift in the forestry sector within the executive bodies.

The powers and duties given to the Ministry of Agriculture, with respect to matters relating to forestry, by the provision of other laws currently in force, are hereby given to the Ministry of Environment and Forest. Proc. No. 803/2013 Article 4 (2) (FDRE – Federal Negarit Gazette, 2013:6994).

Furthermore, the government, noticing the advancement of international thinking on global warming, it added 'climate change' to the name of the ministry (similar to the UK government's action taken before the Copenhagen Climate Summit in 2008), thereby changing it to the Ministry of Environment, Forest and Climate Change (MEFCC) in 2015. This institutional reconfiguration was expected to be the driving force for the operationalisation of the green strategy (FDRE-CRGE, 2013:4). However, with the change in the top political leadership within the EPRDF, Prime Minister Abiy Ahmed decided to streamline the public sector in October 2018, and the MEFCC lost its ministerial status and was lowered to a 'commission'. This policy shift needs more time to be assessed to see whether it results in drastic changes in executive powers and resource sharing.

Departing from the Ministry of Agriculture, the MEFCC took some of its former responsibilities. The divorce process was smooth as most of the interviewed key informants explained, but there were still areas of conflict created due to a lack of clarity in cross-sectoral themes, including soil, water and forestry (KIE08; KIE10). Although these themes are inseparable and interconnected, a new collaborative approach was needed to deal with the functional areas. For instance, agroforestry brings both institutions together. As the expert from the EEFRI said: ‘We have been arguing MEFCC should govern any resource related to forestry. Still, water and soil are under the Ministry of Agriculture. That is, every forest-related function should come to us and not agriculture. Crosscutting issues are not still clear’ (KIE10). Regarding duplication of effort among the newly formed executive body and the existing ones, an expert from the MEFCC said that ‘I do not think there is duplication rather lack of clarity on some functional areas, and we need to work together in areas of mutual interest through a coordinated and integrative way’ (KIE08).

At federal level, the CRGE Facility is under the co-responsibility of the Ministry of Finance and Economic Development (MoFED) and the MEFCC (FDRE, 2011a:47), while the National REDD+ Secretariat (NRS) is under the MEFCC (which was within the Ministry of Agriculture till October 2013). With the government’s increasing interest in REDD+, institutional reorganisation and change at the federal level are expected to impact forestry governance of Ethiopia.

Creating a low carbon society requires the institutionalisation and mainstreaming of the green agenda across all sectors and public policies, including agriculture, transport, energy and education (World Bank, 2012a). However, nearly 10 years on since its initiation, the green agenda is still at a conceptual and planning stage in most sectors, and implementation looks very slow, apart from some fast-track initiatives that provide financial support to regional and local initiatives (Paul and Weinthal, 2019:199; Eshetu

et al., 2014:14). With credit to the CRGE strategy, efforts in the forestry sector have started to evolve and mature both at policy and implementation stages, and the emergence of a new 'Ethiopia Forestry Policy' was symbolic, as Proclamation No. 803/2013 mandated the MEFCC to review the measures being undertaken to address the existing forest-related issues and new frameworks, such as carbon trading, carbon rights, Participatory Forest Management (PFM), community ownership and benefit sharing.

### **Meso-level Governance Reform**

Following the formation of a new ministerial structure at the federal level, regional states have initiated the process of instituting parallel structures. As of 2018, the 11 regional governments of the federal system, including that of the two multi-ethnic city-states of Addis Ababa and Dire Dawa, have created regional offices to monitor environmental and climate change issues (KIE08; Mwebaza et al., 2009:13) and have developed adaptation programmes in 20 sub-sectors. These measures also include supportive actions, such as identifying and mapping disaster-prone areas and mainstreaming climate change in education (FDRE-CRGE, 2013:3). A review of the status of the MEFCC and its capacity to deliver the green policy among the regions, however, has shown some governance capacity discrepancies among the regional states. These are at different stages in instituting and adopting the new climate resilient induced institutional change initiated at the federal level (KIE08). Oromia, Amhara and Tigray are showing some progress, but the 'emerging regions' of Afar, Benshangul-Gumuz, Gambela, Somali and SNNP still struggle to advance the institutional reforms and hire the right expertise (KIE08; KIE10). As most of the key informants agreed, the financial capacity of the regions has been a bottleneck to expanding these middle and lower level public service offices and their functional spheres (KIE06; KIE08). Institutionalising green changes in the public sector and mainstreaming green thinking is a process and takes time.

## **Micro-level Governance Reform**

Advancing the ‘greening’ of all sectors affects many state functional lines as well as their staffing. However, going beyond the federal and regional state level restructuring efforts, all the green programmes, projects and activities are delivered at community level, and so community-based institutional set-up changes are expected to be in line with national reforms. Implementing partners have been experimenting with various community mobilisation mechanisms to enable climate-sensitive behaviour and effectively engage the communities in ensuring the delivery of the project activities and the attainment of livelihood improvement (KIE05). For instance, departing from the traditional ‘open access resource’ regime, the Humbo CDM initiative reintroduced the cooperative model of governing forests at a local level, while other NGOs, like Farm Africa in the Oromia region for REDD+, have been deploying PFM. In Humbo, the experimented farmer managed natural regeneration (FMNR) was a departure from the conventional afforestation and reforestation (A/R) approaches, as it focused on stimulating indigenous stumps and roots naturally. As a result, complementary plantations were partly added only in the highly degraded mountainous areas, where natural regeneration is unable to function.

In addition, World Vision Ethiopia (WVE), a national NGO affiliated to an international network, is promoting carbon based energy efficient stove distribution to rural households through the ‘Energy Efficient Stoves Programme (EESP)’, implementing it through the CDM Programme of Activities (PoA) approach by bringing 20 villages into three clusters in Oromia and SNNP regional states to maximise the project’s impacts and reduce implementation costs (WVE/WVA, 2013). The PoA departs from the Humbo project-based institutional model and brings several beneficiary villages under a single programme. In addition, although the social protection policy’s main focus is on food security and reducing poverty among vulnerable rural communities, the Productive Safety

Net Programme (PSNP) – a semi-permanent institutional framework in rural areas – is carrying out soil and water conservation activities in several villages of Ethiopia, partly contributing to climate change mitigation. Chapter 6 and 7 discuss in detail the green induced community-based restructuring in Humbo and its implications for local natural resource governance, farmers' livelihoods, as well as its response to the global climate change crises.

### **Beyond the Hierarchy: Institutional Interdependences in Green Governance**

Besides these vertical institutional changes, there are also other forms of non-linear partnerships being created which bring actors together to work across the various scales and levels in Ethiopia. The government is working with local and international NGOs, think-tanks and policy institutes, regional bodies and global organisations through a partnership that reflects the essence of mutual understanding (KIE08). For instance, the Humbo initiative was designed and implemented by the lead actor, WVE, with financial and technical support from World Vision Australia (WVA). Here the role of government was limited, only playing a part in creating an enabling policy environment and providing the needed administrative support (KIE07). Thus, the partnership maintained in regaining and protecting the forested mountain shows the diversity of the actors which includes the state, NGOs, global financial organisations, as well as the communities. Such functional interdependencies (see both Figure 4 and Table 8 of Chapter 5) require each green intervention to come up with a tailored institutional framework that aligns individual actors' objectives. However, as the study conducted by Kaur et al. shows, the emerging policy networks created need 'to evolve into a strategic coalition' (2016:25). Apart from the implicit structure of the CDM, a notable Public-Private Partnership (PPP) is not yet recorded in the forest sector of Ethiopia. See Table 7 below for the nature of institutional partnership being created in Ethiopia.

Table 7. Nature of institutional partnerships and global actors in Ethiopia's CRGE

<b>Nature of the Partnership</b>	<b>List of Actors</b>	<b>Responsible</b>
Multilateral banks and agencies	World Bank, African Development Bank, International Finance Cooperation, United Nations (particularly UNDP)	Managing the Scaling up Renewable Energy Programme funds allocated to Ethiopia (ADB/UNDP).  Managing the international window of Ethiopia's CRGE Facility (UNDP).
International climate funds	Green Climate Fund, the Adaptation Fund and the Climate Investment Funds	Influencing the choice of financial intermediaries, financial planning systems and financial instruments used to access and manage multilateral sources of climate finance.
Bilateral partners	Department of International Development (DFID) of UK, DANIDA of Denmark and the Austrian Development Agency	The operationalisation of the National Climate Change Fund and serving on the Advisory Board of the CRGE Facility. Assessing the possibility of using public finance management systems and results-based financing to manage and deliver finance for investment in CRGE (DFID/Norway).
International non-governmental organisations and intergovernmental organisations	Global Green Growth Institute and the Climate and Development Knowledge Network	Providing support to federal ministries, the CRGE Facility on issues such as capacity building, knowledge management and preparation of strategic documents.

Source: Produced based on Kaur et al. (2016:18-19).

The emergence of the CRGE strategy led to the flourishing of research institutes that work in parallel to the state administrative structure. For instance, the EEFRI, established by Regulation No. 327/2014, has massively expanded its mandate, functions and staff, compared to when it was under the Ministry of Agriculture (FDRE, 2014; KIE10). Similarly, the Environment and Climate Research Centre (ECRC) was formed as a designated research body on climate change. The emergence of these institutions is intended to support the country's green policy by providing research and evidence-based policy findings (KIE12). However, this move may still need to have an integrative institutional approach in bringing clarity and enhancing the synergy among the multidisciplinary functional areas. For instance, the forestry sector is in the remit of various ministries and institutes, such as the Ministry of Agriculture, which values

forestry for its contribution to soil enrichment and agricultural outputs; and the MEFCC and the EEFRI which value it for its carbon sequestration, biodiversity and ecological regulatory role. The ECRC mainly focuses on the links between forestry and atmospheric carbon and the valuation of nature. Based on the key informant interviews, although these entities are evolving institutionally and functionally, further functional clarities and harmonisation are needed.

#### **4.6.3 Green Agenda and the Financial Architecture: the CRGE Facility**

Globally, there is a wider consensus on the role of forestry in climate change mitigation. As Seymour and Busch said: ‘The science, the economics, and the politics are now aligned for a major international effort to conserve tropical forests, with finance the missing piece’ (2016:16). This is particularly pertinent to the global South countries, such as Ethiopia, that face challenges related to the lack of adequate finance, technology and state capacity to deliver prosperity to their people (KIE07). There is a lack of capacity to cope with climate change among farmers in Ethiopia, as the statement below reveals:

Poverty poses a major obstacle for farmers in Ethiopia to adapt to climate change. The poor do not have the necessary technology and resources, in terms of money and so on, to be able to change and adapt. Ethiopian late Prime Minister Meles Zenawi, Addis Ababa, 15 January 2009 (IRIN, 2009).

Beyond individual households and looking at the green economic path, the task becomes very challenging as the required initial investment is enormous and competition in accessing the limited global green fund is tough (Eshetu et al., 2014:74). Given the magnitude of the changes needed, countries that choose this path are aiming to generate domestic and global climate funds, beyond the ODA. However, the question of costing green policies and affordability have been continuous points of debate. Green investment can have environmental benefits, but is expected to be ‘extremely costly in the short-term’ (Resnick et al., 2012:216). For instance, related to the question of affordability in

SSA, Uganda intends to inject USD 1.8 billion up to 2020 to harness the economic, social and environmental benefits of green growth (Government of Uganda, 2016:vii). However, part of the resources to be secured is far beyond the government's control and can be influenced by multiple global political and economic dynamics.

As outlined in Ethiopia's CRGE strategy, building a green economy requires 'more than USD 150 billion over 20 years where USD 80 billion is for capital investment and USD 70 billion operating and programme expenses' (FDRE, 2011a:38). To address its climate change challenges, Ethiopia needs USD 7.5 billion per year (Eshetu et al., 2014:74). The government understands that finance is the major bottleneck along the green path, which could possibly derail its march towards building a low carbon society. As the GTP underscored, the 'low mobilisation of domestic financial resources' is an area that demands further work (FDRE, 2010:19). The challenges of accessing climate finance and attracting private sector funds remain potential obstacles to reaching the ambitious targets (FDRE, 2011a:42; Eshetu et al., 2014:74).

Currently, even though Ethiopia is already making substantive climate change related investments through fast track interventions (Fisher et al., 2014:13), the gap remains huge. According to Eshetu et al., climate change relevant spending between 2008 and 2012 was 'found to fluctuate quite considerably' and estimated at an average of '15 per cent of total government expenditure, representing 1.8 per cent of GDP' (2014:46). Historically, Ethiopia is not new in accessing the Global Environment Facility (GEF), as it has been a recipient of the fund since 1991 (EPA-FDRE, 2011b:3), and recently also secured funding from the World Bank's Forest Carbon Partnership Facility and UN-REDD for its national REDD+ strategy development. It is also looking to access the Adaptation Fund while preparing for the Green Climate Fund (GCF) (FDRE, 2011a:42); though its experts are finding it difficult to fulfil the fiduciary requirement of international climate funds (KIE07; KIE13). The question here is how to create efficiency and

effectiveness in managing and mainstreaming the multi-sourced green related funds to the national economy, and this is addressed below.

Based on accumulated global and country-based experience, the Ethiopian government, with the support of UNDP, Austria, UK's DFID and others, formed the CRGE Facility which is expected to play a strategic role in federal climate finance governance, beyond merely challenging climate finance (FDRE-CRGE, 2014). The Facility is considered to be an 'innovative' instrument in integrating the 'CRGE into the national planning' and the government budgetary system (Ibid; see Kallore et al., 2014:1). It is expected to enhance country ownership by putting the state at the centre of running climate finance and the GTP. In filling the climate finance gap, the Facility aims to support the CRGE by attracting and channelling finance including the 'bi-/multilateral grants and pay-for-performance deals as well as trading schemes' (FDRE, 2011a:42). This centralisation of green finances through the Facility is still at the experimental stage and not yet fully operational, and so it is difficult to give a verdict on its success or failure. Although it has secured climate grants from the UK's DFID (USD 23 million) and from Austria (USD 1 million) (Fisher et al., 2014:12-13), other funds continue to be channelled directly to the implementing entities – for instance the REDD+ fund is directed to the REDD+ Office (KIE08). Beyond Ethiopia, this green finance mechanism is expanding in SSA, for instance, Rwanda has redesigned its National Fund for Environment and Climate Change (FONERWA – acronym in French). For a comparative analysis on the climate finance of Ethiopia and Rwanda, see Kaur et al. (2016:12).

To sum up, with the CRGE and the top leadership commitment to the green agenda, Ethiopia is reforming its policies and public sector institutions. Most of the institutional infrastructure is still in the process of evolution, and the magnitude and scale of these changes are incremental rather than systemic.

## **4.7 Conclusion**

Ethiopia's pursuance of the developmental state and the 'liberal' economy is critical to the development of the carbon finance model. Ethiopia's ambition to become an emerging 'green economy' country and its current on-going green discourses and narratives are attractive for analysis and for generating learning. As this chapter has explored, building a climate resilient economy and a carbon-neutral society by 2025 defines Ethiopia's political economy – particularly since the launch of CRGE. The green economy and its political and socio-economic shift require huge investment – in particular systemic and transformative transition that goes deep into the social fabric of Ethiopian society. To date, although the country has carried out some institutional restructuring across different scales, developed a new financial facility and instruments, and expanded its global partnership related to the global environmental discourse, demonstrating evidence at the local level remains a challenge. Nevertheless, in filling the climate leadership gap among global South countries, Ethiopia's dominance as an 'emerging green actor' is expected to continue. The Humbo carbon finance-based forestry case has been implemented within this political ecology – with more than 20 actors building partnership and collaboration to reconcile local and global interests. The next four chapters analyse the implications of the CDM intervention in Humbo and its link with the green economy, based on empirical data from fieldwork.

## **Chapter 5 The Interplay of Local-National-Global Actors in Translating Policy into Practice in Humbo**

### **5.1 Introduction**

The execution of global climate change treaties requires the engagement of actors at multiple policy levels. Translating the Kyoto Protocol into practice in the Humbo natural regeneration initiative involved many development and corporate actors, as well as a level of engagement far beyond the relatively small size of the intervention and related investments. The range of actors included farmers engaged in subsistence agriculture and mobilised in forest cooperatives; environmental players at regional and federal state levels; national and international NGOs; large international financial institutions such as the World Bank; the multiple Annex I parties of the Kyoto Protocol; the UNFCCC with its frameworks; and validation consulting firms (JACO of Japan and RINA Services). Each actor brought their own interests and modalities to the forest work and carbon finance that were carried out on the ground by the smallholder farmers, and these interests tended to converge or diverge at different times. As the key informant interviewees explained, each actor contributed a level of bargaining power to the process of negotiation, and each aimed to maximise the benefits that they could get out of the forest regeneration, aspiring for the best possible outcome from their own point of view.

This section looks at how state policy, with the influence of national political leaders and multiple international actors, sought to put global and national policies into practice among the Humbo communities in light of the twofold objective of climate change mitigation and poverty reduction in the forest regeneration. The analysis undertakes a critical appraisal of the institutional set-up, encompassing the nature of the institutions, the motives of the actors, the effectiveness of networking and partnerships, the communities' access to resources and power, and, finally, the learning processes.

## **5.2 A Web of Multiples: Institutional Synergies and Power Dynamics**

The emergence of a green economy development path has forced international actors, including the UN and the World Bank, to either shift their strategies or to reconsider 'green' as a major element in their partnership arrangements (Barbier, 2011; World Bank, 2012a). Moreover, this new path has created new actors, including think tanks, consulting firms, coalitions and networks, which attempt to influence the global South's greening agenda through their financial or/and technical assistance. Indeed, in environmental governance, 'connected systems' and 'functional interdependence' are increasingly emphasised (Watts, 2012:3). As Clare et al. have argued, the low-carbon economic path requires extensive inter-sectoral coordination and technical knowledge (2012:234), both of which are in large part absent in most of the global South. Thus, whether the green economy strategy is home grown, induced or a hybrid, the engagement of global actors in agenda-setting vis-à-vis national climate resilience policies is inevitable. Uganda provides one example – in its national green growth strategy development process alongside the national actor, the Economic Policy Research Centre (EPRC), international research and policy actors such as the New Climate Economy (NCE) and the Global Green Growth Institute (GGGI), played a significant role in developing the economic model and shaping the strategy's directives (Government of Uganda, 2016:iv). The NCE and GGGI are also prominent actors in the operationalisation of the Climate Resilient Green Economy (CRGE) in Ethiopia, as are a number of other countries, including Colombia, China and India. Furthermore, carbon finance, with an evolving market, has been promoting new actors either as validating bodies, policy entrepreneurs or technical assistance providers.

Carbon, with a global market and value chains, attracts and involves various business-oriented institutional frameworks and actors (McAfee, 2012a:6). Given the challenges that arise in translating global climate change frameworks into the local context, which is

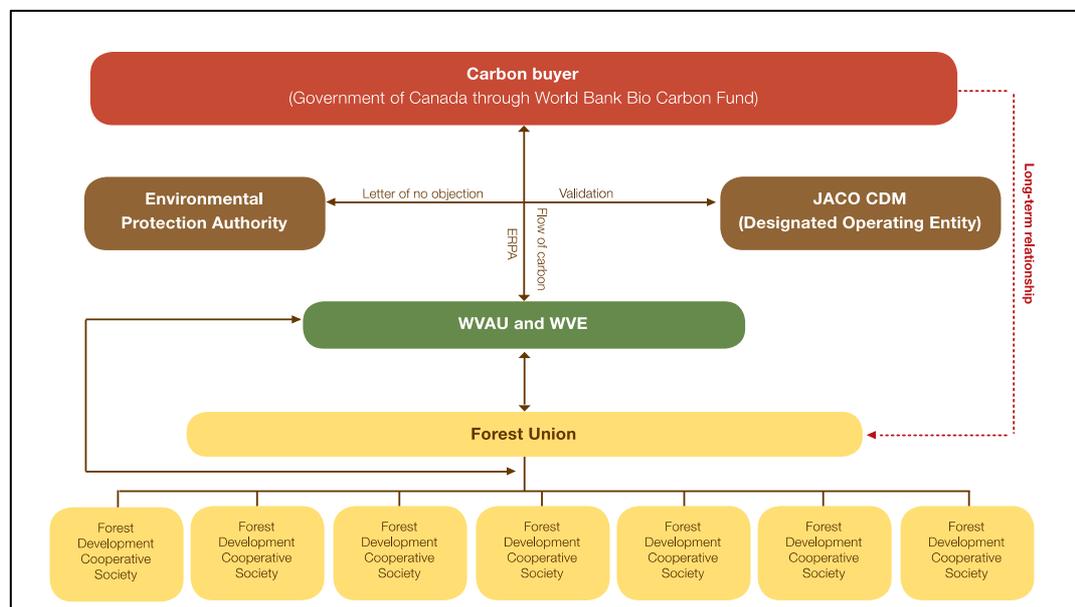
characterised by dynamism and specific processes, carbon finance requires careful analysis to clarify the configuration of the different actors and their level of engagement, their motives and their ability to use all of the resources and means available to them in order to influence local processes. Analysing the institutional framework within the multiple web of frameworks helps us to identify the roles of key carbon finance stakeholders in Humbo, and determine their direct or indirect, implicit or explicit, engagement. According to Humbo key informants, within the relational power dynamics, the actors seemed to complement and create synergies at times and at other times they found themselves in a state of institutional and relational conflict (KIE05; KIE06; KIE08). The following section critically analyses the institutional framework used in implementing carbon finance in the Humbo context and the institutional actors' influences on processes and outcomes.

### **Institutional Framework, Carbon Finance and Actors in Humbo**

Corporate entities, along with their Annex I parties, purchase the carbon credits produced by the 5,168 Humbo farmer shareholders through the World Bank's BioCarbon Fund. The NGO World Vision Ethiopia (WVE), acting on behalf of the farmer communities, signed a 10-year Emission Reduction Purchase Agreement (ERPA) with the World Bank. Simultaneously, it also signed a sub-ERPA contract with the seven Humbo agroforestry cooperatives (KIE01; KIE05; KIE07). World Vision Australia (WVA) funded the initial investment of the project, with the Government of Ethiopia playing its role in creating an enabling environment and policy space for the project. At the local level, Humbo applied an 'innovative' institutional framework – Farmer Managed Natural Regeneration (FMNR) – in delivering its targets (Biryahwaho et al., 2012:14). This was based on an NGO-induced South-South knowledge transfer and the repurposing of the institutional model of local cooperatives for forest regeneration, while attempting to promote rural development (KIE08). The FMNR approach introduced natural tree regeneration through

the ‘planting of seedlings and traditional good practices in forest management’ (Lakew, 2011). This method was developed and has been employed in Niger for over 20 years (KIE05). The illustration above and Figure 4, below, present the nature and characteristics of the actors, along with their roles in carbon finance in Humbo, within an overarching institutional framework and show varying degrees of influence, from the local to the global level. A detailed analysis of their power, influence and impacts on climate mitigation and poverty reduction follows over the course of this chapter.

Figure 4. Humbo natural regeneration institutional framework



Source: Shames et al. (2012:7) [World Vision Australia (WVAU); the Environmental Protection Authority (EPA)].

### 5.2.1 Global Actors: The Roles of International Organisations

A number of key global environment and climate change actors influence international and domestic green policies and frameworks (see Paul and Weinthal, 2019; O’Sullivan et al., 2012:4). Collectively, they have had tremendous leverage and influence on the carbon finance model, from its initiation to its implementation and through the transfer of carbon revenues. Within the Humbo institutional framework set-up, the key global actors all engage in carbon offsets, however the World Bank tended to dominate, as most key

respondents in this study noted (see Figure 5 of this chapter). Its roles included: ensuring that the Humbo CDM be fully compliant with UNFCCC guidelines; determining the amount the farmers receive for each sequestered tCO<sub>2</sub>; implicitly ‘forcing’ the communities to join the compliance carbon market; and managing the BioCarbon fund to influence the overall carbon finance business model.

The World Bank, as a prominent actor in environmental governance, climate change policy and related programmes in the global South, provides technical, analytical and financial assistance to Ethiopia’s CRGE (KIE08). It works across several multimillion dollar environmental and agricultural programmes, including the Country Situational Analysis, the Multi-Sector Investment Plan (MSIP), the Sustainable Land Management Programme (SLMP I and II) and REDD+ (KIE07). Comparing its work in other African countries, it is clear that the Bank’s programme in Ethiopia is one of its most significant – mainly linked to the CRGE – as confirmed in the key expert interview with the World Bank (KIE07). Given its critical role in advancing the CRGE and its dominance in Humbo as the sole carbon credit buyer, the Bank’s impact and influence have been very visible.

In Humbo, the World Bank works through the multilateral/bilateral agreement of the BioCarbon Fund. Besides its intervention as a Humbo carbon credit buyer, it is aiming to buy up to 10 million tCO<sub>2e</sub> from the USD 50 million fund pledged by the Government of Norway for the results-based payments under REDD+ [as of March 2017, the emission purchase agreement along the unit price of tCO<sub>2e</sub> for the REDD+’s 10 years had not yet been signed] (KIE07). As a global financial actor, the World Bank works formally with the government’s executive bodies, including the Ministry of Environment, Forest and Climate (MEFCC). The Humbo project was a rare instance in which the Bank worked with an NGO (WVE), suggesting a specific motive for the Bank to engage directly with a third sector actor (KIE06).

The UN, through the UNFCCC, has been leading the climate change agenda by bringing the parties onto global platforms and urging them to commit to the treaties – the Kyoto Protocol was one among the many agreements. Following the Protocol, the UNFCCC’s CDM Executive Board took responsibility for the verification of the actual sequestered carbon of the project implementing bodies – after the Humbo validation by JACO CDM Ltd, a Designated Operation Entity (DOE) (JACO CDM, 2011). After a lengthy process, the UNFCCC registered the Humbo initiative under its certified emission reduction scheme in 2009. Despite its bureaucratic and cumbersome procedures, the UNFCCC’s role as the international regulatory body in carbon finance has been indispensable.

Table 8. UNFCCC authorised Kyoto Protocol Annex I Parties and status in Humbo

<b>Annexe I Parties Involved</b>	<b>Authorised Participants</b>	<b>Parties’ Status of Involvem</b>
<b>Spain</b>	Kingdom of Spain - Ministry of Agriculture, Food and Environment and Ministry of Economy and Competitiveness	Direct
<b>Canada</b>	The Government of Canada – Ministry of Foreign Affairs and International Trade [ <i>Party withdrawn from Kyoto Protocol in December 2011 but effective from 15/12/2012</i> ]	Direct
<b>Japan</b>	Japan Petroleum Exploration Co., Ltd. (JAPEX); The Okinawa Electric Power Co., Inc.; Suntory Holdings Limited; Tokyo Electric Power Company Holdings, Inc.; Sumitomo Joint Electric Power Co., Ltd.; Japan Iron and Steel Federation (JISF); Sumitomo Chemical; Idemitsu Kosan Co.,	Indirect
<b>Italy</b>	The Government of Italy - Ministry for the Environment Land and Sea	Direct
<b>France</b>	Eco-Carbone S.A.S	Indirect
<b>Luxembourg</b>	Ministry of Sustainable Development and Infrastructure	Direct

Source: Produced based on Humbo CDM Initiative data of UNFCCC (2018a).

The Kyoto Protocol (Article 12) requires Annex I parties to voluntarily participate in the CDM through their Designated National Authority (DNA), either directly or indirectly. As shown in Table 8, Spain, Canada, Italy and Luxembourg participated directly in the Humbo case, while Japan and France engaged indirectly. Here, ‘directly’ implies that the Annex I DNA involves itself as a carbon credit buyer, whereas ‘indirectly’ means that the

state involves itself in the carbon credit through its companies – their combined efforts add up to the country’s emission reduction target. Thus, the Humbo project has needed the approval of four Annex I parties and nine private companies (from France and Japan), all of which are interested in fulfilling their offset targets.

As part of their carbon offset agreement with parties in the global South, Annex I parties may specify the allocation of their CDM specific financial contribution to the Bank, including indicating preferred sectors and geographic areas. For instance, Spain specified contributions from carbon credits for ‘renewables and energy efficiency’, with a geographical focus of Latin America and with a tCO<sub>2</sub> unit price of at ‘no more than Euro 5’ (Environmental Finance, 2004). This preference clearly shows that the Annex I parties do not merely aim to promote global emissions reduction, rather they aim to advance their own national interests and political agenda through the purchase of carbon credits while meeting their Kyoto commitments. In contrast, Annex I parties with indirect participation through companies do not tend to give a regional specificity.

In terms of the BioCarbon Fund and given the World Bank’s pivotal role in driving the Humbo forest initiative, a detailed analysis is provided below to assess the Bank’s degree of influence on the forest-based green agenda, climate finance, its engagement with local actors, and the risk mitigation approach that it put in place.

### **The World Bank’s Motives in Humbo and its Agenda as Global Climate Leader**

As World Bank’s history in climate change reveals its deep interest to be a global player, for instance, in 1990s as Lecocq and Ambrosi argue ‘[a]lthough it invested very little of its own resources into the Prototype Carbon Fund (PCF), [it] ... saw carbon finance as an opportunity’ and considered it as part of its ‘innovation in financial markets’ (2007:138). Furthermore, as trustee of the BioCarbon Fund, the World Bank’s role in Africa has been multifaceted and wide, encompassing the roles of managing a climate fund, buying carbon credits and providing technical support (Salinas and Baroudy, 2011:2). Initiated

and operationalised in 2004, the BioCarbon Fund has had three tranches (Tranche 1 with USD 53.8 million and 14 participants; Tranche 2 with USD 29.5 million and 5 participants, and Tranche 3 which is currently employing the sustainable landscape approach (SLA) (World Bank, 2012b:3-4). Within the first two tranches (up to 2012), there were 23 contracts under the CDM and REDD+ (World Bank, 2012b:3). The fund became functional after securing USD 12.5 million from Canada, Italy and two companies from Japan and France, each contributing USD 2.5 million. Later on, in 2004 and 2006, Spain and Ireland contributed Euro 10 million and USD 12.8 million respectively, as the various reports of *Environmental Finance* show (2004, 2006 and 2011). The BioCarbon Fund plus, with about USD 6 million, provides technical assistance, including capacity building, training and the development of carbon-related methodologies and tools. Beyond being a mere fund trustee and designing new carbon methodologies that shape UNFCCC policies, the Bank has engaged in the global carbon stock exchange market, in which it had to bid against competitors. For instance, the Bank had sold ‘200,000 CER from the CDM ... at a price of €12.52 a piece, via an auction on the Paris-based exchange Blue Next’ in 2011 (Environmental Finance, 2011).

The carbon finance works in an imperfect market, with an imbalance between carbon credit suppliers and buyers – reflecting the Bank’s monopoly as the sole trustee of the BioCarbon Fund. Besides, the World Bank intervention on carbon-based portfolios has been criticised for its ‘lack of democratic governance, conflicts of interests, and [for] creating perverse incentives for polluters’ and ‘adverse impacts on human rights, and the poor inclusion and participation of communities [for its FCPF]’ (Reddy, 2011:169). Such critical reflections on the role of the Bank in climate finance called for a review of its functions, including the CDM’s accountability, legitimacy and governance systems.

As Ethiopia’s experience shows, the World Bank has the upper hand in making key decisions – including determining the feasibilities of A/R for carbon finance and

committing itself as a carbon credit buyer. The Humbo-Sodo regeneration initiative confirms this narrative. Though WVE requested the Bank to purchase the carbon credits of both sister initiatives, the Bank ultimately favoured Humbo and declined Sodo, which had also received Gold Standard certification. This left Sodo looking for a voluntary carbon market (KIE05). The reason given was mainly ‘administrative’, relating to its distance from Humbo (about 15 km). However, this proximity factor was not a major problem, rather the Bank was pursuing the project-based approach to CDM and not the Programme of Activities (PoA), which encourages forming a cluster of small projects. As the result of a shift in its A/R approach, the Bank recently abandoned the scattered small-scale CDM model and moved on to the landscape approach (KIE07).

### ***The Question of Ownership: Claiming Different Narratives***

The status of the World Bank’s ‘virtual ownership’ of the Humbo forest is understood and interpreted differently by the interviewed key informants. This emanates from the position and degree of influence the Bank brought to the initiative. One informant sees the Bank as the real ‘owner’ saying that: ‘[L]iterally the Bank is the “owner” of the protected forest area as the emission contract entails, without an advance notice and in agreement, any activity that can affect the forest is not permitted, this includes even the rural development initiatives of the federal and regional states’ (KIE06). This argument is in line with that of Fairhead, Leach and Scoones, who argue that ‘[w]hile grabbing for green ends does not always involve the wholesale alienation of land from existing claimants’, the structures may create ‘profoundly alienating effects’ (2012:239). Even those cooperatives with land use rights cannot make changes to the forest, as they must abide by the emission reduction purchase agreement. However, a CDM expert in Ethiopia, who was also involved in the process of signing the contract, does not agree with this argument on the ownership issue, saying:

The World Bank does not have ownership in Humbo. The Bank only bought one component of the forest outputs (the carbon credit) and it was willingly sold by the Humbo cooperatives. Thus, the Bank does not have a monopoly in Humbo rather it showed its commitment to buy the 165,000 tCO<sub>2</sub>. Beyond this, the cooperatives can sell the carbon credits in the voluntary market. However, the project team did not push it further and mobilised to access the global voluntary carbon market opportunities (KIE07).

The other structural issue raised was why the World Bank signed the emission reduction agreement with WVE, rather than with the seven cooperatives directly. The question arises as to why a middleman is needed in the carbon revenue transfers. The World Bank, as the middleman at the upper end of the transaction, collects the money from the Annex I parties, and ideally should channel it directly to those who sequester the atmospheric carbon. The key informants and cooperative leaders gave some reasons, including that by creating a ‘middle-level actor’, the Bank is reducing the risk of reversal and possible destruction of the protected forest area and of holding the seven cooperatives accountable. Although the cooperatives were keen to have a direct carbon revenue transfer from the World Bank, they preferred WVE’s involvement in the processes, knowing their limited capacities to deal with the very complex functionalities of the CDM.

In general, despite the formal or literal interpretation of the Bank’s role in the Humbo intervention, its engagement and influence in the process and outcome of the initiative have been important factors – mainly related to the carbon revenue amount. Its dominance and influence may or may not continue in the future – and its role as a buyer might end when the 10-year purchase agreement elapses.

### ***The Uncertainty of Climate Finance and the Bank’s Response***

As of March 2017, the research findings show a high degree of uncertainty among the national actors about the future of the Humbo carbon model. They were not aware of what would happen to the CDM, its existing purchase agreement and the associated future

revenues. The key informants consulted from the ministries, the local authority and non-state actors had little idea of what the future might be. However, in contrast to the early stages of the CDM in Ethiopia, when awareness and knowledge of the carbon market was ‘very poor’ (Aklilu, 2011:96), these actors are now aware of the factors that are likely to affect future carbon deals, including changes that follow the Paris Agreement, the Kyoto Protocol’s second commitment fate, the Bank’s willingness to offer a further contract, the government’s political will to continue hosting the CDM, and WVE/the Union’s decision either to stay in compliance or join a voluntary carbon market (KIE05; KIE06). Yet the Bank’s response is not to commit further beyond the 10 years ERPA.

### ***Land-based carbon schemes: Methodology Review and Scope of Intervention***

Initially, once WVA staff visited the Humbo site and had an understanding of the global carbon finance model, they suggested linking the Humbo forest regeneration with the CDM. The World Bank promptly ‘showed an interest to engage with the initiative’ (KIE07). Their primary objective was to experiment with the CDM and develop a simplified methodology, as stated by key informants from both WVE and the World Bank (KIE06; KIE07). Both the World Bank and the UNFCCC played a significant role in promoting the name of ‘Humbo’, as an almost magnetic force, through their effective use of communication tools (KIE07). Humbo covers only 2,728 hectares of forest land and accounts for 0.27 per cent of Ethiopia’s forestry effort, yet it has disproportionately enjoyed great prominence, recognition and status on the global climate change stage.

According to several key informants, the World Bank’s main reason for getting involved in the Humbo was its motivation to use it as ‘experimental site’ in order to break new ground and show that carbon finance is possible in Africa (KIE05; KIE06; KIE07). Its other reasons were: first to show that the global South, particularly the SSA countries, can effectively implement the CDM and engage in a regulatory compliance carbon market and draw lessons – defying the perception that the least developed countries cannot

deliver carbon finance models; second to address the question of permanency in large-scale A/R interventions; and third to show that these countries have the capacity to quantify CO<sub>2</sub> and provide the right carbon data – that is, to explore alternative methodological approaches on A/R based climate finances that are ‘developing country friendly’ without compromising CDM standards. This would provide the UNFCCC with proof of concept and a solid CDM case, made by the commitment of WVE, WVA and the communities (KIE06; KIE07).

Humbo has contributed to the UNFCCC methodology related to permanency – but as the Kyoto Protocol is dying and getting diluted as an approach, and the learning may not have much impact or effect (KIE07).

The World Bank considers that its BioCarbon Fund resulted in ‘a strong track record of pioneering land-based carbon schemes’, and Humbo played a key role in several of the methodological improvements including the ‘nine carbon accounting methodologies ... [and] tools for carbon modelling and monitoring’ (2018a). In Ethiopia, reflecting Humbo’s experience, the Bank began moving to a Programme of Activities approach, with a programme covering about 286,000 km<sup>2</sup> (KIE06). As a key informant said: ‘Departing from the project-based piecemeal approach with limited geographical impact and despite its efforts to scaling up the CDM, it could not go beyond’ (KIE07). Some of the reasons could be that the Bank already had a showcase for the global South, or its lessons learning target was met, or the carbon market was declining.

***Was there a financial motivation for the World Bank’s involvement in Humbo?***

Influenced by neo-liberal models, the carbon finance and CDM actors all considered both the financial and non-financial gains from the carbon deals. In Humbo, some interviewed respondents felt that the World Bank’s primary drive was not centred on financial benefit. A climate change expert said: ‘In Ethiopia, I do not think the Bank would financially benefit from Humbo, as their interest was focused on improving the CDM methodology

and providing the results to the UNFCCC' (KIE07). However, noting Ethiopia's weak position and the Bank's dominance in setting the carbon price, he elaborated as follows:

At that time [2009] we cannot say we had effective negotiation skills. In this regard, we had some constraints. However, I did not see any pressure posed by the World Bank. They even went an extra mile as the relationship was not of a typical buyer-seller. In this model, the principle is simple. 'If you deliver carbon credit, we buy it'. But the Bank was able to support us in building our capacity and showed us the right direction to go in. Thus, it is difficult to say the Bank was approaching us with a market and profitability mind-set – considering the other support we had (KIE07).

When the carbon credit purchase agreement was signed, WVE complained about the assigned value of USD 4.4 per tCO<sub>2e</sub>. The price was similar to other countries. As the CDM expert said: 'Our fundamental logic for the forest regeneration was to regain the trees lost, but if we can generate carbon funds that would be great' (KIE07). With forestry as a risky sector, he further said: 'When making a decision on the carbon unit price, I believe they considered all risks and costing factors in their cost estimation and market analysis, which is reflected in the USD 4.4' (Ibid). Several experts interviewed said that the Bank's 10-year commitment to Humbo would be risky, but there was a consensus among them that the Bank's experts considered several market assumptions in setting the price per unit of tonne.

However, there is a counterargument posed by other interviewed respondents on the World Bank's motivations and interests in Humbo, and particularity by those who are critical of the CDM. They provided three reasons for the Bank's engagement. First, as a financial institution, though managing the international fund as a trustee, they expected it to generate resources under a different rubric, that of managing the resources. Second, were it purely providing grants, it ought to assign a carbon unit price that equitably compensates the efforts of the Ethiopian farmers. Third, the cost of capacity building and the consultants were covered by the BioCarbon Fund or its Plus component which

constitute the contribution of the Annex I parties. So it is difficult to claim that the Bank's involvement was benevolent, as some consider that the high cost of validation consultants is reflected in the unit price, whereby the farmers bear the financial burden.

All in all, whatever financial benefits the Bank might or might not get, the in-kind benefits that it gained were the most crucial elements of its involvement in Humbo. Almost all of the key informants interviewed agree on the role of Humbo in shaping the climate policies and approaches of the Bank and the UNFCCC. They underscore that Humbo contributed to advancing the Bank's role as a 'global climate change leader' that proposes and drives changes in global climate change methodologies and frameworks.

### **5.2.2 State Motives, Actions and Capacities in Carbon Finance**

Notwithstanding globalisation and the dominance of market approaches, a green economy requires the state to play a critical role in the 'reshaping of the economy' (Brockington, 2012:416), as well as in 'developmental transition' (Vazquez-Brust et al., 2014:30). The state's role as a legal party and signatory to the UNFCCC is critical in shaping carbon-neutral economic policies and initiatives, as all require government permissions and authorisations if they are to be carried out on its sovereign soil (UN, 1998). Furthermore, green diplomacy has been part of states' foreign policies in their own political agendas in international relations while seeking to grab 'new' climate funds. So, the state's decision to adopt the green economy as a development pathway and advance climate change initiatives reflects its deep national interest.

Post-1991, Ethiopia, under the EPRDF, has been one of the few countries able to work effectively with powerful global actors and emerging economies within the multipolar global political order (Clapham, 2018:1157). That is, unlike Emperor Haile Selassie mainly aligning with the US and the western bloc, and the socialist *Derg* with the USSR and the Eastern Bloc, the EPRDF has been able to work with both of these former cold war era blocs, as well as with contemporary donors, including the Gulf and the BRICS

countries. Ethiopia, claiming to advance the ‘developmental state’, has been building a socialist system using capitalist money, that is, state building with non-liberal resources, (see Vaughan, 2011:620). One might say that this is a system that outwardly looks liberal, but is inwardly socialist. The statement below gives a synoptic description of the Ethiopian approach to international relations, which has been shaped by considerations related to domestic political economy and has impacted the government’s greening agenda.

[The late] Meles understood that forging alliances and acquiring international legitimacy would boost the Ethiopian economy and consolidate EPRDF rule. To fulfil his ambitions, the prime minister developed excellent relations with a wide variety of partners, guided by the belief that depending too closely on one set of friends would expose Ethiopia to their whims (Verhoeven, 2015).

The state’s desire to secure foreign resources and direct budgetary support, with a policy model characterised by dependence, has been open to any potential funding. Given weak domestic revenue generation capacity and 63 per cent of its population under the age of 24 (UNDESA, 2017:18), the government has sought, with a great sense of urgency, to acquire new green funds to create employment opportunities.

Green resource generation is an emerging international development playing field and has the potential to attract global climate finance (Howard and Chimbandir, 2018). With Ethiopia aiming to become a middle-income country, its green economy strategy forecasts to have an additional injection of between USD 150 and 200 billion by 2025 and requires foreign assistance and the green fund (including the climate finance and carbon market sources) in order to fill the current financial gaps and reach its goals (FDRE, 2011a).

Recognising this gap and the problem of an ad hoc and fragmented channelling of funds, the government formed the CRGE Facility to harmonise and consolidate its national green financial regime. The state, as a key actor, is intending to influence the overall green

agenda through this facility – as a primary financial pipeline and to manage the green funds effectively, by bringing all initiatives and agreements into one basket (KIE08). Its emergence may affect the existing climate fund channelling modalities, including that of Humbo (see 4.6.3 for functions of the CRGE Facility). As mentioned, WVE receives the Humbo CDM carbon credit revenue from the World Bank and it transfers the fund to the seven cooperatives (KIE02). This *modus operandi* was already in place before the emergence of the CRGE Facility, but the possible future carbon emission reduction deals and their fund transfers are expected to be channelled through it (KIE08). Though some consider the Facility as the government’s agenda of centralisation and strengthening its oversight on finances (KIE12), it is expected to contribute to mapping out the potential climate funds and aligning them with the CRGE.

The Ethiopian government has been getting technical support from international think tanks in conceptualising the green economy, translating the policy into practice and developing implementation modalities. The GGGI has been one of the prominent international actors to be involved and influence the greening process through providing technical assistance (Paul and Weinthal, 2019). With the assistance of GGGI, Ethiopia received a total of USD 60 million grant from both the Adaptation Fund (AF) [in 2015] and the Green Climate Fund (GCF) [in 2016] (Agourides, 2018). Furthermore, the Facility has secured USD 75 million in climate change finance and USD 45 million from the GCF (GCF, 18<sup>th</sup> Board Meeting Decision, 2017). Moreover, the CRGE is also getting funds from Norway, the UK’s DFID, and the German Federal government (FDRE, 2015b:10).

Together with the World Bank’s promotion of Humbo, the Ethiopian government has also been active in promoting it as emblem of climate diplomacy for building a positive image in the country’s foreign policy. Climate diplomacy, as Carius et al. argue, is embracing ‘development cooperation, conflict prevention efforts, and humanitarian

assistance' beyond the 'more traditional measures of climate change adaptation and mitigation' (2017:6) and being able to merge 'climate politics' (Hsu et al., 2015:501). During the COP15 gathering, for instance, the late Prime Minister Meles used Humbo to show Ethiopia's commitment to global climate change mitigation and the abilities of the global South to advance the green economy within their limited resources, capacities, policies and governance.

During the 2000s, as Aklilu argued 'carbon trading was not a popular business in Africa in general and Ethiopia in particular' as it was considered not to have 'the same potential as in other world regions' (2011:97). The responsible agency – the EPA – was 'under-capacitated ... to evaluate the integrity of projects' where it was expected to 'promote' and 'regulate' the CDM (Reddy, 2011:170; see also Alba, 2008:1). Regardless, this gives the state the final say in approving the CDM in line with the Kyoto Protocol. As most of the key informants agreed, the regional and local government authorities were supportive of the Humbo initiative – through facilitating the issuance of land use rights to the farmer cooperatives and carefully monitoring the implementation of the A/R. The communities recognise the government's scarce financial resources – although they are still expecting to receive sustained support. As a farmer from Bola Wanche said '[w]e do not expect the government to provide us similar level of support to that of WVE but it should assist us in protecting the regenerated forest land with the provision of police force to avoid re-deforestation' (HHBL08). However, a Bossa Wanche farmer, aged 58, said that '[d]uring the meetings, though the district authority promises to provide support, in reality it is not materialised' (HHBS05). Beyond administrative assistance, the cooperative members expect further support from their local authority.

Ethiopia lacks carbon-focused institutions that contribute to exploring market options. For instance, Kenya has established a national carbon assessment certification (Jindal et al., 2008:127), which is thought to build its domestic capacity to get maximum revenues.

Similarly, China's success in dominating the global CER market was 'driven by strong institutional support' (Hepburn, 2009:6). Ethiopia can learn from this experience, particularly given the state's huge interest in REDD+.

To conclude, following the CRGE, the government enabled the emergence of new regional state- and district-level structures, as well as state and state-affiliated climate-related research institutions and national policy-oriented think tanks. Their scale spans from federal to regional levels – but many of the newly formed institutions are in their infancy and their set-up needs synergies to be created in their areas of activity and further clarification of functional boundaries. Not all the new actors work solely on carbon finance; their research may be related to forestry, biodiversity and ecological rehabilitation. All are, however, keen to see the outcomes of the Humbo carbon initiative as they can shape their future work and understanding of carbon-related A/R initiatives. It is clear that the state and political leaders played a key role in advancing the Humbo CDM initiative.

### **5.2.3 The Third Sector: A Driving Force behind Ethiopia's Carbon Finance**

The dominance of the third sector, and particularly development NGOs, as vibrant and dynamic climate actors has been increasing, despite their failure to focus on natural resources and look at the entirety of the economic system (Klein et al., 2013:25), and for being 'less good' at utilising the resources (Brockington, 2012:418). In Ethiopia, carbon finance is being led by NGOs; they have access to global knowledge and practices, are able to work with community members, and are eager to take on new initiatives. As Lemenih and Kassa illustrated, the non-state actors, particularly NGOs, have 'played a key role in initiating and supporting re-greening practices, notably area exclosures' (2014:1904). However, they also argue that although these actors tend to 'advocate for policy reforms', their capacities have been undermined due to their failure to create synergies in the forestry agenda.

WVE and WVA have been the driving forces in introducing A/R carbon finance in Humbo, Ethiopia. WVE has been involved since the conception of the project (2004); its role includes PDD development, project implementation through the mobilisation of smallholder farmers, negotiation with government bodies, the carbon credit deals with the World Bank, and post-project delivery period support, including channelling the carbon revenues (KIE02). Serving as an institutional bridge for improving forest governance and maintaining the active role of the wider stakeholders in the CDM processes, WVE showed a high degree of dynamism in attempting to match local needs with international treaties. Regardless of the degree of physical and virtual ownership of the Humbo forest protected area, WVE's efforts to promote 'local control' over the natural resources by the local communities (Grieg-Gran et al., 2015:6) helped to create some level of trust in its ability to deliver its A/R work. Indeed, WVE has been behind every action that influenced the overall carbon model in Humbo and beyond in Ethiopia.

#### **5.2.4 Micro-Institutional Analysis: The Interplay of Local Actors**

The delivery of most international treaties relies on the sustained and effective roles of local actors, together with a conducive policy environment to advance the agenda. As Bäckstrand et al. said: 'Of course, climate governance has never solely taken place in the hallways of interstate diplomacy or the formal rooms of international negotiations' (2017:563). In Ethiopia, the actualisation of the climate resilience strategy depends 'to a large extent on the capacity of local institutions to implement the CRGE' (Eshetu et al., 2014:32). This implies that, local institutions' actions can either successfully deliver or hinder forest conservation projects. Despite the involvement and support of global and national actors in the Humbo initiative, the overall permanency of the forest depends on the effective functioning of the seven agroforestry cooperatives and the Union. Thus, besides the local politics in the Humbo district, the micro-institutional analysis examines the functionalities of the cooperative-Union relationship, as well as the relationships,

degree of influence and authority among the three key local level actors – the WVE, the cooperatives, and the district-level local authority.

## **Establishment of Responsible Institutions: The Cooperatives and Local Politics**

### *Formation of Community Cooperatives*

The establishment of responsible local institutions to sustain the forest was critical for WVE as the protected forest area could be destroyed and farmers' efforts wasted. A decision was made to pursue the 'cooperative institutional model' to maintain regreening at the Humbo locality. Critically examining this model can help ascertain what types of new institutions evolved through the CDM process, together with their relevance and functionalities.

During the *Derg* regime, the promotion of a cooperative model as an institutional instrument to mobilise communities in rural development was a government policy. In the EPRDF government, farmers' mobilisation through smaller administrative units in the local government structures has also been a common practice. For instance, as Vaughan (2011:631) said, at village and district levels '*mengistawi budin* (government groups/teams - the 'lowest level of the state') ... at every 50 rural households, and *lema't budin* (development groups/teams) bringing together 10-15 households' were formed (see also Aalen and Tronvoll, 2009:198). Several people criticised this practice as the state structure can be used to advance party politics (Vaughan, 2011:631). Furthermore, since 1991, the results of the Ethiopian Cooperatives Agency have never been promising. Most of the established cooperatives tended to fail or were found to be weak in delivering poverty reduction programmes and meeting members' expectations (see Asrat and Shiferaw, 2009:142).

Concerning Humbo, a former staff member of WVE said: 'When we decided to focus on community than individual benefit sharing, the legacy of cooperatives was not good. But

we reimagined the cooperative model and made it fit to the forestry initiative, despite the advice we had to avoid it – referring to the previous cooperative experiences and the misused funds by their leaders’ (KIE07). Given this unpromising feature, it was a risky decision for WVE experts to include it as ‘best institutional model’ in their PDD. Given this local level mobilisation practice and as argued by Vaughan above, the WVE did not face a critical problem in organising the farmers into groups – apart from their initial resistance to allow land access to outsiders. The farmers’ cooperative model, with its benefit redistribution mechanism, is helping to sustain the Humbo forest area, so the repackaging of an old institutional model fits the new forest governance.

Within the Humbo institutional framework, the cooperative as a single unit serves as the local-level platform for interacting with its shareholder members and channelling information, policies and resources from the project funders and global actors to rural households (KIE01). The essential cooperative functions include acting as a critical bridge and knot between the global and local environmental governance systems, as well as carrying out all the grassroots-level project delivery activities. Besides the communities’ interest in engaging in forest regeneration, the presence of workable cooperative bylaws that govern the forest area, delineate the role of the actors and allow regulated utilisation of the protected area by the communities (selective forest harvesting) have been critical in creating responsible local institutions. In Humbo, the bylaws were discussed in detail and negotiated by the cooperative members and local authorities (KIE02). Although there was concern that many bylaws end up as blueprints and remain unacted, WVE staff put more effort into the bylaws negotiation process to ensure acceptance by cooperative members (KIE05).

Most of the household survey participants and key informants agreed on the cooperatives’ abilities to engage their members in the various forestry activities, ranging from consultation to planting seedlings. A Hobicha Bada farmer said: ‘The cooperative

committees are engaging members in almost every activity of the forestry, including in seedling plots and cooperative meetings. However, if it is related to money most of the time the committee members work on their own' (HHHD01). This supports the shareholders' concern about the possible misuse of the fund in the future – as they discuss only the general priorities in the meetings and action plan details are left to the executive body of the 19 membered committee (Humbo Agroforestry Union, 2017).

The inter-cooperative partnership and aligning work pattern seem to be in their infancy. The formation of a Union created a platform for the seven cooperatives to discuss common issues across the villages through periodic leaders' meetings (KIE01). However, the cooperatives have been working as independent entities, focusing on their members' interests rather than seeing the cost-effectiveness of carbon revenue investment either in a single village or another. For instance, while some cooperatives are constructing two flour mills, Abala Shoya is unable to have one due to financial constraints. As a consequence, members are still using the Humbo mill which is four hours return journey away on foot. This example shows a lack of inter-cooperative partnership and collaboration, since resources are not shared, nor are the needs of the wider cooperatives taken on board, including profitable businesses (by investing in a less competitive market). Pertaining to Ethiopia cooperative law No. 985/2016, a cooperative can only provide loans to its members, but it can work through the umbrella of a Union structure to engage in inter-cooperative partnerships and access loans.

The cooperative institutional model in Humbo has been successful in rehabilitating and protecting the land, and avoiding the reversal issue (KIE07). Apart from the community members' interest in regaining their lost forest, the relative economic benefits (mainly in-kind) gained from the training, the communal businesses under development, the service they received and the potential for promoting local growth through agroforestry, helped in cementing the organisational development of the cooperatives. However, despite this,

the sustainability of the cooperatives as viable local agroforestry actors relies on their response to satisfy the farmer stakeholders' demands and expectations of the limited carbon financial benefits they receive. In the absence of a further financial injection and substituting their source of household energy consumption, the cooperatives' acceptance by farmer stakeholders could weaken in the long term. Indeed, the risk posed in the future is equal to its success.

### *The Union and its functionalities*

Among others, the fundamental function of the Agroforestry Union, once WVE withdraws, is to run and sustain the carbon finance intervention on its own. The Ethiopian Cooperative Societies Proclamation No. 985/2016 Article 14 (1A) allows for the formation of a union by 'two or more primary cooperative societies having similar objectives' (FDRE, 2016:9451). Therefore, the Union was formed to represent the common position of the cooperatives and deal with any future forestry, carbon and rural development related issues with national and global actors (see WVE-PDD, 2009; Figure 4). The seven cooperative representatives form the Union Board, with a three-member executive committee which runs the overall managerial functions. According to the Humbo District Cooperative Promotion expert, the formation of the Union took a long time because the cooperatives lacked awareness of the importance of the Union structure and feared losing part of their jurisdiction (KIE04), and they also preferred to invest the money in their communities rather than buy Union shares. Despite this, the Union has shown some progress in putting the necessary institutional framework, governance infrastructure and procedures in place (see Table 9 for its strengths and weaknesses).

Fundamentally, the Union is established based on the shareholder business model – with plan to increase its capital and reinvest the carbon revenue generated by the cooperatives into tangible business activities to generate profits. The Union was formed with 39 shares in 2015, each share costing the cooperatives Birr 10,000 (Humbo Agroforestry Union,

2017). That is, Abala Gefata (5); Abala Shoya (2); Abala Longena (10); Hobicha Bongota (6); Hobicha Bada (7); Bola Wanche (6); and Bossa Wanche (3) shares. Within three years, the number of shares has increased from 39 to 73, that is an increase of 87 per cent, while its capital increased from Birr 390,000 to Birr 730,000. However, each cooperative's ability to buy more shares depends on its forest area and its capacity to sequester CO<sub>2</sub>, the amount of carbon fund and the willingness of its executive committee to reinvest it to financially strengthen the Union, and its expectation of a higher return. For instance, Abala Longena has the largest forest area (38%) and bought 12 shares, whereas Abala Shoya, with the smallest forest land (4%), purchased 6 shares. Others fall within this minimum and maximum range. However, the cooperatives are usually at a crossroads over how to utilise the limited carbon revenue in either reinvesting in the Union which ultimately implies investing less in communal businesses and fulfilling their expectations, or vice versa (KIE01) (see Chapter 7 for a detailed analysis of the carbon revenue and its redistribution mechanism).

Table 9. The Union's institutional strengths and weaknesses

Union's strengths	Union's weaknesses
<ul style="list-style-type: none"> <li>• Used the share-based business model (cooperatives as shareholders).</li> <li>• Clarified functional relationship between cooperatives and the Union.</li> <li>• Commitment of the cooperatives and relative increase in share and capital.</li> <li>• Building of a five-room office in 800 sq. metres in Humbo Tebela town.</li> <li>• Collaborated with the cooperative leaders and developed new business ideas like in loaning solar panels.</li> <li>• Promoted its seed collection and selling business in Addis Ababa, Adama and Hawasa bazaars which attracted new buyers.</li> </ul>	<ul style="list-style-type: none"> <li>• Lacked capital (to expand its business – for instance, the solar company does not give the panels on loan to the Union).</li> <li>• Lacked stores for quality seeds (or lack of capital to construct more stores within the Union office in Tebela town).</li> <li>• Absence of fund to train new staff members and the newly elected committee members on the procedures of the Union and cooperatives as there is no allocated fund for personnel training.</li> <li>• Lacked a vehicle to facilitate its business activities. This is forcing it to lose profits as it is unable to compete with the private traders.</li> <li>• Overreliance on a few but committed staff.</li> </ul>

Source: Researcher summaries based on the key informant interviews conducted, 2017.

Furthermore, despite the communities' concern about losing some benefits with WVE's strategic withdrawal from Humbo, since the Union and cooperatives are unable to provide the same level of training and daily labour incomes to the members, the farmers are hopeful about sustaining the forest area. In the long term, despite the PDD's claim, the Union is unlikely to remain fully capable of handling the carbon market dealings. Moreover, although the purchase of 73 shares by the cooperatives has strengthened the Union's capital and engagement in agroforestry business (such as distributing solar panels on a loan basis and trading quality seeds like grevillea), the Union is finding it difficult to satisfy the cooperatives' members 'economy of expectations' (Massarella et al., 2018:375). The interviewed key informants argued strongly that strengthening cooperatives can lead to an institutionally effective Union. Considering carbon revenue's uncertainties, the Union aims to only use it as a leapfrog investment in communal assets and businesses.

Unlike the cooperative committee members, the Union's move to have a salaried staff is expected to be critical in promoting itself as an entrepreneur. However, as per Ethiopia's cooperative law, cooperative leaders' contribution is considered as part of their 'communal responsibility' and they are not rewarded for their efforts. Some interviewed cooperative leaders consider that this legal premise is negatively affecting the cooperatives' effectiveness in having a fully committed staff (KIE01; KIC03). This limitation of cooperatives might decrease to the Union's level of strength.

The Union's relationship with its shareholder members was assessed as satisfactory in interviews conducted with the seven cooperative leaders. However, despite its establishment as a rural development entity, the Union is far from being a full-fledged local carbon actor and actively engaging in carbon markets and dealing with international carbon brokers and buyers. Reflecting this capacity gap, a WVE expert said: 'As of now,

not alone the Union even WVE cannot handle carbon market dealings' (KIE06).

Similarly, assessing the Union's capacity, another respondent said:

The Union cannot make carbon deals. If WVE cannot help the cooperatives and the Union, they shall be in a problem. In the future, if a voluntary carbon market is taken as the best option, exploring the market in Europe, the USA and Australia shall be difficult and is beyond their capacities. Not alone the Union, I do not think even Ethiopia as a country can do so (KIE04).

It is therefore beyond the Union's human, financial and technical capacity to analyse and adapt to UNFCCC requirements and get a better dollar per tCO<sub>2</sub> deals. This can make its bargaining power weak in getting maximum benefit from the carbon deals.

### ***Managing Carbon Benefits: The Quest for a local level autonomy***

Sustaining forest regeneration and conservation needs credible actors at the local level. However, the cooperatives' capacity to assume this role and manage the carbon revenue has been a contested issue (KIE07). Assessing the state of these cooperatives, of the 63 registered cooperatives in the district, the Humbo District Cooperative Promotion Office expert said: 'They are the first carbon-based cooperatives in Ethiopia and able to access international fund. They are best in their functions, governance and financial position as compared to the other forest and non-forest cooperatives' (KIE04).

However, the Humbo local authority raised concerns on who would take the overall responsibility of managing the post-WVE period. The Humbo district officer explains the case as follows: 'During WVE handover of the forest project to the communities, there was an argument whether the Wolayta University rather than the cooperatives to have full responsibility as the latter's capacity was assessed as weak' (KIE02). He further said that 'the University can contribute to the sustainability of the project as it is in a better position to bring more resourceful partners and expand it through conducting researches. Even now, we need some dialogue to ensure the university's role in the protected forest area'.

However, WVE was not persuaded to leave the entire project with Wolayta University, as one of its staff said: ‘Making the local university responsible for the forest at least in research aspects, the WVE handed over the project buildings and facilities to serve its forestry works. However, though it has been two years, there is no substantive work done’ (KIE05). Despite the above explanations, a local collaborative network between an academic and community institution can be created without defying the autonomous nature of the cooperatives. This can expand environmental education opportunities, awareness and green knowledge, create a site for A/R learning and carbon model management among the university and nearby school students, synergise their peculiar specialisation and widen the forest work through the university’s platforms.

Elaborating the main area of disagreement and conflict which occurred between WVE and the local authority in assessing the cooperatives’ capability to manage the carbon revenue is very important (KIE02). The difference in perception and the motive behind evaluating cooperative capabilities by these two key actors led to different results over who and how to manage resources. The local authority wanted to have an upper hand and more control on carbon revenue, however, its justification was strongly objected by WVE (KIE05; KIE06). However, the district advisor said: ‘There might be a transparency issue as the district does not know the exact amount of fund transferred, deducted and the operational cost related to the post-project delivery’ (KIE02). Furthermore, the district administrators argued that releasing Birr 14 million (equivalent to USD 726,000) in 10 years to the cooperatives may lead to misuse of the fund and claims that the cooperatives do not have an appropriate financial management system. As a result, the district officials insisted on the recruitment of a designated person with the responsibility of monitoring the cooperatives’ carbon revenue management at the district office and getting paid from the carbon fund (KIE07). The carbon revenue payment mechanism led to a conflict between the local authorities and WVE.

Disagreeing with the district administrators and working on the cooperatives' institutional infrastructure development, WVE staff explained that 'with further support and strengthening of the Internal Control Management system, the cooperatives can have the capacity to manage their affairs and handle the carbon payments' (KIE06). Besides, despite the local authority interest in closely monitoring the carbon revenue, this was fundamentally against the cooperative proclamation that states cooperatives are 'autonomous self-help organisations controlled by their members' (FDRE, 2016). Channelling carbon revenue through the district office was opposed by both WVE and the cooperatives as it was considered to be local authority interference in carbon finance and local affairs (KIE01). As per the emission reduction agreement, the fund cannot be channelled through a local authority, as a cooperative is the sole actor with land use rights of the forest area – 'not alone to the local authority, it cannot even simply transfer this right to the Union' (KIE07). Explaining the state of the conflict, a CDM expert said: 'The WVE fought for the autonomous functioning of the cooperatives – without government interference. The WVE and the communities were successful, though the fight was not easy' (KIE07). This shows the local authority's interest in controlling the financial inflows and outflows of the carbon revenue while exercising its power over the cooperatives.

The district local authority did not like the direct payment of the cooperatives. They wanted to control the money as they did not want to take responsibility for any wrongdoings. But we said: 'we get the money because we organised ourselves and put our efforts into it'. One of the greatest successes of the WVE was its role in fighting against the local government, not to involve in the project implementation and carbon fund distribution (A farmer, 58, from Bossa Wanche, 2017 - HHBS05).

Therefore, Humbo cooperatives have a relative degree of autonomy about how to use the money within their communities. There is an insignificant degree of intervention

either from the district office or WVE on managing the carbon benefits. For instance, as the MEFCC Humbo office staff said: ‘The district administrator can intervene in the works of the cooperative if it is only necessary [if actions do not comply with cooperatives proclamation like fund misuse]’ (KIE03).

Some of the cooperative leaders expressed concerns about some of their members’ unrealistic expectations about considering the carbon revenue as a panacea for the many local social service delivery problems. According to them, some members failed to differentiate the mandate of the Union and cooperatives vis-a-vis the local authority. Many members asked the Union to invest its shareholders’ money either in road construction or water supply. As one of the cooperative leaders said: ‘They should not think to solve these problems with the carbon revenue. Rather we need to work in getting a third party or an NGO to help the villages in improving access to transport and potable water services’ (KIC04), given such public works require huge investment. Some of the cooperative members’ misconception of spending the carbon resources to promote rural development partly reflects their thinking of the forest as ‘a solution to many of their local problems’.

As most of the cooperative leaders agree, the evolved trust and partnership between WVE and the cooperatives have contributed to delivering the project outputs. However, the cooperative leaders expressed concerns as the carbon money transfers are highly unpredictable and seem to be ad hoc (KIC03; KIC06). Asked whether they knew when the next transfers would occur, a cooperative leader said that ‘we do not know when the next carbon money will be released. The WVE ask us to check our banks and we confirm its release. It is not predictable, and it would be good to have a specific date of release which can help us in our plans’ (KIC02). Despite the time it takes for requesting and transferring the carbon revenues from the World Bank, this is an area that needs to be

addressed. However, arguably, whether the existing structure will reinforce the resilience of the cooperatives in Humbo is still to stand the test of time.

### ***Cooperatives and the Humbo Local Authorities (Village and District Levels)***

The federal and regional government roles are critical in advancing the greening agenda at rural scales. In the case of Humbo, the local government office supports the cooperatives by providing armed guards/police if requested to protect the forest area. That is, as Duffy (2017) argues ‘militarisation of conservation’ has been common as all members of the community do not abide by the bylaws. According to a farmer who guards the protected forest area: ‘The forest guards are unarmed but in case they need an extra support, they can call the armed village members to catch the illegal loggers. The armed village members are always available to provide such support and to put the loggers under control’ (HHBS07). Though at low scale, the Humbo cooperatives have been exercising this power on illegal loggers.

Almost all of those interviewed and who are involved in the different phases of the forest project agree on the critical role played by the Humbo local authority in regenerating the forest area. At the initial stages, the local authorities were willing to engage in the project’s implementation, and further, collaborated with WVE in neutralising the objection by the farmers and facilitated the land use rights certification process (KIE04). Cross and McGhee noted that the formation of the Humbo cooperatives was ‘strengthened by the role of local government, which maintains an office dedicated to monitoring and supporting the activities of cooperative societies’ (2015:19). According to the Humbo district office staff, the local authority provided prompt responses to the cooperatives requests, including addressing escalated issues, providing advice on various administrative matters, as well as delimitating and demarcating inter-village borders within the Humbo Mountain (KIE02; KIE04). However, the office lacks a budget to

support the cooperatives with specific training and technical assistance needs, which may possibly result in weakening the local forest institutions.

According to the Humbo district advisor, the district cooperative monitoring system is functioning as per expected (KIE02). To strengthen the cooperatives' financial management, the District Cooperative Promotion Agency that serves as a regulatory body conducts annual audits free of cost, covered by the government budget allocated to the district administrative office. As per the Cooperative Societies Proclamation No. 985/2016 Article 50 (1) (FDRE, 2016:9472) and an expert from the Agency, 'it is against the Agency's regulation that the cooperatives pay the costs of the annual audits' (KIE04), as strengthening cooperatives' effectiveness is part of its mandate. Indeed, beyond internal financial controls, regular audits can help in building shareholders' and public trust in the cooperative governance system. The district officer said: 'As a result, so far we only found one incident of carbon revenue misuse in Abala Longena amounting to Birr 74,000 (equivalent to USD 3,000) in 2016. The alleged person has admitted the misuse of the carbon fund and our office is expecting a decision to be taken soon by the court' (KIE04). The Agency further conducts inspections related to organisational capacity, the state of operations, the presence of managerial procedures, relevant documents and financial conditions, and monitoring whether the cooperatives are living up to the expectations of their members.

The other significant issue raised between the Cooperative Promotion Agency and the cooperatives was related to the introduction of a cash-based microfinance scheme. As per Article 48 (1A) of the Cooperative Societies Proclamation No. 985/2016, cooperatives are restricted in giving loans to their members (FDRE, 2016: 9471), however, as per the purchase agreement, cooperatives are only allowed to engage in in-kind and not in cash-based microfinance services (besides communal business investment being an overarching principle). Upon the request of shareholders, one of the cooperatives

reinvested the carbon revenue among its members through cash-based microfinance, however, this triggered a conflict and created havoc in the working relationship between the cooperative leaders and the Agency where the latter used its authority to temporarily freeze the functions of the cooperative (KIE01). One district staff member justifying the act said: ‘I do not have any concerns on their financial management, but it was a clash between the signed agreement and the practice the cooperative wants to make’ (KIE02). Basically, this was a clash between the cooperatives’ priorities with the emission reduction agreement and the cooperatives’ proclamation.

To conclude, WVE, the district office and cooperatives have worked for more than 10 years on the Humbo carbon initiative and are able to develop a consensus on issues of mutual concern. Reviewing their work patterns and relationships, despite some gaps in relational power/resources, it is evident that these actors value each other’s input towards the success of the initiative.

### **5.3 Leadership, Influence of Actors and the Effect of Global Climate Treaties in Humbo**

This section discusses the role of leadership in the federal and Humbo greening agenda, the actors’ degree of influence, the impact of global climate change treaties on the future of Humbo’s CDM, and implications for the communities. It interrogates the interlinkages between the national and global climate change agenda, which is the foundation of the A/R based financialisation of nature for rural development in Humbo.

#### **5.3.1 Leadership’s Determining Role for the Climate Agenda**

Ambitious and forward-looking top political leaders are critical in advancing the green economy agenda among the global South countries. As the green economy can shake up the entire state governance and economic policies (UNEP, 2011a), the abilities of top leaders, policy makers and public servants to weigh up its relative advantages to the

economy is determinantal. If delivered in its entirety, the green economy transformative shift can change the political economy of a country (ICC, 2012:10) – regardless of whether the policy is home-grown or induced by global actors. It requires a leader and technical experts who are able to assess the country’s potential, the economic scales and the possibilities of growth within a clean economy, while realising the socio-economic aspirations of its citizens. Ethiopia’s greening progress has been favourably assessed, despite the country’s weakness in unlocking ‘*green investment*’, it is leading on ‘*Leadership and Climate Change*’ compared to other global South countries (GGEI, 2014:22). This assessment reflects the top leaders’ bold decision to launch the CRGE in 2011 and the actions that have ensued.

Ethiopia’s CRGE and CDM are driven by the interests of the top political leadership (Fisher et al., 2014:27). The key informants of this study considered that the leadership played a vital role in advancing the greening agenda, most heralding the late premier. Explaining the political ambition, an EEFRI expert said: ‘The late Prime Minister Meles Zenawi had a grand plan to make a breakthrough on climate change at national, continental and global levels’ (KIE10). With the country’s fast-growing economy and rich endowment of natural resources (particularly as Africa’s water tower), he had the ambition to make Ethiopia a middle-income country within 15 years. It is thus logical to ask for the motives of the late premier in directing the country’s experts to design the CRGE strategy and the actions followed. The respondents of this study gave possible responses.

First, climate change was used for ‘state branding’ (Death, 2011) to consolidate the narrative of the ‘Great Ethiopia’ (Verhoeven, 2015). This was to strengthen the EPRDF’s power in domestic politics while building a positive image internationally. Basically, as Chan et al. (2016) highlighted, there is a gap in ‘inclusion and leadership’ of developing

countries on global climate change platforms, which parties like Ethiopia are trying to fill.

Second, there was a process of developing national climate change policies, such as Nationally Appropriate Mitigation Actions (NAMAs), in line with the UNFCCC requirements and ‘growing international attention on the issue of climate change’ (Fisher et al., 2014:12). However, Fisher et al. argue that the measures taken by Ethiopia ‘go beyond’ these and ‘consider how they can integrate low-carbon resilient measures into their national planning processes’. This consolidates the argument of the country’s focus on creating a low-carbon society.

Third, a global climate change leader who is able to access climate finance could exploit the potentials of international development aid being repackaged as climate funds. As Fikreyesus et al. argue, by ‘designing an impressive portfolio of public policy responses to address climate change’, the Ethiopian government is attempting to ‘capitalise on the opportunities provided by climate change policies, like access to climate finance and technology’ (2014:3) and to tap ‘the potential financial incentives’ (Fisher et al., 2014:12).

Fourth, using the available natural resources and divesting them in the low carbon economy can have a ‘better result’ than the business-as-usual (BAU). With the potential of sourcing its energy demand from ‘clean energy’ (where Ethiopia only uses 5 per cent of its potential [Doig and Adow, 2011:57]), the top leaders considered this an untapped resource which could substitute fuel imports and reduce foreign hard currency imbalances that could be divested into other green-friendly sectors.

Last, some respondents felt that the late premier was using the climate change issue to promote his personal ambition to become a global green leader. Regardless which reason or motive carries more weight, all the respondents agreed that the decision to adopt the

CRGE and the public sector institutional reform was driven by its top political leaders.

The statement below affirms the role played by the political elite.

The leadership role was very decisive in the emergence of the CRGE – with the ambition of creating a low carbon economy. Technical people can design the green intervention, but continuity requires an enabling policy environment. Despite Ethiopia's low emission rate, its leaders are addressing the global challenges posed by climate change and playing a pivotal role in taking Africa's common position at global levels (KIE10).

As discussed in Chapter 4, although the Humbo CDM idea was introduced into Ethiopia by a third sector, its ultimate support by the top leadership, specifically the Office of Prime Minister, enabled it to bypass the objections of key public servants (KIE07). There was fierce opposition to the CDM by the then environment technical committee at the EPA which led to a conflict between those who wanted to introduce the CDM in Ethiopia (WVE and WVA), and the technical experts who persistently opposed it. WVE was looking at the advantages that ecological rehabilitation could bring to the Humbo smallholder farmers, putting the forest at the centre of rural development and considering 'financialisation' as an additional resource (KIE07). However, the bureaucrats, following other countries' experiences, as well as market and financialisation motives, put their counter-argument forward to influence the state policy agenda (KIE05; KIE06; KIE07). Their actions delayed the approval for Ethiopia to host the CDM. The statement below reflects the contested introduction of CDM in Ethiopia.

Humbo is a successful case in Africa. Initially, there were criticisms from bureaucrats and academicians claiming the model was framed based on profits and it was only sold USD 4.4 per tCO<sub>2</sub>. However, if the price per tCO<sub>2</sub> did not come at all, should Ethiopia leave both its degraded land barren and forest development? We were far beyond CDM's financial element. Those who were critical of the CDM missed forest development for Ethiopia is a matter of life and death. Glad the EPA's top leader gave us the green light to advance the idea (KIE07).

In Humbo, a few community leaders considered as ‘change agents’ were collaborating with WVE to advance the idea of a protected forest area (KIE01). But the majority of the farmers considered the ‘change agents’ as ‘mercenaries and who were willing to sell the land of their forefathers’, and who were thought to be bribed by the external actors – and they threatened to attack them. At that time, the intensity and scale of the conflict was growing exponentially and WVE, the ‘change agents’ and the local authority called for the intervention of the armed forces (KIE05; KIE06). The role of the local leaders was defiant as they showed their determination to the greening cause. In any case, the commitment of the top leaders led to securing the approval of Ethiopia hosting the CDM in Humbo.

### **5.3.2 Actors’ Degree of Influence within the Humbo Institutional Set-up**

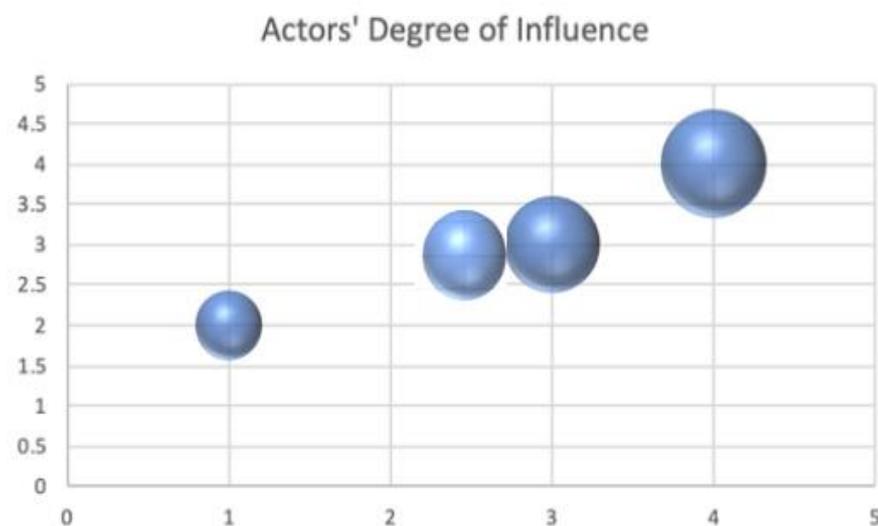
Greening involves highly committed engagement by multiple actors, as the Humbo case illustrated. Figure 5 below depicts each major actors’ influence on the institutional web and their capacities and capabilities to shape the power dynamics within the carbon finance initiative.

An actor’s degree of influence depends on their political power, financial position and the level of network and alliances they create in advancing their specific agenda within the green governance framework (Newell et al., 2009). As Figure 5 shows, the research respondents’ feedback on ranking the influence of the actors in Humbo resulted in mixed reactions. They were asked who they considered the four most influential and ordered as the World Bank, World Vision Ethiopia/Australia, the Ethiopian government, and the farmer communities.

This ranking by the key informants can be interpreted in two ways – from both process and result perspectives. Some see the carbon finance process as a matter of priority and consider the farmers or the WVE/A as actors with a determinantal say. They argued that without the full commitment of the farmers to regreen their degraded ecologies and

WVA's initial investment or WVE's high degree of determination to introduce and implement the CDM in Ethiopia, carbon finance would not function at all. Considering the challenge of A/R implementation and the risk associated with its reversal, it can be concluded that it is essential to install the necessary community-based institutional infrastructure that is founded on trust among the farmers who would be the working force of the initiative and would sustain the protected forest area (KIE06).

Figure 5. Actors' degree of influence in the Humbo initiative



Source: Researcher data collected from KIEs, Humbo and Addis Ababa, 2017.

Note: In the above figure, the size of the circles represents their degree of influence within the Humbo Assisted Natural Regeneration Project. That is, World Bank (largest), WVE/WVA (second largest), Government of Ethiopia (third largest) and communities (smallest circle).

The counterargument looks at the actors' degree of impact on the overall forest restoration and CDM's benefits to the communities rather than the process of implementation. As the 'biggest carbon investor in Africa' (Jindal et al., 2008:123), most of the key informants agreed that the World Bank had an exponential influence on the Humbo through its technical expertise, extensive carbon finance knowledge, global network and ability to directly access the Annex I parties, as well as its upper hand in deciding the unit

price of the sequestered CO<sub>2</sub>. An expert in the project argues, ‘despite farmers relentless efforts who under any circumstances are not assured for a fair compensation, the market imperfection can harm them in realising poverty reduction element of the carbon finance’ (KIE04). The fact that the World Bank decided the unit price negatively affected farmers’ level of carbon revenue and livelihoods improvement. For an actor to be powerful, it needs to influence and dictate the result and impact of the green intervention – and this is case of the World Bank.

To conclude, Ethiopia’s strategic decision to make the green economy an overarching sustainable development path was driven by the top political leaders, which is expected to be a critical factor in shaping the country’s future. As the Humbo case shows, the role of these leaders in hosting the first carbon finance initiative was determinantal. Besides the high leadership commitment to Humbo’s carbon initiative, the Bank, WVE/WVA and the communities also played a vital role. Beyond the actors’ influence, and within the prevailing context of carbon finance uncertainty, the future global climate change treaties and actors’ responses are expected to shape Humbo’s climate finance future.

#### **5.4 Conservation in Conflict with the Rural Development Agenda**

Nature conservation, which focuses mainly on ecological rehabilitation and biodiversity, is criticised for lacking a ‘utilisation’ element that considers the essence of local livelihoods, cultural beliefs and communities’ fulfilment in their daily economic activities (McAfee and Shapiro, 2010:3; McAfee, 2012a:14:126, Duffy, 2008). This typically emanates from the lack of local communities’ meaningful involvement in protecting the common land from exploitative public use, or failing to complement greening initiatives with alternative sustainable sources of income, or not using a rights-based approach to conservation, thereby not respecting the mutual coexistence of human and nature.

In Ethiopia, multiple forestry initiatives across its boundaries, coupled with other ethnically-driven actions, have led to the persistence of several resource-based conflicts

(Hagmann and Mulugeta, 2008:20). Recently, Humbo also experienced a conflict among the actors involved in forestry with the local development agenda. The local authority promoted the local economy through the construction of a road that crossed the protected forest area, putting the local communities and the district authority in conflict with WVE and the World Bank.

The Ethiopian Rural Land Administration and Use Proclamation No. 456/2005 Article 10 (2) states ‘the [land] holder shall have an obligation to allow the construction of irrigation lines and other infrastructures if they cross his land holding’ (FDRE, 2005) and obliges the cooperatives to allow public infrastructure to cross their protected forest area. Upon notification of the road construction proposal, WVE warned the local authority and communities, stating: ‘Destroying part of the protected area can harm Ethiopia’s global image. However, the district office unilaterally pursued the road construction that crossed the protected forest area’ (KIE07). The divergence in interpreting their action is self-explanatory as the big actors think about maintaining the ‘national image’ while the local actors prioritise the improvements to social services. The local authority advisor weighed the benefits of road construction against the affected forest area:

The new route had partly affected the forest. However, comparing the Humbo – Bedisa road significance and contribution to the communities, and the damage occurred to trees, the latter weighted less (KIE02).

The district office, deciding to construct the road as per its ‘best public works design’, advanced the work ‘without the knowledge of WVE’ and ignoring the emission reduction agreement (KIE05; KIE07). Based on the ‘transparency’ clause of the signatories to the ERPA, WVE reported this small change made to the forest to the World Bank. Consequently, 20 per cent of the carbon revenue for that year was frozen. A community agroforestry leader said: ‘It was a government rural development programme and the destruction of the forest area was not our failure. However, the World Bank and WVE

used this as an excuse to freeze part of the carbon revenue’ (KIE01). Mitigating the issue, however, the Regional State, in collaboration with the local authority office, planted an additional 7.88 hectares of trees adjacent to the forest land in May 2016 (KIE02; Humbo District letter written to the WVE, 2017). The farmers had demanded the road construction, expecting a significant impact on the local economy and improved access to public health services. Previously, women had died as they were unable to get timely medical treatment (KIE03). The road has reduced the travel time by three and a half hours and the cost of transportation by more than threefold (KIE05).

According to WVE staff, an assessment was conducted as to whether the act of destroying the forest was intentional or not; and the World Bank delegate was expected to look at the broader implications of the road construction for rural development – beyond the carbon emission reduction (KIE05). He further said: ‘Besides the local authority decision to replace the affected land, the new road is considered as a firebreak – as a standard procedure of sustainable forest management [though it was unintended impact]’.

The conflict between the local and global actors and the measures taken reveal the clash between local development interests and of keeping the Humbo protected forest area intact in line with the carbon credit purchase agreement and global climate change mitigation. As Ethiopian Rural Land Administration and Use Proclamation No. 456/2005 orders, local authorities have the right to carry out rural development activities in lands managed under the use rights. However, the absence of consensus among the involved parties led to a state of conflict. Although the conflict that arose over the promotion of rural development which affected forest conservation practices seems settled, Humbo’s lessons should help to explore how local interests and global climate change-oriented initiatives can go hand in hand.

## 5.5 Conclusion

The localisation of global development frameworks through the financialisation of nature and its resources involves key players with different power and interests at all scales – from global climate and development bodies and regimes to local development initiatives. The web of multiples brings together the policy and practice of rural development players in terms of their interests, power, decision-making roles and the strategies they use to influence the process of conservation, financialisation of nature and impact on smallholder farmers. Every actor claiming their intervention was based on the ‘global collective effort’ towards climate change mitigation and poverty reduction influenced the Humbo web of institutional multiples. The critical aspects identified are: the actors’ remit and power in terms of knowledge, financial position, technical capacity and negotiation abilities, and using globally-agreed frameworks as a reason for intervention and to advance their interests; a lack of knowledge and practice in the state policy-setting agenda on carbon finance for rural development; and the significant interest of the political leaders in grabbing green funds. This chapter concludes that besides the need to improve intersectoral coordination, strengthening the governance and resilience of local actors can lead to the institutions’ functional dividend in the long run. While the empowerment of local actors and creating economically viable institutions is a process which requires a lot of resources, investing in them could increase their abilities to fulfil their members’ expectations. Arguably, as it stands now, carbon revenue alone cannot reinforce their institutional capacities and mutual partnerships. The dichotomy between rural development and conservation also needs to be addressed, as it can lead to conflict and affect the nature of the partnerships between actors.

## **Chapter 6 Greening Analysis: Structural, Institutional and Physical Restoration**

### **Impacts in Humbo**

#### **6.1 Introduction**

The forestry-based Payment for Ecosystem Services (PES) intervention in Humbo of Ethiopia has both global and local development significance. Forests are expected to contribute to mitigating the effects of the environmental crisis and to improving farmers' subsistence-oriented livelihoods – and as 'the most productive ecosystems' with their 'ecological functioning', they have a significant position in political ecology (Negewo et al., 2016:88). Globally, there are 8,137 CDM projects and Programme of Activities (PoA) initiatives, with the issuance of more than 2 billion Certified Emission Reduction (CERs) [registered as of August 2019] (UNFCCC, 2019d). However, forestry accounts for only 0.8 per cent of the entire CDM (UNEP-DTU, 2018). Humbo Ethiopia is one of the registered Afforestation and Reforestation (A/R) initiatives where carbon sequestration was taken to be a key part of a rural development package whereby farmers contribute their time, efforts and knowledge while expecting to receive physical, environmental and financial benefits. For Ethiopian farmers and for the nation at large, carbon was a raw material seen as a new commodity mainly because of the Humbo initiative.

This chapter looks critically at whether the intended positive contributions of the carbon finance model which were initially imposed, and particularly the market-based offset mechanism of CDM with its structural and ecological benefits, have been realised. It considers whether this has positively contributed towards reducing atmospheric carbon, desertification and biodiversity loss, with favourable effects on micro-climate changes as well as global climate change mitigation. The chapter also explores critical elements of impact analysis on the induced structural and institutional changes, and the impact analysis also on the physical regeneration and its results.

## **6.2 Structural and Institutional Changes**

Ethiopia's implementation of the Humbo CDM initiative was mainly driven by a desire to regenerate the degraded land and to mitigate the global ecological crisis. Framed within the concept of a low carbon economy, the Humbo carbon credit initiative brought some structural and institutional reforms at the local level, including a protection-oriented local forest governance model and, along with it, land use rights certification. This section examines the key legal and structural changes that are linked to the forest regeneration and conservation efforts. It investigates the legal framework, local forest governance, and collective thinking and attitudinal change (for instance the idea that '*air can be sold*') among the farmers and the key stakeholders. As a farmer from Hobicha Bada said: '[W]e did not know air could be converted into money – except by those who were experts. We consider air as air, and we never quantified it into currency' (HHHD10). Considering the financialisation process, another farmer noted: 'Carbon financing as an exchange of clean air with foreigners' (HHHD07). In light of the local forest governance dynamics, the permanence of the changes brought about is also explored as it has an immediate effect on the sustainability of the intervention and associated benefits, which are founded on carbon-based rural development.

### **6.2.1 The Political economy of Land Governance in Wolayta**

It is important to connect an understanding of historical land politicisation to a wider consideration of the Humbo initiative by cogitating land and holdings rights. In Ethiopia, land has been a highly politicised asset under both the previous and present political systems. Past kingdoms sustained their power mainly on the basis of land and religion. The socialist *Derg* regime came to power claiming land to be for the farmers and instituted radical land reform and nationalisation in 1975 (Gebreselassie, 2006:44). Despite changes instigated by the various state political ideologies to the inheritance-based land governance system, the Wolaytas have been able to maintain their customary

land holdings (KIE01; KIE14). Land ownership is hereditary and paternal, and their '[s]ons [are] thus entirely dependent on their fathers' (Freeman, 2013:7). Besides the uncultivated grazing areas, the land is widely used by Wolayta smallholder farmers (Balisky, 1997:60).

In Wolayta and other Ometo societies of Ethiopia, the traditional *Mayza-Maiya Gadya* land system, referred to land as a 'form of royal or lineage property', was used 'to govern most land rights' before the conquest of the southern region by Emperor Menelik II in 1894 (Planel, 2008). Despite the land belonging to 'the *kawo* (king) [as] the father of all Wolayta lineages', farmers, as descendants, were free men to cultivate their land (Ibid). Furthermore, Planel argues that this land tenure system had 'prevented the creation of large private estates, ... [rather] causing multiple redistributions of land within the same lineage' (2008). However, as Chinigo (2015:196) states, the patrilineal heritage system 'allowed some greater degree of land concentration' as people who were 'outsiders and lower status groups' did not have access to land.

Once the Wolaytas were conquered at the end of the 19<sup>th</sup> century, Emperor Menelik II introduced 'the *gabbar* (farmer) and *naftanya* (northern rifleman) system' (Balisky, 1997:59). This abolished their traditional land tenure system which allowed an individual farmer to have his own land; as Guidi argues, such a system introduced exploitation through taxation and labour (2013:2). There were about 500 state-appointed nobility who had 5 to 100 farmers under each of them (Ibid; Tronvoll and Haggmann, 2012:7). Hodson, a British Consul in Southern Abyssinia, travelled to Wolayta in 1915 and recorded that the district was divided up into 44 officers, while the chief justice known as Afa Negus Telahun had 'one thousand tenants' (1928). That is, though '[t]he *gabbar* continued to hold the land (*rist*) by inheritance from his forebears' (Balisky, 1997:59), the system made them 'de facto tenants' and they were obliged to 'give up part of their agricultural production to landlords' (Chinigo, 2015:197), that is, 'one-tenth .. of all produce'

(Hodson, 1928). Furthermore, Balisky (1997:61) describes the consequences if a farmer failed to pay his tax as follows:

Evidence of unpaid taxes was indication that the ownership of his land was under question ... [and] could lose his land to his overlord by failing to pay his taxes on time. He then became a tenant farmer who was obligated to pay one-third of his produce to the *naftanya* overlord.

Furthermore, the heavy tax levied on the farmers and customs gates had ‘hamper[ed] internal trade’ as there were ‘six or eight different customs gates between Sidamo and Addis Ababa’ (Hodson, 1928). As a consequence, despite having ‘uncultivated’ land, the Wolayta farmers were reluctant to produce beyond essentials (Ibid). As Abbink (2006:3) noted, notwithstanding the dismantlement of ‘[i]ts political structure ... the region's identity, as expressed in language, political status, cultural traditions, memories of clan and family lines, and social hierarchy did not disappear’.

Following the Italian occupation and the arrival of the British forces and their allies in 1941, as Guidi illustrated, once the *naftanyas* left, they were ‘replaced by salaried civil servants’ and ‘co-opted and assimilated local elites (*balabbat* – ‘one who has a father’) to establish their power down to the grassroots ... to collect tribute from their erstwhile kinsmen and followers’ (2013:8). Even these land governance practices had ‘only marginally affected the clan structure and its hierarchical organisation’ (Chinigo, 2015:197) and did not dismantle ‘local customs’ as the farmers continued to own the land; however, given the prevailing power dynamics the ‘customary rights [were] almost ineffective’ (Guidi, 2013:7). This land tenure system continued until the fall of the Haile Selassie rule in 1974.

However, after the *Derg* led revolution under the slogan of ‘*land to the tiller*’ and its radical land reform in 1975, the nationalisation and collectivisation of land, as well as the formation of Peasant Associations (PAs) with a periodical redistribution of land, were introduced. This abolished landlordism among the Wolaytas (Chinigo, 2015:197) and

also gave access to land to those who were landless, including those who used to be newcomers to the villages - those without hereditary lines or former slaves.

Since 1991, the EPRDF-led government has advanced a developmental state, and all of the investments associated with ‘double-digit’ economic growth have been centred on land as the main asset of production. Reforming Ethiopia with ethnic-based federalism, the coalition party has been engaged in a ‘political experiment using ethnolinguistic identity’ for state politics and for governing its people (Abbink, 2006:4). On the issue of land, EPRDF has followed the *Derg* land policy by reassuring the state’s land ownership. In Wolayta, as Chinigo explained, ‘EPRDF policies did not bring drastic changes to the overall agrarian structures provided by the 1975 land reform’ besides ‘flexibility in renting out the land for short periods of time, and hiring labour outside the household’ (2015:198). Guided by the Agricultural Development-Led Industrialisation (ADLI) policy, there was intensive smallholder agricultural commercialisation in Ethiopia.

Some of the large-scale agricultural commercialisation investments in biofuels in Wolayta Zone were studied by Chinigo (2015). His account shows that two international companies came to invest in biofuels production - the British Sun-Biofuels PLC (with 3,000 hectares of state land to establish a plantation of jatropha in Offa district in 2007), and Global Energy Ethiopia (GEE - an Israeli company and part of the Group Machiels of Belgium with 7,000 of hectares - of which 2,925 hectares was state land that was used for grazing - to produce castor beans in 2008). With GEE, 10,000 smallholder farmers were given contracts to produce castor beans and there was a plan to construct a biodiesel factory in Sodo. However, both biofuel projects ‘closed down’ as they ‘found out that castor and jatropha were not productive enough’ (Chinigo, 2015:206).

To conclude, despite these land governance dynamics, three reasons can be highlighted as to why the Wolaytas were determined to maintain their customary land ownership. First, the history of the Kingdom of Wolayta and the Wolaytas’ interest in maintaining

an autonomous regional governance (see Section 3.6.1). Second, the strong cultural element that is intrinsic to the Wolaytas and their determination to keep their patrilineal-based land inheritance rights, regardless of the gender issue. Third, land scarcity and high population density which did not allow them to allocate new land to the young and new settlers in the Humbo villages. This is a part of a long history and custom that still does not allow women to be part of the patrilineal line to inherit land from their fathers.

### **6.2.2 The Question of Land and Farmers' Initial Reaction**

Land-related and resource-based conflicts, at times coupled with socio-economic tensions between the state and communities, and between investors and communities, have been very common in Ethiopia (Kebede, 2002). A salient example is the dispossession of peri-urban farmers under carefully designed plans for the expansion of the Addis Ababa metropolis, which triggered conflict between the authorities and residents of Oromia Region, leading to the killing of hundreds of people (Pinaud and Raleigh, 2017). In this case, farmers were forced to cede their land with manifestly inadequate compensation, and politically connected investors established lucrative housing developments on the seized land. Often land issues are complicated by their linkage to other elements, in particular the issue of ethnicity, intensified by the emergence of ethnic federalism as the fundamental basis of Ethiopian governance. So, the land is central for rural communities as it is linked to both their identity and their livelihoods.

### **The Financialisation of Nature: Land-Based Clash on Humbo Mountain**

Like most other global South countries, Ethiopia did not have the requisite competence in running carbon finance initiatives (Hagbrink, 2010) and had not integrated the new commodity – carbon – into its national forestry and environmental policies. Therefore, the initial stages of the Humbo were treated with suspicion, especially among the farmer communities. However, in contrast to the ambivalence at the local level, at the federal level there was political will, as the then Premier Meles Zenawi was keen to influence the

global climate change regime (De Waal, 2018:9) and see its progress, despite the fierce objections of some technocrats who thought that it would not bring any substantive benefit to Ethiopian farmers. Despite such fierce opposition, the carbon initiative was launched and tested in 2006.

**Box 1. Land Legal case between farmers and the cooperatives**

In the Bola Wanche village, there were about 40 people who had a claim for farmland within the mountain area to be protected under the A/R project. Though all of them opposed the project concept, only some of them filed a court case in Hawassa city, which they lost. One of the 40 people who did not challenge it gave a reason. In his words:

‘We got the land because the village administration identified us as people who depended on their fathers’ small plot of land. During this period (1993/94) there were also *ex-Derg* soldiers and non-native new settlers (*MeTie* in Amharic) who were allocated land. At that time we were young and did not have families. Moreover, one of the purposes of the land allocation was to develop the land and reduce the outmigration of the youth. Also to enhance our integration into the community (especially for those who had been away with the *Derg* army or other reasons).

Once WVE came and asked to take the land, we opposed it, but we failed to put any permanent asset onto the land. We did not even plant a banana there. Only one farmer built his house and used his farmland. We never used it, claiming it was not suitable for ploughing or developing it. Unlike the rest of us, this person was left unaffected by the project and was not evicted from it. We did not use the land, and it became a protected forest land.

We were told by the village administrators that: “It was up to us – we gave you the land and now we can also take it from you and give it to the carbon project”. Literally, they said it is up to them to give the land to us or not. Some of the 40 farmers admitted that they were at fault, through their own failure to use the land. Not using the land for 12 years meant it was a wasted resource for the individuals and for the government. The government could not collect tax on it, as it collects tax only from developed land. This put us in a weak position to keep the land. Now half of the 40 people have become cooperative members – but the other half are still discontented with the decision and are not members.

The land belongs to the state. We got the land from the state, and the state can take it back at any time. However, not one of us has been reallocated other land or got any substitute land. Land is scarce in the Bola Wanche village.’

Source: Interview with a Bola Wanche farmer, 2017 (HHBL07).

When the Humbo carbon project was initiated, the communities at first rejected it, arguing that they would lose their assets, use rights and livelihoods, and fearing that their land would be taken by foreigners conspiring with World Vision Ethiopia. They felt that their rights to access the resource would be denied and the security of their livelihoods would also be adversely affected (HHAL03). The farmers were confused by the concepts of financialisation of the land and carbon trading, and worried that conserving the mountain would negatively affect their livelihoods. Terms such as the ‘abstraction of nature’

(Corson and MacDonald, 2012:268) or ‘fictitious commodities’ (Polanyi, 2001:168) were obscure or completely unknown to the farmers. Given all of this – the uncertainty, the ambivalence on core concepts and the importance of land to livelihoods and identities, it was inevitable that land would be at the centre of conflict between the forest-based carbon credit initiators and the target communities.

Neoliberal ideas of investment modelled on profits clashed with the interests of the communities – starting from the very first stages of the forest regeneration initiative in Humbo (KIE05). For investors, land is a resource required for investment and producing carbon as a commodity (Liverman, 2004:735). However, as in most agrarian societies, the Humbo communities’ livelihoods are largely dependent on a land-based production system and land constitutes part of their identity that needs to be defended at any cost. Land is deeply linked with their inheritance – historically, culturally, socially, economically – as farmers, but such interventions largely ignore their cultural values (McAfee, 2012b:126). Thus, the Humbo farmers were not enthused by the notion of the financialisation of the land and of the forest. Their principal argument was the need to protect land use rights, as a source of inputs for livelihoods and basic necessities.

When the carbon project started, we were afraid and suspicious because we used to have livestock fodder and fuelwood from the mountain. When I wanted to make charcoal for cooking and wood for constructing my home, I used to cut the trees without any restriction. Moreover, I used to sell charcoal from it and buy household stuff. So when I was told it will be conserved, I thought I will be denied access and miss out all the benefits I used to have (A farmer, 40, from Hobicha Bada, HHH03).

The Ethiopian Rural Land Administration and Use Proclamation No. 456/2005 Article 2 (12) defines ‘communed holding’ as ‘rural land which is given by the government to local residents for common grazing, forestry and other social services’ (FDRE, 2005:3136). Traditionally, Humbo Mountain, with an area of 2,728 hectares, was governed under the

‘common resource’ system covering the seven villages (see Ostrom, 2009). Access to the resource was equally available to every farmer. Thus, the communities had the perception that they would lose out by giving the land to outsiders under the proposed new arrangements. Community members were furious at the proposed natural resources regeneration and greening agenda. They went beyond putting forward verbal objections, withholding their collaboration, blocking roads and denying access to their villages for WVE staff. They even went to the extent of defending the area with machetes (KIE07).

Because the Humbo carbon-based natural regeneration project was the first of its kind in the country, communities lacked other examples to help them make an informed decision about the initiative. Simply accepting it on trust was not an attractive proposition. Ostrom, referring to ‘the conventional theory of collective action’ emphasised that the ‘context’ can affect the ‘levels of trust and reciprocity of those involved’ (2009:10-11). To advance the agenda, community members were briefed and extensively lobbied by WVE, administrators and religious leaders about the positive contribution of forest recovery and its potential benefits – this was linked to the environment and agriculture – through reduced soil erosion. They were told of the potential cash and compensation to be generated from carbon credit sales. A farmer from Abala Gefata explained how he was influenced to join the initiative. He said: ‘I joined the forest cooperative because I was advised by the village forest committee members and the priest, with the understanding of – if a government backs the project, it is highly likely to be assured and it is good for you to join it’ (HHAG02). Alongside others, the role of religious leaders was prominent in persuading community members to accept the PES project. Therefore, in line with Ostrom’s thinking, local socio-economic and political dynamics and the collective behaviour of the farmers affected the level of trust they had with the development staff. Even though WVE’s relationship with the communities was characterised by a high level of trust that had been cultivated over almost three decades, tensions and mistrust emerged,

and the communities were not willing to accept the idea at face value. They suspected that the initiative might have hidden strings attached to it. The mounting resistance jeopardised the advancement of the project. Unable to move forward with the idea of carbon-based investment, the police were enlisted to bring order to the community. This junction was a tipping point, after an intense two weeks of conflict, about 29 people from Digso (part of Hobicha Bongota) were detained for one month by the police (KIC07; KIE01). With the resistant farmers in prison, project work commenced, including forming committees, preparing nursery sites and mountain area enclosures. Furthermore, some people were also filed their land claim case to the courts (see Box 1). Farmers complained that there was a lack of local organisation or local institutions to defend their rights. A farmer from Bola Wanche said: ‘our resistance rather was ad hoc and disorganised’ (HHBL02).

Following a reconciliation process, the protesting community members were released from prison. After gradual lobbying efforts, attitudinal change began to develop. But still, with the fear of land-grabbing in mind, the farmers were not entirely content. As a consequence, the few collaborating farmers were threatened (KIE01; KIE05). A cooperative leader said:

In the beginning, we were happy to hear of conserving our barren and rocky land. However, our anxiety was allowing outsiders to access the land which might make us absolute losers (Cooperative leader, KIC03).

Similar statements were raised by many founding shareholder members of the cooperatives. It was clear there was fear of land loss among the farmers. However, WVE by deploying multiple persuasive approaches (KIE05) and the police force by breaking down the farmers’ resistance, project implementation was started. The communities gradually accepted the regeneration and conservation concept – after being assured that their land would not be taken away from them. This assurance convinced most

community members to agree, and with the collection of more than 100 signatories the initiative went on to full implementation (HHBS07).

Similar kinds of conflict over land or other land-based resources have been reported with most of the carbon or eco-tourism based investments carried out in the global South (Gerber, 2011:165; McAfee, 2012b; Duffy, 2008; Clare et al., 2012:234). The principal reasons given include: denying community members access to resources, an unfair share of benefits generated from the carbon sales, and mistrust between those who introduce the idea and the hosting communities. An Abala Longena farmer explained communities initial concerns about the carbon initiative and the persuasive approaches used by the NGO in the following way.

Before the start of the project I had some anxiety, but once the WVE started to train us about the benefits of the greening, I was able to accept it and expecting to gain some financial benefits from the carbon credit (HHAS01).

In consultation with elders and local authorities and advancing the initiative, WVE was able to successfully demarcate the land around the seven villages, which helped to prevent any possible future resource-based conflict. A Bola Wanche farmer elucidated the process: '[o]ur grandfathers know the land of each village. However, due to soil erosion, parts of the mountain had shown topographic changes which made it difficult to demarcate the inter-village borders within the mountain area' (HHBL05). The Bola Wanche and Bossa Wanche land was demarcated with the help of elders, WVE and an expert from the Ministry of Agriculture, who referred to a cartographic document made in the 1980s and was able to mediate with the villagers (Ibid). Demarcation was vital as the land to be regenerated and reforested as well as the carbon revenue to be redistributed depended on its size, and the type and nature of its vegetation. So, '[a]fter two years of local stakeholder consultation, planning and negotiations' (Rinaudo et al., 2009:12), the Humbo project took off as the first A/R carbon finance initiative in Ethiopia.

## **Land Use Rights**

As Garrett Hardin postulated in his classic 1968 paper '*The Tragedy of the Commons*', ownership and land tenure play critical roles in the development and management of the local ecology – particularly in relation to (controlling) the overgrazing of pasture. Hardin showed the adverse consequences of 'open-access resources', and he proposed 'restriction' as a solution. Though local property rights are critical, they do not necessarily lead to automatic protection of a forest area, as practice is linked to culture, local practices, socio-economic situations and trust (Ostrom, 2009). Therefore, understanding the importance of legal forest rights, in context, and their impact on the A/R is vitally important. For the Humbo initiative designers, land ownership of the protected forest mountain and related user rights were at the top of their priorities (WVE-PDD, 2009). As a World Bank carbon finance expert said: 'In forestry, ownership is key in changing the overall dynamics – if the process is transparent and lawful, and if you put in the necessary bylaws and underline the fact that every output of the forest will belong to them, the farmers would be willing to accept it' (KIE07).

In Ethiopia, forests can be governed by the state, or by private or cooperative bodies. Some 80 percent of the man-made forests are owned privately (KIE10). One of the fundamental claims of the Humbo project implementers and the World Bank (KIE05; KIE06; KIE08) on the success of the carbon initiative was guaranteeing communities' land use rights for the forest area and its resources. A conclusion was reached by most key informants on the 'reformulation of land use rights in Humbo'. In order to assess the provision of 'land use rights' as an innovative idea in Ethiopia, it is worth asking what legal rights the constitution endows to citizens regarding land ownership. The FDRE Constitution's Article 40 (3) on 'The Right to Property' (FDRE, 1994a) says '[T]he right to ownership of rural and urban land, as well as of all natural resources, is exclusively vested in the State and the peoples of Ethiopia'. Thus, the land is the sole property or

asset of the state and ‘shall not be subject to sale or other means of exchange’. However, Article 40(4) lays down the grounds for securing land use rights: ‘Ethiopian peasants have the right to obtain land without payment and the protection against eviction from their possession’. Therefore, farmers’ land use rights are constitutionally protected.

Further, Proclamation No. 456/2005 consolidates land use rights and Article 2 (4) defines ‘holding right’ as: ‘the right of any peasant farmer or semi-pastoralist and pastoralist shall have to use rural land for purpose of agriculture and natural resource development, lease and bequeath to members of his family or other lawful heirs, and includes the right to acquire property produced on his land thereon by his labour or capital and to sale, exchange and bequeath same’ (FDRE, 2005:3135). However, national legal frameworks do not mention carbon as a commodity. As emphasised earlier, it is new to the Ethiopian experience and carbon has never previously been exchanged as a commercial good.

Although the regional land proclamation does not explicitly mention carbon sequestration, an independent consultant in Ethiopian law confirmed that those who possess community holdings (land use rights certificates issued based on Proclamations SNNPR 53/2003 [and 110/2007] and Federal 456/2005) have the rights to all the products produced from the land, and, ...[these] therefore necessarily include sequestered carbon (WVE-PDD, 2009:17).

The interpretation, by experts, of the proclamation and its provisions for land use rights contributed by establishing the recognition of the abstraction of the forest or of nature as carbon, and enabling Ethiopia’s decision to host the CDM. These are basic prerequisites. CDM requires the implementing parties to have communities’ assurance and willingness to support the initiative, and land tenure security is a precondition to qualify for the carbon emission reduction certification. Forests with ‘insecure land tenure’ are considered as high risk (Jindal et al., 2008:116). Of the 58 respondents in this study, only 20 mentioned land ownership and use rights as an ultimate benefit of the carbon intervention. The

communities fundamentally perceive that the land belongs to them and they do not recognise the formality attached to it. Some do not recognise any reallocation or transfer of ownership, as they inherited the land from their ancestors. Though not a common response, one farmer from Abala Longena said, ‘this project downgraded our status from being the owners to only land users’ (HHAL02). The formalisation of the rights they are endowed with under the constitution and of land use rights was only a legal and project-related technicality to them. However, the certification of land use rights together with the available resources gave them the assurance that their land would not be taken under the pretext of ‘greening’ - green grabbing (Fairhead et al., 2012:237). Furthermore, Lemenih and Kassa consider that: ‘Better tenure security, clear land use rights, and devolution of responsibilities to lower levels of organisation ... help facilitate collective action for better re-greening initiatives in communal systems’ (2014:1904). Thus, the key positive change noted by the respondents is that they now recognise their ‘ownership’ of the forest, which they consider to be protected against potential land grabbers. The key structural change made due to the recognition of land use rights is that land has moved from being common village land to being cooperative members’ land. This may benefit most people in the community, however, due to the restrictions followed in accessing the regenerated land, most of those who are non-cooperative members are left without any tangible benefits.

### **6.2.3 Local Forest Governance: Cooperatives and the Formation of the Union**

The institutionalisation of the local forest governance system is critical to effective and efficient management of local resources as well as ensuring their fair distribution among village members (Luke, 2009). However, it is not an easy process as the rural communities have their own ways of managing local resources and coping with stressors, both human pressures and those arising from natural disaster, even if not always with success. The Humbo case shows the weakening of customary laws for the effective

management of shared resources. In this section, the discussion of local resource governance takes more of an in-depth look at the importance of land to farming livelihood systems and the formation of new governing structures in the seven villages – mainly the cooperative and union structures.

Land among the farmers of the Humbo is the most crucial asset as more than 90 per cent of households' livelihoods depend on agriculture. As interviews with the individual farmers show, the land tenure system is based on family inheritance, whereby individual families 'own' farmland plots [formally land is owned by the state] which are transferred from a father to his sons, as daughters do not inherit. For instance, if the father has four hectares, he is then expected to share his allotted land with his four male children equally unless some of his mature sons have dropped out of farming. With the expansion of educational opportunities, they may have secured public office jobs or pursued the rural-urban migration route and ended up in the towns. Unlike individual families' farmland, the communal land, except the Humbo Mountain, is available for every member of the community to access and use for any purpose, including household energy consumption, getting building construction materials, grazing their livestock and charcoal trading – except for agricultural production.

Most of the elders agreed that the forest resources and grass, especially the supply of trees and related by-products, were adequate for the population size that used to live in the same area five to six decades ago (FGDALM01). However, as the frequency and intensity of drought increased in Humbo district, people started to see the forest as an alternative source of income, so they cut down and burn the trees and sell the charcoal in nearby towns. The majority of the 58 household survey respondents agreed that the primary cause of deforestation was the lack of effective local forest governance and the unavailability of alternative sources of income for households. A farmer from Abala Shoya said 'as a consequence of the destructive practices of humans, the mountain was extremely

degraded and it looked like land burnt by a volcanic eruption' (HHAS01). Fixing this gap is key to ensuring the permanence of forest regeneration and fulfilling the requirements for accessing the carbon revenue (WVE-PDD, 2009). Therefore, the focus for WVE was on mobilising all community members and key leaders to abide by the cooperative bylaws. The rights and responsibilities of every member were then determined by the cooperative bylaws and internal membership guidelines.

A new structure for organising the seven participating villages into seven cooperatives with forest governance bylaws was established (KIE07). This institutionalisation was a fundamental reform in changing the rights, status and accessibility of common resources in the Humbo Mountain, which prohibited the previously existing right of free access to the resources in the vicinity. As a consequence, the process of securing land use rights for the cooperatives and their members meant that non-members were excluded and lost the economic benefits that they used to get from the mountain. In this kind of situation, an owner with 'cumulative' or collective user rights can have 'the right to fully exclude others' (Asiyanbi, 2016:150). Denial of access to the protected area is equally relevant to both cooperative members and non-members, by cooperative bylaws and state law (with the exception of the permitted fodder collection). This leads us to begin to see a holistic concept of conservation, which sometimes does not go beyond area enclosure. With protected forest areas, unless substantiated with utilisation, it is highly likely that sustainable conservation will come under threat. The Humbo case shows the importance of utilisation. With a shift in thinking, there was 'a call for a move from making conservation for the sake of conserving trees to promoting proper utilisation of the forest outputs – as the harvest of biomass can be beneficial to the farmers and they should be not excluded from their local ecologies' (KIE07). Accordingly, regulated harvesting of grass within the protected forest area is allowed – in order to provide animal fodder as well as to reduce the risk of fire.

Consolidating the formation of the cooperatives and fulfilling CDM requirements, certificates for a legal entity were issued to the seven cooperatives by the office of the SNNP's Regional State. (Cooperative Promotion Agency Registration Certificate of Cooperative). The Bossa Wanche cooperative's land use rights certificate reads:

In accordance with Article 24 (2) of the Proclamation No.106/2006, to determine responsibility and duty of the Executive bodies of Southern Nations, Nationalities and People's Regional State, and the power vested in the Regional Cooperative promotion Agency there by the Bossa Wanche Kache Mountain Forest Development and Protection Cooperative Society, limited liability is herewith registered on June 27<sup>th</sup> 2007, ... and granted this certificate of Legal personality. Hawassa.

In order to strengthen the seven cooperatives, committee and sub-committee structures were created and a few members helped to mobilise the farmers to participate in the natural regeneration activities and work closely with WVE, the local authorities and the World Bank in ensuring the proposed activities were executed, in accordance with the PDD guidelines. Each cooperative functioned as a bridge and as the first point of contact for multilateral interactions before the seven cooperatives went on to form a Union. In the new local resource governance model, the Union is a second tier structure and acts as a central node for the seven shares-buying cooperatives. The Union was established to defend the interests of the member cooperatives in dealing and negotiating with WVE, the World Bank, carbon sequestration validating consulting firms and other potential carbon buyers. It is accountable to its cooperative shareholders while the cooperatives are accountable to their individual shareholders. The individual members' share price was nominal in some of the villages, in one case, Birr 15 per share. The share price differ slightly from one cooperative to another. In another case, the figure was Birr 50.

Therefore, looking at the local natural resources governance model in the Humbo mountain area, the implemented project brought fundamental changes to formal land

titles and the regulatory system put in place. The intervention created seven cooperatives, which at a later stage formed an umbrella structure – the Union. The status of the regenerated Humbo Mountain was changed from open-access land to a system based on cooperative user rights. Any attempt to access the conserved area became a punishable offence, which could lead to legal charges at the village level with the possibility of referring cases to the district courts. In most cases, the violation of bylaws by both members and non-members (in illegal logging, membership is not a significant factor) is dealt with at village level with advice, warnings and financial penalties (HHBL07). In 2014, some offenders were caught and sent to the police station where they were detained for seven days. But, when they admitted their error, they were pardoned and released (HHBL05).

### **Adopting New Local Forestry Governance Approach: Impacts and Sustainability**

According to respondents, there are two ways of applying the traditional land governance system in the Humbo area. There is the land communally used by the villagers as well as privately ‘owned’ (literally) or leased (legally) land used for building and farming, as land is the sole property of the state, as the Ethiopian Constitution stipulates. Regarding forest management, the first allows free access to members, but the latter is only available to family members. Given the small size of landholdings in most of the villages, farmers usually practice agro-forestry on their farming land with the aim of meeting household energy consumption needs, and providing for wood and charcoal sales. The underlying cause of the deforestation observed in Humbo is the obsolescence of the traditional natural resources governance system, with its customary laws, and its inability to cope with the Anthropocene pressure mounted on it (WVE-PDD, 2009). Moreover, as a farmer from the Abala Longena said, during the ‘*Derg* regime, there was a plantation project which led to protected communal land, but it was not community-based and so it was slowly destroyed by the farmers’ (FGDALM01). That is, the imposed approach failed to

persuade the communities and make them feel that they were genuine owners. Thus, the Humbo initiative had to address forest mismanagement that had left the mountain ecosystem in an almost 'irreversible' state (van der Ploeg and Withagen, 2013:117). However, most of the respondents agreed that they have never recognised the deep link between forests and climate change.

In general, the lack of governance capacity among governments and environmental actors has been a barrier in implementing CDM projects in Africa (Pfeifer and Stiles, 2008:22). The Humbo project dealt with this knowledge and practice deficiency by importing a new farmer-based governance framework, the Farmer Managed Natural Resources (FMNR), from Niger. Using FMNR, Brown and Stigge argue that the 'roots of the trees cleared as long as 60 years ago' can be regenerated (2017:67). Furthermore, Klein (2013:25) underscored the role of a non-state actor in disseminating the relevant knowledge and practice within the SSA countries and this was evidenced in the Humbo case. FMNR was introduced in Humbo because of World Vision Australia's (WVA) experience in Niger. It was able to transfer the practices and skills to the Ethiopian farmer communities. The adoption of FMNR practices in regenerating trees naturally on degraded land was effective, in part because the methods were similar to those traditionally practised among the Humbo farmers (KIE06). Instead of focusing on planting new seedlings, the approach aims to regenerate the roots and stumps of the destroyed indigenous trees on the degraded land where more than 90 per cent of the Humbo mountain was regenerated using these techniques (Rinaudo et al., 2009:13). Because the practice was similar to what they were already doing on their family farmland, especially for eucalyptus, it was readily accepted by the farmers. The approach involved regenerating and retaining the indigenous tree species, which are well adapted to the local area's soil type, weather and topography. The main change here was in expanding the practice from individual families' farmland to the communal land – the Humbo Mountain. The regeneration, as the WVE report mentions

and as confirmed by the key informant from the NGO (KIE06), was quicker than it was with the WVA experience in Niger, as the temperature and rainfall are far more favourable in Humbo than in the Sahel region (KIE07).

FMNR aims to be a participatory and low-cost forest management technique and is expected to yield results within a short period of time – depending on the adaptability of the receiving farmers (Reij and Winterbottom, 2015:4). Therefore, it was critical to see how the newly-imported governance approach worked alongside the existing traditional system that had failed to preserve the forest area, whether it had entirely replaced it, or if there was an attempt to combine the components of the borrowed framework with the prevailing local systems.

Before the Humbo initiative, the state of the protected land was found to be highly degraded and the remaining roots of the trees were struggling to cope with the recurrent droughts and regenerate naturally (Kamara et al., 2008). Drought exacerbated the effects of destructive practices:

This desperate action [*cut and slash*] coupled with overgrazing and cyclical droughts halted the natural regeneration of the trees exposing the land to hostile weather elements that left the land bare and barren until the commencement of the current intervention in 2005 (Kamara et al., 2008:5).

The respondents, when asked to compare the traditional and FMNR forestry governance systems, said the new practice with assisted regeneration of the trees is almost the same as the traditional one. However, the traditional system only worked at the smallholder farmer level, whereas FMNR helped them to regenerate the land and plant a diversified set of species of plants, bolstered by the presence of the newly established bylaws which protected against illegal logging. They also noted that because of the change in the large protected forest area, a positive change in the micro-climate was realised. FMNR focused on the farmers leading the process of regeneration which made it a form of participatory forestry management. FMNR led to the evolution of the cooperatives with their governing

bylaws for protected common resources, which is considered to be one element that departs from traditional natural resource governance (HHBS04). Furthermore, in relation to the traditional land tenure system related to the protected mountain, a farmer from Bola Wanche said that ‘previously most of the users of the mountain were those people who live around it [a proximity effect], cutting trees and making charcoal, but now almost every member of the seven villages became a direct or indirect beneficiary of the changes made’ (HHBL08). To conclude, it was the right decision to transfer WVA experience from the Sahel region to the Humbo area, where it was in line with traditional forest regeneration practices and hence was readily taken by the farmers.

#### **6.2.4 Green Culture, Knowledge and Skills**

WVE’s intensive forestry work included capacity building components focused on forest regeneration skills, capacity enhancement training and exchange programme packages for both the prospective and already recruited cooperative members. This helped to increase their level of knowledge of the human-environment relationship. This also partly promoted the financialisation of forests. For instance, almost all of the qualitative study respondents agreed on financial compensation for the concerted efforts they contributed to the project. As the FGD conducted with women showed, the communities did not imagine that ‘the air could be exchanged for money’ and thought the approach would not be practical. However, with the greening process of A/R, one of the women said ‘we are able to see the carbon money transferring to our villages’ (FGDBLW02). However, despite the change in their understanding and attitudes on the monetisation of their environment, they still emphasised the non-cash benefits they gained from the carbon initiative. For instance, during that FGD and the household survey, discussants and respondents in relation to the environmental crises and the importance of greening said:

If the rainfall is erratic or delayed, it is due to the lack of a workable community forest governance system in place, and when people exposed the mountain to degradation by destroying the forests for their personal gain. Furthermore, there is also a human element in environmental degradation, which is highly likely to lead to soil erosion and flash floods during the rainy season (Women's FGD, Bola Wanche, FGDBLW02).

In the absence of humans, trees can survive but in the absence of trees, human beings cannot survive. Therefore, for their own sake, human beings should plant and manage forestry properly (Bola Wanche farmer, 60, HHBL08).

The conservation and environmental regeneration process in Humbo contributed towards developing awareness and a greening culture linked to the forestry sector. The training sessions were focused on the causes of environmental degradation and the importance of community work in rehabilitating the localities. Some members attended a single training session, while others went to multiple sessions, which usually lasted from one to three days. Those interviewed said that these intensive trainings enhanced their knowledge in terms of how they understood the forest-human relationship, and on environmental malpractice, as well as conservation and its contribution to climate change. Furthermore, they were able to practice their knowledge by participating in the planting of seedlings, in pruning and terracing, erecting fire breaks, and in protecting the regenerated land from illegal loggers. As the interviews conducted in the seven Humbo villages show, local people's knowledge on the environment was improved immensely, but they were struggling to see the project's immediate effects in improving their livelihoods and reducing their level of poverty. And the cultural understanding and interpretation of carbon emission and climate change can vary. One example is illustrative here:

Intriguingly, stoves which emit less smoke may also be less sought after for social reasons; ... in some areas in Ethiopia, the more smoke coming out of a house, the wealthier the household is perceived to be because of this signals that there is always food in the house (Aklilu, 2011:103).

Moving beyond knowledge cultivation, and if complemented with other alternative income generation activities, this cultural aspect could be an asset in ensuring the permanency of the regenerated land and in reducing poverty. Broadly, culture and social values have been largely neglected in greening projects, though local narratives and understandings of climate issues are relevant to the communities.

In conclusion, framed within the international climate agreement of the Kyoto Protocol and its market-based approaches, the Humbo CDM intervention has brought about some structural and institutional changes to the local forest governance system. As discussed above, the actors involved deployed both soft and coercive power, at different times, in order to break down farmers' resistance and advance the agenda of protected forest land. Though land use rights certification was considered an innovative approach, it involved an interpretation of existing constitutional rights. The introduction of the FMNR technique was successful as it was easily adopted by the farmers. After almost a decade-long engagement, every farmer understood the links between forests and climate change, though they failed to clearly understand and use the financial element attached to it. The next section deals with the physical impacts on the ecology and the associated results.

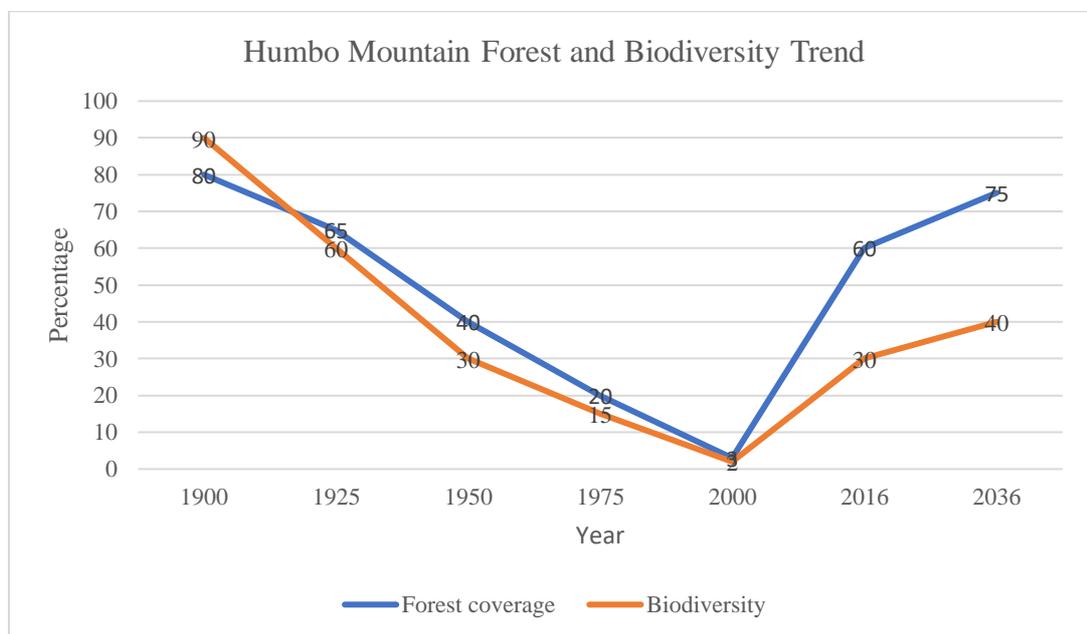
### **6.3 Humbo Physical Regeneration Impacts**

The position of the natural environment as a source of 'capital' lies at the centre of the financialisation of forests. Physical regeneration and atmospheric carbon sequestration are the driving forces behind carbon interventions and are the main pillars in mitigating the global climate change crisis (UN, 1998). The communities under the CDM consider carbon as the primary output of their engagement with the regeneration initiative of A/R and with the carbon sequestration business model - sequestering greenhouse gas (GHG) emissions. However, not every stakeholder has the same interests. For instance, farmers tend to prioritise ecological regeneration and functioning rather than the carbon element. Despite such divergent perspectives, the whole process of regeneration reforested the

2,728 hectares of Humbo. The impacts of the intervention on environmental rehabilitation are discussed below. But before discussing impacts, it is relevant to look at forest trends and dynamics in Humbo.

Most of the interviewed respondents confirmed that the forest coverage of Humbo Mountain used to be dense. However, the forest density was declining sharply for about five decades (from the 1950s to the 2000s). Recalling the period that led to deforestation and degradation, most respondents firmly agreed that the substantive canopy coverage deterioration took off with the rise of the communist *Derg* party to power in the 1970s. Unlike many other rural areas, the deforestation here was not mainly caused by farmland expansion and licenced logging. However, as Brown and Stigge (2017:66) stated, ‘the increasing population density led to the swift conversion of what had once been mountainous woodlands to agricultural use’ and charcoal making.

Figure 6. Forest coverage trends and the regeneration point in Humbo Mountain



Source: Researcher based on FGD findings (2017). Note: Data refers only to the 2,728 hectares of land discussed here.

As depicted in Figure 6, the FGD conducted with elders showed trends and mapping analysis results [covering the period from 1900 to 2036, including the Humbo CDM’s

30-year lifespan], with a stiff decline in forest coverage and associated benefits during the second part of the last millennium, which left the mountain without any noticeable forest canopy. However, the mountain gradually started to regain its trees with the regeneration efforts of WVE and the communities. Quantifying the deforestation process in the last century, the elders said: ‘If the forests had a coverage of almost 80 per cent at the beginning of the 20<sup>th</sup> century, then we can estimate it had declined by 50 per cent in the middle of the century, while the mountains were left without any noticeable tree canopy by the end of the century’ (FGDALM01). The forest coverage decline during the 1970s, as the communities indicated, was critical in terms of environmental degradation, the loss of forest-related benefits, and biodiversity. During the period known as the ‘Green Famine’ of the 1980s, the area remained green while people were starving and dying because of food insecurity, famine and malnutrition (Kamara et al., 2008). Brown and Stigge point out that, as a consequence of deforestation in Humbo, ‘the topsoil on the hillsides eroded and became subject to periodic landslides, creating downstream gullies and covering valuable farmland with silt, cobblestones, and boulders’ (2017:66). All of the FGD discussants agreed that the CDM intervention had brought tremendous natural resources regeneration to the Humbo Mountain. The significant changes witnessed in the pattern of forestry over the last decade are outlined below.

### **Topographic and Micro-climatic Effects**

With the aim of fixing the problems created by communal environmental mismanagement, Humbo’s greening had impacts on the local topographical structure as well as local climatic conditions. Both the FGD discussants and household survey respondents were able to provide before-and-after comparisons for the implementation of the Humbo forest regeneration initiative. In order to appraise the project’s impact in terms of biophysical regeneration, this section analyses the changes to the topography,

biodiversity and micro-climate in the area and their implications for the farming communities.

**a) Topographical Change and its Effects**

As the pre-and-post project photographic evidence of Figure 7 shows, and as confirmed by the respondents' statements, Humbo Mountain has been transformed from degraded land to a green landscape. Together with the partnership created between international and national actors, it was credit to the local farmers' efforts and commitment that WVE was able to secure carbon revenue from the World Bank. More than a million seedlings were planted by the members of the cooperatives (KIE05), and the success achieved in recovering the lost forest was reaffirmed by the communities, by the WVE staff, by the independent validation consultants from JACO and RINA, and by the researcher's several visits to and observations of the conserved area. However, some of the significant topographic effects reported and the resultant improvements, such as changes in rainfall, mentioned by the farmer respondents were difficult to confirm, to prove or to disprove. This would require further scientific studies.

***Reforestation and Desertification:*** The A/R alongside the land conservation work carried out in the mountain together with the governance system introduced, has enabled the expanded coverage of trees and other vegetation on the 2,728 hectares of land. As a result, soil erosion has been reduced and the process of degradation at this particular location was halted. The farmers agreed that the work had revived the catchment streams that flow from the mountain and enriched the underground water. Due to the A/R, 'watershed, hydrological and biodiversity functions have improved – the change is visible' (KIE07). For instance, in 2014 Hobicha Bada farmers had reported to the district office that they counted five streams in the forest mountain (KIE03). The environmental rehabilitation had 'improved the groundwater quantity and quality, .... [and] increased recharge' (Brown and Stigge, 2017:66). Some farmers mentioned that because of the underground

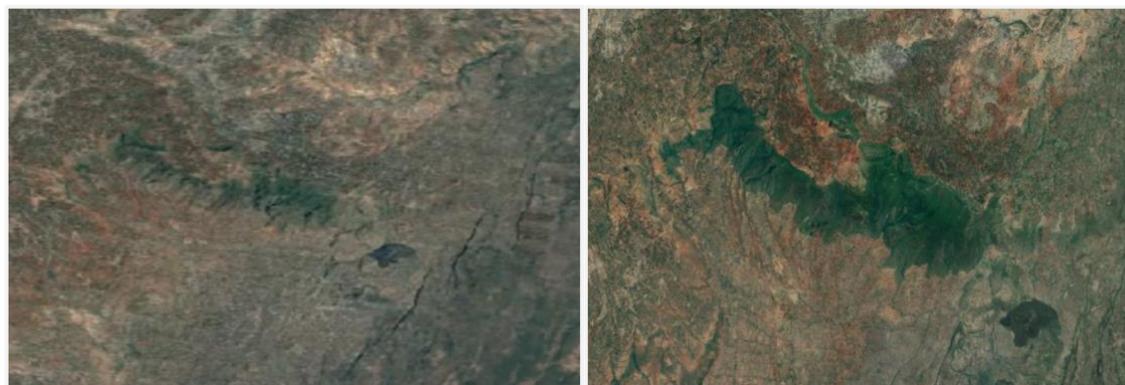
water recharge they were able to collect water from 8 to 10 metre deep wells, instead of from a depth of up to 20 metres – a reduction of more than 50 per cent in the difficulty of accessing underground water. This reduces the digging effort and related costs almost by half.

Figure 7. Humbo before and after the natural regeneration



7a). Humbo mountain before regeneration (WVE report, image taken before 2006).

7b). After the assisted natural regeneration (Researcher, 2017).



7c). Google Earth: Satellite imagery in 2006. 7d). Google Earth: Satellite imagery in 2018.

However, despite this successful assisted natural regeneration, the greening has led to some displacement effects. CDM focuses on land which had been degraded for 50 years and without substantive forest regeneration work (as per the UNFCCC guidelines) and does not explicitly deal with the ecological links that regeneration has across the various physical or biophysical nature systems. That is, CDM has limited scope and lacks the capacity to look at the wider landscape as an integrated system where actions in one sub-

system bring about a reaction in another sub-system. This is CDM's principal drawback, as highlighted by many scholars including Fairhead et al. (2012:255). As evidence from this research shows, this is the case in Humbo as well. The Humbo project design proposes the provision of alternative sources of energy to the communities in order to avoid any adverse displacement effects. However, the farmers of one village were asked where they got the firewood for their families. They answered: 'We are using the firewood from other nearby places'. A farmer from Abala Gefata mentioned a place called Delkisha where he fetches firewood, though he said that he had stopped making charcoal for commercial purposes (HHAG05). This statement is alarming as it indicates that some of the farmers had been increasing pressure on other mountains in the district, for instance in the Wegera and Webaneqa areas (KIC07). This problem was predicted by both the communities and the project designers, so that the latter promised to provide alternative sources of energy, as stated in the PDD of 2009. Though an attempt to distribute cookstoves was made, the environmental costs of displacement are not quantified in any form in the project. Therefore, the associated opportunity costs need to be highlighted, and the effects of conservation on both cooperative members and non-members should be mitigated by providing an adequate source of energy. This is the typical failing of such an approach, without a systematic outlook on land tenure, resource governance and livelihoods.

***Soil Erosion and Flash Floods:*** The Humbo district had been a flood-exposed area mainly because of the deforestation of the mountain, erratic rainfall and poor management of catchment areas. An OCHA situational report (2006) shows that the Bilate River had caused flooding among various areas of the SNNPR, which affected about 50,000 to 60,000 people including the people of Humbo district. A farmer from Hobicha Bada said that about 800 households in the area were affected by three flood-induced hazardous occurrences between 2000 and 2016 (HHHD09). As a consequence of the latest flash

flood of 2016, two children were reported to have died (KIC02). As Rinaudo et al. illustrate, heavy rain and soil erosion were the leading causes of the floods, in which ‘mudslides kill people and livestock and damage crops and infrastructure’ and, they note, these ‘create poverty traps for many households, constantly thwarting efforts to build up assets’ (2009:12). Floods are strongly linked to regeneration. In general, ecological rehabilitation enriches the micro-watershed of the sub-set of the landscape and ecological system.

An interview with WVE staff confirmed that, following the soil and water conservation effort, ‘soil moisture increased, quality of soil protected and flood intensity reduced and as a result, farmland yield productivity had increased’ (KIE06; also HHAG04). However, as Ali et al. argue there is ‘scant evidence’ on the investments directed to improving ‘watersheds or landscapes’ (2018:2). Therefore, this is an area that needs further study to demonstrate the changes in farmland productivity related to forestry – as there is no data on reforestation’s contribution to a single farm or on whether there is any change in farming outputs. On the other hand, there are farms that are being destroyed by wild animals because of the forest recovery (see the case of a farmer from Abala Shoya village in the Box 2, page 215).

***Aesthetic Value:*** The topographic change, and seeing the reddish mountain turning into a green landscape in front of their eyes, has given community members some hope for growth. Most of the respondents expressed their happiness about the aesthetic value of the canopy coverage which has given them a sense of pride – a common statement in Amharic language was ‘*endezih huno stayew wusTihn yemiseT-h A’nd neger ale!*’ (literally meaning: ‘When you look at the regained green area you sense a feeling of pleasure’). They also realise that they have developed a new collective thinking of ‘[i]f we work together we can then change problems in our localities’. This cultural aspect was one of the non-market values or non-carbon benefits repeatedly mentioned by the

household survey respondents. With beautiful scenery and the return of wild animals (such as bush pigs, warthogs, monkeys, antelopes, gazelles and various species of birds) that can be seen at a short distance from the main settlements, there may be an opportunity to attract tourists to the area. Some respondents said they hoped investors might be encouraged to open a 'lounge' or centre (displaying the traditional artefacts of the Wolayta people), but so far there has been no reported interest from any potential investor, although the Union has supported organised trips conducted by the regional states and other organisations. Some forestry experts who were interviewed suggested that aesthetic value can be 'monetarily quantified' as a public good freely used by the farmers of the seven cooperatives. Their underlying argument was that if this value were monetised (or given an estimated monetary value), the assessed gains of the project would be higher.

***Local Rainfall Dynamics:*** Local rainfall dynamics can be affected by multiple factors, including the source of condensed air and wind direction, global climatic trends like El Nino, local topographic structures and other climatic elements. A study by Spracklen et al. on the pan-tropical forest (Amazonian forests) revealed that in '60 per cent of the tropical land surface (latitudes 30 degrees south to 30 degrees north), air that has passed over extensive vegetation in the preceding few days produces at least twice as much rain as air that has passed over little vegetation' (2012:282). Research conducted over a sizeable geographical area and over extensive vegetation may not represent and support the claimed rainfall results in Humbo. However, the Humbo respondents perceived that with the forest regeneration, the quantity and regularity of rainfall has improved.

Though the elderly might give their historical rainfall observation, some people may simply repeat what they were told during the training. Scientifically forests contribute to moisture and increase rainfall. There is a direct correlation. However, there is doubt in accepting the change made to this small area can cause significant rainfall improvements. There might be some improvement, but I do not think that it would be like what is being

claimed. There might be some positive contribution, but I do not believe it brought significant change to the local rainfall dynamics (KIE07).

Reviewing the evidence, Seymour and Busch said that forests ‘support agriculture at continental scales by bringing rainfall to inland farmers’ (2016:7). Beyond such generic illustrations, the community perception of rainfall improvement raises multiple questions. Is the increase in rainfall a national or regional weather phenomenon, or is it a localised trend unique to the Humbo villages? Is the change in the rainfall pattern merely a result of forest recovery and topographic alteration on the 2,728 hectares? The researcher attempted to get more data from the project officers about whether there is any scientific and meteorological evidence on the rainfall pattern since 2006 that could substantiate the communities’ observations. However, as no rainfall study had been conducted, it was not possible to validate the claim being made as a result of the CDM-based forest regeneration. In the Humbo PDD, despite having local climatic improvement as a project output, improved local rainfall is not mentioned. Moreover, when asked why the local forest regeneration did not mitigate the erratic nature of the rains in 2017, the Humbo district environment expert said: ‘The small land area of 2,728 hectares in Humbo could not avert the El Nino phenomenon over the 86,000 hectares’ (KIE03). Nevertheless, there is a consensus among the respondents and expert key informants that the biophysical impacts of the project have reduced the communities’ vulnerability to climate-induced shocks through enhancing resilience.

#### **b) Micro-climatic Effects**

As scientific findings show and as Seymour and Busch argue ‘[f]orests generate cooler, wetter weather regionally as well as locally’ (2016:70). Indeed, as Figure 6 above, on Humbo forest coverage trends and regeneration, clearly shows, in the decades before the A/R started in 2006 and until forest coverage was regained, the micro-climate was very dry and warm. The local climate trend analysis is in line with global climate change. The

current average temperature for Humbo is 29 degrees Celsius, but a positive topographic change at the local level can reduce the local temperature. A local expert on soil and water conservation also confirmed this, saying ‘the Humbo project could potentially reduce temperatures by 1 to 3 degree Celsius locally as compared to the previous recordings’ (KIE14). Explaining local temperature and weather trends, a resident of Abala Longena said that there was a trend of steady temperature increases, which had been be felt by every member of the community. The majority of respondents remember that the weather had become steadily warmer, especially from the 1970s, coinciding with the identified turning point of intense forest deforestation in the mountains (KIE01). The rise in temperatures can be taken as evidence for climate change in Humbo. Recalling those decades with unfavourable weather, a farmer said that ‘[d]ry and warm winds were blowing into our faces’ (HHAL05).

According to a cooperative leader, the micro-climate of the villages adjacent to Humbo Mountain has significantly improved (KIC01). The researcher’s own observation and reflection also support this case. On several occasions, when he and his team were heading from the main Sodo-Arba Minch road to the Humbo forest mountain area, the researcher felt that the local temperature was becoming more moderate. Almost all of the respondents agree with the suggestion that ‘the forest mountain has improved the micro-climate’ and that it has contributed to having a relatively colder temperature in the seven villages than in a previous period (before 2006). According to respondents, since the regaining of forest coverage, the average local temperature has decreased. However, it is difficult to scientifically prove or disprove this perception, as there are no temperature records at the local level.

The micro-climate is improving in the locality [with a moderate temperature]. Even some villages that in the past did not get good rainfall as early as in February/March, are getting it now. As a result, the coffee plantation has been expanding (KIE02).

Following the change in the micro-climate, respondent farmers said that the health of both humans and animals in their localities had also improved. A farmer from Abala Gefata says that ‘previously both the humans and animals used to be affected by various diseases and symptoms like diarrhoea and vomiting, which were common. After the A/R work was carried out, the incidence of such diseases has dramatically declined’ (HHAG02). Moreover, respondents agreed that the mild temperature made living conditions on the landscape more favourable. A woman from Bola Wanche said ‘six years ago this village was difficult to live in, including humidity-caused diseases’ (HHBL01). But, it is difficult to verify this assertion or identify it as an outcome of the project, as there might also have been improvements in health services or disease prevention practices. It should be noted here that the PDD does not mention improved health as an intended output.

To conclude, the great success of the Humbo initiative was in its ability to produce physical regeneration and to secure non-carbon benefits for the farmers. A change in the micro-climate was repeatedly mentioned by respondents, and ecological rehabilitation is expected to contribute towards farmers’ resilience to drought. In addition to the biophysical changes, this contributes to the objective of reducing atmospheric CO<sub>2</sub> for climate change mitigation. This is dealt with in the next section.

#### **6.4 Global Climate Change Mitigation and Emissions Reduction**

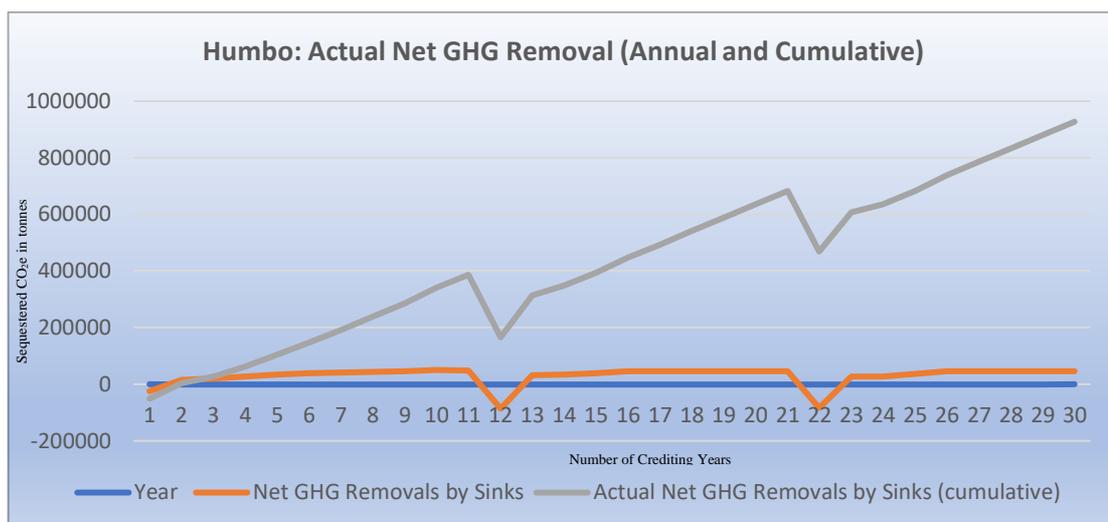
A critical analysis on how the international treaties aimed at climate change mitigation impacted the Humbo agreement and the communities’ expected benefits is relevant here. The movement for keeping global warming below 1.5 or 2 degrees Celsius before 2100 where it was before the industrial emission level was introduced in 1990s and creating ‘some form of steady-state ecologically manageable equilibrium’ (Lloyd and Subbarao, 2009:237) was conceived. The CDM was one of the first initiatives in this effort.

The global imperatives of climate mitigation were at the heart of the Humbo initiative, which was driven by WVE and WVA, though this specific cause was not a priority for

the farmers. Far beyond the farmers' understanding (at least at the outset), carbon has been the foundation of the project, and the overall performance of the Humbo and the communities' efforts on A/R has been weighted against the amount of CO<sub>2</sub> sequestered. Despite the criticism of evaluating climate change mitigation merely through carbon analysis which ignores social spaces (McAfee and Shapiro, 2010:3), the carbon stock has been an element in every negotiation and performance appraisal, in compensation for ecosystem services and in benefit-sharing across all global levels. WVE designed the initiative as one that is centred on carbon credits, with CO<sub>2</sub> sequestration validated by independent consultants and showing the project's ability to maintain certain UNFCCC technical standards.

Departing from 'constrained conventional development' (UNEP, 2012:xviii; Jouvét et al., 2013:29), the Humbo initiative was formulated on the basis of the financialisation of nature, prompted by the strong global call for climate change mitigation. This implies that the 880,295 tCO<sub>2</sub>e which is to be absorbed over the 30-year crediting period is expected to remove the equivalent amount of atmospheric carbon and will contribute towards reducing global warming (WVE-PDD, 2009:47). The PDD was produced on the basis of the assumed sequestration baseline with the aim of sequestering carbon ranging from 14,399.60 tCO<sub>2</sub>e to 50,393 tCO<sub>2</sub>e annually. Plainly, Humbo is acting as a sink for the atmospheric carbon regime. CDM aims for global-level CO<sub>2</sub> emission equilibrium, but it is not expected to reduce atmospheric carbon as it gives companies a certain legitimacy in sustaining their existing business models – despite their adverse impacts on global environmental security. Humbo's contribution to global climate change mitigation actions shows there are strong local-global links and interdependencies. That is, the acts of each Humbo farmer or emitting company, or the acts of the middle men, such as WVE, or the World Bank through its BioCarbon Fund, have impacts either on the level of atmospheric CO<sub>2</sub> or on the profit or benefit sharing of each actor.

Figure 8. Annual Sequestration of Carbon in Humbo Forest (in tCO<sub>2</sub>e)



Source: Researcher, based on the WVE-PDD Dataset (2009:46-47).

Determining the amount of CO<sub>2</sub> sequestered on forest land can include either above ground or underground carbon absorption measurement approaches (or both). The potential of Humbo’s carbon sink capacity was ‘calculated using published information for similar climatic zones and vegetation types following an approach of combined natural regeneration and supplementary planting, biomass stock and annual increment figures for plantations’ (Cross and McGhee, 2015:19). On Humbo, one climate change expert observed that:

There is an argument that Humbo’s effort is undervalued as it is worked out based on the above ground carbon sequestration capabilities. However, there was a lack of capacity to measure underground GHG and this form of assessment has a high monitoring cost – it needs to take soil samples and has complicated measurement tools. We also lacked baseline data on the soil. Furthermore, soil carbon needs about 10 years of being decomposed and a trend analysis. Only after passing through all these capacity issues and investing much money, it might be profitable (KIE07).

So, carbon sequestration under the Humbo project was assessed on the basis of above ground biomass and excludes the soil sink [the underground carbon stock], as measuring this, to quantify the fixated carbon, involves a very complicated process that was beyond

Ethiopia's capacity (KIE07). Had both methods been applied, the assessed amount of CO<sub>2</sub> sequestered would have been greater. There may well have been a substantial loss in terms of unsold carbon credits.

Figure 8 depicts the net GHG removals by the sink over the 30 crediting years of the Humbo forest. Humbo, in exception of the negligible early years' emission, is a low-carbon initiative (WVE-PDD, 2009) as it is not carbon intensive and 'animals were used to transport all forest products' (Brown and Stigge, 2017:67). In Humbo's CO<sub>2</sub> sequestration model, there are three important figures to be looked at in relation to GHG removals, where the offset leads to the CERs. In the first two years, the graph shows a drop in GHG removals as there was some biomass loss for the actions taken in regenerating the mountain. Following this, during the 12<sup>th</sup> and 22<sup>nd</sup> year, there would be a net loss of GHG removals amounting to 86,276 tCO<sub>2</sub>e and 82,661 tCO<sub>2</sub>e respectively due to the allowed selective forest harvesting under the Emission Reduction Purchase Agreement. However, during the rest of the 30 years or project life span, there would be a net increase on GHG removal, reaching 880,296 tCO<sub>2</sub>e. As per the 10-year purchase agreement made under the compliance carbon market, 165,000 tCO<sub>2</sub>e was sold to the World Bank at USD 4.4, which would amount to around USD 726,000. To avert any possible long-term risk linked to the carbon market, the World Bank was not willing to commit to a further purchase beyond 56 per cent of the 10 crediting years and also for Sodo – a sister forest regeneration project in Ethiopia. As the WVE expert indicated, due to a lack carbon market knowledge, WVE was unable to sell the remaining 44 per cent of the sequestered CO<sub>2</sub> in the voluntary market which would have generated financial resources for the communities (KIE06). (See Chapter 7 for detailed analysis of the carbon revenue and its associated economic benefits).

## **6.5 Conservation, Biodiversity and the Threat Posed to the Community**

Despite the carbon off-set intervention's focus on climate mitigation, forest regeneration does contribute to the enrichment of biodiversity in this particular ecosystem. As the Humbo interviews show, Humbo's flora and fauna have been under constant threat from both human and natural pressures. Ethiopia is estimated to be 'home to between 6,500 and 7,000 species of higher plants, of which about 12% are endemic' (WVE-PDD, 2009:81). With the destruction of habitat, biodiversity loss in Humbo was not different from that in the rest of the country. Before the initiation of the Humbo A/R, the region had only 1 per cent of original forest cover (Ibid). So regaining native vegetation and biodiversity was a key aspect of the intervention. It is interesting that monocrops were avoided in Humbo, in contrast to many commercial plantation projects in other African countries, such as Mozambique (Grieg-Gran et al., 2015:33). Humbo is near the Rift Valley lakes, including the Abaya, which hosts wildlife, including crocodiles and hippopotamuses, and has significant fishing resources. But the lakes are threatened by sedimentation which is 'due to the high levels of eroded soil entering [the lakes].. each year' (WVE-PDD, 2009:81). So, the revegetation and enrichment of the nearby mountain areas of Humbo was expected to increase the health and diversity of flora and fauna, by reducing the flow of silt and maintaining the lake ecosystem. Moreover, the improvement in terms of canopy recovery was expected to provide a habitat for various wild animals and the endemic birds, and to serve as a corridor for them – linking 'the Nechisar National Park, Lake Abaya and Lake Chomo' (Ibid:82).

The Humbo Mountain regeneration has also created a conducive environment for wild animals, enabling them to return to their previously destroyed homes. As the PDD notes, the 'promotion of native vegetation and biodiversity', which can serve as 'a refuge for local and migratory species and improve the linking up of fragmented forest resources' (WVE-PDD, 2009:2), was one of the pillars of the A/R. The 2017 WVE Annual

Monitoring Report, produced on the basis of the identified biodiversity plots, shows the return of many types of birds (WVE, 2017). The reappearance of the migratory species was anticipated, and the negative impact of these birds, with damage to crops or injury to domestic animals was repeatedly raised as a point of concern by the communities. In response, the farmers were told the regeneration has ‘global importance’ and they were promised they would be supported and compensated, while the forest area would be fenced. These assurances helped to convince the farmers to agree to the initiative (HHBL08).

### **Box 2. Case: Biodiversity and Wild Animal Attacks on Farmers**

Mr Abraham (not his real name), 65 is a resident and a founding member of the Hobicha Bada Forest Cooperative and lives adjacent to the CDM conserved Humbo Mountain. He is a farmer but also engages in petty trade and cattle fattening and did so before the start of the A/R project. He was a beneficiary of the mountain’s resources before it became a conserved area under the forest regeneration project. He recalls how the mountain’s ecosystem was in the past, saying ‘when I was a child I remember people were taking very thick sized trees for constructing their houses, however gradually everything got lost’. He is delighted with the success in recovering the forest and how the initiative has progressed over the decade.

However, following the A/R activities, wild animals that had previously been displaced returned to the area. Mr Abraham was the victim of a wild animal attack. His income has been significantly affected as both his farm and livestock productivity declined. Abraham said ‘we have stopped planting false banana (*Enset*), sugar cane, maize, potato, etc. as these plant species attract wild animals’. Raids on farms by wild animals take place during the day and at night, carried out by monkeys, warthogs, bush pigs (*asama*), and porcupines. Mr. Abraham has had to abandon backyard farming activities.

The researcher asked Mr Abraham to provide him with an estimated value for the damage to his farm as well as to domestic animals over the last few years. He provided the estimates listed below for losses of agricultural produce since 2008 (The losses are mainly due to hyenas, panthers and monkeys).

#### **Monetary values of lost farm produce**

Maize (1 hectare) = 10 quintals x Birr 300 per quintal = Birr 3,000

False banana tree = 100 in number x Birr 100 per tree = Birr 10,000

Sugar cane = 40 small plots (*medeb*) x 40 pieces x Birr 2 per piece = Birr 3,200

Sweet potato = 10 sacks of 50 kg x Birr 200 per sack = Birr 2,000

2 sheep and 2 calves eaten by a panther and hyena = Birr 8,300

Total loss = Birr 26,500

This farmer has lost a total of Birr 26,500 (over USD 1,000 at current exchange rates), while the benefits he personally has gotten from forestry are negligible. Mr Abraham said that, in his local area of Hobicha Bada alone, 96 households have fallen victim to attacks by wild animals, either on their farmland or on domestic animals.

Source: Interview, Hobicha Bada (February 24<sup>th</sup> 2017).

Residents in the area said that the population of migratory wildlife species has been increasing from the first days of the project, to the point where they are now a threat to the communities, adversely affecting farmland productivity, livestock size, incomes and livelihoods. As the case presented in Box 2 illustrates, most of those farmers who live adjacent to the protected area have been affected due to the incursion of wild animals on the farmers – triggered as a consequence of the carbon project conservation works. Most farmers interviewed agree that the level of asset loss after regeneration has been greater than the damage previously caused by flash floods. However, in FGDs the Abala Longena elders noted that they considered the return of the wild animals to be an ‘indication for and return of the good old era’ (FGDALM01). The farmers placed greater value on this kind of non-carbon benefit as they said it brings back old memories – a village full of agricultural harvest, with a lush forest canopy and wildlife.

### **Compensation for the Farmers Bordering the Conserved Area**

At the inception of the project, WVE identified the fact that the vulnerable farmers near the mountain would face the loss of assets as well as other non-carbon benefits due to either the return of wild animals or area enclosures. The PDD indicates that those farmers who lose out under conservation were supposed to get financial or in-kind compensation. However, the interviewed farmers and the cooperative leaders said that the support provided by WVE and later the Cooperatives failed to adequately compensate for damage to their farms and livestock or for other losses.

Given the permanency of the conserved area, the co-existence of humans and wild animals seems inevitable. Most household survey respondents drew attention to attacks by wild animals and suggested some possible mitigation actions. The researcher’s further analysis is incorporated with the suggestions provided by the farmers, listed below:

- Encircling the entire conserved area with a barrier fence. However, this conflicts with the stated purpose of the Humbo conservation initiative to provide

a corridor for migratory species. And confining the wild animals in this particular mountain might lead to both overpopulation and starvation.

- Framing a compensation scheme for those farmers who are being attacked, especially in consultation with the MEFCC, Ministry of Agriculture and Wild Life Protection Departments – a scheme that compensates for the productive household assets lost. That is, if a hyena kills a goat or monkeys destroy a plot of a maize, the farmer should be compensated in full, with the equivalent monetary value. However, this may not be practical as resources are not readily available from carbon revenues.
- Reducing the overpopulation of wild animals in the conserved area by allowing legal hunters to cull the excess population, thereby also generating income for the cooperatives.
- Creating credit facilities (in cash or kind) to help farmers quickly regain their lost productive assets.

Traditionally, the Humbo communities' market time is during the night, and wild animals like hyenas use this as an opportunity to attack domestic animals. One possible solution could be providing local people with metal nets in their compounds to protect their livestock. Exploring alternative solutions to the issue, Mr Abraham, who gave the case study above, was also asked by the researcher if there were any plant species that repel wild animals. He suggested the cash crop '*khat*' [a green leaf with mild narcotic effects], but he hesitated to plant it as it is against his religious beliefs. However, other farmers, even those who farm far away from the restored land, and especially those in Bossa Wanche and Bola Wanche, have already started planting this species as a lucrative crop.

## **6.6 Challenges in Creating an Integrative Approach to Rural Development**

Similar to other agrarian societies, agriculture in Humbo has remained the main source of livelihoods for the farmers, while they complement it with animal husbandry, cattle fattening, apiculture and casual labour in nearby towns (FGDALM01). The majority of them practice agroforestry. As most of the respondents emphasised, despite successive droughts and erratic rainfall, and the low level of investment in agriculture, the area has

proven to be relatively resistant to environmental and climatic shocks, though farm productivity has been declining. Humbo's history shows that farmers have been very vulnerable to food shortages (Brown et al., 2011:322). The allotted farmland is small and not fertile, according to the farmers interviewed. As Kabore argued, Humbo's 'local food and farming systems were not adapted to the increasingly unreliable rainfall in the area' (2013:6).

The Humbo CDM's focus was primarily on forestry and it has been criticised for sidelining agriculture and creating sectoral trade-offs. Notwithstanding the Humbo initiative's success in restoring the forest and generating carbon revenue, it is only the local farming system that can form the foundation for rural livelihood improvements (Kabore, 2013:6). With the intention of supporting farming systems, and in order to partly satisfy their biomass demands and to reduce enclosure-related displacements, the Humbo CDM initiative had given seedlings to the farmers to plant on their farmlands. However, remaining small-scale and limited in its sectoral scope, the initiative was unable to design an integrative approach to agroforestry. The underlying argument is that, had agriculture had the same level of sectoral investment as that in forestry, it would have had a greater impact by directly improving farm productivity (KIC01). This was strongly emphasised by the Abala Longena FGD participants (FGDALM01) who called for further investment in the agriculture sector. However, despite the indirect non-carbon benefits in terms of ecosystem enhancement, forestry-based CDMs are not meant to fund agriculture. Experts involved in designing and running the initiative argue that the primary focus was, appropriately, on the forest and it should not be expected to invest equally in both sectors (KIE05; KIE06).

However, recently there seem to have a fundamental shift in thinking towards giving more attention to agriculture, for instance by changing the descriptive names of cooperatives from 'forestry' to 'agroforestry' cooperatives. The shift is strongly reflected in the

Union's business plan. Beyond the carbon initiative, as emphasised by household survey respondents, providing fertilisers, effective extension services and productive assets (on a loan/credit basis) to farmers would contribute to increased farming productivity (KIE01). Retrospectively, this can compensate for the missed opportunity to invest equally in both forestry and agriculture sectors. This amounts to an emerging hybrid model that supports livelihoods in the Humbo villages, at the same time as making conservation more sustainable (KIE05).

Reviewing the above sectoral trade-offs at the Humbo level and considering the revised PDD of 2009 that allocates resources with a balance of 80 per cent on forestry, 10 per cent on agriculture, 5 per cent on education and 5 per cent on other sectors (World Bank, 2016), the criticism on the lack of direct support to farming is evidently well founded. This represents only a very modest improvement on the original plan, with a focus of 100 per cent on forestry (World Bank, 2005:1). However, notwithstanding the indirect benefits of the rehabilitated ecosystem, this imbalanced sectoral trade-off derives from the Kyoto Protocol, which focuses on the carbon business case, rather than promoting a holistic approach to rural development.

## **6.7 Conclusion**

The financialisation of nature and carbon finance has been expanding across the global South. Following the Kyoto Protocol, Ethiopia's decision to host the Humbo CDM brought about several structural, institutional and biophysical changes among the seven farmer village communities. After more than a decade of implementing carbon finance, Ethiopia provides ample opportunity to observe the impacts on the communities. In the initiative, WVE used both 'command and control' approaches as well as financial incentives in advancing its agenda in the farming communities. Humbo witnessed a clash of neoliberal and profit-based investment ideas with local perceptions and understandings of the financialisation of nature, with the farmers showing strong resistance to 'land

grabbing'. Moving forward, it was successful in mobilising the communities, introducing a local forest governance model and a natural regeneration technique (FMNR) for forests, which was readily adopted by the farmers. The governance model led to a change in land use rights - from communal land to a system of property leased by cooperatives, which excluded those that were not members of cooperatives; enhanced a green culture and avoided overt land grabbing. Empirical work on Humbo reaffirms the commendable achievements realised in regaining 2,728 hectares of land where the farmers confirmed the biophysical changes achieved and the associated benefits, such as soil and water conservation, micro-climatic and biodiversity improvements. Its contribution towards the global climate mitigation agenda has also been validated by a number of actors. However, Humbo's over-emphasis on environmental rehabilitation led to an intersectoral trade-off, particularly with agriculture. Furthermore, there remain challenges as to whether or not the CDM as a global climate change architecture is playing suitable role in terms of rural livelihoods improvement and sustainable development. The next chapter discusses this in detail to see whether or not the Humbo initiative was a win-win engagement for both the farmers and the companies of the global North.

## **Chapter 7 Greening Analysis: Economic Impacts and Poverty Reduction in Humbo**

### **7.1 Introduction**

The green economy is being promoted for its social and economic benefits for communities, whilst sustaining economic growth and promoting ecological rehabilitation. Indeed, reducing poverty through resource generation of the CDM was key to the Kyoto Protocol and PES instruments. Along with global climate change mitigation, livelihoods improvement in the global South is at the centre of PES design. It is linked to afforestation/reforestation (A/R) and rural development, with atmospheric carbon as a commodity never having been considered to have a role to play among farmers. The Humbo CDM demonstrates the influence of global treaties on the communities thinking about the local ecology. Thus, this chapter goes beyond the ‘ecological functioning’ of the forests (Negewo et al., 2016:88) and critically assesses CDM’s impact on improving the livelihoods of the Humbo smallholder farmers. It examines the economic benefits and livelihood changes resulting from the carbon finance. It assesses whether the intended positive contributions of the carbon, and particularly the market-based offset mechanism of the CDM, have been achieved. This includes an analysis of the revenue redistribution mechanism, impacts on household income, social relations and inclusion, and the sustainability of the protected forest area and its future benefits.

### **7.2 Resource Generation: Carbon Finance Claims and Realities**

To support the global South’s ‘adaptation costs’ (UN, 1998), the Kyoto Protocol aims to reduce poverty among the smallholder farmers through resourcing and creating access to services and finances. Poverty reduction is key to the carbon credit business model and it is important to analyse the result of the globally-driven response to a monetary incentive to create a socially and environmentally desirable private and public good, as Gsottbauer et al. (2011) outline. However, can ‘inclusionary’ neoliberal development thinking

(McAfee, 2012b:109) create opportunities for generating resources while mitigating climate change? This section looks critically at the claims made to reduce poverty and create socially desired change among the Humbo farmers.

The resource gap, expressed as the immediate developmental need, has been a fundamental bottleneck in advancing the green economy and sustainable development (Eshetu et al., 2014). Pro-poor investment is vital for creating effective local and national economies that can contribute towards a just society (Dirix et al., 2016:842). Due to economic or political marginalisation, some rural areas receive less state policy attention and capital investment, and private investors might not be encouraged to invest due to the lack of infrastructural development. In such contexts with fewer economic opportunities, any small investment may be readily noticeable and seen as enormous. Moreover, resource injection in marginalised and remotely located rural areas can potentially have a broader spill-over effect into nearby villages and towns.

Resource generation and ‘financial inflows’ (Jindal et al., 2008:116) in support of the global South through the financialisation of natural resources was the critical pro-CDM argument used to advance the agenda among the Humbo smallholder farmers. As the financial component was a driving force for the greening intervention, a carbon credit revenue analysis is necessary to see how much leverage was created from the resources generated through the Kyoto Protocol process. As indicated in the PDD, Humbo was expected to generate a total of USD 726,000 for the cooperative members (membership size in 2017 was 5,168) in its first 10-year crediting period through the secured purchase agreement of the World Bank. The focus of analysis here is on the resources generated from engagement with the global North, as per the CDM design and specified in the Kyoto Protocol.

### **7.2.1 Carbon Finance Investment**

Greening initiatives, as Bina argues, should consider both economic and environmental benefits if they need to be labelled as ‘pragmatic choices’ (2013:1042). Ethiopia has ‘potentially marketable areas for carbon trading’ including landfill, hydropower, biomass and other renewable sources of energy (Aklilu, 2011:96). Thus, within Humbo, the investment related to carbon-based forest development can be seen from two dimensions. These include the initial forestry project development investment made mainly by WVA and the carbon revenue generated from the BioCarbon Fund in the 10 crediting years.

As the findings of the key informant interviews show, the Humbo A/R initiative received investment from various stakeholders, ranging from financing the initial project costs to securing the technical, political, administrative and policy support. This section outlines the initial financial investment challenges and the mitigation actions taken in the absence of Ethiopian banks’ willingness to finance the initiative.

In its search for potential creditors, WVE approached the banks in Ethiopia, but all declined to finance the initiative as carbon-based financing was new for the banks and the associated risk was perceived to be high (KIE07). Similar experiences are evidenced in other countries of Africa and this demonstrates the national banks ‘reluctance ... to provide financing because they are not familiar with evaluating the risk of carbon projects’ (Hagbrink, 2010; Salinas and Baroudy, 2011:89; Lecocq and Ambrosi, 2007:146). Analysing the cost-benefit retrospectively, the banks’ decision to decline the financing seems entirely reasonable. As the costings below demonstrate, under a linear cost-benefit analysis, the initiative would not have been feasible without a grant support. During the first five years (2006-10), Humbo had a total cost of USD 653,303 for ‘tree nursery establishment and management, forest management training, project related staff costs and the establishment of the legal and socio-economic framework for running the seven cooperatives’ (Biryahwaho et al., 2012:14). However, the cost of running the entire

forest greening business was a USD 1.3 million (World Bank, 2016) [refers to Sodo as well but excludes farmers' voluntary labour contribution], while the 10 crediting years of carbon is expected to generate only USD 726,000 (KIE06). If the cost of implementation plus the real cost to communities is included, the total cost could be even greater. Under these terms, it is not reasonable to expect local financial institutions to support the CDM. In the absence of a loan financing option from the Ethiopian banks, WVA was forced to finance its 'direct operating and maintenance costs' with about USD 1 million (KIE07) from 'discretionary philanthropic funds contributed from churches, corporations and individuals' (WVE-PDD, 2009:20). As well as WVA, WVE and government bodies also invested their time and efforts in the initiative.

There were some doubts among the interviewed key informants about how WVE's monitoring costs and the cost of validation bodies who conducted visits every five years (to ensure the permanence and the carbon sequestration capacity) were covered. According to a key expert interview, the World Bank covered the validation consultants' costs (JACO CDM Ltd), but WVE did not count this expenditure as a direct project cost. The experts did not have any idea how the Bank was recovering this cost (KIE07). However, according to Salinas and Baroudy, the transaction costs in the BioCarbon Fund A/R CDM initiatives were estimated in USD as follows: 'project preparation (170,000 – 400,000); validation (16,500 – 45,000); registration fee (16,500 – 48,000) and verification (14,300 – 53,200)' (2011:96). However, Humbo/Sodo's overall project execution cost was above average, USD 1.3 million, as per the World Bank (2016) records. This was partly due to the project extension to strengthen the Humbo cooperatives (KIE06; KIE07).

The communities' contribution to the CDM initiative was partly compensated by the WVE (such as payments for training days and conservation works). However, labelled as 'communal responsibility', individual farmers' and committee leaders' time was not appropriately compensated (KIE05). As an example, one of the cooperative leaders

mentioned that he patrols the protected forest area on a one day per week basis (either alone or with other guards), on average four hours per week. He also spends more time if an unexpected problem such as illegal loggers case arises (KIC07). However, he was not paid for this work which was directly related to the project's effectiveness and sustainability.

In Ethiopia, given the 'very limited budgetary resources to fund implementation of public activities', rural development activities mainly 'depend on support from NGOs and unpaid labour from local communities' (Eshetu et al., 2014:60). Utilising WVA funds, the initial investment was spent on project delivery including covering the costs of WVE, setting up the forest governance system and partly covering communities' daily labour costs. As lead implementer, the WVE provided technical support from inception along trainings on sustainable forest governance, agricultural practices, ecotourism and conflict (WVE-PDD, 2009:15). The initial investment created daily job opportunities for 9,000 labourers during its operational period – by participating in conservation and business skills training and the A/R activities, including managing the nursery sites, seedling plantation, land clearing and uprooting stumps, pruning trees, terracing and fire breaks (KIE06). This number of labourers seems big, but divided into the number of cooperative members, on average it represents a few days per person. Most of the members worked for about a month on such activities and were paid a total amount ranging from Birr 150 (USD 13) to 750 (USD 69) (based on USD to Birr exchange rate of 2008). A few people joined the sewing machine training and received more than Birr 1,200 (USD 110).

### **7.2.2 Carbon Credit Revenue Analysis**

In line with international frameworks for the valuation of nature and especially forests, carbon revenue is generated according to the assumed CO<sub>2</sub> baseline and the forest area's capacity to sink atmospheric CO<sub>2</sub> (see Table 10 for the amount of sequestered CO<sub>2</sub> and revenue generated). In Humbo, such baselines had already been developed for the lifetime

of the project. Following the carbon credit purchase agreement made with the World Bank, carbon revenue which is a ‘conditional payment for farmers’ (Wunder, 2005:2) had to be transferred to the WVE annually. The WVE then transfers the money to the seven Humbo forest cooperatives. Despite being a custodian for the regeneration project, WVE claimed there was no financial transaction cost deducted from the carbon fund that it receives from the BioCarbon Fund (KIE06).

Table 10. Emission reduction in tCO<sub>2</sub>e and estimated carbon revenue over 10 years

<b>Reporting Year</b>	<b>Period</b>	<b>Emission Reduction</b>	<b>Cumulative Emission Reduction</b>	<b>Total amount of revenue in USD</b>
1 <sup>st</sup>	2009	7,769	7,769	34,183.60
2 <sup>nd</sup>	2010	11,117	18,886	48,914.80
3 <sup>rd</sup>	2011	14,900	33,786	65,560.00
4 <sup>th</sup>	2012	17,398	51,184	76,551.20
5 <sup>th</sup>	2013	19,365	70,549	85,206.00
6 <sup>th</sup>	2014	21,049	91,598	92,615.60
7 <sup>th</sup>	2015	22,627	114,225	99,558.80
8 <sup>th</sup>	2016	24,204	138,429	106,497.60
9 <sup>th</sup>	2017	26,571	165,000	116,912.40
Grand total	2018	165,000		726,000.00

Source: World Vision Ethiopia (2012).

### **Managing the Operational Costs**

Ensuring sustainability, dealing with reversal issues (burning trees of the reforested areas and so contributing to the atmospheric CO<sub>2</sub> emission rate) and post-project related operational costs, the WVE staff, in collaboration with the communities, developed a cost-settlement mechanism based on the national laws and level of risk associated with the forest area (KIE05). Reversal is critical in managing forest areas as any mistake can have a devastating effect on the whole local ecological system. As the experience from other parts of Ethiopia shows, unless the regenerated forests are effectively managed, they can backfire. According to the EEFRI expert, this is already documented in evidence from the Chilimo-Gaji Forest in Dendi District, West Shewa Zone, Oromia, Ethiopia (about 76 km from Addis Ababa) where over time a Farm Africa PFM-based reforestation resulted

in deforestation (from about 6,000 hectares to its current coverage of 4,500 hectares) (KIE10). According to Tesfaye, the cause was that ‘those highly dependent on the forest to generate income remained reluctant and unsupportive’ as their priority was beyond mere natural conservation (2017:1). The key challenge is to engage with the drivers of deforestation and support the local ecologies for the promotion of the local economy.

In 2014, WVE handed over the conserved forest area to the communities, however, some capacity gaps among the seven cooperatives were identified, including their inability to produce an annual carbon emission monitoring report. Until the WVA grant elapsed in August 2014, WVE had a paid staff but as an expert said: ‘We were forced to develop a mechanism to deal with it’ (KIE07). Therefore, based on the level of risk, it was agreed to set aside 5 per cent of the carbon revenue with WVE to mitigate reversal cases, with any unused portion to be fully released to the cooperatives. According to the project staff, this is in line with the Forestry Law which states that if timber is sold, 5 to 10 per cent should be kept for its replacement – this can be for seedlings or forest redevelopment (KIE06). Comparing with the voluntary market buyers who are required to keep up to 30 per cent, what was done in Humbo is fair and reflects the assurances given by farmers about the level of risk of reversal (Ibid). Yet, as there was no any significant incidence of fire, the emergency reserve is not yet used.

To maintain the emission reduction reports and other technical support, a World Bank expert said: ‘A further 10 per cent of the carbon fund was decided to be used for operational cost where a fulltime staff is hired to monitor the process, and the costs related to CO<sub>2</sub> sequestration measurements and refresher training on data collection to the farmers’ (KIE07). He further said: ‘It was a clear message from the cooperatives as they said “In the absence of WVE, we cannot be successful” and they were happy to pay the salary of one professional staff’. This acknowledges the NGOs’ specialised knowledge and expertise in managing carbon credits.

## **Individual vs Communal Carbon Revenue Distribution**

The CDM has multiple models for distributing carbon revenue to participating agencies, including private companies, public enterprises, community cooperatives, individual farmers and others. Carbon credit revenue is intended to compensate for the investment made by the carbon offsetting body. This includes money, time and effort, knowledge and committee mobilisation and leadership invested in sequestering the atmospheric carbon. As per the UNFCCC guideline, the PDD is required to show the fair redistribution of the generated carbon revenue among the actors who participate in the CDM process. CDM has a stringent requirement to permanently protect the regenerated forest area which can be at risk of falling back to re-degradation. As the Humbo case showed, this can create a delay in the transfer of the carbon funds and in extreme cases, may halt it. This occurred in Humbo during the conflict between WVE and the cooperative members in regards to the road construction, as discussed in Chapter 5.

There are two most commonly used modalities in redistributing carbon revenues – either the individuals (including privately owned companies) directly gain carbon and non-carbon benefits, or there is a community-based benefit redistribution mechanism where individuals access the benefits through their representative umbrella institutions. In both models, there is a possibility of public discontent. The WVE experts who designed the Humbo initiative pushed for the communal carbon revenue redistribution model as it would not be more than USD 1.17 per month per cooperative member (assuming the reserve emergency fund is fully released by the end of the 10 year period), and issuing the fund to individual farmers would not bring any positive change either to household asset building or to poverty reduction (KIE07). Their central argument has been that if the resource is used for community asset building (such as for flour mills, grain stores and shops), as per the PDD, it can widen access to services. Under the communal carbon revenue model, the seven Humbo cooperatives received a total of Birr 6.7 million (USD

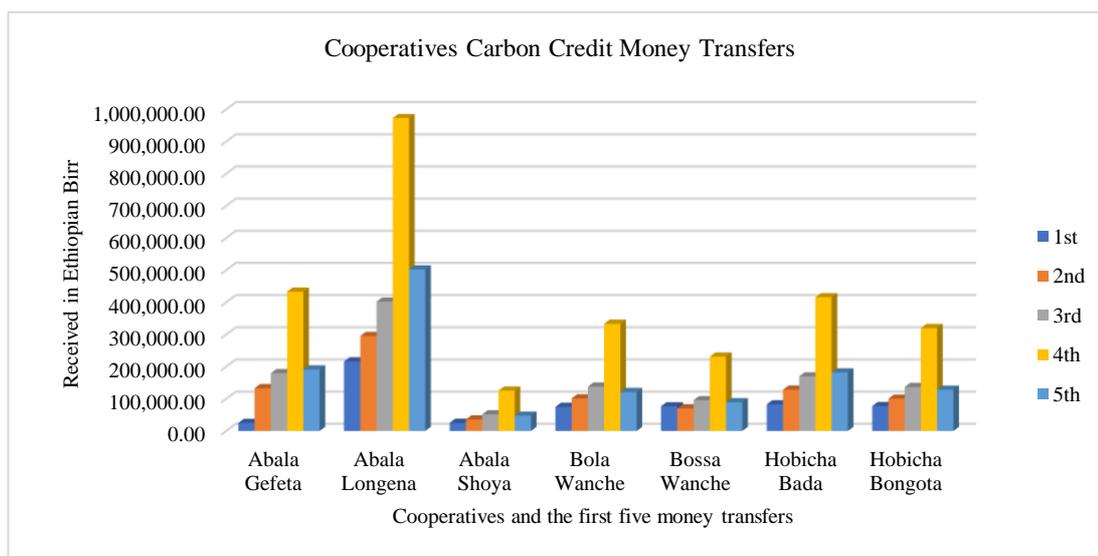
85,206) in five transfers from the BioCarbon Fund up to 2017 (see Table 10 and Figure 9). To review the potential livelihood impacts, the two scenarios are discussed below.

### **Scenario I. If the carbon revenue is redistributed to individuals**

This scenario bases its assumption on the carbon credit being redistributed to every member of the seven cooperatives in a fair monetary allocation. Under this scenario, the carbon revenue excludes the initial investment of USD 1.3 million made by the WVA (including the World Bank contribution of about USD 125,719.97 [World Bank, 2005]). Determining the annual or monthly share for each member shows the weight and contribution of the CDM initiative to each of the 5,168 cooperative members.

The total project carbon revenue was projected to be USD 726,000 (based on USD 4.4 per tCO<sub>2e</sub>), with WVE keeping a total of 15 per cent as an emergency reserve and for operational costs. Therefore, under this scenario every member's share for the entire 10 years would be:  $(\text{USD } 726,000 - 15\% \text{ emergency and operational cost}) / 5,168 \text{ members} = \text{USD } 119.40$ . If the total carbon revenue amount in the first 10 crediting years was redistributed among the seven cooperatives, it would amount to USD 11.94 per farmer per year or about USD 1 per month. This is the net financial gain a single cooperative member would gain from the carbon credit revenue. This calculation is based on the secured 10-year carbon revenue through the compliance carbon market as the communities are uncertain whether the same level of income would continue or not and there are no guaranteed purchases for its 20 remaining crediting years. However, looking at the sharp decline in global carbon prices, the community benefits are expected to shrink drastically and even USD 1 per month may not materialise in the next two decades of the project life. If the carbon credits are entirely sold during the first 10 years (2009-2018) to either the World Bank or other potential carbon credit buyers (that is, including the unsold remaining 44% sequestered atmospheric CO<sub>2</sub>), the carbon-based monthly income would not go above USD 2 per month, which would not bring any significant change.

Figure 9. Cooperatives carbon credit money (Five transfers in Birr)



Source: Five years carbon fund transfers, Humbo Agroforestry Union Report, 2017.

Note: The first carbon payment amounted to USD 34,000 was made to the cooperatives on 15 March 2011.

Since the completion of the project, cooperative members confirmed that none of them received payments individually from the carbon revenue. One farmer, who also works as a daily labourer in a nearby town, said ‘I received no monetary benefit since the completion of the project, but I do expect among other things in the future to have a dividend from carbon money, support in income generation activities, low-interest credit facilities and low-cost grains’ (HHAS04). The respondents also said that there were a few members who requested the carbon fund dividend to be shared among the cooperative members.

### Scenario II. If the carbon revenue is managed under the communal model

In this scenario, which is the current revenue redistribution system in place, the cooperative members are expected to get benefits through the communal businesses or assets built from the carbon revenue. The underlining idea is that when cooperative capital and productive asset increases, members benefit from accessing services in their locality, getting microfinance opportunities and also getting grains at a fair price from cooperative owned stores at cheaper than the market price. Therefore, the benefits an individual

member can get from the carbon revenue redistribution will be through accessing services and getting some discounts. The following discussion looks at what communal assets had been created at the time of the research, and the opportunities, including jobs, that came out of the carbon revenue. As shown in Table 11, so far 8 grain mills, 11 grain stores and 2 shops have been constructed with the carbon revenue, creating regular albeit low-salaried jobs for 56 people. Furthermore, as the case of Bossa Wanche shows, the cooperative invested its fund in building shops and renting these to private businesses to generate resources, a lucrative business since the village is the hub market for the other nearby villages (KIC05).

### **Community Assets: Expanding Access to Services**

Before the CDM initiative, there were no flour mill services in most of the villages, and people had to travel to Humbo, Sodo or other nearby towns (FGDBLW02; HHAG01), usually either travelling with their donkeys for hours or using public transport. When travelling during the rainy season, the farmers were also affected by floods with some unable to travel or at risk of losing their donkeys on the way back to their homes (KIE01). Prioritising mill businesses in the villages was therefore important. All of the respondents mentioned the construction of the flour mills and the services they get in their respective villages as the principal benefit of the carbon revenue. People could access the service with less travel time – on average they used to travel 4-5 hours. The mills are equally open to both cooperative members and non-members and the price per kilo of milled grain between the community-owned and private mills is almost the same.

However, there was a repercussion in a few of the villages where the duplication of investment in flour mills had pushed away private investors (for example the closure of two privately owned flour mills following the opening of new cooperative flour mills – one was in Hobicha Bada where there were already four mills) (HHHB10). The carbon fund discouraged some local private investors as their profit margins started to decrease.

Indeed, unable to withstand the competition, one owner reportedly relocated his flour mill business to Arba-minch (KIC06). The cooperative and union leaders were asked if they were able to invest the carbon revenue in other bigger business ideas, but they said that given the financial capital constraint they could only afford to engage in small businesses.

Table 11. Number and type of community assets and employment opportunities created

Cooperative Name	Communal Business			Employment created				Total No. of Employment created
	Grain Mill	Grain Store	Shop	Grain Mill	Grain Store	Shop	Forest Guards	
	No.	No.	No.	No.	No.	No.	No.	
Abala Gefata	2	2		6			2	8
Abala Longena	2	2		2	1		8	11
Abala Shoya	0	1					2	2
Bola Wanche	1	1		4			2	6
Bossa Wanche	1	1	1	2	2	1	5	10
Hobicha Bada	1	2	1	4	1	1	4	10
Hobicha Bongota	1	2		4			5	9
Total	8	11	2	22	4	2	28	56

Source: Union and Cooperative chairpersons' interview, 2017.

The cooperatives also reinvested the carbon revenue into constructing grain stores and engaging in other profitable businesses. The idea of the grain stores is to buy grains from the cooperative members and non-members in post-harvest time and resell during the lean season. Some respondents praised the grain stores for stabilising the local grain price and enabling access to grains with almost zero transportation cost. This, they felt, had a positive impact on their level of food security (HHAG04).

### **Green Jobs and Local Economy Spill-overs**

Most CDM interventions claim to promote green jobs in the rural areas and be a catalyst to the local economy dynamism (ILO/UNEP et al., 2008; Poschen et al., 2012). Forestry has significant potential leakages that go beyond the villages and their local economy – at a commercial level it may create processing centres and links to multiple sectors and employ more local people. This provides job opportunities for rural people and contributes either to short-term or long-term livelihood impacts. The green jobs which

aim to ‘preserve or restore the quality of environment’, however, should be with adequate pay and conducive employment conditions, as defined by the ILO/UNEP et al. (2008:5).

As almost all of the respondents agreed that, besides agriculture, the Humbo district faced challenges in creating alternative sources of income or other economic opportunities. Within this context, the Humbo initiative was able to create temporary jobs in two ways: first 9,000 one-off daily labourer jobs were made available during the project implementation period (WVE-PDD, 2009) and more than 150 daily labour positions were created to meet the demands for the construction of communal business buildings and related work. The second is that over 56 relatively regular jobs were created to run local communal businesses across the seven cooperative villages. These included running the daily activities of the grain mill (as operator, assistant and guard), the grain store (as a guard, and loading and offloading grain sacks), the shop, and also forest guards hired to protect the reforested mountain from illegal logging. As with Mozambique’s carbon project claim to increase the employment rate from 8.6 to 32 per cent (UNEP, 2012:243), in the Humbo locality, although the rate increased numerically, it is difficult to see its significant impact on livelihoods as those employed were not getting fair compensation.

The following selected statements from the respondents attest to the level of financial and in-kind benefits they gained from the project.

Before the mountain became a protected forest land, I used to sell firewood from it for Birr 40 to 50 (per donkey load) and charcoal Birr 20 to 25 per sack in Humbo *Tebela* town. With the training money I got, I bought four goats which became 10. I sell some of them to help my family (HHAG05).

Individually, I did not get any money from the carbon credit sales, but during the project implementation, I believe the community benefited by participating in the training and forestry regeneration tasks where I got Birr 500 and Birr 150 respectively. I also got in-kind support of sickle and seedling of a *Gesho*. [*Rhamnus prinioides* - leaf buckthorn, used in Ethiopia for brewing traditional alcoholic beverages called *Tella and Tej*] (HHHT03).

Since its initial stages, job opportunities for the community members were created. For example, nowadays some people are recruited to operate the grain mill and work as guards, and with the little money they get they are supporting their families financially. These people are from our village, however, all are men. Every member is not equally benefiting (HHAG01).

When I worked in digging seedling pots for 21 days in 2008, I got paid Birr 240 and I bought a mature sheep for fattening. Though the amount of money seems small, its purchasing power was relatively strong (HHBL06).

As the above responses show, the farmers did not feel they had benefited in direct cash terms from the carbon revenue as it was modelled around communal revenue redistribution. Generally, they were happier with the per diems for training and regeneration money they received from the WVA grant than with the post-regeneration carbon credit revenue, as some of them had used the former to buy low scale productive household assets.

In regards to the equity of the payments, the researcher consulted the communal businesses that recruited cooperative members, and they revealed that the effort and time they put into the positions and the amount of payment they got was far from comparable. The cooperative members literally referred it as *'the little money they get'* (HHBL02), as in some cases they were being paid between Birr 150 – 400 for 26 days which is equivalent to Birr 6 or Birr 15 per day (that is USD 27 cents or 68 cents a day – at a rate of USD 1 to ~ Birr 22.6).

In comparison to the national per capita income of the country, the World Bank reports reveal that despite Ethiopia's 'double-digit' economic growth, it remains among the least developed countries at USD 783 per annum (World Bank, 2017). Although it is difficult to take per capita income at its face value (as it does not show resource redistribution), this can be indicative in highlighting the impact of carbon revenues on household incomes. Given this national figure, in the context of the greening initiative, the project's

contribution to household incomes is insignificant. That is, it falls short of the ILO requirement for fair pay for conserving the environment. To further analyse the post-project delivery status, the recruited cooperative guards received Birr 150 as a monthly salary, which is equal to the payment made for attending the three-day training on natural resources management. Furthermore, a forest guard and a cooperative leader commented on the fairness of the monthly payments of the micro-businesses employees.

The payment is not enough. However, I do not have any alternative. My intention is to use the opportunity that brings Birr 150. Besides the low pay and the cooperative has been asking the members to patrol and guard the forest land even without paying a penny. There were days where we guarded it for free – without any payment. The reason is that the forest belongs to us and we look after it without expecting payments. As losing the forest means losing the lives of ourselves and our children (Forest guard, 55, HHHD10).

It is inadequate payment, but the amount would be beyond the cooperatives' ability to pay. We know it is not comparable to the time and effort they put into it, and even they have been complaining about being paid less. What they are contributing is for local development and it is difficult to label the payment even as a salary (Cooperative leader, KIC07).

One of the forest guards was working for free in the protected area while getting a monthly support of 30kg of grain from the emergency relief aid given out by the government (with an equivalent cash value of Birr 150) (HHBL07). Emergency relief aid lasts for six months of the year. Living near the protected forest mountain, this person guarded the forest daily. The other forest guards in the village were being paid Birr 300 for the same job and even though he requested equal pay like the others, the promised increase had not yet happened. Although a meagre contribution, the government relief resource was being used to guard the protected land from which the World Bank purchased its carbon credit. Furthermore, comparatively, a guard who worked for the village administration was paid Birr 500 (~ USD 22.12) per calendar month (HHBS08).

Even taking the local government salary scale for a guard into account, what the forest guards were receiving from the carbon fund was far less.

Beyond the household level impact, it is important to explore whether and how the intervention affected nearby villages and local administrations. Humbo is 17 km away from Sodo, the administrative centre of the Wolayta zone. The key informant interviews conducted at the district level show that the Humbo initiative's key role has been in creating a positive image for the localities known for food insecurity and famine for decades. As a farmer from Bola Wanche stated: 'Some people may not follow the media, but when you watch a TV and see the prominence of Humbo at Africa and global levels you feel very proud. As our history is of poverty and drought' (HHBL05). Reflecting this poverty mentality, they consider the initiative has positively contributed to changing the perception of people in the district and promoting the green agenda at district level. With the intention of replicating Humbo regeneration, for instance, a further feasibility study was conducted in regenerating another mountain in the district (KIE03). However, no mention has been made of any significant economic spill-over effect or problems created by the carbon business model in the nearby rural areas, except the few economic benefits from the initial investment made by WVA. Although at a low scale, a few experts think that the money circulation has had a positive effect on the local economy (KIE14).

To conclude, despite the claim for generating resources to the communities and the in-kind support provided, farmers' expectations for getting compensation from the CDM initiative have not been met. Aside from the farmers' satisfaction with the non-carbon benefits of physical regeneration and acknowledging the small financial support they received from training and seedling plantation, the financial support has not made a significant contribution to their livelihoods.

## **Microfinance and Credit Opportunities**

Regarding the power dynamics and the inclusiveness of benefit redistribution, Shames et al. argue that understanding the power dynamics and managing conflict over ensuring equitable distribution of benefits and decision-making powers are critical to the success of carbon-based initiatives (2012:5). The Humbo cooperatives started providing microfinance services when the fourth carbon credit revenue was received from WVE in 2014. As per the purchase agreement, the initial objective of the reallocation of resources generated through the World Bank was to utilise them for communal services and not make direct allocations of funds to individual farmers (KIE02). The committee members of one cooperative discussed ways to redistribute the fund and agreed to reinvest it in developing village-level microfinance (KIE01). Every member would get some amount of loan from the cooperative to buy productive household assets or other necessary items for their families, as most of members requested some asset accumulation support. But the local government would not allow them to use the funds for microfinance, since they had been told by the parties of the agreement not to invest the carbon revenues for such purposes. However, the cooperative had a strong leader who had spent years regenerating the forest, and he insisted that his cooperative use the money for microfinance. He explained that he had unilaterally decided this to ensure that his members benefited from the new scheme. The allocation was made according to their household member ratio (Birr 3,000 to Birr 5,000). Some stakeholders, mainly WVE and the local authority, disagreed about how to redistribute the benefits generated from the carbon finance (KIE01).

In Hobicha Digso, 20 cooperative members took out loans (HHHD01), to be repaid with 10 per cent interest. One WVE project manager said ‘this has partly prevented them from being exploited by individual private lenders in the nearby *Tebela* town who demand a

higher percentage of interest to be paid' (KIE05). However, its impact on improving livelihoods seems limited.

The loan being given is only Birr 500 per member, and this cannot change their livelihoods – they cannot even buy an ox or cow but maybe goat or sheep.

They lack sufficient capital for their microfinance (KIE03; also KIE07).

In the case of Bola Wanche, the cooperative provided mini-solar panels on a microcredit basis. The Union bought the solar panels and distributed them through the cooperatives to their members. Although at the time of the research, the impact was still in its infancy stage and only about 100 people of the 5,168 members benefited (KIC04), the community members appreciated the scheme as they were able to get access to lights and charge their mobile batteries (HHBL03). For instance, under the 'Solar Credit' scheme in Hobicha Bongota, 18 people received solar panels of different sizes and capacities on loan (smaller ones for lighting only, while the bigger ones had a mobile phone battery charging function) in April 2016 (KIC07). A woman from this cooperative said that she was very pleased with the solar loan as it helped her family reduce its fuel cost for lighting and also allowed the neighbours to charge their mobiles [they had previously been paying Birr 2 to charge a single mobile battery and 20 birr to travel to the charging station]; it also facilitated their communication, including knowing market prices (HHHB06). They bought the solar panels to be repaid with money they would get from farm or non-farm sources. Furthermore, the cooperatives also provided *teff* seed and fertiliser on a loan basis, which benefited 376 farmers. In Bola Wanche, 160 sheep were procured to be loaned out; women were given priority either to partake in the *teff* or sheep loaning packages (HHBL06).

Supporting agricultural activities through the microfinance scheme was becoming the priority of cooperatives. Apart from benefitting individual members, it was also positive move for the Union to promote its entrepreneurial strategy. However, the service needed

to be competitive with the existing Omo Microfinance scheme, which also provided loan services in villages like Abala Gefata (HHAG05).

### **7.3 Non-carbon Benefits: Timber Sales and In-kind Support**

Non-carbon benefits from the Humbo regeneration initiative included fodder; timber sales from the three regulated harvests of biomass in the 12<sup>th</sup>, 22<sup>nd</sup> and 31<sup>st</sup> year span (but maintaining 50 per cent of the standing biomass for ecosystem services) (WVE-PDD, 2009:15; Brown and Stigge, 2017:67); honey production; and tourism. As per the PDD, some members of the cooperatives were supposed to receive in-kind support, especially those who would lose out due to the area enclosures. The current support package is a loan for ox, sheep, *teff*, fertiliser and solar panels, while previously it included chickens, a sewing machine, etc. WVE also planned to supply energy efficient cookstoves to the communities through its Rural Technology and Promotion Centre. However, the farmers were not content with the level of support they were getting as it was far less than expected – especially those who had been attacked by wild animals and had suffered a loss in their livelihoods.

Animal fodder was another benefit the farmers were getting from the protected forest area. However, it was expected that the quantity of the grass collected from the forest would decline with time. As a farmer from Bola Wanche said ‘[A]t the beginning of the forest initiative when the trees were not tight, the grass was growing fast but once the trees started to grow the grass we get had decreased’ (HHBL05). In the part of the forest called ‘Millennium’ (planted in 2008) which was reforested with eucalyptus and grevillea trees, the Bola Wanche forest cooperative sold the grass for a total of Birr 600 (~ USD 24) to its shareholders, with proceeds going to the cooperative (Ibid). That is, a farmer pays Birr 20 (~ USD 1) for about 40 m<sup>2</sup> land of grass. In some cases, if the grass was not mature, it might be sold for Birr 10. The price was far less than the market value, but the cooperative was trying to assist its members. Similarly, a key informant said that:

In support of members on a yearly basis, the farmers paid Birr 10 (in 2016) and Birr 20 (in 2017) to fetch grass from the forest area. Most of them live adjacent to the forest protected area. We do this for two purposes – to support the members with a nominal fee and also to clear the forest area from the dry grass which can cause a fire – especially during December to February. Those who paid were able to access the forest till the grass cleared (KIC01).

However, most of the interviewed farmers were not happy with not getting what was promised during the launch of the initiative. As an Abala Longena farmer said: ‘Promise for compensation and in-kind should be kept to the community whose livestock grazing area and free firewood usage area is blocked’ (HHAL02). It is very common to hear such discontent among the farmers.

#### **7.4 Rights and Benefits of Cooperative Members and Non-Members**

The Humbo CDM initiative brought with it a new social grouping – based on cooperative membership. Previously, all farmers of the seven villages had equal access to the continuously degrading mountain, with free access to the local biomass resources. However, with the forest conservation idea in place, two groups were created in the villages. These were: cooperative members – 5,168 (who participated in the training provided by WVE, participated in the actual plantation and bought shares) and non-members – more than 2,000 (most of them without any formal link with the CDM).

Membership of the cooperatives was on a voluntary basis, although the carbon-associated incentives and expectations played a vital role in encouraging the farmers to join. Some people joined because of the financial payments made for participating in the training and working in forest-related activities. Others stated that they joined the CDM initiative because there were no other alternatives provided to the communities, such as micro-finance services or farming-based schemes. For instance, a Hobicha Bada farmer said: ‘The only initiative in the area was the carbon project, and I joined it for whatever

opportunity it might bring to me’ (HHHD04). The table below shows the rights and responsibilities that were associated with the new local forest governance regime.

Table 12. Rights, responsibilities and benefits of cooperative members and non-members

<b>Rights, Responsibilities and Benefits of Cooperative Members and Non-members</b>	
<b>Cooperative Members</b>	<b>Non-Cooperative Members</b>
Right to have cooperative shares and associated benefits	No
Accessing training organised by WVE and the cooperative. They get financial and in-kind benefits.	No
Right to be a cooperative leader	No
Accessing grains from the stores. Priority is given to the members	Yes, after the members have had access to the grain
Using the communal enterprise service like grain mills	Yes, available to anyone
Getting microfinance services and solar equipment	No
Abide by the cooperative bylaws	Yes, related to the protected forest area

Source: Researcher based on the data collected during the fieldwork, 2017.

All the cooperative members and non-members were denied access to the conserved area and its resources. The members at least felt some level of ownership and did expect benefit from their cooperative shares and participation. Some members were asked why some farmers declined to become members and were unwilling to join the cooperatives. The researcher asked 10 non-member respondents (about 15% of the interviewed community members) why they did not join one of the seven the cooperatives. They claimed that the members did not get substantial benefits and adequate compensation for the efforts they exerted and then asked ‘why should I join?’. Some said that they did not feel a need to join themselves because one of their family members had already joined (HHNM01). They also said that they did not see themselves as being in conflict with the members, despite their preference to stay away from the initiative.

In discharging their responsibilities, almost every cooperative member seemed to act as a forest guard. The cooperative member respondents said that they reported any incidence

of logging to the forest committee. For instance, Abala Gafata farmer said: ‘I immediately reported to the guards and committee members once I noticed some people were illegally logging the forest, as a consequence they were penalised for their illegal acts’ (HHAG01). Reporting incidences are more frequent among the members than their counterparts.

### **7.5 Discussion on the Carbon Revenue Redistribution Mechanism**

Benefit redistribution and safeguarding are crucial elements in the green economy agenda (Klein et al., 2013). Carbon revenue redistribution highlights the receivers’ power status and level of influence in the community which may privilege some individuals or groups above others. As the Humbo evidence reveals, some cooperative members showed resentment towards others regarding the communal carbon revenue distribution mechanism. Calling the method unfair, the respondents mentioned three key factors. First, the benefits of physical nature regeneration are equally available to both members and non-members (that is microclimate, and, reducing soil erosion and flood). Second, the members were not looked up to by the non-members as they did not get any direct regular financial rewards from the carbon. Third, communal services serve both members and non-members almost equally. Despite these facts, there was still an interest among some non-members to join the cooperatives, regardless of the recent increase in the registration fee and share price. Most of the members had the view that non-members regretted not joining the cooperatives from the project’s inception (HHNM01).

Exploring the carbon credit revenue distribution among cooperative members, the 58 respondents were asked which members benefited more than others. The question posed was: ‘was any bias practised in redistributing the payments?’. The majority agreed that almost every cooperative member had benefited equally, but some suggested that the cooperative committee members benefited more than the individual members (HHAS02). As the cooperative bylaw stipulates, committee members worked on a pro-bono basis, but they were allowed to get management training per diems as well as travel allowance

while travelling on businesses related to the cooperative's activities. For instance, WVE covered all travel costs in support of the Hobicha Bada cooperative winning a land inheritance claim on the land designated for conservation made from the reign of Emperor Haile Selassie by 11 people. This might have made the individual members think that the committee members had been getting more payments than themselves. This became particularly evident with WVE's exit from Humbo, when the cooperatives failed to sustain the training schemes and associated benefits. As a farmer from Bola Wanche said: 'Now the committee members are only getting benefits as training allowance stopped two years ago [2014/15]' (HHBL08). Other than this, the respondents did not see any bias towards the resource redistribution, agreeing that it was fairly allocated among cooperative members. This statement complements their argument: 'No such bias recorded as those who live near to the mountain prioritised in benefiting with sheep, goat, ox and employment opportunities' (HHAS04; FGDALM01). This could be unlike other cases in Africa; take for instance the 'carbonised exclusion' of Nigeria, where the 'carbon mitigation legitimise[s] a militarised exclusion of local forest users from timber and non-timber forest resources while facilitating elite capital accumulation' (Asiyanbi, 2016:155). However, in Humbo, although most households were low income, there was no observed resentment towards the elites or cooperative leaders from the other members, apart from the perspective of gender inclusiveness (see section 7.6).

The absence of individual-based benefits resonated among the members, some saying: 'what are we benefiting from constructing houses and shops?' and 'as shareholders of the capital, the committee failed us to give our carbon fund dividend' (HHBS05). Over the last three to four years, they did not get any direct financial benefit and this triggered them to start asking questions. To show the members' slight weakening interest, they gave as an example the declining number of attendees in the meetings called by the cooperative

committees. Even some non-members advised the members not to attend the meetings saying: ‘the benefit is for the committee members and not the members’ (HHBS05).

## **7.6 Social Inclusiveness, Equality and Cohesiveness**

The green economy is founded on three critical principles – economic growth, sustainable environment and social inclusivity (UNEP, 2011a). In a rural development context, its impacts have to ensure a balance of social power and status among the target and non-target groups. Aside from the mere economic growth approach, some of the critical parameters of sustainable development are inclusiveness, social equity and environmental justice among the various groups, especially disadvantaged, marginalised and socially less powerful members (Piketty, 2014). This necessitates pro-poor social, economic and environmental indicators and outcomes. The promotion of an equitable society at all levels and scales must be taken on board when applying social indicators, including reducing exclusivity and inequality to its lowest levels - in terms of both active engagement in the process and fair share and redistribution of the benefits. These include respecting the communities’ rights and ownership of the processes, ensuring the voices and participation of all, and protecting their economic and livelihood interests. Among other pro-poor social indicators, gender is an essential factor that can lead the transition to the green economy (Klein et al., 2013:9). However, the link between gender and the CDM seems to be challenged as advancing pro-poor rural interventions are found to conflict with the economic performance indicators. For instance, those who expect financial gains from the business models like CDM deployed in rural areas might focus explicitly on the delivery of goods and services and see what they would get at the end (benchmarked against a cost-benefit analysis and profit motive with results-based performance related to carbon offsetting).

The Humbo research examined this critical factor in order to assess the initiative’s impact among socially and economically disadvantaged groups, mainly with the focus on women

and youth groups. Although other social inclusion indicators were considered, including religion, ethnicity, clan lineage as well as social and economic status, not all were found to have distinctive significance to the project, since 96.33 per cent were from the Wolayta ethnic group, and the majority of them follow the Pentecostal religion and depend on agriculture for their livelihoods. The next section discusses the implications of the CDM initiative on gender and youth.

### **Gender Sensitive Inclusion: Rural Women's Roles and Challenges**

A UNFCCC report strongly emphasises that CDM can be a 'powerful tool for gender equality and specifically in the empowerment of women and for improving their daily lives' (2012:6), mainly by providing fuel-efficient and clean cookstoves and creating CDM A/R related employment opportunities. UNFCCC considers 'many of these new positions' to be 'filled by women' (2012:7). However, this argument failed in Humbo as women were less involved in all levels and processes of the A/R.

According to the Humbo respondents, the economic and socio-cultural status of women is low – including at household and community levels. Though there is a general belief that positive gender role changes are occurring gradually among the Wolaytas, a derogatory perception and attitude towards women still exists and are deeply embedded in the culture. As a farmer from Abala Longena underscored: 'Unlike a man who has seven hearts, a woman has only one heart and even this gets lost at midday' (HHAL10). Others also justified the lack of women's active participation as they perceive women to be less capable of understanding issues and lack awareness of local matters, including forestry. Although only a few, there were those who thought that a labour-intensive job was not suitable for women, whereas a man from Abala Longena emphasised that '[t]he task requires labour and I do not think it is a kind of job where women can contribute' (HHAL05). Others said they did not believe that women have time as they are occupied with the day-long domestic work including fetching water, feeding kids and going to

markets (HHAG06). Some considered that if women had some relief from such work they might be actively engaged in the initiative. For instance, Abala Gefata women travel more than 3 hours daily to fetch water. The respondents' feedback illustrates the different levels of understanding of gender roles which are shaped by culture and socio-economic beliefs.

Based on the interviewed cooperative members and the FGD conducted among the 10 Bola Wanche women cooperative members, the initial emphasis of the Humbo initiative was mainly on the successful delivery of the designed activities, but these failed to be gender-sensitive. Through the entire content of the PDD with 102 pages, the word 'gender' is only mentioned once – to indicate that the cooperative should include women. The PDD fails to ensure women's inclusion throughout the CDM project activities as it gives more weight to the carbon technicalities than the social inclusion indicators, as explained in Chapter 3. That is, women were not considered as 'green stewards' and were less involved until the middle of the project implementation where their numbers had started to rise gradually from a few to hundreds. For instance, at the beginning (2007/8), women constituted less than 10 per cent of the cooperative members, whereas later in 2017 this increased to 22.41 per cent (see Table 3 in Chapter 3).

The number of women in the project is low, and they are not participating widely. This was because their husbands, as well as the forest committees and project implementers were not encouraging them to join the cooperatives. Women did not get enough attention. However, those who are participating are getting the same benefits as that of men (Hobicha Bada farmer, HHHD02).

Of the female FGD participants, three reported working at committee level. In one of the cooperatives, the cooperative chairman said that although the bylaws give women a committee membership quota, they have never practised it (KIC01). For instance, unlike Bola Wanche village (with 3 women representatives out of 19 committee members), the Hobicha Bongota and Abala Gefata respondents reported that there was no gender

representation in their executive committees (HHHT08). However, one of the women FGD participants said ‘although women had problems in joining the cooperatives at the initial stages, at the moment both men and women can work on the same foot. Furthermore, those women with weak physical capabilities were allowed to participate in activities that suit them and hence they were not left behind’ (FGDBLW02; also HHAG04). The FGD discussants identified the following potential bottlenecks to women’s lack of involvement in the forest regeneration and governance, and stressed the need to encourage more women to join the cooperative.

- As in most of the agrarian societies, a man is socially and economically head of the household among the Wolaytas. Thus as some respondents tried to justify the lower involvement of women by asking ‘if the man is represented in the cooperative what would be the role of the woman?’. The basic argument for not including women is that the representation of the household through the man. If the family is a woman headed household, she would be encouraged to work. However, an increase in the number of women had challenged this argument as both men and women of the same family started to buy cooperative shares individually rather than as collective household members.
- There was less focus from the project coordinators in involving more women as they were overwhelmed by their responsibilities to lead the ‘persuasion’ campaign to the community members to accept the project idea and its delivery which were key to get it approved. For instance, the FGD women participants agreed that their engagement was because of the briefings provided by the committee members of the cooperatives at a later stage of the project (FGDBLW02).

In terms of the ‘social dimension’ of the green economy (Klein et al., 2013) of engaging women in decent green employment opportunities, the semi-permanent jobs created by the carbon credit induced communal businesses are still unable to recruit women, with the claim that the jobs are too physically demanding. Of the new jobs created, none are specifically allocated to women (HHAG01). However, there was no opposition to women keeping retail shops. Though the salary for such jobs is low, it can potentially help some

women cooperative members get an additional source of income for their families. Thus, in light of the above gender-based analysis, the Union and cooperatives must consider maintaining gender parity in their recruitment processes if the missing link to the social component of the green economy is to be addressed.

### **The Young People: Their Engagement and Expectations**

According to the youth FGD discussants of Hobicha Bada, there is a high degree of rural outmigration among the Wolaytas, both in terms of intensity and proximity, to the nearby cities of Sodo, Arba Minch, and Hawassa, and to Addis Ababa and beyond. However, unlike many other young Ethiopians, most are not keen on international migration, rather they prefer to stay closer to home. Given the high rate of unemployment and lack of economic opportunities in the Humbo district, outmigration has been a coping strategy among the young, where some estimate the rate to be 50 to 60 per cent (KIC06). The scarcity of land and lack of opportunities in their localities is pushing them away to look for alternatives in urban areas.

The Humbo PDD mentions the creation of jobs or employment opportunities for rural people including the young (with an age range of 18 to 29). It claims that Humbo youth were engaged in the forest regeneration activities during both the implementation and the post-project completion periods (WVE-PDD, 2009:84). With this in mind, a youth-targeted FGD was conducted among 10 people in Hobicha Bada, with an emphasis on what of the carbon finance could be relevant to them while still staying locally. Many youth had hoped that the Humbo initiative would create opportunities to them and make them more productive citizens while supporting their families' farms. One young person among the discussants underscored the fact that outmigration is creating a labour deficit in the farming sector which is the primary source of livelihoods among the Wolaytas.

A few young people benefited from the temporary employment created by the forestry cooperatives during the construction of the grain mills, stores and shops (HHAS02).

Moreover, the youth participated in the annual pruning and got paid Birr 15 per day, working temporarily up to 15 days. In Hobicha Bada, the FGD discussants stated of the 848 cooperative members, up to 20 young people worked annually on maintenance tasks in the protected forest area (FGDHBY03).

Of the 10 youth FGD participants, only one was a cooperative member. The non-members gave two critical reasons for not joining the carbon initiative: some were in education and unable to afford the Birr 50 share price and registration fee. Others said that the existing members were not able to get the expected level of benefits, and this did not motivate them. Describing the declining interest among the young in agriculture and forestry, one discussant said: '[T]hose who are in education want to get office jobs while others want jobs that bring money quick like engaging in motorcycle transportation service between the villages and nearby towns and "*ayer-be-ayer*" or petty trades. Mostly, it is only those who dropped out of education and decided to permanently settle in the village, and engage in farming became members of the cooperative' (FGDHBY03). They suggest the carbon initiative should develop a youth-oriented scheme including job creation opportunities, loans for bee production, animal fattening, petty trade, support to get irrigated land, and training to be carbon experts in Ethiopia. However, one of the cooperative leaders was not in favour of giving loans to the youth and claimed that most of the young people disappear once they get the loan. They then find themselves in difficulty to repay it along with the interest. He referred to other government-supported youth groups who can get loans (KIC06).

To sum up, although the Humbo lags behind in contributing to balancing social status, it did not reinforce significant inequities in sharing the benefits. However, this does not mean that the women and youth benefited to the same degree as the men. The initiative also did not create a new elite, as the financial benefits are still low. The challenges to create inclusive rural development in Humbo require more attention.

## **7.7 Poverty Reduction: Communities' Perception of the Carbon Finance**

The green economy advances environmental sustainability and communities' livelihoods, however, the challenge remains to measure socio-economic impacts of such CDM-based rural developments (Disch, 2010:53). It is also problematic to rely on the impact assessment of the PDD as a source of verification as it is worked out based on baseline assumptions (Dirix et al., 2016:843; Disch, 2010:55) and on 'orthodox environmental economics' (Liverman, 2004:735) in valuing nature, and this has been a highly contested approach, critiqued for considering nature as a 'capital'. This puts the Humbo CDM in conflict with the broader spectrum of the green economy.

Among the Wolaytas, as most of the interviewed respondents explained, poverty is predominantly defined by lack of resources including lack of household productive assets, erratic rainfall and occurrence of drought. Other fundamental causes raised include: population growth and density, and the prevailing land tenure system. Some also mentioned being vulnerable to attack by wild animals. As smallholder farmers, their subsistence-based livelihood is closely linked to the local ecological and climatic conditions. During the 1970s to mid-2000s, Humbo agricultural productivity declined by 70 per cent, leaving 85 per cent of the farmers in poverty (Lakew et al., 2011:7). A Humbo District staff member said that the district was known for its persistent poor livelihoods, repetitive drought and poverty (KIE02). The question remains: did the Humbo carbon initiative create new opportunities for rural livelihoods and reduce poverty?

The majority of respondents stated that besides improvement to the physical environment and the 'we can do' mentality created among farmers, they had not witnessed any significant livelihood change. For instance, the value of the benefit for each tCO<sub>2</sub> in Sodo was reported to be 'USD 124 of additional social and environmental values' (ForestFinest Consulting, 2016). As the Humbo case documented, however, the 'artificial market' approach (Disch, 2010:52) did not automatically work for the poor and it is difficult to

expect this intervention to play a defining role in reducing rural poverty. The green economy's 'social dimension' (Mearns and Norton, 2009) impact indicator goes beyond the creation of a clean environment. The following accounts from respondents show the livelihood impacts of the initiative.

It is difficult to attest farmers' livelihood has improved. However, there are a few who made changes by attending the training, getting a sewing machine, ox, sheep and engaging in animal fattening. However, their number is small and the majority only benefited for a short term, and they did not seem to move on out of poverty (KIC06).

Despite the positive contribution of the carbon initiative in restoring the ecosystem of mountain, in my observation, there is no unique contribution or livelihood targeted support made to improve our living situation (HHBL01).

So far it did not adequately improve the livelihoods of the members. The reason is that all the money is invested in communal assets. It may take years to see livelihoods improvement (KIE01).

Carbon fund, though not fundamental, can be considered as an 'additional resource' as it is one means to generate income while keeping the forest. This does not mean that CDM can alleviate poverty (EEFRI expert, KIE10).

Though low, the project contributed directly to poverty reduction and also local development by creating employment opportunities' (HHBS02).

The benefits to the Humbo farmers are therefore relatively small and not sufficient to allow the farmers to leapfrog from the state of poverty. The case reaffirms the results of Dirix et al. that 'CDM appears to be more effective in reducing GHG emission than achieving sustainable development' (2016:844). Similarly, the case of Peruvian households (2011–2015) shows that CDM brought a 'slight effect on household consumption expenditure and had no effect either on employment or in poverty alleviation' (Pécastaing et al., 2018:198). Unlike the findings of Brunt and Knechtel (2005) that support the fact that CDM can work in small rural communities, the Humbo

findings oppose this line of argument since the initiative failed to realise pro-poor growth. Cooperative members suggested that in the future the initiative should support agriculture in order to have an impact on poverty and improve livelihoods.

### **7.8 The Question of Permanency and Sustaining the Impact**

The permanency of the green initiative assumes a unique position in CDM initiatives (UN, 1998). Environmental and rural livelihood improvement must address scalability, replicability and self-sustainability to ensure its wider and sustained impact. Though the cooperative members seemed to be committed to sustaining the greening initiative in Humbo, some key issues may lead to reversal and affect the initiative's impact on livelihoods. These are discussed below, based on reflections from the cooperative members and key informants.

#### **i. WVE strategic exit and local forest governance capacity**

WVE had been active since the 1980s in Humbo, however, its involvement was phased out, claiming food insecurity, malnutrition and poverty had been reduced (KIE05). Thus, WVE handed over the Humbo initiative to the cooperatives, but the question remains: will they have the capacity to sustain the protected forest area and deliver the claimed benefits? The statement below reflects a common response to WVE's strategic exit.

The forest belongs to us. In handing it over to the next generation, we will continue to work on its sustainability. Though as a consequence of WVE withdrawal we lost some training and associated benefits, the Union should work with other partner organisations that can assist (HHHT03).

This illustrates, besides the communities' commitment, that there was some degree of uncertainty linked to WVE's withdrawal, as it was the initiator of the Humbo CDM initiative and had been working as a bridge with the World Bank. A WVE expert provided an operational explanation for the NGO's exit and said: 'It is not that we are transferring the project to the Cooperatives and the Union as we, both the WVE and the World Bank,

are the guarantors of the project' (KIE06). Similarly, a World Bank expert said 'Humbo is our global model' (KIE07) and re-stated the Bank's support for its continuity.

In the absence of WVE, the cooperatives and the Union are able to run the day-to-day routine functions, as well as community mobilisation and protection of the forest land. However, their capacity to engage and deal with global carbon markets and ability to influence the process and the carbon credit buyer's behaviour is weak, as they lack the knowledge, expertise and capital. Furthermore, unlike the farmers in Latin American countries (McAfee and Shapiro, 2010), the Humbo farmers do not have a platform or alliances to take their cases to higher levels of the state. Though the fraud level is low (so far only one case was recorded), the respondents have asked for more transparency and accountability measures in managing the carbon revenue to be put in place; in particular a woman from Bola Wanche expressed these concerns (HHBL01). Moreover, membership has grown, but also the 'economy of expectation' among the farmers (Massarella et al., 2018:375). Thus, this seems a challenge for the cooperatives as there are no significant carbon revenues to satisfy this need.

Most of the Humbo carbon deals and negotiations were made based on the interests and knowledge of WVE (KIE01). Despite WVE strategic withdrawal, given the communities weak technical capacity and position as well as the NGO's influence through its experts, knowledge and relative strength of networking to global carbon markets, WVE's engagement seems set to continue for the foreseeable future.

## **ii. Community-forestry interface: Communities' motivation**

The community-forestry interface is critical as it defines the communities' level of ownership, interest, motivation and satisfaction in benefit redistribution which, either positively or negatively, influences the continuity of the greening initiative. Forest sustenance is labour intensive, so what are the motivational factors that sustain their active role? Among other socio-economic indicators, the farmers' behaviour is influenced by

incentivising or disincentivising factors. With an increased level of awareness of forests' role for ecological equilibrium and dealing with climate change, the farmers showed a keenness to protect the forest area. This can be a push factor to keep the protected forest area as intact as it is now. Indeed, there is some degree of optimism in its future among the farmers. However, as Lemenih and Kassa argue, 'if re-greening is only for environmental goals, it is less likely to encourage the participation of communities' (2014:1904). To avoid the history of degradation being repeated, alternative sources of income should be created for the farmers.

### **iii. Gaps in the legal system**

Legal systems and their execution can have an impact on managing the environment and natural resources. However, in Humbo some key informants interviewed underscored that the prevailing legal system encourages misbehaviour in protecting the forest area. A Humbo district staff member said: 'The legal system needs reinforcement as the illegal loggers are getting a nominal penalty at the district court. It is not comparable to breaking the bylaws and the damage made to the forest area. There is a fear such gaps in the legal system may encourage bad behaviours' (KIE02). Although illegal logging cases are few, such actions can affect the protected area's sustainability and carbon revenue generation.

### **iv. Uncertainties after the crediting years with the purchase agreement**

The CDM as a global climate architecture, despite its ability to include 8,137 initiatives, is at a very critical juncture of its existence. Although its fate is difficult to predict, some reforming ideas are flowing to make the framework fit for purpose, especially in achieving the socio-economic indicators among the rural farmers of the global South. In light of these arguments, the future of the Humbo carbon initiative seems uncertain after the 10-year crediting period. A key informant from Hobicha Bada said: 'For the next three years and as per the purchase agreement we will have the carbon fund transfers but we are in doubt on what would happen then, and thus it would be good to get a new buyer

ahead of when the 10 crediting year elapses' (KIC06). Questions such as: 'who would be the next buyer?', 'what would the price per tCO<sub>2</sub> be?', and 'for how long will the carbon purchase agreement be operational?' are left unanswered. This leaves the farmers in limbo as they are not sure whether the carbon fund will continue or not.

## **7.9 Conclusion**

The Humbo forest-based carbon finance case illustrates the clash between market-based approaches and the rural development agenda and farmers' expectations. If CDM is only 'left to market forces, [it] does not significantly contribute to sustainable development', as Olsen (2007) concludes. Hence, reflecting on its role as a pro-poor strategy, as the respondents emphasised, CDM had limited effect in reducing poverty among the Humbo farmers. Although they value the indirect and non-carbon benefits of the CDM and the inspiration created to challenge common societal issues together, its poverty reduction and socio-economic achievements are far from expectations. Moreover, the project has failed to sell the 44 per cent remaining carbon credits which would possibly bring additional resources to the farmers, although these would not be sufficient to bring significant livelihood changes. Given the voluntary contributions and underpaid farmers, the initiative does not reveal the actual cost, which conflicts with the ILO decent jobs aim for restoring the ecology. The respondents confirmed that the promise made for compensation and the scheme in place did not significantly contribute towards their livelihoods. Greening has also resulted in social inclusion problems, mainly related to gender, but is able to reduce the bias partly by prioritising those farmers who are affected most. Furthermore, unlike other market-based approaches, Humbo did not show exaggerated 'uneven social consequences' (McAfee, 2011:2) as individual and group financial benefits were small. Howard and Chimbandira (2018) underline that '[d]ecarbonisation' should not be 'the final word in the pursuit of clean growth and green finance'; but this is what was evidenced in Humbo.

## **Chapter 8 The Financialisation of Nature: Humbo and its Implications for Carbon Finance and Emission Reduction**

### **8.1 Introduction**

The financialisation of nature has been the founding pillar of many approaches to ecosystem payment services - linking the farmers of the global South with multinational companies and other state and non-state actors through global climate change mitigation frameworks. It is referred to in each carbon-based forest conservation programme and has played a determining role in influencing the responsibilities, power dynamics and benefits of the parties involved. In the carbon finance model, the common institutional language among actors is carbon as a quantifiable and tradeable commodity (Corson and MacDonald, 2012:268). For instance, under the Kyoto Protocol, Annex I Parties transfer their resources to the World Bank's BioCarbon Fund in order to get carbon credits which are counted as part of their national emission reduction targets. To secure these funds, the farmers who sell the carbon credits have to 'prove that those particular emissions would not have been reduced without the additional incentive of the carbon credits produced' (Rinaudo et al., 2009:12). In the case of Humbo, the seven cooperatives secured CERs after fulfilling the lengthy and complicated validation and verification processes of the carbon finance model.

The Ethiopian Humbo natural regeneration initiative, being the first to secure a temporary CER in SSA, has had multiple implications for the national and global climate change regime. Considering the local-national-global interlinkages, this chapter discusses the financialisation of nature and climate finance in light of global carbon credit price trends, its influence on the Ethiopian domestic climate change agenda, and the carbon finance model's potential legacies and prospects in continuing as a 'viable solution' to climate mitigation and resource generation for low-income farmers. It looks at the implications of carbon finance from a macro-perspective in examining carbon pricing at the local level,

and the Ethiopian government's interest in the CDM, which might either result in its 'phase out' or an enduring legacy through other forms of financialisation of nature. This analysis focuses on the empirics of Humbo to unpack carbon finance functionalities and its national and global implications, including those for the prospects of the post-2020 Paris Agreement. The arguments in this chapter are based on analysis of the carbon finance model's global trends and UNFCCC data (2019a-d), on the extensive qualitative data collected from the various actors involved in the Humbo regeneration initiative, as well as on consultations with federal level technocrats and policy makers in Ethiopia.

## **8.2 Global Carbon Market Dynamism and CDM's Uncertainties Impact to Humbo**

With the emergence of the Paris Agreement, global climate change negotiations are moving forward with new deals, and the continuity of existing frameworks such as the CDM is being challenged. Some climate based frameworks are deemed to be obsolete, and others tend to reform themselves and bounce back to be relevant to contemporary global needs. Some like Dirix et al. are hopeful that '[a]dapting a political realist and pragmatic approach' can help the CDM find relevance in the new climate era (2016:848).

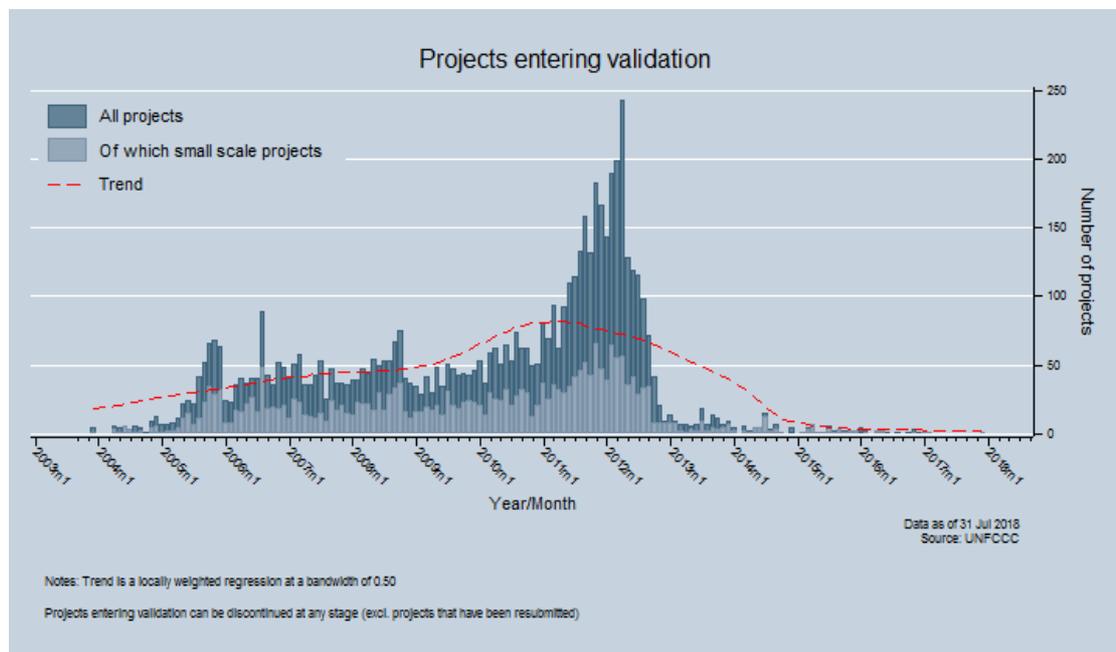
The global carbon unit price has continued to be volatile, varying substantially, and is also far from being a positive factor contributing to the realisation of the expectations underlying the global climate treaties. As the recent report produced for the World Bank and Ecofys shows, the demand for carbon credits has been very low compared to their supply and its price has ranged from 'less than USD 1/tCO<sub>2e</sub> to a maximum of USD 139/tCO<sub>2e</sub>' (Goyal et al., 2018:17). Though the carbon market has shown some progress – for instance the carbon price per tonne rose from USD 7/tCO<sub>2e</sub> in 2017 to USD 16/tCO<sub>2e</sub> in 2018 – the abovementioned report underscored that 'about half of the emissions covered by carbon pricing ... [were] priced at less than USD 10/tCO<sub>2e</sub>' (Ibid) and this is far below the Paris Agreement target requirements.

Many authors, practitioners and analysts of the carbon offset business model emphasise the fact that there has been a continuous decline in global carbon prices (McAfee, 2012a; Clark and Hermele, 2013:37; ICE, 2018). Since its introduction to the stock exchange market, carbon has been a highly volatile commodity due to excessive speculation and uncertainties about the outcomes of global climate change negotiations. Such price fluctuations can directly affect the farmer communities' carbon based resources, income and livelihoods. Analysing recent CDM market activities, including registration, validation and CER issuance by the UNFCCC, the CDM's status has been drastically declining globally from year to year. Over an 11-year period, (December 2008 to August 2019), the CDM's Executive Board (EB) validated 8,137 initiatives and issued a total of over 2 billion CERs (UNFCCC, 2019c; 2019d). However, looking at recent validation trends (January 2016 to August 2018), the EB has validated only 20 projects, that is 0.20 per cent of the total (UNFCCC, 2018d). Furthermore, as the Kyoto Protocol based market updates show, the total number of registered projects was 66 in 2016, and compared to 2015 this represented a decrease of 35 per cent (Ibid). As discussed below, this could be a compounded effect of several factors (see Figure 10).

Besides the Kyoto Protocol's implementation challenges and its cumbersome technical requirements, the USA's non-commitment to the Protocol (Ostrom, 2009:3), its failure to reduce poverty in the global South and the critical view of many sceptical authors (Cooper, 1998); there were several major reasons that led to the decline of the CDM as an effective climate change mitigation option. The withdrawal of key signatories and climate change parties like Canada with an influence of domestic politics in 2012, and their unwillingness to commit further to the Doha Amendment of the Kyoto Protocol and the Protocol's second commitment as well as several state parties' voluntary cancellation of the CERs had adversely affected CDM's continuity, and it lost its traction. Moreover, the lack of emission reduction commitment on the part of countries such as Japan, New

Zealand and Russia has sharpened the CDM dilemma in global climate mitigation. This has diminished the acceptability of the mechanism and led to a lack of adequate financial resources for the BioCarbon Fund. Given such fluid and unpredictable global climate change regimes (Clark and Hermele, 2013), the treaties and the future of carbon based mitigation initiatives like Humbo are susceptible to unpredictable behaviour by the key actors. This leaves the future of thousands of CDM initiatives in a state of flux.

Figure 10. The State of CDM: Number of projects entering validation



Source: UNFCCC (2018d).

The voluntary cancellation of the CDM registered CERs was key in weakening the mechanism as a global tool to combat global warming. Entities and parties that originally signed up for the CDM scheme have withdrawn from several sectors. As the A/R sector data of 2018 show, Colombia voluntarily cancelled 1.2 million tCERs under the CDM project entitled *Forestry Restoration in Productive and Biological Corridors in the Eastern Plains of Colombia*, ‘in favour of ExxonMobil de Colombia SA ... for neutralisation of GHG emissions associated with fossil fuel combustion’ (UNFCCC, 2018e). Three countries, China (38%), India (14%) and the Republic of Korea (12%), accounted for the bulk of such voluntary cancellations of CERs in 2017 (Goyal et al.,

2018:35; UNFCCC, 2018b). Similarly, the Republic of Korea cancelled four projects/CERs between June to August 2018, to convert investments to the Korea Emissions Trading System, started in 2015 (UNFCCC, 2018e).

The presence of flawed and unreliable carbon prices is a major reason for the CDM's decline. This suggests an important question: what would the ideal tCO<sub>2</sub> unit price that is required if the 1.5 degree Celsius global temperature target is to be achieved? The World Bank formed a High-Level Commission on Carbon Prices, chaired by Joseph Stiglitz and Nicholas Stern, and concluded that to achieve Paris Agreement's temperature target, carbon prices should be 'at least USD 40–80/tCO<sub>2</sub> by 2020 and USD 50–100/tCO<sub>2</sub> by 2030' (Stiglitz et al., 2017:3). But, looking at the current prices and the status of projects like Humbo, with a price of USD 4.4 per tCO<sub>2</sub>, reaching the Commission's target seems to be a very distant prospect.

Despite these challenges, Seymour and Busch still see the carbon finance model in forestry as the best option: 'rewarding developing countries for protecting their forests is an urgently needed, affordable, and feasible strategy for rich countries to support reducing the emissions that cause climate change' (2016:7). The logic behind investing in the countries of the global South is that '[c]limate benefits are identical whether emissions are avoided in Mississippi or Peru, but there's a big difference in cost' (Ibid:123). These cost considerations imply that emissions reduction is more efficient and cheaper in the global South (Kachi, 2017:3; Stern, 2006:245). However, this shows that, in this logic, the primary objective is global emissions reduction by the cheapest means, rather than supporting the development endeavours of the global South.

Comparing the different types of carbon credits, CERs are in a better position to secure domestic and international credit demands and buyers, relative to other certified CO<sub>2</sub>. Carbon credit is traded differently with various market forms and platforms. A recent report produced by the World Bank, Ecofys and Vivid Economics shows that compliance-

based CERs in the Republic of Korea's ETS are in 'high demand' (Zechter et al., 2017:33). The same report documented that the voluntary market CERs grew six fold, from 0.8 MtCO<sub>2e</sub> in 2015 to 4.8 MtCO<sub>2e</sub> in 2016, while its annual demand was 'under 50 million CERs' (Ibid:33). As part of carbon buyer diversification efforts, carbon sinks like Humbo, with CERs, are looking for voluntary carbon markets to cover the cost of investment, increase their revenue and meet their sales targets. Thus, while it is very difficult to predict the outcomes of global agreements and their effects on the future of existing CDMs, the CERs from the Humbo area are expected to be relatively strong in the carbon markets. The section below looks at the status of Humbo in SSA and Ethiopia, as well as global carbon market dynamics and their impacts on the Humbo farmers.

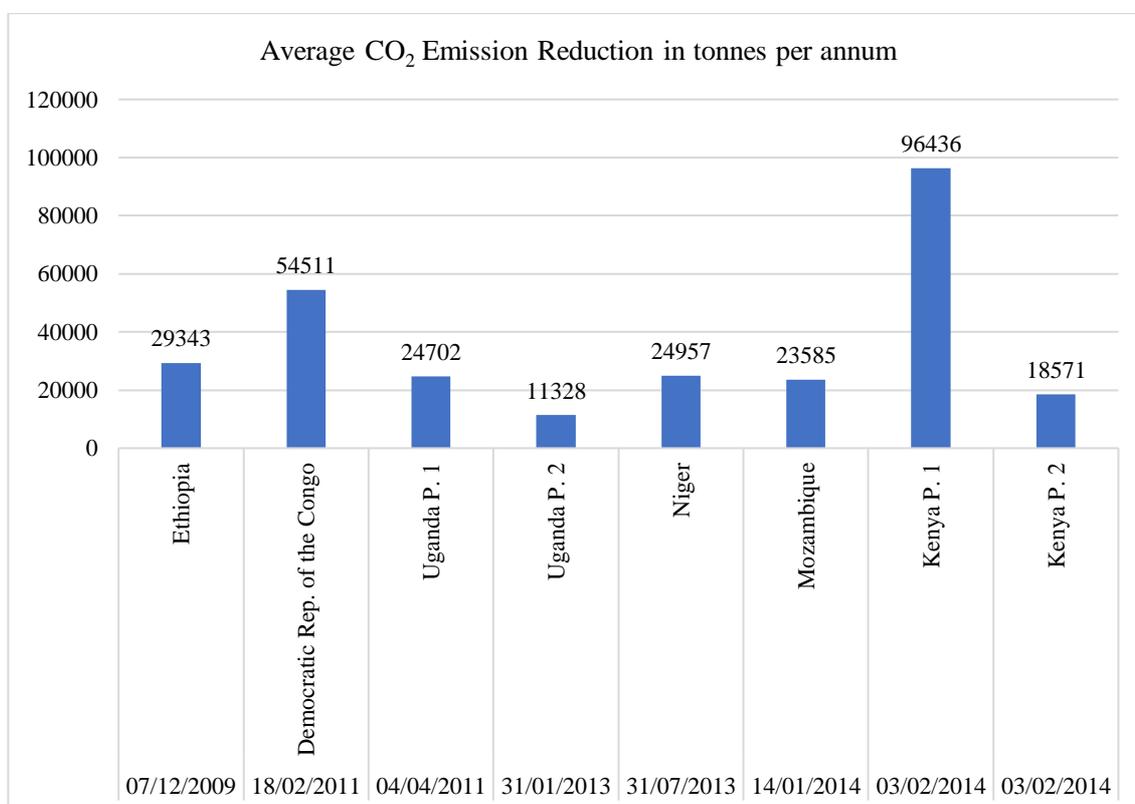
### **The CDM Context of Sub-Saharan Africa: Why did Humbo become significant?**

In the whole of Africa, under the first (2008-2012) and partly in the second (2013-2020) Kyoto Protocol commitment periods, only six countries have been able to register their A/R projects under the CER of the CDM (UNFCCC, 2018a). As Figure 11 shows, Ethiopia was the first to fulfil the lengthy UNFCCC requirements and register its Humbo project, followed by Democratic Republic of Congo (DRC), Uganda, Niger, Mozambique and Kenya. In terms of average CO<sub>2</sub> tonnes sequestration capacity per annum, Kenya leads with 1.15 million, followed by Congo (545,110); Uganda (360,300); Ethiopia (293,430); Niger (259,570) and Mozambique (235,850). Kenya and Uganda's data are aggregate figures from two registered CER projects within those countries, while Ethiopia's CO<sub>2</sub> sequestration figure refers only to the A/R of Humbo. Although Humbo was the first large-scale CDM A/R in Africa, its land coverage and carbon sequestration capacity are not that large, in comparison to those of the other CDM projects that followed its path. Just as the capacity to sequester CO<sub>2</sub> differs from one project to another, the nature of the carbon credit buyers also varies. For instance, the World Bank buys the carbon credits of Ethiopia (Humbo) and Mozambique. However, Uganda's carbon credits

are bought by the Swedish Energy Agency, a designated entity of the Swedish government for carbon abatements.

Africa began CDM implementation late, which has been described by several authors as a ‘regional disparity’ (Boyd et al., 2009:821; Jindal et al., 2008:116). However, from 2009 to 2014 it was able to register six A/R initiatives, on average almost two projects per year (UNFCCC, 2018a). Still, there is a critical choice to be made between promoting expansion or aiming to make a significant impact among specific communities by focusing efforts on a smaller number of projects. The World Bank decided to include new A/R projects in other SSA countries rather than committing to fully purchase the Humbo carbon credits. In Humbo’s case, this left the communities without a buyer for part of the carbon credits that they produced.

Figure 11. Humbo within the Larger Emissions Reduction Effort under A/R CDMs Registered in Africa



Source: Researcher, based on the CDM Data of the UNFCCC, 2018a [P.1 or P. 2 refers to the number of projects a country is able to register under the CDM].

## **Carbon Credit Pricing in Humbo**

Once validation was secured, the World Bank offered the seven cooperatives a carbon credit purchase agreement of USD 4.4 per tCO<sub>2</sub>. This implies that the farmer cooperatives would receive carbon revenue annually for the efforts they made in sequestering atmospheric CO<sub>2</sub>. That is, communities would be paid for 165,000 tCO<sub>2</sub> of the 880,295 tCO<sub>2</sub> (18.74 per cent) to be sequestered over 30 crediting years. There can be some variation between the PDD prediction and actual delivery. For instance, the estimated and delivered amounts for the period of 2009-2011 were 69,868.7 tCO<sub>2</sub>e and 73,138.49 tCO<sub>2</sub>e respectively (Tefera, 2013:8). If the annual carbon credit purchases are aggregated, the World Bank agreement covers only the first 7.5 of the 30 years (The 8<sup>th</sup> year cumulative figure is 193,516.30 tCO<sub>2</sub>, [WVE-PDD, 2009:47]). When the agreement was signed with World Bank for USD 726,000, the tCO<sub>2</sub> unit average price in the voluntary market was between USD 9 and 15 (KIE07). Over the 10-year crediting period, Humbo expects to sequester a total of around 330,000 tCO<sub>2</sub>, but the Bank had only agreed to buy just above half of it, leaving the rest to be sold on the voluntary carbon markets. However the project's engagement with the voluntary market has not been successful.

Considering that the maximum potential the initiative could bring to the communities and what is actually bought do not correspond, Humbo is an economically undervalued investment. Ideally, carbon credits as outputs of the forest production process should not be wasted. This affects the project's turnover period for the high investment cost incurred to regenerate the mountain area. Many key informants asserted that the main reasons for this inefficiency were the lack of demand from the World Bank or other potential buyers, and the declining nature of the carbon market, as well as the lack of resources, marketing skills and substantive efforts made in selling the remaining credits in the voluntary carbon markets (KIE05; KIE07). An expert who was previously involved in the Humbo initiative said: 'Despite the availability of the unsold carbon credits, we did not push to exploit the

opportunities linked to the voluntary carbon market' (KIE07). Had the project ensured the sale of the remaining 44 per cent of carbon credits, beyond the secured 56 per cent purchase, it would have almost doubled its carbon based revenue – given that the voluntary carbon market tCO<sub>2</sub> unit price is higher than that of compliance carbon market. According to the key informants, the World Bank did not exert an effort to assist with the sale of the remaining carbon credits to other potential buyers. The additional resources generated might not have brought about substantive change in terms of livelihoods or standards of living, however there would have been a substantial increase in the resources generated for the forest user cooperatives.

### **The Underlying Factors of Humbo within the Carbon Market System in Ethiopia**

The carbon finance market as an emerging practice has been attempting several marketing models. Globally, there are two main carbon offset markets (Jindal, 2006:10). The *compliance carbon market*, as in the case of Humbo, requires A/R initiatives to pass through the scrutinised standard validation, verification and certification process of the UNFCCC in order to be recognised as viable GHGs sink sites and get approved to secure financial transfers. However, the *voluntary carbon market* refers to carbon offset actors taking carbon sequestration initiatives and looking for potential carbon credit buyers, either in national or global carbon markets.

Ethiopia, piloting the A/R carbon finance model, has been active in both compliance and voluntary carbon markets, through the Humbo and Sodo schemes respectively. Comparing the Sodo and Humbo forest regeneration initiatives is instructive about how these carbon market systems are functioning in Ethiopia. The Sodo A/R regeneration site in the Mount Damote area of Wolayta Zone, SNNP Region, was started in 2006, the same year as Humbo. Its project partner is ForestFinance and its carbon mitigation contribution was validated and verified by the Rainforest Alliance. Similar to Humbo in many respects, despite their use of different carbon markets, Sodo is also a Gold Standard forest

initiative certified by a Swiss organisation called the Gold Standard. The total emission reduction expected from Sodo with the planting of 450,000 trees, including 13,000 apple trees, is on average 6,000 tCO<sub>2</sub> p.a. across a total area of 503.28 hectares (FirstClimate, 2017). Over its 35 crediting years (2006-41), Sodo plans to sink more than 185,000 tCO<sub>2</sub>. Unlike Humbo, Sodo failed to secure a World Bank emissions reduction deal, for ‘administrative reasons’ (KIE06). So, it turned to the voluntary carbon market. This requires a regular search for potential carbon credit buyers and creates a degree of instability in carbon resource generation. The project was able to secure carbon credit buyers for a year or two, including its first sale to a German buyer - ForestFinance in 2015. The deal was for 6,157 tCO<sub>2</sub> at USD 41,559.75 (WVE, 2015). As Humbo and Sodo pursued different carbon markets, there was a large difference in price - with the Sodo project receiving almost double the price per unit, for the same measure of sequestered tCO<sub>2</sub>. This has created a great deal of dissatisfaction among the Humbo project farmers.

Conflict was recorded during the handover of the forest work by WVE to the communities. Though Humbo is big in size, the CO<sub>2</sub>e unit price is less for Humbo than Sodo. It has been a long time since the cooperative leaders raised this concern including saying, ‘Why we went to compliance market and why did we go not for a voluntary market? Why we were not fully involved in that process?’ The Union and cooperatives have been complaining on the decisions made at the beginning of the carbon deal (Humbo District administration staff, KIE02).

In discussions, the cooperative leaders repeatedly mentioned the above issue. One stated that ‘While Humbo’s forest size and tCO<sub>2</sub> sequestration capacity are about five times that of Sodo, we are getting only USD 4.4 compared to USD 8.5 per tCO<sub>2</sub>e for the Sodo farmers’ (KIE01; KIC01). Sodo’s CO<sub>2</sub>e unit price differs from one buyer to another, and the price received varies from USD 8.5 to USD 12-15. The Humbo district advisor confirms this grievance about the unfairness of the carbon market (KIE02). Essentially this reflects the lack of understanding of the carbon market and its functioning among the

Humbo farmers. Their lack of awareness meant they did not understand that carbon price structures are determined by several market and non-market forces, and are not just about how much tCO<sub>2</sub> they sequester.

Comparing the two markets within Ethiopia's carbon finance context, a WVE interviewee pointed out that in Humbo 'despite the low unit price, the compliance market brought some degree of regularity in revenue generation and reduced the risk of lacking a carbon credit buyer' (KIE05). Under this model, the carbon purchase agreement is usually made for a longer period – for 10 or more years. However, it suffers from the drawback that there are only a few buyers who are sufficiently large and able to buy bulk carbon credits (KIE07). Moreover, these actors are very influential and their bargaining power is greater and their technical capacities far more sophisticated than those of the farmers of the global South. As the Humbo case shows, the World Bank's programme in Ethiopia is typical of such contractual carbon offset agreements. Unlike the compliance market, the voluntary market might provide an opportunity for the negotiation of carbon prices, but reliance on it also carries the risk of failing to secure a regular long-term buyer since the carbon purchase contracts are mostly short-term – spanning from a year to a few years in durations, and from a few to thousands of tCO<sub>2</sub>e.

The global carbon price regime has direct and indirect effects on A/R CDM initiatives. The decline in the carbon credit unit price, in voluntary and compliance carbon markets, is reflected in, potentially sharp, declines in the incomes of farmers in the global South. Carbon as a commodity is highly volatile, as the tCO<sub>2</sub> unit price is influenced by multiple powerful actors who have strong financial positions and speculative capabilities. But volatility can involve price increases. The EU ETS carbon price showed an increase in 2018. The CER price showed a '46% increase [from €0.24 on 2 July to €0.35 on 19 July]' (Andreassen, 2018). Though the factors that triggered the increase were not easy to identify, it could be a result of the 'EU ETS compliance player(s) using their leftover

offset quotas amid the EU Allowance bull run', and the impact of speculation in the 'international context' (Ibid). The reforms made to the EU ETS are also considered to have contributed to the price rising 'above €10 per tonne' (Green Economy Coalition, 2019:1). However, climate experts do not think that the price changes driven by the EU ETS market mean the 'good old days' of the CDM are back, as the post-2020 EU ETS 'does not allow the use of international credits' (Andreassen, 2018).

In analysing the World Bank's carbon business model and its implications for Humbo, it is worth reviewing the Environmental Finance reports (2006-2015), which focus on the BioCarbon Fund. According to the first edition of this report, the Bank had a target of buying carbon credits for between 'USD 3.75 and USD 4.35 per tCO<sub>2e</sub>' (2006). This is almost within the range of unit price paid to the Humbo farmers. However, other reports in the Environmental Finance series show that the World Bank as a carbon credit trader 'sold 200,000 CER from the CDM ... at a price of €12.52 a piece, via an auction on the Paris-based exchange Blue Next on 18 May 2011', though the Bank did not disclose 'the winners of the 6.8 times oversubscribed auction' (2011).

Concerning the Annex I Parties payments, there was a disparity between the purchases made by the parties and the Fund's payments in respect of the carbon credits bought from the farmers, as in Humbo. For instance, Spain's USD 12 million payment was to reduce 'emissions reductions equivalent to 400,000 - 800,000 tCO<sub>2</sub> over a period of 10 to 15 years, for which the [BioCarbon] fund will pay USD 3-4/tonne' (Environmental Finance, 2004). Under linear workouts, 400,000-800,000 tonnes of CO<sub>2</sub> implies a range of USD 15 or USD 30 per tonne – assuming the operational cost to be zero. Furthermore, Spain's engagement with the BioCarbon Fund required the World Bank to invest in 'renewables and energy efficiency' in the South America region with a condition that the purchase should be 'no more than €5 per tonne of CO<sub>2e</sub>' (Environmental Finance, 2004). Such

conditional payments of Annex I Parties may limit the Bank's flexibility to buy carbon credits from other regions, like Africa or Asia.

As explained above, the Humbo project envisaged income coming from both the World Bank compliance market and also, potentially, from the voluntary market. As in other business dealings and as the Kyoto Protocol dictates, carbon credit buyers and sellers should have the rights to negotiate their interests and positions. But the fixed compliance prices can be problematic for sellers as they are supposed to agree on the price offered. The statement below from a participant in the Humbo CDM illustrates this.

We had some knowledge and negotiation skill constraints that affected our position and allowed us to compare opportunities. However, I did not see any pressure from the World Bank. In carbon finance, the logic is simple – It is 'If you supply a carbon credit, we buy it'. Our relationship was not a typical buyer-seller, even they went an extra mile in providing us technical assistance, like capacity building and training on methodology, and showed us the right direction to go. I can say the Bank was not involved with a profit motive - considering the other support we had (KIE07).

Thus, host countries like Ethiopia were supposed to accept the World Bank's compliance carbon price offer of USD 4.4 and were not in a strong position to argue and negotiate. They could attempt to do so, but lacked the capacity and technical knowledge to make tangible changes, as Aklilu stressed, 'general levels of awareness of the carbon market [were] very poor' (2011:96). The statement below shows the risk associated with forestry and priority areas for Ethiopian climate experts.

What Humbo was offered by the World Bank was almost on a par with other countries in the A/R. Unlike energy, forestry is very risky sector as a grievance from a single person can destroy the protected area. They take all such factors into account when they decide the carbon unit price. WVE was complaining about the USD 4.4 price. But our logic was, 'let's regenerate the mountain and ensure environmental benefits, and if we get [on top of that] additional carbon funds that would be great' (KIE07).

In Humbo, neither the cooperative farmers nor WVE experts were invited to carefully scrutinise the carbon price offered by the World Bank – despite the project staff’s eagerness to see the project completion and CER issuances (KIE07). As the Humbo case illustrates, the offer could be a very conservative figure, based on speculation around the possible decline of the carbon unit price. Based on the fixed rate carbon purchasing agreement, the Humbo tCO<sub>2e</sub> unit price has remained the same throughout the 10 crediting years. The price has been protected and has not been affected by fluctuations in the global carbon market’s daily price. But when the Humbo agreement was made, the unit price was below the market value. (At that time it was between USD 9 to 15 per tCO<sub>2e</sub>). The two statements provided below attempt to explain how the World Bank reached the offered price and how this might have affected Humbo.

I believe the World Bank as a profitable financial institution had considered all the market elements in reaching the USD 4.4 per tCO<sub>2</sub> price. Despite carbon price fluctuations, they are highly competent in understanding and predicting the possible price changes (WVE forest expert, KIE05).

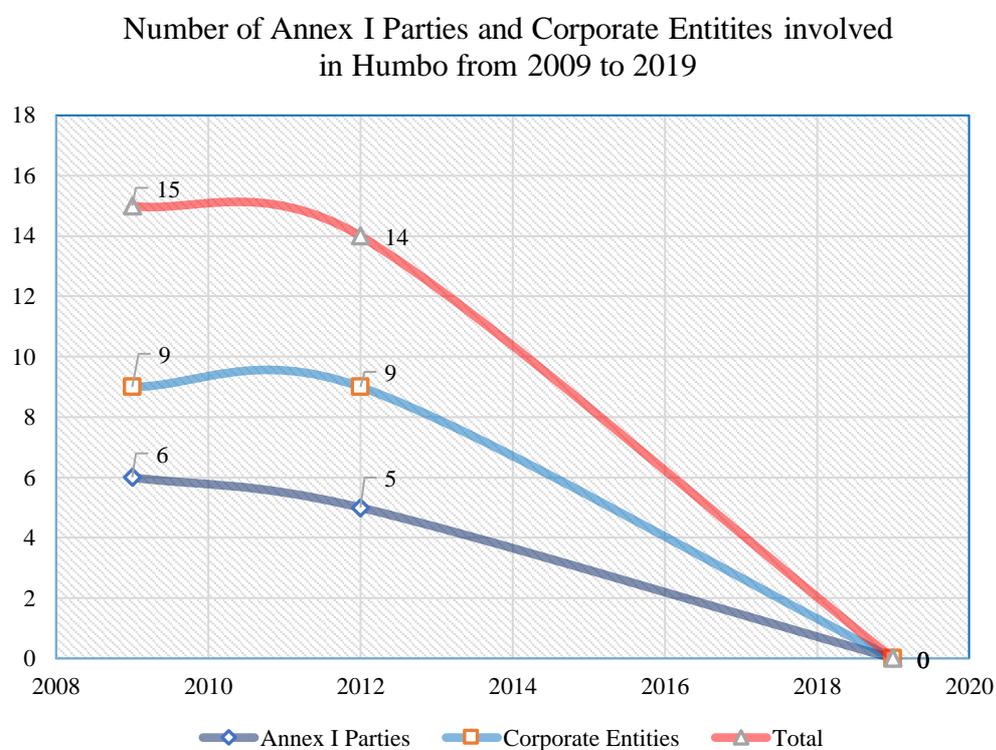
The World Bank had cost-estimation tools and conducted market analysis. It is obvious the Humbo consultant fee might be paid from the grant that donor countries provided. However, the USD 4.4 per tonne could be from the off-set agreements and should reflect their full costs. For the Bank, committing itself for 10 years would be risky, but their experts should know how to mitigate the risk by putting in a reflective price (Climate change expert, KIE07).

As a counterargument to this, the key expert among the initiators of the Humbo project disputed the suggested profit-oriented motives of the World Bank. He said: ‘I do not think the Bank would financially benefit from the Humbo CDM, as their primary interest was in the improvement of the CDM methodology and influencing the UNFCCC’ (KIE07).

The World Bank’s post-purchase agreement is described by two experts interviewed as producing a situation with a high degree of uncertainty and ambiguity (KIE07; KIE12).

Reflecting on this in 2017, it was difficult to predict what might happen after 2018. See Figure 12 for the number of Annex I parties (six) or their corporate entities (nine) withdrawal from Humbo and the BioCarbon Fund where their number declined from 15 in 2009 to nil in 2019, based on the UNFCCC dataset (2019a). The non-commitment of these 15 actors increases the uncertainties related to the future of the Humbo carbon finance business model and the CDM.

Figure 12. Annex I Parties (as members of the BioCarbon Fund) and their corporate entities involved in the Humbo carbon credit purchase agreement



Source: Researcher based on the UNFCCC dataset (2019a).

As the fieldwork interviews documented, the possibilities are many - outcomes are inherently unpredictable and could put the Humbo farmers in a disadvantageous position. The probable scenarios hinge on several questions: Will the World Bank be interested in buying credits for another ten or more years at the same, lower or a higher price? Will the communities, through their Union, decide to join the voluntary carbon market and look

for other potential buyers or stick to the World Bank offer and its regular revenue? And, will a strong domestic carbon market emerge in Ethiopia, whereby private investors (under their corporate social responsibility programmes) buy carbon credits from Humbo farmers? For instance, the Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA) is expected to increase CDM CERs and voluntary market credits demand by about '2.5 GtCO<sub>2e</sub> between 2021 and 2035' (Zechter et al., 2017:33). And if the global flight carbon emission tax is imposed on Ethiopian Airlines, Humbo could get a local carbon credit buyer. However, this does not necessarily represent an injection of resources by the global North into the global South. The claim that poverty reduction in the global South can be achieved by generating additional carbon resources would be called into question. The uncertainty has already overshadowed the future carbon market prospects of Humbo, as WVE and the Union have so far failed to secure a new purchase agreement.

### **8.3 Humbo Within the Broader Financialisation of Nature Regime**

The financialisation of nature is intended to ensure conservation, natural resource regeneration and compensation for ecosystem services, claiming to improve poor farmers' livelihoods. It is deeply embedded within global economic models, agreements and treaties, such that it is difficult to understand the explicit impacts on smallholder farmers' day-to-day activities. Given the knowledge and practice gap with regard to the financialisation of nature and climate finance in the global South, Ethiopian policy makers, technocrats and targeted community members have been struggling to comprehend the treaties and their technical requirements (Aklilu, 2011). In public policy circles, it took a long time for carbon finance to be considered as a viable alternative approach to rural development, with most people being suspicious of it and many claiming that it might detract from or distort rural economic growth.

## **The Carbon Market Model and Humbo Communities Challenges**

Reflecting neoliberal thinking and the Kyoto Protocol, WVE produced a forest project document that is ‘context based, market oriented’ and supports adaptation and mitigation agendas (WVE, 2009). Such a pro-market argument in Ethiopia resonates with Lemenih and Kassa, who consider the market a ‘major driving force behind the expansion of small-scale plantations across the highlands’ of the country, where some farmers were motivated to convert their ‘farm and grazing lands to woodlots in some areas’ (2014:1904). Thus, the marketisation of natural resources has been the key pillar for WVE in advancing the carbon agenda among Humbo farmers. But as the initiator of forestry-based carbon finance in Ethiopia, WVE had first to internalise financialisation in its strategies and operations (KIE05). With an intrinsically market-based approach to forests, the carbon exchange market, the carbon price and the interplay of key actors have dictated the level of carbon and non-carbon benefits to Humbo farmers.

According to key expert interviews, the market model followed in Humbo was influenced by three determining factors. First, the nature of price fluctuations and inflation – tending to keep prices low. The World Bank carbon analysts tend to put a lower price tag on carbon in the compliance market, which takes into account predicted future price changes. Second, the impact of the carbon exchange market – given that the global market is far from being under the control of the communities. Third, the challenges faced in coping with the rapidly changing carbon market - keeping up with new knowledge, securing new buyers and managing diverse stakeholders’ interests in the process.

In addition to the Humbo communities’ initial fierce objection to the CDM intervention, there were also some public servants who opposed it. Their underlying argument was that ‘the communities would not benefit’ from the “carbonisation” of forests’ (KIE05; KIE07). As one of the project initiators elaborated: ‘At the beginning, when we pushed for the introduction of the carbon project in the agrarian villages of Humbo, we witnessed

instant objections from the farmers, key bureaucrats and policy makers. But since there was huge interest from the top federal level political leadership and political will [from the Office of the Prime Minister], a green light was given to advance the idea of carbon-based forest development in Humbo' (KIE07). According to the key informant from the MEFCC, lacking the support of the top politicians, these public service experts were unable to advance their case for stopping Ethiopia from hosting the Kyoto Protocol activities (KIE08). Even now, after a decade, and following the decline in global interest in the project-based CDM approach, and with the empirical evidence from Humbo, the technocrats have continued to be an obstacle to scaling up CDM in Ethiopia. Their main request was to have a direct financial and technical support to the forestry sector (KIE14).

### **Local Actors in the Implementation of the International Climate Treaties**

Environmental frameworks developed by pro-market experts are highly complex in nature. This has been evident as the states of the global South have been struggling to translate the internationally offered proposals into realities on the ground (O'Brien, 2012:13). Given these countries' limited institutional infrastructure and capacity for the technical and policy analysis needed to understand, embed and implement the frameworks, adoption of CDM has proved to be difficult. As a consequence, CDM took much longer to be introduced in Africa than it did in other emerging regions. As most key expert interviewees agree, when Humbo was initiated, there were huge knowledge and skill deficiencies across all the government offices, within the initiating NGO itself and in the communities. The financialisation of nature, and particularly carbon, in Ethiopia was new and so there were only a few people who deeply understood the working modalities and functionalities of CDM (Aklilu, 2011:102).

Farmers' understanding of climate finance was expected to be by far the weakest among the different actors involved. This was partly why they were given more explanation about the environmental rehabilitation and regeneration aspects of the project than about

the financial aspects and the monetary value attached to carbon. Some farmers were confused by the whole concept of ascribing a 'market value' to atmospheric air. Farmers asked questions such as: 'How can air be sold to others?' It took a while for farmers to understand the financialisation of the forest. Even now, though the farmers are aware of the carbon revenue being paid, they have little understanding of how the carbon market works, who determines tCO<sub>2</sub> prices and if it is fair of the value of their regenerated forests, or if a transaction cost is associated with carbon revenue.

This leads us to ask how much the Humbo targeted cooperatives are engaging in mutually beneficial partnerships with the internationally affiliated WVE and the World Bank. As project implementers, the seven cooperatives were able to form an umbrella organisation – the Union - though its carbon market orientation is still minimal (KIE05). And the farmers lack a solid business case founded on investment and rate of return. As part of carbon stock monitoring, they are able to participate in field level data collection tasks, enlisting cooperative farmer members to participate in exchange for a daily payment. Despite the management-related capacity building support that they receive from WVE and the local authority, the farmers are far from being full-fledged carbon finance actors. Community participation and remuneration are also highly contested issues. The Humbo process has never appropriately monetised the farmers' efforts, including their labour time, indigenous knowledge and leadership skills that turned the project concept into a reality (KIE01). Had project costs been worked out based purely on an economist's concept of the cost of investment, the more than 10 years of communities' in-kind contributions might have exceeded the carbon revenue received. As key informants emphasised, this was mainly overshadowed by two factors.

First, the concept of community ownership (and collective action) was emphasised, with local people contributing free labour. The farmers got paid for 15 days' work while working for an additional 15 days on a voluntary basis (KIE05). Had this been managed

by a private company, they would have been fully paid, for all of the time they contributed. This partly dilutes the claims made for the carbon finance model at the local community level. Krishnan et al.'s observation applies to Humbo, where '[w]hile compensation or substitution limits local people's economic loss, it often does not cover their entire opportunity cost' (2012:10).

Second, there has been an increase in the awareness of the non-carbon benefits of forest regeneration in terms of livelihoods. The market value of nature and the carbon-benefits were less understood by the sampled farmer respondents, as the non-carbon benefits were given greater emphasis. The farmers considered the regained forest as a symbol of 'hope' in their efforts to promote local economic growth. [Among the Wolaytas, green scenery symbolically represents a brighter future]. However, some of the benefits mentioned by respondents seem to be no more than rote lines repeated from the training courses they had received, rather than facts they had actually witnessed on their farmlands, as a project officer confirmed (KIE06). It was noticeable that most of them took time to answer when probed and asked to describe the impact of forest regeneration on farmland productivity.

In sum, Humbo within the context of financialisation, reveals some central flaws in the approach. Communities remain far behind in terms of understanding and internalising the financial instruments used in carbon finance and this has affected their capacity for negotiation, as well as the level of support they are able to get. Moreover, the misinterpretation of global treaties in the localities has undermined their contributions.

#### **8.4 Legacies of CDM: Will it Remembered for its Success or Failure?**

As it evolved with the Kyoto Protocol, CDM was considered an 'innovative' and 'flexible' mechanism that would function beyond specific political boundaries and at global scale (UNFCCC, 2011a:1). However, the mechanism's effectiveness and the legacies it has left behind, for the smallholder farmers and for the global climate change mitigation regime, have been debatable. As predicted by Cooper at the outset, the

approach was ‘bound to fail’, as setting national targets would not ‘solve the alleged problem of global climate change’ (1998:66). In line with Cooper, Nordhaus (1998) also described it as ‘a dead duck’, proposing instead a carbon tax as a viable option for mitigating global warming crises and promoting economic development. However, two decades after their gloomy predictions and despite the difficulties faced, the CDM has been able to survive and to bring forward more than 8,000 small and large-scale GHG reduction initiatives under its umbrella (UNFCCC, 2019c). However, it is on the brink of collapse as a result of several factors, national and global, as the Ethiopian case shows. In statements by key informants, there are two conflicting views that reveal a divide in how experts in Ethiopia understand CDM and see its future. Some think that CDM is an obsolete climate change mitigation mechanism that needs to be phased out (KIE08). Others, however, reject this idea and believe that the model has evolved and expanded as part of a wider mutation of climate finance processes (KIE07). The latter notion resonates strongly with those who have worked on the different stages of the Humbo CDM intervention.

WVE worked to build a bridge between Humbo’s local needs with respect to resilience (the enhancement of degraded land) and global climate finance (KIE05). A decade after its implementation, however, CDM as a climate change mitigation and poverty reduction mechanism seems to be at a crossroads. Its heyday lies in the past. CDM, at both the local and global levels, must either evolve and adjust to fit new realities, so that it can meet the farmers’ expectations, or develop an exit strategy that minimises the potential negative impacts of its abandonment on the targeted communities.

#### **8.4.1 Policy Development and Learning Input: A Positive Legacy?**

This section looks critically at the fate of CDM and its legacies for environmental governance within the context of Ethiopia’s CRGE strategy. It discusses Humbo’s legacy in terms of green diplomacy, climate policy development, the challenges of scaling up

and promoting an integrative rural development modelling, and the emergence of the landscape approach to forests and its links to global carbon finance. While CDM must overcome serious challenges if it is to sustain itself as a viable climate mitigation solution, most of the 58 household survey respondents and expert informants provided some positive learning from this carbon finance experience in Ethiopia. Humbo's effects span from the macro (federal), to the meso (regional) and to the micro (community) levels, and they include increased knowledge and technical skills. Those consulted also emphasised its wider implications in terms of the biophysical rehabilitation of the mountain, beyond its contribution to smallholder farmers' livelihoods.

**Green Diplomacy:** Green Diplomacy, as an emerging concept, was extensively explored by Death in his studies related to South Africa (2011). It refers to countries that deploy the green agenda in their foreign policy and diplomatic dealings and strategies at bilateral, multilateral and global levels. In contemporary politics, as Seymour and Busch argue, leaders are cautious of the possible 'risks to their international reputations' which can result from 'high rates of deforestation' (2016:13). Thus, the former Presidents Lula da Silva of Brazil and Susilo Yudhoyono of Indonesia were motivated to 'show leadership in the climate protection arena' and promptly engage with REDD+ (Ibid). Ethiopia's case, with the decision to focus on climate diplomacy, is not very different from these countries.

Green diplomacy can link local environmental initiatives with a national interest in promoting positive international relations. Advancing the greening agenda and having Humbo as a solid forest regeneration case, Ethiopia continues to promote itself as a leader in the global South and a climate actor by demonstrating a commitment to addressing global warming. Ethiopia has created alliances with various actors, like the G77, in advancing the AU's common position on climate change at the global level (in the G20 and in UN gatherings). The key informant from the World Bank asserted: '[T]he late Prime Minister made a presentation on Humbo in Copenhagen [COP15] – as a flagship

case to the global leaders. Humbo got global recognition and showed the global South's leadership, goodwill and commitment to global warming concerns' (KIE07). Humbo served as a solid forestry case study for Ethiopian green diplomacy.

In international relations, diplomats from various countries have promoted such environmental work, but it has been particularly significant for Ethiopia. As a key informant from WVE stated: 'Even Ethiopian diplomats who do not have extensive knowledge on environment and climate change were able to convey the message of Humbo. I consider that Humbo greatly contributed to the green diplomacy of Ethiopia' (KIE06). This shows the mainstreaming of the green agenda into Ethiopia's foreign policy, wherein Humbo served as the country's primary development 'success' story. The following statement by a climate expert consolidates the arguments made above.

Despite the initial challenge the project had faced due to the lack of a uniform level awareness on forest across the country, its successful implementation led Humbo to be a showcase globally; it became the only flagship that the government could use. However, by this time, CDM had already been exploited by other countries, such as Brazil and China (KIE07).

Charting a new development path, Ethiopia became the first country in Africa to produce a comprehensive written green economy strategy that covered multiple strategic economic sectors. The CRGE strategy outlines the roadmap for Ethiopia to become a net zero emission middle-income country by 2025 (FDRE, 2011a). Boosting Humbo's importance in the natural regeneration of the Great Rift Valley, the strategy documented the Humbo initiative as a starting point and a step ahead on the way to a carbon neutral economy (FDRE, 2011b:13). Simultaneously, as the MEFCC expert underscored, green diplomacy had helped Ethiopia in generating resources and getting support from development partner countries, such as Norway and the UK (KIE08). According to him, this was due to the presence of a well-defined and comprehensive national green strategy,

as well as the momentum and positive image built by Humbo. Despite its relatively small size, Humbo was instrumental in advancing green diplomacy and in ‘state branding’ (Death, 2011:460) as the ‘Great Ethiopia’ (Verhoeven, 2015; Clapham, 2018; De Waal, 2015; Le Gouriellec, 2018). The statements presented below, the first by a World Bank expert and the second by a Humbo district administration advisor, underscore the political relevance of Humbo and the sense of pride it created at various levels.

Politically Humbo has had significant influence. In the absence of any successful case from the global South during 2009-11, Ethiopia ranked next to Brazil in efforts to make a case (KIE07).

Politically we benefited from the Humbo project – by promoting our name [Humbo District]. Because of Humbo, our name is known, recognised and became notable globally (KIE02).

At the African continent level, Humbo helped to make Ethiopia the host of the *4<sup>th</sup> Africa Carbon Forum* in Addis Ababa in 2012. The Forum was aimed at exchanging ‘knowledge on carbon markets and green technologies’, and discussed CDM prospects along with funding opportunities for Africa (World Bank, 2012b:13). Some of the key informants interviewed agreed that Humbo’s solid CDM case played a key role in bringing this continent-wide platform to Ethiopia (KIE05; KIE06).

In sum, though it would be difficult to claim that Humbo’s CDM intervention played a defining role in Ethiopia’s green diplomacy, its role in catalysing the climate change agenda and creating a positive image at national, continental and global scales has been visible.

**Climate policy formulation and execution:** Broadly the federal bodies, public service office, specialised entities and other institutions like the Global Green Growth Institute (GGGI) have supported the process of developing the CRGE policy. As a result of CRGE, state policies are expected to be influenced by the new carbon based economic model, either on a short or long-term basis. When the CRGE was initiated, as Fisher et al.

claimed, ‘nobody knew what green economy meant .... [though] there are still many ideas around what the concept actually means’ (2014:22). As the CRGE emphasised and WVE staff noted: ‘Carbon as a new commodity is expected to affect many economic sectors and it can lead to policy revisions’ (KIE05). For instance, when Ethiopia agreed to host CDM activities, in the absence of a clear policy, several burning questions were raised, such as – does CDM fit the Ethiopian definition of forests? Having a financial element to it, how does the business model affect the existing commodity trading, banking systems and the taxation regime? Are land use rights provided, and if so, for how many years? All these concerns were linked to domestic and international trade, as well as land, environment and climate change governance and policies.

Concerning Humbo’s influence on Ethiopia’s climate-resilient policy development process, the majority of the key informants agreed on its role in enriching green policy dialogue, including the CRGE’s formulation, implementation and progress evaluation phases. Several experts interviewed underscored the fact that Humbo expanded policy knowledge and skills on carbon offsets and the financialisation of nature among policy makers and bureaucrats in Ethiopia. Policy makers’ discussion of Ethiopia’s acceptance of CDM led to the exploration of policy options with respect to where CDM fits in with existing economic and environmental policies (KIE05). In other words, as the WVE project officer illustrated, Ethiopia’s capacity in analysing carbon stocks, designing a carbon-centred intervention, applying carbon measurement methodologies, and developing carbon-based scenarios and benefit sharing mechanism increased. Particularly, though Humbo failed to scale up, a WVE expert attested: ‘It became the first experimental initiative on the A/R based carbon model and served as a learning centre for many policy makers and communities’ (KIE05). Most of the key informants consider that this laid a solid foundation for any form of carbon based development, including the CRGE strategy and REDD+. For instance, in using a sequestration rate for large scale

A/R and area enclosure, the CRGE studied the work done in Humbo (see statement below).

The sequestration rate for both afforestation and reforestation was set at 10.75 tCO<sub>2</sub>e/ha/year, a number directly taken from the afforestation/reforestation CDM project in Humbo (FDRE, 2011a:110).

Furthermore, key informants who managed the CDM initiative agreed on Humbo's contribution towards developing a clear definition of forest in Ethiopia. However, an EEFRI expert challenged this, stating: 'I am sure Ethiopia used to have the FAO-based definition of forests, but Humbo could contribute in developing a more context-based definition. Nevertheless, claiming Ethiopia did not have a forest definition before the CDM project cannot be justified' (KIE10). As the current Forest Policy is the successor to the previous laws, policies and proclamations established since 1994 or even before.

In terms of forest policy delivery in Ethiopia, there was a capacity building benefit, and as a WVE report notes 'the experience gained in processing, negotiation, implementation and delivering of environmental services to the emerging global market' was considered to be an exemplary output of the project (WVE, 2009). Some experts agree on CDM's contribution to advancing the landscape approach and a policy shift to REDD+ and agree that Humbo helped to make Ethiopia one of the first countries to be accepted for the REDD+ programme (see section 8.4.3). Furthermore, Humbo CDM is credited with having influenced the government to rethink its carbon-based interventions and look at wider ecological systems rather than small, disconnected area enclosures.

**Carbon Tax Policy - A New Commodity?:** Furthering their commitment to climate change mitigation at the global level through Nationally Determined Contributions (NDCs), the engagement of the countries of the global South with the carbon business model and financing mechanisms seems to be growing – although the majority of these

lack a carbon tax policy. It is a new policy agenda that is being set like in South Africa, and sooner or later other African countries may consider adopting a carbon tax policy.

Regarding the absence of a carbon tax in Ethiopia, two reasons were given by the key informants interviewed. First, because carbon as a commodity is new to the national economy and its magnitude in relation to the GDP is insignificant, the government might be reluctant to institute a policy. Second, the government, with its 'no-action' policy option, is encouraging more greening work. That is to say, introducing a taxation regime alongside carbon sequestration efforts could hinder green initiatives that contribute towards reaching the NDC target under the CRGE. With the lack of a carbon tax regime in Ethiopia, in the case of Humbo, the carbon revenue received by the seven cooperatives has not been taxed. The carbon revenue has never been distributed as dividends to the shareholders. As income or revenue from sales, it is unclear whether it will be taxed in the future or whether introducing taxation will reduce the level of impact realised from carbon revenue.

In Ethiopia, given carbon as a new commodity and its significance to the CRGE strategy that is built on the carbon emissions reduction model, the government is considering the introduction of a specific carbon policy that is applicable across multiple sectors (KIE07). However, there are several questions that need to be addressed. Will the government seek to generate revenue from the carbon deals? Will it be treated like any other forest output or commodity, such as timber, for which there is a timber tax? If emissions from national companies such as Ethiopian Airlines are counted or if they act as domestic carbon credit buyers, what would be their requirements under national tax law? Will the government treat cooperatives and private investors equally in taxing A/R carbon revenue? Whatever form it takes, the new carbon tax policy is expected to address issues that intersect multiple sectors and actors. In the absence of a regulatory mechanism, as one of the key

informants advised: ‘Ethiopia may consider introducing a comprehensive new carbon policy’ (KIE07).

**A centre of excellence – a living experimental site on carbon:** Despite the reluctance of some policy makers and bureaucrats to back the initiative, and despite community members’ concerns about land grabbing (which led some to take measures to block it), Humbo was gradually shown to be a positive experience in Ethiopia and a solid example of what carbon based rural development is about, what it involves and its potential benefits and associated costs (KIE06). Strengthening this line of argument, a WVE staff member pointed out that a number of people had visited the site to learn from its rich documented experience so that they could make informed decisions on their own proposed carbon based A/R initiatives. These visitors have included Ethiopian nationals as well as people from Uganda and Sudan. A REDD+ programme staff member affirmed that ‘Humbo is our learning curve in forestry. For any learning and reference on carbon-based development, we send people to Humbo for CDM and to Bale for REDD+’ (KIE08). Humbo has become a living experimental forest case study, and its lessons are expected to have an impact on other communities’ critical decisions.

The key lessons generated from Humbo lie in its ability to fill the knowledge and skill gaps in forestry, including those with respect to greening desiccated landscapes, governing communal forest, and carbon business modelling, along with its revenue redistribution mechanism. Generally, despite its small geographic coverage and the challenges faced in fulfilling its ambitions, Humbo has created momentum for greening in Ethiopia, leading many experts to refer to it as ‘a symbol of triumph on greening’. Though we should note that interestingly there are divergent assessments of CDM’s contribution to green policy development in Ethiopia. The following three key areas illustrate Humbo’s influence.

- a. The CRGE strategy is built on the carbon based framework, aiming to address climate change challenges and reduce poverty in Ethiopia, with a definition of resources based on financialisation and with thinking based on ‘nature as capital’. The strategy and other forest projects use Humbo’s methodology to calculate their emissions reduction.
- b. Prior to Humbo, carbon was not explicitly mentioned as a commodity in national economy policy. Thus, the emergence of Humbo has contributed to the march towards recognising it as a tradeable commodity.
- c. Albeit on a small scale, Humbo attempted to move away from the more or less standard approach to community development projects, involving implementation on a ‘cash-for-work’ or ‘food-for-work’ basis, with no further financial benefits for local people once the A/R had been completed. This includes an element of behavioural change, encouraging people to look at ‘nature as capital’ (Sullivan, 2012; 2014), besides the traditional slash and burn approach for cash.

#### **8.4.2 Why Has Humbo Failed Scale Up in Ethiopia?**

Pro-poor development intervention is evaluated by its sustainability and robustness in benefiting the target group and reaching wider communities through inclusive scaling up processes (Singh et al., 2019). However, as Resnick et al. argue, some micro-level initiatives face particular problems in scaling up and enriching national strategies as they ‘pose more trade-offs’ (2012:216). In a similar vein, and as documented by several authors including Jindal (2006) and Massarella et al. (2018), most carbon finance-centred rural development interventions have failed to scale up, or be scaled up, and reach more poor communities and those with different socio-economic and cultural circumstances. Massarella et al. argue that at a village level the ‘[e]arly stages of new international conservation and development program[me]s, ... are characterised by large amounts of resources and attention, along with high expectations of success’ though ‘these early expectations are rarely fulfilled’ (2018:375). The scaling up of micro-level interventions cannot be taken for granted as they tend not to be readily adaptable or capable of being

extended into a wider context. Moreover, there is lack of adequate investment, assured in the pilot phases, but not over time, as the Humbo case revealed.

As the empirics of other CDM implementing countries show, the framework is facing scaling up problems across the globe. For instance, Massarella et al. (2018:375) in their study of carbon pilot projects in Tanzania, found that there was a trade-off between ‘fully piloting new initiatives and raising expectations’ among the communities. The possible repercussions of ‘unfulfilled expectations’ of benefits, created by small scale carbon-based interventions, were not considered. In Ethiopia, it is worth looking at the A/R initiatives that followed in Humbo’s footsteps, in order to explore whether it should be shelved as an outdated mode of forest governance, or continue to be a ‘physical on-site museum’ enabling other initiatives to learn from its history. Moreover, we should ask, will Humbo experience a resurrection and bounce back to secure its future position as an ‘innovative’ rural development model suitable for emulation in Ethiopia and beyond? This section explores other carbon-based A/R initiatives in Ethiopia and Humbo’s influence on their activities.

As discussed at the beginning of the chapter, in parallel to Humbo, the Sodo Community Managed Agroforestry and Forestry Project was implemented by WVA/WVE. Sodo followed a similar implementation process to that of Humbo, including in its approaches to participatory forest management, community mobilisation and gaining land use rights certification. Both sister projects secured Gold Standard certification and were very similar in many of their aspects, except in terms of the biomass volume involved and the type of carbon market in which they trade their carbon credits. The sister initiatives pursued mutual learning, rather than having any scaling up correlation between them.

All key informants agreed that the Humbo initiative has so far remained unreplicated in Ethiopia. The key barriers to scaling up mentioned include: the lack of initial investments like those made by WVA; a reluctance among federal level technocrats; the very

technocratic procedures involved; the lengthy process that must be followed from initiation to certification (Humbo took more than 5 years to get carbon revenue); the costs and skills requirements (the ‘high transaction costs of meeting the CDM requirements’ as described by Salinas and Baroudy, [2011:89]); the deep decline in the global carbon price; and the risks associated with retaining the protected area for the agreed crediting period, given the susceptibility to fire (Boyd et al., 2007:250). In its failure to be scaled up, the Humbo case is similar to cases other authors have examined in other countries, such as Mexico (McAfee and Shapiro, 2010) and Tanzania (Massarella et al., 2018). Box 3 presents the case of the Jama-Urji Farmer Managed Forestry Project. The carbon model seems to have been maintained in various forms, but not as an A/R CDM for the promotion of rural development.

There are also alternative renewable energy initiatives in Ethiopia, like the Energy Efficient Stoves Programme (EESP) of WVA and WVE which focuses on reducing the non-renewable biomass consumption level through the CDM PoA approach and sells its credit carbon to the Swedish Energy Agency, Standard Bank Plc (UK) and WVA (WVE/WVA, 2013; Swedish Energy Agency, 2015). Similarly, the Development Bank of Ethiopia has registered the ‘Ethiopia Off-Grid Renewable Energy Programme’ under PoA in July 2016 (UNFCCC, 2019b). Such energy-based carbon projects, which are relatively easier to implement, in terms of verification and management processes, than A/R, are getting carbon credit payments. But they are still in their infancy.

To conclude, despite being a site for learning, given diminishing global interest in CDM and its inability to expand to other parts of Ethiopia, Humbo is likely to remain an A/R CDM museum for the foreseeable future, unless it is embedded within REDD+ or the new post-2020 Paris Agreement frameworks.

### **Box 3. Implications of Humbo to the Jama-Urji Carbon Project Case**

In the Jama-Urji carbon based project, the implementing NGO (HoA-REC&N) decided to follow some of Humbo's practices, but avoided Humbo's use of the CDM compliance carbon market. In mobilising its 2,000 cooperative members, Jama-Urji followed the Humbo forest governance model for cooperatives. The project coordinator said, 'We conducted the feasibility study and baseline survey; prepared a Forest Investment Plan and Fire Management Plan, conducted an Environmental Impact Assessment and now we are at the carbon finance validation phase. It is a very tedious process. Once validation is secured, we will then face the marketing difficulties' (KIE11). The process followed is very similar to that in Humbo.

Explaining the initial investment, the project coordinator said: 'The investment so far made is huge – roughly USD 40,000 (only for area enclosure). So far neither a market pipeline nor carbon credit buyer has been secured. If we face a marketing problem in the future and fail to do it independently, we may consider joining the Landscape Approach [see Section 8.4.3] of the REDD+ programme in Ethiopia' (KIE11).

From its inception, the Jama-Urji project chose not to follow the Humbo CDM model, opting to pursue the Voluntary Carbon Standard (VCS) model and trade in the voluntary carbon market. The reason given by the project coordinator was: 'We started it in 2015 and the CO<sub>2</sub> global price has already started to decline and we were advised that it will not be a viable option. There were only a few in Africa and there was little chance of getting UNFCCC CDM certification' (KIE11). When asked why HoA-REC&N did not use the CDM, he said: 'We started following in the footsteps of Humbo's CDM, but later on we found it will not be feasible as we may not get market for it. Therefore, we avoided the CDM because VCS has a better unit price'.

Learning from previous forestry initiatives in Ethiopia and managing community expectations about carbon funds, the expert from HoA-REC&N said: 'Except with the government officials, we do not talk much about the financial element of forests with the community members – to avoid the expectations dilemma. Conservation is our priority and carbon finance is secondary. To investigate this, we went to Bale to observe the REDD+ programme for the CoCooN – (Conflict and Cooperation over Natural Resources in Developing Countries) study trip. But the community members were asking, *why didn't we receive the carbon funds?*' (KIE11). From these statements, it is clear that, despite the fact that the Humbo CDM was not replicated, its experience served as a reference point for other similar projects in Ethiopia.

Source: Researcher, based on an interview conducted in 2017 (KIE11).

### **8.4.3 The Landscape Approach: Moving beyond Piecemeal Intervention**

The emerging Landscape Approach for sustainable land management is gaining momentum and dominating the current global conservation and carbon related discourses. It aims to address the gaps in managing land's multifunctional roles, linked to conservation, biodiversity enrichment, food security, poverty reduction, climate change mitigation and sustainable development. It attempts to depart from a piecemeal approach, as documented in the Humbo CDM. As Pistorius et al. elaborate, the approach is seen 'as

a means for improving resilience of land and communities' (2017:1). It looks at the trade-offs and synergies, and the multiple factors related to land and its contribution to rural development. In the spirit of the '*Bonn Challenge*' - though with limited evidence on its impact across the globe - Ethiopia is voluntarily committing itself 'to restore 15 million hectares [150,000 km<sup>2</sup>] using the landscape approach' (Ibid). As the key informant from WVE underscored, 'I think Humbo has laid the path in advancing forestry and its lessons have helped the government to depart from a piecemeal approach and move towards an integrated approach to large scale intervention in Ethiopia' (KIE07).

The Landscape approach considers the wider ecological setting as a single system for forest governance in Ethiopia, and considers net emission reduction rather than just the sequestration of carbon in a specific location. But it is widely expected to face a capacity building challenge in its delivery, as an expert from the Ethiopia Environment and Climate Research Centre explained (KIE12). The geographical area being considered is wide and it is far beyond the country's current capabilities to effectively manage it and ensure its multidisciplinary effects on livelihoods, nature, the national economy and global climate change mitigation. The best option might be to go for a 'sub-landscape approach' (Linke et al., 2005). Furthermore, it should go beyond the geographic domain and consider societal and cultural differences within the wider topographical scope.

### **Ethiopia's Policy Shift to REDD+: Is this the end of the CDM?**

In Ethiopia, besides its Humbo CDM initiative, the World Bank is working with REDD+ through its Forest Carbon Partnership Facility (FCPF). Of 69 REDD+ countries, Ethiopia was one of the first countries to submit its readiness document (KIE08). Its readiness preparation proposal (R-PP) was approved in 2012 and it secured USD 3.6 million of funding from the FCPF (FDRE, 2015a:1). A REDD+ office key informant explained that an additional USD 10 million was granted by the UK and Norway, each contributing USD 5 million (KIE08). This makes the total budget USD 13.6 million (total funding for

Humbo/Sodo CDM's was USD 1.3 million), with the aim being to 'reduce emissions from deforestation and forest degradation, foster conservation, and enhance forest carbon stocks' and ensure the forest contribution to CRGE (World Bank, 2014). Its biggest component is the Oromia Forested Landscape REDD+ pilot Programme (FDRE, 2015a:6). Expanding its collaboration with the World Bank, Ethiopia signed a five-year agreement amounting to USD 18 million in March 2017 for 'improving the enabling environment for sustainable forest management and investment in Oromia national regional state' (MEFCC, 2017a). Creating such an enabling environment involves laying down the necessary infrastructure for moving to measured REDD+ result-based performance, with the domestic capacity to verify results, and with the ambition of creating a regional state with a zero deforestation by 2030. Moreover, the Government of Norway has pledged an additional USD 50 million to partly fund the REDD+ programme, with the largest portion to be based on results-based payments for sequestered CO<sub>2</sub> and verified emission reduction (FDRE, 2015a).

In contrast to experience under the CDM, there is evidence of degree to which the government is vigorously pushing the REDD+ agenda in deploying the landscape approach. But, there are a number of REDD+ critics, including Sayer (2009:1), Myers et al. (2018:314), Seymour and Busch, 2016:273) and Asiyanbi (2016:155). The REDD+ approach has been criticised mainly for its emphasis on technical solutions to the political ecology, for disrupting carbon market dynamism (*inter alia* by granting awards to projects with lower standards than CER) and for the exclusion of communities access to local resources. But Angelsen et al. (2017) argue that 'although [it] troubled, is not dead'. Despite its flaws, REDD+ is expanding in SSA and Ethiopia is one of the first countries to advance the agenda on a large scale.

An expert from MEFCC, quoted below, gave a firm view of the trends in carbon finance in Ethiopia with respect to the two mechanisms, reflecting the government's diminishing

interest in CDM and its increasing focus on REDD+ as the ‘best option’ in governing Ethiopian forests.

I do not see any future of the carbon finance especially the CDM in the global South as it is extremely complicated and cumbersome mechanism. With due respect, I do not think it can serve the global South. On carbon finance, the only area where we place some hope, in forestry, is REDD+ (KIE08).

Despite CDM being the first initiative in this field, the Ethiopian government gives more weight to REDD+ than to CDM. REDD+ is a top priority for policy makers. Comparing the two frameworks, ‘[u]nlike the REDD+, the CDM does not have its own designated office. Rather its functions are dealt with as part of the overall ministerial tasks’ (KIE13). This is a clear indication of how the government is advancing REDD+ and trying to exploit the linkages embedded within it. Henceforth, considering the scope of REDD+ and its financial aspects, the government has intensified its efforts to expand its geographical scale. The discussion above suggests why the state is focusing on REDD+ rather than the CDM, though at this stage it is difficult to identify, or verify, results as the programme only recently completed its first phase, the readiness package.

### **8.5 The Paris Agreement, NDCs and the Future of Humbo**

Unlike the Kyoto Protocol which imposes targets and an enforcement approach on the global North, the Paris Agreement is built on cooperation and voluntary commitment (UNFCCC, 2015). Under the Agreement’s Article 4 (3), though the ‘common but differentiated responsibilities and respective capabilities’ principle exists, the countries of the global South are expected to actively engage in emission reduction through declaring their commitments. Nonetheless even though this principle attempts to consider the ‘different national circumstances’ of the parties, it is still vague as the parties’ commitments are left to be determined by their own decision making processes and legally binding targets are missing. Moving out of the old climate mitigation mechanisms,

the Agreement seeks the formation of a new system of a ‘Sustainable Development Mechanism (SDM)’ for the post-2020 global climate agenda (Kachi, 2017:2). As the recent report produced by the World Bank and Ecofys shows, of the 169 parties that submitted their NDC, only 88 are planning or considering using ‘carbon pricing and/or market mechanisms’ (Goyal et al., 2018:33). This can be a domestic or international carbon mechanism – and this number represents just less than half of the participating countries (48%). Thus, despite the prominence of the carbon finance model, more than half of the parties are not considering it in their NDCs as the best option for reducing their GHG emissions.

The Paris Agreement Article 6 (2) calls parties for applying a ‘cooperative approaches that involve the use of Internationally Transferred Mitigation Outcomes (ITMOs) towards NDCs, promote sustainable development and ensure environmental integrity and transparency’ (UNFCCC, 2015:24). The Agreement, without departing much from existing international carbon pricing mechanisms, has been exploring ways to mitigate differences with or divergences from the currently used mechanisms and methodologies, including the CDM. For instance, the UNFCCC has requested the Subsidiary Body for Scientific and Technological Advice (SBSTA) to develop a system for adoption by the COP. The document produced for review indicates the CDM and its Article 12 issued CERs can be integrated into the ITMO of Article 6(4) of the Paris Agreement (UNFCCC, 2018c:22-23). However, there remain some challenges in creating harmony between old and new climate mitigation mechanisms. The SBSTA’s Article 18 ‘Transition from the Kyoto Protocol to Article 6 (4) of the Paris Agreement’ proposes some mitigating measures for the Kyoto Protocol with the intention of CDM/JI qualifying for the Paris Agreement including the following three options:

Option A [existing CDM/JI activities may become Article 6.4 activities without further conditions];

Option B [existing CDM/JI activities may become Article 6.4 activities if they meet certain conditions]; and

Option C [no existing CDM and JI activities may become Article 6.4 activities].

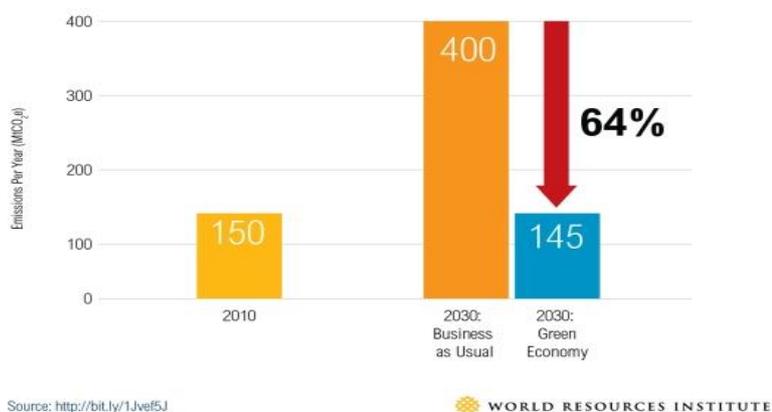
As of 2019, the Parties are undecided about which option or combination of options to pursue and which will function effectively at the global scale and keep the temperature increase below 1.5 degrees Celsius. Referring to the Options, Kachi (2017:2) argues that to ‘avoid dangerous overlap of the two mechanisms [CDM and SDM]’ it would be better to phase out the CDM. Considering the CDM to be an ‘outdated Kyoto mechanism that has no role to play under the Paris Agreement’, Kachi, however, advises using the CDM experience and have a smooth ‘transition’ to ‘shape the SDM’ (Ibid:6). Extreme views include that of Reddy and others, who, going beyond just the CDM, advised the ‘phase out’ of carbon finance ‘given its inherent problems and its failure to benefit Africa’ (2011:174).

However, experts who met in Bonn in 2018 argued strongly that the CDM, which has been able to register thousands of carbon related projects, has the potential to ‘inspire, inform and lend infrastructure ... to build [tools] under the Paris Climate Change Agreement’ (UN Climate Change, 2018). These arguments suggest that there are opportunities for the post-2020 global climate change mitigation mechanisms to learn from existing and previous interventions and incorporate lessons by developing an effective exit strategy based on an appropriate system. Such a system could reduce the uncertainties hanging over the Humbo forest initiative and shape its future.

The global climate change regime and the Parties’ Intended NDCs will influence the green economy efforts of the global South. For instance, Uganda aims to reduce its emissions by ‘28 per cent which is much higher than its NDC of 22 per cent emission

reduction’ (Government of Uganda, 2016). Similarly, as the Paris Agreement’s Article 3 requirement stipulates, Ethiopia was one of the first African countries to submit its ambitious Intended NDC to the UNFCCC, aiming for greater national carbon reduction and more sequestration activities. In the CRGE’s plan under the BAU based on 2010, Ethiopia’s emission rate would be the doubling of the 150 mega-tonnes of CO<sub>2</sub> or higher by 2030 (see Figure 13). Compared to the BAU baseline, Ethiopia’s ‘conditional contribution’ commitment of Intended NDC is the highest in Africa (64%) while the lowest is that of the Democratic Republic of Congo (DRC) (17%) (van Pelt and Leisch, 2016:102). However, the Intended NDC aims to keep the emission rate even lower than the 2010 base – that is, 145 mega-tonnes in 2030 (Levin et al., 2015).

Figure 13. Ethiopia’s proposed National Climate Action Plan 2030



Source: WRI – World Resources Institute (2018).

This implies, following CRGE’s focus on forestry, that this sector is expected to be a driving force for a wider A/R intervention with a large scale geographical coverage, as in REDD+, rather than small projects that make smaller contributions. However, as a WVE expert emphasised, given Ethiopia’s Intended NDC commitment, the Humbo CDM is expected to remain relevant, as it adds, even if only a little, to efforts to meet the national emission reduction target.

When Humbo was initiated, Ethiopia did not have any carbon emission reduction commitment to global efforts [Intended NDC]. This is a new trend for the global South where the importance and contribution of Humbo towards achieving the country's target remains relevant (KIE06).

So, Ethiopia is experimenting with both the REDD+ and CDM frameworks and is attempting to align them with its national development priorities, poverty reduction strategies and the commitments it has made under both frameworks. As a result, unless global reforms that strongly influence Ethiopia's domestic forest-based green agenda are pursued or the leaders decide to merge them, both frameworks might continue working side by side for the next few years. Therefore, despite the differences in their approaches and implementation modalities, the expected level of contribution to the GTP and some REDD+ experts' critical perspectives on the CDM, there should be an integrative approach that brings both frameworks under a single umbrella, avoids a multiplicity of forest-based frameworks and enhances mutual learning and benefits.

### **The Future of Humbo: Possible Scenarios and Actors' Implications**

Considering the grim prospect for the CDM, the unpredictable results of the global climate change negotiations and the shift towards devising 'new' climate modalities, the weak capacity of the newly formed Union, the low interest of bureaucrats and global interest in the CDM, it is expected that more policy space for the World Bank and WVA in Humbo's carbon business model is expected to be created – mainly related to the 20 remaining crediting years (KIE06). This is evidenced by the key interviews conducted, as no one has confidence in the future of the Humbo and its impacts on livelihood improvements. Within Ethiopian climate change policy, many experts agree that the CDM is obsolete and it looks like there will be no future for it in the A/R (KIE08; KIE11; KIE13). Although beyond their capacities to dictate, the key informants provided several possible scenarios based on the outcomes experienced. These include:

- a. The Ethiopian government explores the carbon market with an interest to fulfil its NDC. Humbo can be included as part of the results-based payment of REDD+ (though not under the CDM).
- b. Continue under the compliance carbon market agreement – though the World Bank does not show an interest in small piecemeal initiatives like the Humbo.
- c. Move to the voluntary carbon market.
- d. The emergence of a domestic carbon market (in the case of Ethiopian Airlines’ commitment to buy certain tonnes of carbon credits).

These scenarios can potentially define the role of the actors involved in Humbo where they are expected to re-emerge to fit the evolving climate change contexts. Two of the scenarios are illustrated below. Under scenario (a), the World Bank, as a carbon credit buyer, may continue its role through REDD+ in Ethiopia, in line with O’Sullivan et al.’s (2012) discussion of the Bank’s role. However, under scenario (c), the search for a new buyer will continue while the current buyer may consider buying more carbon credits by competing with other buyers. Indeed, more carbon actors are expected to be involved – spanning corporate bodies, brokers and consultants. This would possibly reduce the Bank’s dominant role in the Humbo carbon finance model. However, despite the several scenarios put forward, no actor is confident in the outcome.

As to the communities, with the declining nature of global carbon prices and removal of commitment from the Annex I parties in the Paris Climate Agreement, the carbon-based resource seems to diminish with time (KIE10; KIE11). Despite the prevailing uncertainties, however, the communities are still optimistic that the carbon initiative will contribute positively towards their livelihoods.

## **8.6 Humbo Beyond the Ethiopian Context: Global Implications**

The influence of Humbo’s CDM at continental and global levels resulted from its being based on local-national-global partnership. Its engagement with the Kyoto Protocol and its carbon sequestration certification helped it to gain a recognised status in global climate

change mitigation, with the World Bank and the UNFCCC using all their media outlets to promote its re-greening activities. Humbo defied the assumption that CDM was unattainable by least developing countries (KIE06). Humbo also contributed towards enhancing the World Bank's global status, as this partly depends on its continuing to be a global leader in carbon finance, by among other things contributing to the improvement of the UNFCCC's CDM methodology. The MEFCC expert consulted agreed that the promotion of Humbo by the Bank had 'helped Ethiopia to some extent and even they [the Bank] consider Humbo to be a "point of reference" when they engage with us on forestry-related negotiations' (KIE08).

A decade after gaining this recognition, however, due to the emergence of REDD+, its own inability to obtain assured resources for its remaining 20 crediting years and to substantially reduce poverty among the farmers, and the lack of expansion of carbon-projects in other SSA countries, the global image and influence of Humbo's CDM have diminished. A WVE key informant makes the point that the Bank has a special stake in and focus on Humbo (KIE06), but its future is likely to be strongly influenced by the Paris Climate Agreement mechanisms.

Thus, despite some disagreement on the level and strength of its impacts, it is clear that Humbo played a key role in advancing the climate resilience agenda(s) of the World Bank, the UNFCCC, and the Ethiopian government. Humbo has achieved a renowned position both nationally and globally. But, its role appears doomed to decline due to the uncertainties it is now facing.

## **8.7 Conclusion**

Neoliberal economics can shape agrarian dynamics within rural development contexts, causing a shift in thinking, modes of production and income generation. The carbon finance model is complex as it brings many instruments and multilevel powerful actors together. Given the speculative nature of trading, the global carbon supply-demand

imbalances, market imperfections and the global North's unreliable commitments, the CO<sub>2</sub> price has been declining very significantly and this has severely undermined the CDM's claim to provide a mechanism for poor smallholder farmers in the global South.

In discussion of the financialisation of nature within the context of Ethiopia, the Humbo CDM stands out as being the first of its kind and providing a learning curve for policy makers, yet its legacies are still disputed. Though it is difficult for Humbo to claim to have made a central and dramatic contribution to environment and climate change related policy change in Ethiopia, as it once appeared set to do, its role at the initial stages of policy formulation was evident and significant. As Salinas and Baroudy's study shows, Humbo's global image and certification 'inspired the Ethiopian Government to consider mainstreaming carbon finance into its sustainable land management programme as a new model of sustainability' (2011:31). Despite Humbo's small size and scope, its relevance in linking forests, climate change and rural development assumes a degree of importance in the development of the green economy strategy and forest policy in Ethiopia. Nevertheless, it failed to play a transformative role in bringing about paradigm shift in rural development founded on the green agenda.

Dealing with multiple carbon-based frameworks, notably REDD+, the Ethiopian government is making use of lessons gained from the CDM experience, including the working modalities followed in forestry and move towards building a low carbon society. Humbo, as the first carbon-based approach to climate change and rural development in Ethiopia, has expanded and deepened policy knowledge by testing CDM for poverty reduction, and played a symbolic role by demonstrating the potential of forest regeneration. Moreover, it has introduced the concept of carbon-based rural development and helped to shift mindsets in the Humbo communities, with people seeing nature in terms of capital, while many still have doubts about the approach's practicability.

A decade after its implementation in Ethiopia, can anyone claim that CDM is still alive? Some key experts say 'it is dead' and see it as a framework that has lost its way as a pathway to forest-based rural development (KIE08). As a carbon expert from an NGO stressed: 'I do not think the carbon finance has any future. The companies in the global North and their economies are benefiting from it ... I wish [if] there could be alternative approach to it' (KIE11). Finally, as the Carbon Market Watch Policy Brief of 2017 hinted, the CDM's very existence in post-2020 might well to come to an end – 'Good-Bye Kyoto' (Kachi, 2017). Unless the CDM is reformed, and revived as part of a new synthesis, what the findings of this analysis suggest is that the survival of the approach as part of global environmental politics and the development agenda is highly likely to have been lost, leaving a legacy of lessons learnt, with perhaps a cautionary tale of inflated expectations.

## **Chapter 9 Conclusion and Policy Implications**

This concluding chapter summarises the key findings of the empirical research from the Humbo assisted natural regeneration initiative in Ethiopia. It analyses the implications of carbon finance on the national green economy policy agenda for natural regeneration and sustainable development, poverty reduction and the global climate change regime. Key debates on the financialisation of nature are backed up by evidence from the Humbo case study, and any gaps that require further critical engagement or studies on the forest-focused green agenda are identified – for the green economy in general, and for carbon finance promoting rural livelihoods resilience in particular – in Ethiopia and beyond.

The green economy, a term coined by Pearce, Markandya and Barbier in 1989, has recently expanded its dominance in the global economic development discourse, intersecting multiple global climate change mitigation, economic growth and poverty reduction issues. Since 2012, Rio+20 has played a determining role in mainstreaming the concept onto the international sustainable development agenda. As part of an emerging development lexicon, the green economy is an ‘assemblage of discourses, actors, institutions and calculative technologies [that] underpin the creation of markets for ecosystem services’ (Sullivan, 2014:1), which embraces the carbonisation of development and its financing mechanism. As history shows, both global and national actors – corporate entities, states and non-state actors – have been advancing their interests using global treaties within the framework of international institutions. The operationalisation of the green economy is reflected in a number of sectors where the significance of forestry and its carbon abatement functions remains critical in the global South. The Kyoto Protocol, which was ratified by 192 parties and became effective as of 2005, requires Annex I parties to offer ‘new and additional financial resources’ to the global South for reducing CO<sub>2</sub> through sequestration (UN, 1998). This is in addition to their efforts to minimise climate-related impacts on global South countries by improving

their technologies, building their capacities, and assisting them in diversifying their carbon-intensive economies (UNFCCC, 2003:21), or as Zomer puts it, accomplishing ‘multiple goals of poverty reduction, environmental benefits and cost-effective emission reductions’ (2006:2). In line with Sustainable Development Goal (SDG) 13, which urges us to ‘take urgent action to combat climate change and its impacts’, the regulatory role of forests as carbon sinks are expected to continue to develop with the advancement of the Paris Climate Agreement.

Global South countries, such as Ethiopia, have been focusing on food security and strengthening the resilience of vulnerable communities to reduce the adverse impacts of environmental degradation and climate change. Historically, Ethiopia’s vulnerability has been mostly related to manmade and natural disasters, but it has also been exacerbated by political and economic processes. To advance the green agenda, and within the provisions of the Kyoto Protocol, Ethiopia implemented the Humbo assisted natural regeneration initiative, which was the first large-scale A/R certified project in Africa, in line with the aims of its national Climate Resilient Green Economy (CRGE) strategy – to regain forests by increasing CO<sub>2</sub> stock through carbon finance models. The overall model is framed on carbon reduction, with the end result of Ethiopia becoming a ‘zero carbon’ country by 2025.

Humbo’s rural communities have been facing challenges of food insecurity, unreliable rain due to climate variability, and poverty which have forced them to rely on safety net support or pursue outmigration. Despite farmers’ efforts to increase agricultural productivity, they have not been as successful as had been hoped, as revealed by the respondents in the household survey.

Within the framework of the Kyoto Protocol and global climate change negotiation trajectories, this dissertation has critically examined the financialisation of nature and its relevance to the future of CDM initiatives like Humbo in the post-2020 or Paris climate

regime. The research findings show the interdependence of global treaties and national policies, local-national-global actors and their influence on carbon finance, and the benefits and costs in the context of the Humbo CDM. They also highlight the claims made which are at odds with the results of the ecological rehabilitation of 2,728 hectares of land to significantly improve the livelihoods of 5,168 cooperative member farmers. This dissertation has assessed the impact of the intervention among the Humbo smallholder farmers and its wider implications for the national climate resilient strategy, the global climate change mitigation and the 'leave no one behind' objectives enshrined in the SDGs. Concluding findings and policy implications on the financialisation of nature, climate change and poverty reduction in SSA are provided below.

### **9.1 Key Findings**

Carbon-based forestry development is embedded in neo-liberal development thinking and has been appreciated for its global expansion and for bringing 8,137 initiatives onto the UNFCCC CDM system – the largest global offsetting scheme. Carbon sequestration in forests has been central to the corporate profit motive equation, and an underlying logic for global climate change mitigation. In Ethiopia, Humbo laid a foundation for carbon abatement and created a strong link with the green economy strategy. This is similar to cases in other SSA countries where carbon is slowly becoming part of the national development strategy – aimed at building a resilient and low-carbon society. Ethiopia's CRGE and its REDD+ policies are founded on the carbon finance model, with Humbo being recognised as a point of reference. Through its carbon sink and ecological regulatory function, Humbo is expected to sequester 880,295 tCO<sub>2</sub> throughout its 30-year crediting period. This will contribute positively to global climate change mitigation. Though the measurement for CO<sub>2</sub> sequestration varies, the Humbo forest regulatory role is validated by the consultants of JACO and RINA Services, and verified by the UNFCCC.

Although CDM is founded on a market approach, as the Humbo case shows, A/R initiatives, with carbon as the core element, cannot be implemented without a substantial initial capital investment. Ethiopian banks declined to finance the Humbo CDM due to its perceived economic unviability. Consequentially, the initiative was implemented with the generous (although ultimately insufficient) initial investment of World Vision Australia (WVA). Had WVA not secured this grant from its philanthropists and donors, this first UNFCCC-recognised large-scale A/R flagship initiative in Ethiopia and in SSA would not have occurred. Notwithstanding, this financing did not even cover the full project and operational costs. The findings of the research show that it was not viable as a business case. Had the A/R CDM been a profitable business, it would have attracted more investors from state, non-state and private actors – either nationally or internationally, which has not yet happened in Ethiopia.

The Humbo climate mitigation initiative used both a ‘command and control’ and a financial incentive approach – the ‘economy of expectation’ for fair compensation – to advance the greening agenda among the rural farming communities. Humbo witnessed a clash between neoliberal ideas and local perceptions and understandings of the financialisation of nature, with farmers initially showing strong resistance to buy into the idea of the CDM. The principal reasons that led to conflicting narratives on land and its abstraction within the carbon finance model were as follows:

- a) The essence of the Humbo assisted natural regeneration initiative was interpreted differently by the companies of the Kyoto Protocol Annex I parties and by the farmers. For the global North emitting companies which tend to offset CO<sub>2</sub>, the sequestered forest land was a resource or an asset which enabled them to meet their carbon reduction targets, whereas for the Humbo smallholder farmers, the value of land goes beyond its mere investment significance and is deeply embedded in their identities, which they feel they have to defend at any cost. The initial mistrust and land-based conflict of the CDM initiative reflected these

divergent narratives on the financialisation of nature and of seeing ‘nature as capital’.

- b) Wary of the potential impact of overt ‘green grabbing’, the majority of the seven Humbo communities initially objected to the greening idea as they perceived that they would lose out. This shows that when aiming to implement natural resource based green initiatives, a critical look at the links between the community and the land is essential; that is considering the non-economic value of the land and the impacts of land grabbing which could negatively affect food security and livelihoods. There is a lack of transparency about the benefits the emitting companies gained from the process (the farmers knew tCO<sub>2</sub> is USD 4.4 but did not have a clue how much these companies paid to the World Bank’s BioCarbon Fund); had the farmers known the implicit and virtual nature of the land grabbing and its impacts, they may not have embraced it.

The process followed to secure land use rights for the seven forestry cooperatives was a mere interpretation of the Ethiopian Constitution (Article 40[4]), but its assurance from potential green-grabbers encouraged the Humbo farmers to engage. Such assurances were critical in mitigating any land-based conflicts arising from the carbon finance model. This could be a lesson for other green economy initiatives – to ensure the full participation, consent and willingness of the communities.

In Humbo, the climate finance model and its CDM were driven by NGOs – mainly World Vision Ethiopia (WVE) and WVA. Although initially imposed on the farmers, the idea of forest rehabilitation and the financial elements were later embraced. The non-state actors played an important role in knowledge and practice transfer, as well as driving the carbonisation of forests. During 2004-06, at the initial stages, the state was at the back of the queue and observing from a distance, while the NGOs were ensuring their catalysing and influencing role on the national climate change agenda. But a few years later, the state’s role in carbonisation development through the green economy increased significantly.

All the research participants agreed that the Humbo initiative has brought significant ecological rehabilitation, micro-climate and biodiversity improvement, soil erosion reduction, underground water enrichment, as well as ‘hope’ and inspiration for development among the smallholder farmers. However, despite the objectives of poverty reduction and its contribution towards sustainable development, they underscored that the level of poverty in their localities did not show substantial change, and they attributed this to flaws in the carbon finance model. Therefore the model’s inherent flaws and its failure to bring economic benefits prevented the farmers from achieving substantive livelihood change (income, food security and agriculture).

The non-carbon in-kind benefits from the Humbo initiative were more significant to the farmer forestry cooperative members than the global North’s ‘resource generation’ element of the Kyoto Protocol. Although the carbon revenue increases in asset accumulation and household income were low, the communities’ enhanced skills to manage and sustain the forest have so far proven to be effective. Thus, as similar evidence from other global South countries such as Mexico, Brazil, Nigeria and Mozambique shows, and this research work argues, the environmental benefits far outweigh the carbon-based financial benefits that the farmers received. As Pfeifer and Stiles observed, CDM can only have a ‘minimal impact’ on sustainable development (2008:4). The findings of the research conducted in Humbo are in line with this observation.

It is not easy to clearly see the exact costs and benefits that the Annex I parties’ private companies, or the World Bank, have got from this business model. However, framed within the neoliberal economic model, the national economies of the Annex I parties, along with their private companies, have profited from these types of commodity exchanges by displacing the carbon reduction target among local farmers and buying carbon credits at cheaper prices, in this case in Humbo. The premise should not be doing it cheaply – this is a flawed argument. The CDM CERs should be sold at least at the same

prices per tCO<sub>2</sub> as stipulated by the OECD, with the difference invested in the global South.

Although the CDM's focus was on delivering forest regeneration and efficiency, the key indicator of the green economy was inclusiveness – which was not achieved in Humbo. Initially women constituted only 10 per cent of the seven cooperative members, but slowly this increased to 22 per cent. Despite UNEP's recognition of women as 'custodians of the environment', they were excluded socio-economically from actively engaging in rural development issues. Furthermore, despite the PDD's aim of creating jobs for youth, the involvement of those living in the area was not significant.

The 9,000 temporary green jobs that were created during the natural rehabilitation and conservation project generated some benefits to the farmer cooperative members. However, this drastically declined on the project's completion and with the strategic withdrawal of WVE from the Humbo locality. Furthermore, the lack of a compensation scheme for the victims of wild animal attacks has become an increasing problem as farmers are losing their livestock and farm yields.

The case of Humbo also revealed a clash between conservation and rural development endeavours. The destruction of about 6 hectares or 0.22 per cent of the protected forest area for the purpose of expanding the feeder road between the villages created a conflict between the local authority/communities and the WVE/World Bank. The emission agreement stipulated that any actor, including the state, cannot alter the nature of the forest without the advance notification of the carbon credit buyer, that is, the World Bank. This led to freezing 20 per cent of the carbon revenue and created distrust and discontent among the farmers. The withheld amount was released a year later – after the impact on the forest area was assessed as insignificant.

Reflecting on the trajectory of the Humbo initiative, the local-national-global policy and institutional linkages played a significant role in promoting the global climate change

mitigation actions. However, carbon finance and its market processes are very complicated and were not undertaken easily by the local farmers. Thus, despite their efforts in regaining and protecting the forest area as required by the UNFCCC standard and the World Bank's credit buyer, the farmers were not able to claim the amount of financial resource they were supposed to receive. For instance, due to the limitations of the carbon market and the lack of capacities among the local actors, WVE and the farmer cooperatives failed to sell approximately half of the carbon credits for a decade.

In addressing the interdependency of climate change and poverty in the context of a neo-liberal global economic model, Humbo has initiated a successful local forest governance institutional framework by reconceptualising and experimenting with the 'failed' cooperative model in Ethiopia. But the sustenance of the model can be affected by several factors, including the level of carbon revenue; complementing the CDM initiative with alternative sources of income schemes; and farmers' continuous commitment and their level of green culture. In addition, through WVA, the South-South practice of transferring knowledge on forest management and natural resources enabled the farmers to learn from Niger about how to assist the natural regeneration of native forests on a large scale. The capacity created among the cooperatives is another positive result to underscore, and this has so far contributed to the sustainability of the intervention.

Moving beyond CDM's piecemeal project-based method, REDD+ is advancing the landscape approach, despite being a controversial conservation agenda which has only completed its readiness phase in Ethiopia. However, given the country's limited implementation capacity, the research suggests that a manageable 'sub-landscape approach' may work better. Such an approach could bring managed compartments together as one ecological and socio-economic system. Managing Oromia Regional State (which is almost the same size as Italy) as one landscape could be ineffective and have less impact.

Although CDM's future seems uncertain, the emergence of Nationally Determined Contributions (NDCs), whereby Ethiopia has committed to emit 145 MtCO<sub>2</sub> less than its current amount by 2030, is expected to have an influence on the CRGE strategy, with Humbo's relevance continuing in one form or another.

Beyond the CRGE, a strategy is needed that integrates the multiple micro-carbon based packages in all sectors with efforts being undertaken, including the CDM on A/R, REDD+, energy efficient cooking stoves and other programmes, so as to reduce transaction costs and avoid any intersectoral trade-offs, such as costs to agricultural productivity. As the Humbo case has documented, a mere emphasis on the carbonisation of rural development cannot bring about livelihood changes, and therefore the carbon finance of the CDM needs to depart from its exclusive focus on forestry and advance agroforestry, along with alternative livelihoods-supporting financing mechanisms.

## **9.2 Policy Implications for Sub-Saharan Africa**

Ethiopia is considered to be one of the few 'early adapters of the low-carbon resilient agenda' (Fisher et al., 2014:5), and its regreening or natural regeneration case has been a learning curve for the SSA region. These key policy lessons can contribute towards a reconfiguring of carbon-based economic development in Ethiopia and beyond.

Ethiopia's CRGE, which was launched in Durban COP17 in 2011, is mainly driven by global climate change discourses and the commitment of the top political leaders to global warming and the climate change agenda. It was developed in response to the country's history of drought and famine. Though technical and financial support has been provided by the global actors, including the World Bank, and the UK and Norwegian governments, the transformative strategy at policy level was designed as a result of this political commitment and will. This makes the CRGE strategy a hybrid – with elements of influence from both the home-grown and the global climate change discourse.

Given that climate change is disproportionately affecting the global South, SSA countries have been focusing on climate adaptation, but have been less active in climate change mitigation. Indeed, besides the ambition of Ethiopia's leadership to green the economy, the country, as the Humbo case depicts, is facing financial, technological and human resource constraints. Despite the introduced reforms, the institutional and policy capacity towards realising a transformative green economy in Ethiopia is low.

As the chapters on the analysis discussed in detail, the incremental institutional reform that brought about a new climate-focused executive body and strengthened research institutions in Ethiopia is a significant step towards laying down the necessary state governance infrastructure to realise the CRGE and to respond to national and global climate change challenges. However, these institutions lack adequate human and financial capacity. Though there is a CRGE Facility which is considered to be 'innovative', it still requires investment from both government and international development partners to serve as a vehicle for the new transformative strategy.

Before the launch of the CRGE, the greening movement in Ethiopia – mainly forestry, Natural Resource Management (NRM) and rangeland management, but not carbon focused – was dominated by the specific initiatives of non-state actors, largely NGOs. However, the state has been consolidating its position and powers through designing comprehensive and nationwide economic policies and strategies in an attempt to create a climate-resilient green economy. So, despite the prominence of market approaches and globalisation trends, this looks at the greening impact of the green economy in its socio-economic and political entirety.

Local-level greening initiatives can be undertaken by non-state actors, as the Humbo case evidenced. However, the move towards a guiding green strategy, after implementing several interventions, was a retrospective process through the integration of the greening initiative in Ethiopia. Thus, other countries aiming to adopt the green economy as their

growth and development path should critically weigh the contributions and opportunity costs it can bring to local farmers, the national economy and global climate change mitigation action, and decide accordingly. The new economy is built on the principle of carbon neutrality, and the country's capacity to deliver prosperity without burning carbon needs to be assessed, as there is not a single country that can be assured economic growth without the brown economy.

Beyond domestic political and developmental aspects, the Humbo carbon finance initiative has been central to 'green diplomacy', which is being used as a means of 'rebranding' the Ethiopian state (see Death, 2011) and creating a positive image in international relations and diplomatic circles. The global green agenda is anticipated to expand into the next few decades. Accordingly, the centrality of green diplomacy is also expected to remain a key state foreign policy instrument in creating a responsible state for the global cause of climate change, and for accessing climate funds and technical support. In the absence of other initiatives, Humbo filled the greening showcase vacuum in Ethiopia and SSA.

### **9.3 Key Focus Areas: At National and Global Scales**

This section deliberates on the key focus areas that affected the localities – from the perspectives of national and global climate change and of poverty reduction.

#### **National Scale**

Ethiopia, despite being landlocked, is endowed with human and natural resources that can potentially enable to reach a middle-income country status. As Ethiopia's experience shows, more than any dominant development narrative, the green economy, with climate change adaptation and mitigation elements, is gaining a central position on the 'Developmental State' agenda and this could be an economic opportunity. Its leaders have been ambitious in advancing the idea of 'Great Ethiopia'; however, political instability

mainly due to ethno-politico division and power-sharing struggles from 2015 to the present have been adversely affecting the country's foreign direct investment and the heralded 'double digit' economic growth. An overreliance on foreign assistance could also affect its state budget and derail its progress in realising the ambitious plan of becoming a carbon neutral economy by 2025. Therefore, given that the green economy requires huge capital investment, the country's reduced economic growth of 6.8 per cent (World Bank, 2018b) and its limited capacity to deliver systemic institutional change within its 'functional interdependence' (Watts, 2012), its leaders may need to reflect on the new trajectories and revise the timeframe to realise the ambitious CRGE strategy.

As the CRGE stipulates and Fisher et al. argue, the green economy of Ethiopia has 'GHG emission abatement' (2014:18) for climate change mitigation, with carbonisation of development strongly accentuated. This is to be complemented by extensive technical and financial support for its sectoral management by prioritising its four top strategic sectors (agriculture, forestry, energy and transport). Though at an early stage, the mainstreaming of carbonisation and its resultants seem inevitable if CRGE is to be strictly followed as a development path in the coming years.

The alignment of Humbo with climate finance models has given a new perspective on nature and its abstraction to smallholder farmers and policy makers. Previous community-based A/R initiatives were mainly carried out for conservation and environmental sustainability purposes and, besides the non-carbon benefits, further financial income was never expected. However, with the Humbo CDM, although low, farmers are getting financial rewards for their investment in reforestation and avoided deforestation. REDD+, which is the biggest forestry programme in Ethiopia, is also advancing a result-based performance and expects to generate more resources.

In reviewing experiences with carbon-based development and interviewing climate and forestry experts in Ethiopia, it has become clear that their efforts lack the presence of a

national carbon market broker. In light of the CRGE's reliance on a carbonisation of the sectors and its eagerness to engage with carbon finance (even beyond CDM and REDD+, the emergence of emission reduction initiatives in energy), the government should support the formation of an agency that deals with the carbonisation of nature, which proactively explores global carbon markets and plays a bridging role between farmers who have made great efforts to regenerate the forests and buyers who are interested in buying carbon credits from within the country. With the expansion of carbon-based forest development, the REDD+ Secretariat or a similar macro-level institution (which may need to be created) might play this role in the future – bringing all the piecemeal pocket carbon initiatives under a carbon sequestration compensation mechanism umbrella.

The Union and cooperatives, as key local actors, were expected to play determining roles on the fate of the CDM-induced regenerated forest area. Instituted within the context of pessimistic attitudes towards cooperatives in Ethiopia and despite their weaknesses, as underlined by the Humbo District officer, these local institutions are among the few cooperative entities that are functioning effectively in the country. However, their existence is influenced by many factors, including living up to the promises, the acceptance and level of trust of the cooperative members, the level of carbon revenue secured over the next 20 years, the presence of alternative sources of income, the expansion and profitability of the cooperative-owned enterprises, and the equitable redistribution of resources among members. In the absence of adequate carbon-based financial inflow, the benefit of the enhanced 'green culture' could be diluted if the smallholder farmer cooperative members start to notice the covert and virtually embedded land grabbing within the carbon finance framework. This might affect the sustainability of the protected forest area. Whether the ecological rehabilitation of the CDM will be sustained without sufficient carbon-based financial incentives remains to be seen.

## **Global Scale**

Framing rural development within the abstraction and carbonisation of the forest sector has not resulted in poverty reduction among the Humbo farmers, which was the intended objective. While aiming to maintain healthy ecological wellbeing, a complementary component of the conservation intervention which improved farmers' livelihoods and advanced rural development would have been a transformative impact. Premised on this analysis, it is suggested that along with the UNFCCC carbon-based mitigation agenda and the carbonisation of local nature conservation initiatives, complementary sector-wide rural development schemes that focus on agriculture, entrepreneurship and other social protection practices could create synergy and bring lasting impacts to the livelihoods of farmers, lifting them out of poverty without creating forest-cover reversal.

The claimed benefits of neoliberalism and market-based systems for rural development may become diluted at grassroots level. In Humbo, the World Bank gets deals from the Annex I parties and their emitting corporate entities based on the amount of CO<sub>2</sub> that is sequestered and there does not seem to be a loss in the transactions made among these actors, nor with the consulting firms that validate the carbon sinks. However, implementing the forest-based green agenda at grassroots level and under the claim of 'ownership of rural development', farmers' time, efforts and knowledge were not adequately monetised, economically valued and costed, and finally, were not compensated for. Humbo showed these missing links in sufficiently costing these during and after the project implementation periods. This included providing remuneration for half of the farmers' daily labour at the minimum payment framed under the social protection rate (aimed at food sustenance, not prevalent local labour market wage/salary rates). Such practice is flawed and against the ILO definition of creating decent green jobs and needs to be squarely addressed.

The compliance carbon market should fundamentally reflect the efforts made by poor farmers and, at a minimum, the farmers should be adequately and fairly compensated. Going beyond unilaterally utilising the market model as a defining feature of the farmers' conservation efforts, the carbon finance model should include a minimum payment for the efforts made. In a global neo-liberal economy, abandoning carbon markets seem challenging. Thus, a minimum full payment for their effort and time should be made to every farmer, in addition to the compliance carbon market-based generated revenues. This would protect the farmers from the volatility and uncertainty of the carbon exchange market and its consequences. In this way they would benefit from both the guaranteed minimum payment and carbon market exchange based incomes.

With the inability of carbon finance and particularly CDM to improve farmers' livelihoods and reduce poverty, the post-2020 or Paris Climate Agreement frameworks should reflect these findings. Unless the financial element of the mechanism is reconceptualised, reconstructed and reframed, its claim of generating resources and supporting the global South will not be achievable. A call for alternative approaches that depart from pure market mechanisms should seriously be considered. For instance, while compensating the farmers for their efforts in realising and guarding the forested area, as well as for the loss of household asset caused by wild animals, the carbon revenue generated can be considered as an incentive or additional resource, but not as the main livelihood financial support. Therefore, the research calls for a reconfiguration of the existing carbon finance modalities and an introduction of the 'Rights-Market Hybrid Carbon Finance Model' which can ensure the coexistence of the two contradicting narratives of rights and market approaches to rural development. Departing from the neo-liberal environmentalists and going beyond the financial element, the model should not decouple nature and society – both conceptually and empirically.

## **Concluding Argument**

Though it might be difficult for Humbo to fully claim its contribution to environment and climate change resilient policy change in Ethiopia, its role in the initial stage of policy formulation was significant. However, it did not play a transformative role in the green agenda founded on the carbonisation of a nature-based rural development paradigm shift. In general, as Salinas and Baroudy's study shows, Humbo's global image and UNFCCC certification has 'inspired' the government in 'mainstreaming carbon finance into its sustainable land management program[me]' (2011:31). Indeed, under the carbon neutral green economy, Ethiopia expects to generate billions of dollars a year from its 320 million tCO<sub>2</sub> offset and carbon credit sales (even with a conservative figure of USD 10 to 20 per tCO<sub>2</sub>) (EPA-FDRE, 2011a). Therefore, despite Humbo's small size, scope and magnitude, its relevance in linking forests, climate change and rural development assumes some degree of importance to Ethiopia's green strategy development.

As the evidence from Ethiopia as a CDM hosting country and as Humbo's empirical work reaffirm, there is an acute need to reform the global climate change architecture to make it fit in both mitigating global environmental challenges, and in its rural livelihood improvement and sustainable development roles. Based on the findings, unlike the claim made by the Kyoto Protocol, and despite the partly built local and national level capacity in forest governance and climate change, carbon finance, in particular the CDM model, neither diversified Ethiopia's local economy production system nor achieved high-impact and noticeable technology. This nullifies its win-win equation as the farmers are losing more than they are gaining. However, this is not what was intended. Given CDM's uncertainty as an 'innovative' institutional approach to global climate change architecture, the framework should consider previous studies and the evidence and findings of this research work to either address its gaps strategically to fit the contemporary post-2020 climate change regime or accept its 'dignified death'.

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