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GOVERNANCE OF FOREST LANDSCAPE RESTORATION

Analyses of Governance Issues in Cases from Ghana and India

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FOREWORD

Forest landscape restoration is widely recognised as a continuous process that requires considerable time to lead to visible results in the field as well as impact on people's livelihood and well-being. In order to shape the participatory social processes, it is therefore important to support forest landscape restoration through adequate data and research. To this end, the present study has been implemented as a follow-up to an IUFRO-led comprehensive analysis in 2019 of the progress made in forest landscape restoration implementation in 17 different landscapes in nine selected countries in Africa, Asia and Latin America. This report presents the results of case studies in Ghana and India that were part of the 2019 work and have been further analysed with specific focus on forest landscape restoration-related governance issues.

The study, coordinated by IUFRO's Special Programme for Development of Capacities (IUFRO-SPDC), was implemented by scientists of Ghana and India in close collaboration with the IUFRO Special Project World Forests, Society and Environment (IUFRO-WFSE). The cooperation allowed to combine local expertise and research data from Ghana and India with governance experiences related to forest landscape restoration made in other countries and regions. The results highlight important differences in the political, legal and institutional environments among the different case studies and the need to recognise opportunities and limitations in restoring land based on the local context. To this end, a number of key messages have been distilled from the results that may be helpful for guiding forest landscape restoration work in similar circumstances elsewhere.

The support received for this work by the German Ministry of the Environment, Nature Conservation and Nuclear Safety (BMU) as part of the Ministry's 2020 grant allocation to IUFRO-SPDC's projects on forest landscape restoration is gratefully acknowledged.

Michael Kleine (Coordinator of IUFRO-SPDC)

KEY MESSAGES

KEY MESSAGE 1

Recognise where and when restoration is a reasonable and feasible option

India

Governance issues essentially relate to the land and the people. All lands that have become degraded due to anthropogenic reasons have served the interest of the people in the past and these interests need to be recognised and attended to in the restoration process.

Ghana

Land tenure, tree ownership arrangements, benefit sharing and the livelihoods of the people are among key governance issues that have driven deforestation and forest degradation in the past. Any forest landscape restoration process needs to attend to these issues.

KEY MESSAGE 2

Restoration decisions must take into account the stakeholders' different interests, skills, capacities and leverage

India and Ghana

The first task in organizing a forest landscape restoration program is to identify people who have their "skin in the game", examine the nature, depth and duration of their involvement, and then make sincere efforts to include them in the program at appropriate levels so that all of them feel they stand to gain from the program at least in the medium and long run, if not in the short run.

KEY MESSAGE 3

FLR takes place within formal and informal regulatory frameworks and policies

India and Ghana

Local laws, regulations, and traditions concerning land, water and vegetation seriously impact restoration

Left photo: © Forest College & Research Institute, Telangana. Right photo: © R. T. Guuroh

activities and should be included in the planning and implementation processes from the very beginning. It is important to institutionalize structures of local communities/farmers participation in decision-making under forest landscape restoration and such structures should be enforced.

KEY MESSAGE 4

Create jobs and clear benefits for local communities and make trade-offs transparent

India and Ghana

Forest landscape restoration programs need to offer the opportunity to reduce rural poverty and promote economic development by offering job opportunities to local communities and to increase food production through the use of agroforestry technology. Engagement of local labour to the maximum extent possible is indispensable as it will strengthen local involvement with the restoration process.

KEY MESSAGE 5

Sustain FLR results through monitoring and adaptive management

India and Ghana

Continuous monitoring, and immediate proactive response to emanating signals and indicators, is key to success of restoration programs.

KEY MESSAGE 6

Conflict resolution mechanisms are integral part of FLR

India and Ghana

Set a conflict settlement mechanism as an integral part of the restoration process to resolve issues as they arise without allowing them to become festering wounds.

KEY MESSAGE 7

Political support is key

India and Ghana

Fullest support by the highest political executive for the restoration program enhances chances of success by reducing interdepartmental frictions, and by supporting timely financing, quick resolution of conflicts between implementing agencies and stakeholders, and effective monitoring.

KEY MESSAGE 8

Develop flexible governance structures allowing for different types of restoration alliances

India

Initial land restoration programmes in India are primarily funded by governmental institutions. In the long-term, forging flexible alliances with non-profit organizations aiming at social and environmental development will help to sustain restoration results.

Ghana

The private sector is a key partner in providing financial support for forest landscaperestoration activities and to ensure the success and sustainability of restoration programs. There is need for public-private partnership models to support government efforts in the restoration process.

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1. INTRODUCTION

Forests and trees provide crucial ecosystem services that form the basis for sustainable development and human welfare. Continuing deforestation and forest degradation, however, seriously threaten the long-term continuous provision of these services. The importance of restoring deforested and degraded lands has in recent years received increasing international attention as one of the critical issues for sustainable development. The United Nations has declared 2021-2030 'Decade of Ecosystem Restoration' and various international, national, sub-national initiatives and programmes aim to restore millions of hectares of degraded lands. The Bonn Challenge seeks to facilitate the restoration of 350 million ha of degraded forest lands by 2030. Regional initiatives include the APEC 2020 Forest Cover Goal, which achieved to reforest more than its aimed for 20 million ha until 2020, Initiative 20x20 which expects to achieve 20 million ha in Latin America and the Caribbean, and the African Forest Landscape Restoration Initiative which aims to restore 100 million ha in Africa by 2030 (Humphreys et al. 2020).

Understanding how forest restoration efforts have been implemented in different contexts can guide the further development of restoration approaches and their implementation. While there is quite good understanding about the technical and ecological aspects of restoration, the social and governance-related issues have until recently received much less attention (Mansourian 2016). This report aims at increasing the understanding of the governance in the context of restoration projects in two very different contexts and thus shedding light on the role of governance and institutions in shaping restoration efforts and their outcomes and impacts. The analyses build on the 2019 IUFRO-SPDC project "Forest landscape restoration implementation: progress on the ground" which provided an independent exploration of efforts contributing to forest landscape restoration (FLR) in selected landscapes in nine Bonn Challenge countries. The current governance analysis further focuses on two of the case studies, India and Ghana, that were part of the analysis of progress made in forest landscape restoration implementation in these nine countries. It is part of an IUFRO-SPDC led project in 2020 on "Building local capacity and networks for forest landscape restoration implementation", funded by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

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2. FOREST LANDSCAPE RESTORATION AND GOVERNANCE

2.1 Understanding forest landscape restoration governance

Forest landscape restoration (FLR) expands the restoration target area from specific sites to encompassing entire landscapes with multiple ecological, social and economic functions. It aims at regaining ecological functionality and enhancing human well-being in deforested or degraded landscapes. FLR is not an end in itself, but a means of regaining, improving, and maintaining vital ecological and social functions, in the long-term leading to more resilient and sustainable landscapes (http://www.forestlandscaperestoration.org/what-forest-and-landscape-restoration-flr). It includes a range of different approaches from natural regeneration, to tree planting, plantation establishment and agroforestry systems and entails a much broader inclusion of multiple land-uses, actors and social relations among them, different livelihood activities and economic interests and the different spheres of decision making that affects the use and management of natural resources (Chazdon and Uriarte 2016).

Decades of experience from natural resources management and more specifically forest resources management have emphasized the crucial role that resource governance has in efforts and measures towards sustainable resource use and management (Nunan 2016). There are multiple definitions of governance. Bevir (2012) suggests governance to comprise of the processes of governing of a social system (family, tribe, formal or informal organization, a territory or across territories), undertaken by the government of a state, by non-state structure, by a market, by a network and through laws, norms, power or language. The definition recognises three elements: what is to be governed, who does the governing and what tools and instruments are at the disposal of actors who claim, or contest governance. It encompasses the social system under consideration, which in this report is forest restoration, the actors involved and the means of governing. Forest restoration and thus its governance are undertaken by national and subnational governments, government actors with a forestry mandate, often government agencies, but also civil society actors, civil society organized groups, either form NGOs or other organized groups, private actors, companies or enterprises, but also private landowners. These actors bring their needs and interest, leverage, skills and capacities to influence decision making to the table when choices need to be made in decision making arenas.

Of key relevance when debating governance is its institutional and regulatory dimension. The governing that oftentimes multiple actors undertake in some sort of coordinated fashion is itself governed by institutional and regulatory arrangements. The legal and regulatory framework of an economy or country defines the organizational structure of government and specific laws establish governing bodies and assigns them mandates, responsibilities and operational resources. In the case of forest restoration, land laws, forestry laws and other legal instruments define the legal status of non-urban lands, but also may stipulate when forest restoration is required or facilitated, where, by whom and how. Together the institutional framework comprises "the norms, institutions, and processes that determine how power and responsibilities over natural resources are exercised, how decisions are taken and how citizens

– including women, men, youth, Indigenous peoples and local communities – secure access to, participate in, and are impacted by the management of natural resources" (Campese 2016, p. 7). It encompasses the laws, regulations and other formal rules as well as policies, programmes, institutions and processes that define or shape how natural resources are managed and used for extractive or non-extractive purposes, and who has access to natural resources and for what purposes. It also includes customary and other local practices, norms and rules that relate to the use of natural resources.

Land and resource tenure is an important component of the institutional and regulatory framework. Tenure refers to the conditions under which land and resources are held or occupied and determines who can access and use which land-related resources, in what way, for how long and under what conditions. The governance of tenure includes the decision-making mechanisms that establish how and by whom these rules can be made and changed. Tenure may be regulated by statutory law or by customary laws and norms, or by both at the same time (Larson 2012).

An important share of the literature on natural resource governance concentrates on the identification of principles that are important for sustaining the productivity of the resource and/or for the livelihoods of local people or resource managers (Nunan 2020). This literature has supported the development of different governance frameworks and design principles, which also aim at curbing corruption and illegalities. In general, the normative approach to 'good governance' emphasizes governance systems that are transparent, inclusive, accountable and participatory (Nunan 2020).

Governance operates at multiple levels, consisting of international, national/state, and local landscape levels, and including actors, agencies and organizations which participate in decisions, affect or decide on how natural resources are accessed, used and managed at these different levels (Nunan 2016). It includes the different sectors of government which govern and influence land and natural resource related decision making but are also influenced by processes or institutions that operate at international level. The different levels of governance form a nested interactive system. Forest landscape restoration projects and programmes also cut through these different levels and are being influenced and

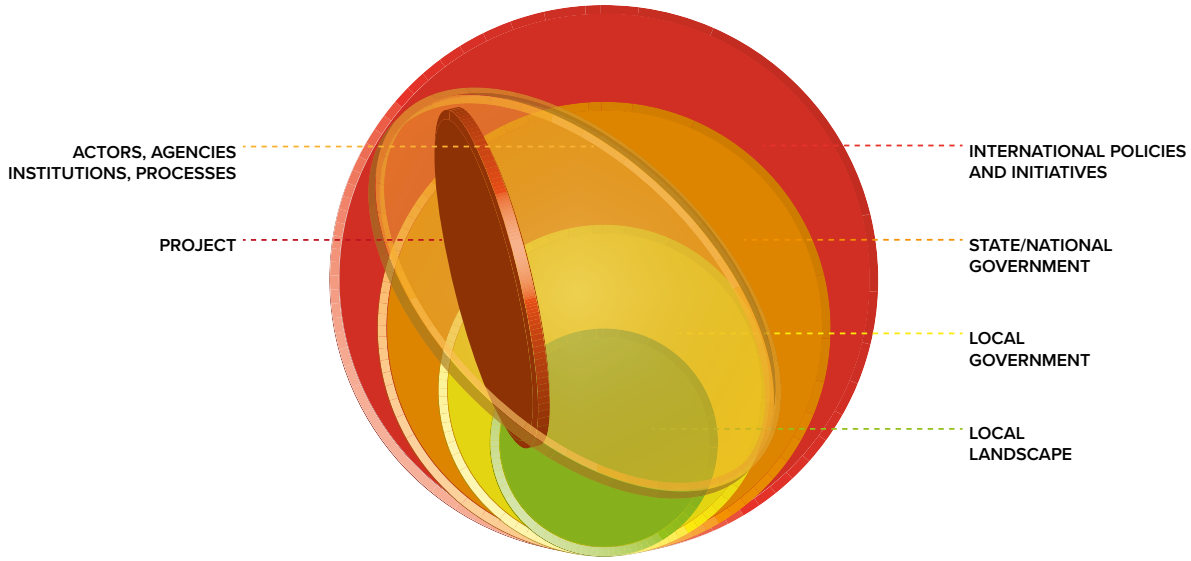

Figure 1: Forest landscape restoration projects and programmes cut through the different, nested levels of governance.

shaped by them. The relationships among the different stakeholders and the processes for coordination and decision making are important for effective and just governance (Figure 1).

In a landscape context, governance is seldom a simple, uniform process. Instead it can consist of different parallel processes that can be differentiated e.g. according to the status of land (agricultural or forest land) and the related legal consequences, forms of tenure, stakeholders and actors involved and the degree to which governance is based on a customary or statutory tenure system. These processes come together at the local level and together with the extent and condition of the natural resources shape the opportunities and challenges as well as outcomes for forest landscape restoration. One way of more effectively addressing the multi-dimensional nature of landscape governance is through integration across different spatial, temporal, and sectoral scales as well as integration of different systems related to governance arrangements, social and ecological conditions, and Western and traditional knowledge realms (Mansourian and Parrotta 2019).

Differences within governance issues are seldom easily categorized. Instead they vary along a continuum of conditions which can e.g. describe the degree of government control over the resources, or the degree to which resources are privately owned or controlled. These considerations emphasize the need to understand the local governance context. To illustrate this, this report focuses on two very different countries and contexts and the respective governance arrangements and related opportunities and challenges in order to draw broader conclusions and lessons learned.

The next section presents a brief overview of the issues found important for governing forest restoration in the related literature. Building on the understanding of governance presented above and the literature section, section three presents the framework for analysing the case studies in the form of guiding questions.

2.2 Issues found important in forest restoration governance

Governance analysis has two major thrusts. On the one hand it undertakes analysis of governance processes, while on the other it aims to identify governance options and improvements. As an example of the latter, Chazdon et al. (2019) lists 19 guidelines and best practice for forest restoration and FLR, and those include governance issues (see also Mansourian et al. 2019 and Mansourian 2020).

Research has emphasized the importance of decentralized governance and improvements in institutional arrangements, inclusive decision-making processes and awareness of restoration benefits within communities and landholders (Brancalion et al. 2016), as well as people-centered, adaptable, context dependent approaches, engaging people's motivations, ideas, cultural norms and values, engaging a range of stakeholders and sectors across scales and meeting goals at regional, national, and international scales (Wilson and Cagalanan 2016). Hanson et al. (2015) have highlighted the role of clear motivation, the existence of enabling ecological, market, policy, social, and institutional conditions, and the capacity and resources for sustained restoration implementation. The role of property rights in influencing local participation, changing land use and the benefits local households receive from forests in relation to forest restoration efforts has been emphasized by e.g. Cronkleton et al. (2017) and McLain et al. (2019). One of the critical factors that will likely influence the success of policies to promote FLR is their capacity to provide material benefits to those directly affected, because in developing countries with large numbers of rural poor, reforestation will not be a success unless it also improves livelihoods (Baynes et al. 2015).

The lessons learnt from 10-years of FLR in Tanzania emphasize the importance of the following issues that contribute to successful outcomes: long term and diverse funding; balancing ecological and social objectives; ensuring that communities

benefit from protecting and restoring forests; favorable policy environment; understanding and acknowledging historical and political legacies such as land tenure and rights; agroforestry as an important tool for FLR; prioritization of restoration interventions within the landscape according to social and ecological criteria; embedding the project in local institutions; raising awareness through a comprehensive communications strategy; strong monitoring and evaluation plan for adaptive management; identifying and sharing lessons learnt before exiting; FLR management structures reflecting multi-scalar dimension (Mansourian et al. 2019).

The research summarized above has been used to develop tools and instruments to achieve enabling governance restorations, like for instance the Restoration Opportunities Assessment Methodology (ROAM, produced by IUCN and the World Resources Institute, WRI). The latter is a planning tool for sub-national planning, decision-making, and prioritization of FLR interventions. It has become widely used in national and subnational FLR planning. It includes the Restoration Diagnostic (RD) tool, "a structured method for determining the status of enabling conditions within a landscape being considered for restoration and for designing the requisite policies, practices, and measures needed for successful restoration" (https://www.wri.org/publication/restoration-diagnostic). Based on case studies and literature RD presents a framework of issues that were present in cases where restoration has occurred in the past. The common themes were grouped into: "1. A clear motivation. Decision makers, landowners, and/or citizens were inspired or motivated to catalyze processes that led to forest landscape restoration. 2. Enabling conditions in place. A number of ecological, market, policy, social, and institutional conditions were in place that created a favorable context for forest landscape restoration. 3. Capacity and resources for sustained implementation. Capacity and resources were mobilized to implement forest landscape restoration on a sustained basis on the ground." (Hanson et al. 2015, p. 4). Furthermore, the enabling institutional and governance context includes the following

- Market conditions: Competing demands (e.g. for food, fuel) for degraded forestlands are declining
- Value chains for products from restored area exist
- Policy conditions: Land and natural resource tenure are secure; Policies affecting restoration are aligned and streamlined; Restrictions on clearing remaining natural forests exist; Forest clearing restrictions are enforced
- Social conditions: Local people are empowered to make decisions about restoration; Local people are able to benefit from restoration
- Institutional conditions: Roles and responsibili ties for restoration are clearly defined; Effective institutional coordination is in place.

In addition to the RD tool which provides a comprehensive insight into the various governance issues affecting a particular landscape, successful outcomes of FLR in the long-term also requires the application of locally implemented FLR processes with sufficient feedback mechanisms involving all relevant stakeholders (Stanturf et al. 2017). The lessons learned from an analysis of 17 forest landscape level restoration implementation cases in Africa, Asia, and Latin America emphasize the importance of e.g. the following interlinked governance and governance-related issues: aligning expectations in project design, expectations and current threats among stakeholders; strengthening collaboration and participation; incorporation of incentives and reducing disincentives for restoration; and consideration of spatial and time scales (Stanturf et al. 2020).

3

3. FRAMEWORK FOR ANALYSING GOVERNANCE ISSUES IN THE CASE STUDIES

The framework for analysing the case studies in India and Ghana builds on the above discussed understanding of governance that concentrates on the different actors and the norms, institutions, and processes that determine how power and responsibilities over natural resources are exercised, how decisions are taken and how different actors – including government agencies, Indigenous peoples and local communities, women, local farmers – secure access to, participate in, impact and are impacted by restoration. The broad questions presented below are to draw specific attention to the issues that have been found to be of specific importance in the context of forest landscape restoration, especially focusing on the actors and the institutional and regulatory dimensions. They encompass both the formal and informal local or customary norms, institutions and processes and draw attention to the relationships among different actors and the division of power, responsibilities and the related distribution of costs and benefits among them.

The case study countries, India and Ghana, exemplify different governance and natural resource contexts as well as different approaches to restoration. According to FAO (2020) data, forest cover increased in both countries during the ten-year period 2010-2020. In India, the forest cover increased by about 2.66 million ha, of which around 82% was due to natural regeneration. In Ghana, the forest cover increased during this period by 43,000 ha; however, the area of naturally regenerating forest decreased by 34,000 ha while the planted forest area increased by over 77,000 ha.

In the India case, the forest area to be restored is owned by the government and the restoration activities, while including other stakeholders, are mainly the responsibility of the different government organizations. Parts of the forest are managed jointly with local communities under joint forest management schemes. Restoration of lands outside the forest area involves the panchayat raj and rural development department. While the governance system of India remains centralized the panchayat raj system establishes a local level self-governance system where gram panchayat represent the local, village level governance with responsibilities ranging from water supply, maintaining public health and sanitation to planting and preserving trees on the sides of public roads. The traditional land tenure system has merged into the panchayat system.

In Ghana, customary and statutory tenure systems are applied in parallel. The customary system is applied outside the areas reserved by the government for specific uses, such as the forest reserves. The case studies presented here clearly exemplify the dichotomy of these systems. Forest restoration is in the case study areas implemented under public-private-partnership arrangements with some opportunities for participation for local farmers by allowing them to cultivate crops in the planted area during the early years of the plantation establishment.

The case study chapters present the overall situation with respect to forest landscape restoration for both countries and introduce the case study areas under analysis. The broad framework questions presented below are used to structure the analysis of restoration governance in these areas, followed by a discussion on the main governance concerns and conclusions.

Framework questions

1. What are the relevant national/state level sectoral laws, regulations, policies and programmes (e.g. forestry, agriculture, agroforestry) and how do they influence, guide, support or restrict restoration in the case area?
2. What are the statutory and customary land and resource tenure and land management systems and the interplay among them in the area in terms of the rights to land and resources and their security and the related division of costs of and benefits from FLR?
3. Who are the main actors and stakeholders in the case area and how are the power relations be tween them, how is their inclusion, representation and/or participation in decision-making orgaized?
4. How is the case connected to national and international processes, initiatives, agreements and commitments?

4

4. CASE STUDY INDIA – FOREST LANDSCAPE RESTORATION IN GAJWEL AND MULUGU MANDALAS OF TELANGANA, INDIA

4.1 Forest landscape restoration in India

The forest landscape restoration efforts in India are spearheaded by the Green India Mission (GIM) which is one of the eight national missions under India's National Action Plan for Climate Change (NAEB 2011). The Mission aims at responding to climate change by a combination of adaptation and mitigation measures in the forestry sector leading to enhanced annual CO_2 sequestration and adaptation of vulnerable ecosystems and forest dependent communities to the changing climate. The detailed proposal of the GIM was accorded approval by the Prime Minister's Council on Climate Change in 2011 and was finally approved by the cabinet in 2014 as a Centrally Sponsored Scheme with the central government meeting 60% of the expenditure except in economically weaker states where it is expected to meet 90% of the expenditure (PIB-1 2019). The rest of the expenditure is to be met by the states executing the program either as part of their existing forest restoration schemes or as a new restoration program.

The countrywide specific targets under the GIM were to increase forest cover by 5 million ha, improve the quality of forest cover and the provision of ecosystem services over 4.9 million ha, increase tree cover in urban and peri-urban areas of over 0.2 million ha, agro-forestry and social forestry over 3 million ha, and restore wetlands on over 0.1 million ha. In addition, the Mission sought to promote forest-based livelihoods and income generating activities and alternative fuel energy for 3 million households

Photo © Forest College & Research Institute, Telangana

(MoEF 2011). These targets have since been revised. At the UNFCCC Conference of the Parties 2015 held in Paris, India agreed to an additional sequestration of 2.5 to 3 billion tons of CO_2 in its lands and forests by the year 2030 and, as a part of its efforts to meet this humongous target, the country pledged to bring into restoration 13 million ha of degraded and deforested land by 2020, and an additional 8 million ha by 2030 under the Bonn Challenge (PIB-2 2019). India's pledge, which at 21 million ha was already one of the largest in Asia, was further expanded to 26 million ha by the Prime Minister of India at the UNCCD Conference of Parties held in New Delhi in 2019 (PIB-3 2019).

4.2 Introduction to India case study

The state of Telangana in India has had a still ongoing forest restoration program, linked to the Green India Mission, called "Telangana Ku Haritha Haaram

(TKHH)" since 2015 when this new state was formed after reorganization of the erstwhile state of Andhra Pradesh. Telangana has committed itself to eradicating poverty through fast paced sustainable economic development while increasing its forest and tree cover to one third of its geographical area and taking good care of its environment. Specifically, the objectives are (Jayaswal et al. 2019):

i. Improve biodiversity in forest area
ii. Replacement of Eucalyptus monocultures with biodiversity rich native stands
iii. Protection of the forest area from biotic interference
iv. Conserving soil and water in forest areas
v. Weed management to promote grass and natural regeneration
vi. Reducing man-animal conflict
vii. Fire prevention measures
viii. Reclamation of the encroached areas
ix. Improvement of stocking in natural forest areas through assisted natural regeneration and artificial regeneration

The landscape chosen for this governance analysis covers a small part of the state spread over an area of 35,985 ha falling in Gajwel and Mulugu mandalas of Siddipet district close to the state capital Hyderabad. Agriculture is the major land use covering an extent of 25,491.37 ha and constituting 70 % of the lands in the study area, while forest lands cover 11 % of the total land area (Jayaswal et al. 2019). The land use categories in the landscape under study are shown in Table 1.

The forests in the area were generally heavily degraded with most degradation caused by excessive removals of wood for energy and other uses, cattle grazing, infestation by weeds, and heavy soil erosion with reduced ability of the soils to hold moisture. Frequent forest fires leading to die back of natural regeneration and reduced growth rates worsened degradation. The landscape was also affected by frequent droughts caused most probably by the warming climate.

Forest restoration efforts in this landscape focus on Assisted Natural Regeneration (ANR) activities

Table 1: Land use pattern in the study area
(Source: GIS & Remote sensing cell - Forest Department of Telangana)

Land use category	Gajwel – 2016 Area, ha	Mulugu – 2016 Area, ha
Agricultural land	16,406.72	9,576.46
Built up area	727.74	288.74
Forest	1,282.65	2,875.37
Mining/Industrial	127.91	157.93
Scrub land	1,296.41	1,096.92
Transportation	85.84	14.37
Wastelands	11.90	103.85
Water Bodies	1,217.76	714.18
Total	21,156.96	14,827.82

involving enrichment planting in areas with forest canopy density from 0.1 to 0.4 and block planting in areas with canopy density of less than 0.1. Biotic interferences are reduced by digging deep trenches along the forest boundaries to prevent cattle from entering forests. In addition, soil and moisture conservation, protection against fire, weed removal, and cultural operations are undertaken (GoTE 2015).

Outside notified forests, large scale plantation activities with peoples' participation have been taken up under agroforestry, homestead, avenue planting and on tank foreshores. All available public lands under the control of government departments, corporations and institutions, including educational and training institutions of all descriptions, have also been mandatorily planted up with trees of appropriate species by the concerned departments and organizations themselves with technical support from the forest department. Private industries, business houses, and educational and other institutions have also been persuaded to bring all unused lands in their control under tree cover with the technical support of the forest department (GoTE 2015).

Native timber and non-timber tree species of high economic value preferred by local communities like *Pterocarpus marsupium, Syzygium cumini, Hardwickia binata, Madhuca indica, Dalbergia latifolia, Albizzia lebbeck, Anogeisus latifolia, Aegle marmelos, Annona squamosa, Azadirachta indica, Diospyros melanoxylon*, and several Ficus and Terminalia species, grasses like *Thysanolaena maxima*, and medicinal plants like *Adhatoda vasica, Calotropis gigantea, Tridax procumbens, Tinospora cordifolia, Abrus precatorius* have either been planted or otherwise encouraged (Jayaswal et al. 2019).

The regeneration areas are protected by local watchmen against cattle damage and fire. The status of regeneration is monitored closely at several levels in the forest department and, subject to the availability of moisture in the soil, replanting is done at the earliest where needed. Uninterrupted flow of planting stock, manpower, and funds, to every village is ensured through a well-designed online monitoring mechanism by the forest department and supported by the government at the highest political level. Regular capacity building programs are conducted for the staff of various departments on nursery raising and plantations and also for the forest labourers (GoTE 2015).

Robust institutional arrangements have been established to support forest restoration efforts at all levels of governance from the high powered Coordination Committee of TKHH chaired by the Chief Secretary to the Government and consisting of the heads of all concerned departments in the state capital to the green protection committees at the village level called the Haritha Rakshana Committees. These committees oversee planning, execution and monitoring of the restoration efforts besides creating public awareness and capacity building of all stakeholders in an effective way (GoTE 2015).

Local governance bodies have been made responsible for restoration with appropriate provisions in regulations under the Panchayat Raj Act. Mass participation by people has been enabled by creating public awareness at the grassroots level and also through specially designed orientation programs for public representatives in the state legislative assembly, district and municipal bodies, and village panchayats. Special programs for school children to make them understand the value of forests called 'Vana Darshini' provided the children not only exposure to forest conservation and landscape restoration activities but also hands-on training in tree planting. The overall effect of these steps has been the generation of massive public support for the greening program (Chepuri Sridhar Rao, personal communication, June 22, 2021).

The increase in restoration efforts at the village level from year to year has depended upon the outcomes of the preceding years. The villages that have been able to achieve their afforestation targets with the expected survival percentage and quality are allowed higher targets in the next planting season subject to the availability of lands in their jurisdictions and availability of funds from the state government.

The underlying objective is to saturate the landscape with trees and other ecologically appropriate vegetation at the earliest within the means of the state government (R M Dobriyal IFS, personal communication, Jan 20, 2021).

The restoration efforts continue because in some villages there are still lands that require revegetation and also because restoration does not end with planting in the first year but must necessarily entail subsequent care over several years. In villages where the restored vegetation has reached a stage at which it is not easily destroyed by cattle grazing and by other forms of anthropogenic interferences, like collection of wood debris for fuel and of medicinal plants for household use, the restoration work can be considered as completed. In these villages, local people have been engaged at modest wages to keep a watch to prevent encroachment and the recurrence of conditions that had led to degradation in the first place. In most villages in the landscape under study, no large areas are now available for afforestation or reforestation, only a few small left out patches. Within farmers' own fields some farmers tend to increase the number of agroforestry trees on their lands, but a few remove them when the tree growth interferes with their agriculture crops (R M Dobriyal IFS, personal communication, Jan 20, 2021).

Lack of finances for planting trees does not appear to be limiting restoration anywhere in the landscape including on private lands. This is primarily because the forest department has provided an uninterrupted and adequate supply of planting stocks of almost all species that are in demand. The farmers use their own labour and resources to meet other costs in planting trees in private fields while the government has sustained the flow of funds for planting and maintenance to its various departments. During a financial year, if a particular department runs short of money for this purpose the district collector has the authority to transfer restoration funds from other departments that have some money to spare (Chepuri Sridhar Rao, personal communication, June 22, 2021).

The results of these restoration efforts have been very encouraging. More than 3.5 million saplings have been planted on an effective area of 7955 ha till March 2021 beginning 2016, including block planting over a total of 1198 ha, assisted natural regeneration over 714 ha, intensive weed suppression over 858 ha, avenue plantations over 91 km and fire prevention activities consisting, among other actions, of new fire lines over 142 km. With similar efforts elsewhere in the state, Telangana has already achieved restoration of about 0.43 million ha of degraded forest area by March 2021 and expects to achieve about 1.0 million ha in a phased manner over the next three years (C. Saravanan IFS, personal communication, June 22, 2021). This contributes to achieving the national targets under the Paris Climate Agreement, the Bonn Challenge, and the New York Declaration on Forests.

4.3 Legal framework, policies and programs

At the apex level safeguarding forests and wildlife, and by extension their restoration where degraded or lost, has been enshrined in the Constitution of India. Article 51 A (g) of the Constitution makes it a fundamental duty of every citizen to protect and improve the natural environment including forests and wildlife. Further, the Directive Principles of State Policy under Article 48 A also requires that the "State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country". The Supreme Court of India also expanded the scope and content of the fundamental right to life by holding that Article 21 of the Constitution of India "protects right to life as a fundamental right. Enjoyment of life and its attainment including their right to life with human dignity encompasses within its ambit the protection and preservation of environment, ecological balance free from pollution of air and water, sanitation without which life cannot be enjoyed. Therefore, there is constitutional

imperative on the Central Government, State Governments and bodies like Municipalities, not only to ensure and safeguard proper natural environment but also an imperative duty to take adequate measure to promote, protect and improve the environment both man-made and natural environment" (Supreme Court of India 2002).

At the national level the Indian Forest Act, 1927, and at the provincial level the Andhra Pradesh Forest Act of 1967, renamed as the Telangana Forest Act 1967, and the various Rules made thereunder, provide the principal legal infrastructure for forest restoration activities (GoTE-2 2015). Another central law, the Compensatory Afforestation Fund Act of 2016 (MoEFCC 2016), and the Compensatory Afforestation Fund Rules of 2018 (MoEFCC 2018), regulate the flow of a limited part of funds for restoration activities. The Green India Mission program of the Government of India is an important financing channel for these activities.

The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) aims at ensuring at least 100 days of unskilled wage employment through productive activities like pitting, planting, watering and protection and other maintenance activities and thus creating both community and individual assets in the villages. Schedule I of MGNREG Act, 2005, of this Act lists public and community works including "afforestation, tree plantation and horticulture in common and forest lands, road margins, canal bunds, tank foreshores and coastal belts duly providing right to usufruct to the households" as eligible activities related to natural resource management and improving livelihoods (GoI 2005). The Scheme provides incentives for protecting and maintaining trees on individual lands according to the survival rate of the plantations.

There are no laws or policies that inhibit restoration of legally defined forest lands within the landscape under discussion. Outside this landscape, however, there are legally or even customarily recognised habitats of black bucks (Antelope cervicapra cervicapra), the State Animal of Telangana, where tree planting is restrained even if the land is degraded as it would be harmful for this species.

Conversion of agricultural lands for non-agricultural use is discouraged except with the permission of the Collector under the provisions of the Telangana Agricultural Land (Conversion for Non-Agricultural purposes) Act of 2006 and the Rules that govern the implementation of this Act (GoTE 2016). Section 7 of this Act provides relaxation for activities like aquaculture, poultry and dairy but no such exemption is available for conversion of agricultural lands to forestry. Tree planting by farmers in their homesteads and on the margins of their agriculture lands has been a long-held tradition in the region and the landscape under study (R M Dobriyal IFS, personal communication, Jan 20, 2021).

The National Agroforestry Policy of 2014 provides the overall policy framework for planting useful trees on agricultural lands for increasing land productivity by enriching soils and conserving moisture, enhancing the availability of fodder and increasing the income of farmers from their agricultural lands (DoAC 2014). The Action Plan prepared by the Department of Agriculture of the Government of Telangana has enabled the implementation of this national policy in the state with a considerable degree of state support by providing planting stock and extension services (GoI 2019).

The Telangana Forest Produce Transit Rules of 1970, that prohibits transport of tree products without a written permission of the state forest department, has been an impediment for the full enjoyment of the recent advancements in agroforestry practices by the farmers because obtaining this formal permission often entails high costs and even harassment through corrupt practices (GoTE-3 2015). In 2017 the government liberalized these Rules by exempting 40 tree species, enabling the farmers to harvest these trees and transport them to the market without having to go through any formalities. These exempt species include, for example, bamboo, mango, jackfruit, coconut, cashew, toddy, ashoka, eucalyptus, casuarina, seema thumma (*Prosopis juliflora*),

subabul, and seema chintha (*Pithecellobium dulce*) among others (Hindu 2017).

4.4 Land and resource tenure and benefit sharing arrangements

The forest lands in the landscape are all fully owned by the state government as Reserve Forests. The benefits from trees and ecosystem services on forest lands are governed by the existing rules and regulations of the forest department. Parts of these Reserve forests adjacent to villages are identified for joint management by the Forest Department and the local village community and are termed as Joint Forest Management (JFM) lands (Bhattacharya et al. 2010). All local people can collect NTFPs for their personal and subsistence use. An auction system is in use for the commercial collection of certain forest products like tamarind and sharifa fruits.

Agricultural lands are either owned and cultivated by farmers themselves or leased annually by cultivators from the landowners. These one-year leases do not provide incentives for growing perennial crops and only agricultural crops are grown on leased lands. The benefits from trees on agricultural land belong to the landowner who hold these lands in perpetuity (R M Dobriyal IFS, personal communication, Jan 20, 2021).

All waterbodies, wastelands and scrub lands within the landscape under study fall under the control of the village panchayats within whose limits these lands are located (GoTE 2018). Most mining lands are owned by state government or village panchayat and under long term leases to the mining industry. These lands are expected to revert back to the control of the landowner after the lease period ends. Lands under transportation infrastructure like railway lines, roads, bus and railway stations, and other transport related facilities are owned by the Railways, National Highway and State Highway authorities (R M Dobriyal IFS, personal communication, Jan 20, 2021).

Over the past several decades the traditional tenure and norms have merged with the formal tenure and norms, and traditional authorities like the village elders have merged with the elected sarpanch of village panchayats. Traditional land use in the landscape under study is farming, animal husbandry, grazing animals, wood collection for fuel, and seasonal collection of medicinal plants. Land and resource related conflicts arise from time to time. They are mostly settled through discussions among the concerned parties, sometimes with the help of gram panchayat, and in a few cases by taking the matter to the civil court (Chepuri Sridhar Rao, personal communication, June 22, 2021).

4.5 Actors, power relations, representation and participation

The Telangana Ku Haritha Haram is a government flagship program on forest restoration with the funding coming primarily from the state government. The restoration program involves active participation of public representatives, government departments and local government bodies. Non-government organizations, industrialists, common people, farmers, students, and media people are also invited to join the program to make it a large people's program. A critical difference with earlier afforestation efforts is the involvement of most of the government departments instead of only the forest department. These government departments are required to not only

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plant trees over lands under their direct control and areas of influence but also take continuous care of them in subsequent years (GoTE-1 2015). This has become a critical element in scaling up restoration well beyond the limited capacity of the forest department.

The main organizations involved in restoration in the case area are the government departments of forest, and panchayat raj and rural development. The forest department is responsible for nurseries and restoration of degraded forests in reserve forest areas and for providing technical support to all other departments as well as gram panchayats involved in restoration activities. The panchayat raj and rural development department is the major implementor of restoration activities outside forest areas. It also provides financial assistance for nurseries and plantations by converging funds from various ongoing programs like MGNREGS, gram panchayat funds etc. It holds extensive discussions with the gram panchayats before deciding on the restoration activities because under the Panchayat Raj Act increasing greenery in the rural areas is one of the main responsibilities of the gram panchayats, but there are no formal agreements between the stakeholders.

For plantations outside the forest areas, the panchayat level planning process starts with village meetings in October each year. In these meetings the plantation activities and types of plantations in the village are discussed. Subsequently, during a transact walk in the village, the locations of plantations, like farmer fields, roadsides, institutional lands, community lands etc., are identified. The number of plants and species required are decided accordingly and a village level plan is prepared and subjected for approved in a village meeting (GoTE-1 2015).

After the restoration of a government forest area is completed the state government draws the rules for the use of the restored areas considering the views of all stakeholders, including the gram panchayats. The relevant gram panchayats draw these rules for the use of restored areas on community and other village lands under the overall supervision of

Photo © Forest College & Research Institute, Telangana

the Panchayat Raj and Rural Development department. Benefits are shared on family basis. Assured employment under MNREGS is available to all men and women living in the village. Any aggrieved person, irrespective of gender or social group, can approach higher level officials in their offices or when they come to visit the village (GoTE-1 2015).

The free, prior and informed consent (FPIC) is crucial for the implementation of TKHH program on all lands other than the reserved forests that are under the exclusive control of the state forest department. In the case of all community lands, FPIC is ensured by presenting the proposed plan of action to the elected gram panchayats who then grant, or withhold, permission for the proposed activities as proposed or with modifications. For community members the FPIC is ensured through open discussions in which the entire village appraises the plan of action and its various conditions. Without discrimination all social groups inhabiting a gram panchayat area are automatically participants in the program. Decision making is completely transparent. All activities related to restoration are discussed in the Grama Sabha with the villagers, including the development of nurseries and plantations, and soil and moisture conservation works, the need for these activities, where to execute them, the cost involved, etc. The works are taken up only after obtaining the

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approval of the Grama Sabha (Dobrial 2021).

Conflicts that may arise during the implementation of restoration activities will first be addressed by the members of Gram Panchayat and village level officers of the forest and panchayat raj departments. If a solution is not found, a resolution will be sought at the Mandal level and then, if necessary, at the District level (Dobrial 2021).

4.6 Connections to international processes, initiatives and agreements

The restoration program is not only aimed at fulfilling the national policy goal of bringing one third of the geographical area of the country under forest and tree cover but also at reaching the targeted Nationally Determined Contribution under the Paris Agreement of the UNFCCC. In the forestry sector India has voluntarily committed to an additional sequestration of 2.5 to 3 billion tons of CO_2 by the 2030 and the TKHH program is a significant step for reaching this target.

Under the Bonn Challenge India is committed to the restoration of 26 million ha. In Telangana state around 1 million ha of degraded lands are estimated to be available for restoration, all of which is expected to be restored by 2030 and would be an excellent contribution to India's Paris Agreement targets. Of this target around 0.3 million ha has so far been restored across the state under the TKHH program. The program also aims at enabling sustainable economic development of the state of Telangana which is in line with the UN Sustainable Development Goals. The landscape under study is a tiny part of the overall state target.

4.7 Main governance concerns: an analysis

The foremost governance issues facing an agency tasked with restoration relate to the land, its use, and the users. These land uses can be legitimate under the formal laws or customary rules, whose legitimacy can be questioned if they do not align with the formal laws of the land. Many laws in formerly colonized societies tend to run counter to the locally evolved laws and customs (Iyer 2008). There are also traditions that are widely accepted among the people but are shunned by the formal laws of the state. These contradictions and fissures have the making of serious governance challenges when there is a defacto land use change involving large extents of lands as in landscape restoration (Singh et al. 2020).

The nature of land and the appropriateness of foresting it in the face of more pressing land use needs often poses the first governance challenge. Imagine the demand for setting up a women's college on degraded forest lands in close proximity to a large Metro city like Hyderabad instead of restoring the area to its original ecological status of a dense forest a decade earlier! In a crowded country such challenges affect almost every land one tries to bring under restoration and the Gajwel Mulugu landscape is no exception (Dobrial 2021).

Some of the degraded lands in this landscape were used by persons or organizations other than the state forest department. It is not quite clear when and how it had happened, except that this passing into outside control occurred over a long period and was a continuing process. Lands under unauthorized use by way of encroachments over public lands and mining and quarrying present the greatest difficulties. Many of these encroachments took place in the parts of Gajwel Mulugu landscape that are closest to the Metro city of Hyderabad where the land costs are exorbitant and the demand for stone from quarries for construction is high. Most illegal settlements were by poor people working in the neighborhood constructions and households who have been able to strengthen their unauthorized control over the lands using the political power their large numbers gave them. There are also some encroachments for settlement by relatively richer people who use corrupt practices to prolong their hold of the land, but these are easier to address by a determined forest department backed by the government and the judiciary. Lands under active mining and quarrying present the greatest difficulties because of their very high economic utility in the booming infrastructure development taking place in the surrounds and the number of people employed in these activities. Making alternate mining sites available for development activities often presents the only possible solution, which is what was done by the government in the case study area (Dobrial 2021).

Considerable difficulties were encountered in reforesting encroached lands in parts of this landscape and there were strong protests against restoration in many places, mostly in the first and second year of the program. Firm and tactful handling of all such disputes by the forest department backed by a determined government made all the difference between the current restoration drive and many earlier efforts. The entire issue was discussed in detail with the implementing officials of the state forest department and with professional foresters and researchers who had encountered a range of land related governance issues in the states of Haryana, Himachal Pradesh, Goa and Tamilnadu and who, between them, had considerable experience of similar restoration efforts in Myanmar, Nepal, Bhutan and Bangladesh, too. A summary of the nature of conflicts and solutions that emerged in the landscape under study, complemented with some important lessons from a few sites in above mentioned states is presented below.

Restoration of lands under unauthorized use

In dealing with degraded lands encroached by unauthorized users the usually understaffed forest departments often choose to circumvent the problem by ignoring the affected land parcels and taking up

restoration work around these. But this quiet acceptance of unauthorized use is usually interpreted as a license to further expand into restored lands once the forest department turns its attention elsewhere. When unauthorized use is by the rich and powerful the best option is generally eviction but should be attempted only if the Government is willing to back the action, otherwise it could be very risky for the unprotected field staff of the forest department. When the unauthorized use is by the poor, often the best way forward is recourse to roadside and fruit planting in settlements without eviction combined with homestead planting on occupied lands.

Then there are cases where the lands identified for restoration are used in criminal ventures like illicit distillation of alcohol or cannabis and poppy cultivation for illegal production of narcotics. Use of remote forest lands for illicit distillation is not uncommon in South Asia with high taxation on alcohol. This was also the case in the Gajwel Mulugu landscape, but it did not create major difficulties during the restoration as only very few people were involved in it and the vast majority of villagers in the neighborhood were opposed to this activity (Dobrial 2021). Mostly, the distillers move away on their own as alternate sites are not too difficult to find, and when they do not, seeking assistance from the police on a few occasions is a good deterrence. But dealing with illegal cultivation of cannabis and poppy, where criminal gangs make heavy investments in very remote localities and shifting to alternate sites is not an option, involves a very high risk and massive police operations are needed to get rid of the narcotic cultivators. Forest departments are usually well advised to stay away from such sites and leave the task of eviction of these narcotic mafias to a professionally trained and well-equipped police force.

Identifying primary stakeholders

An important task in restoration is the identification of primary stakeholders. These are essentially the landowners, those holding rights to the land and the existing produce, the graziers from near and afar, firewood collectors, fruit and seed collectors, honey producers, the bark collectors, those with right of access to sand and stones, and the rest. Sometimes, even those who merely have a right to pass through the lands in question can stop a restoration project if they carry enough influence with those in authority. The identification of stakeholders is achieved satisfactorily in a large area through a judicious use of village records and participatory consultations with the people. Village records are a good source for identifying genuine right holders, but they are not the only source as these records are often manipulated by local elites in connivance with the village revenue officials. Limited rights to lands situated on village extremities are often shared with people from neighboring villages, and therefore, participatory consultations across village boundaries may also be necessary. This is particularly important in tribal villages (Dobrial 2021).

Most old village records mention only men as the owners of rights. Yet, the local tradition gives women equal rights to the property even when treating the eldest male as head of family. In village level institutions, including the Gram Panchayat, gender equality has been addressed by mandating that half of the elected representatives should be women. Also, the government supported employment in forestry activities favours women. During the financial year 2019-20 women received 58% of the wages for forestry works disbursed under the MGNREGS in the landscape under study (Chepuri Sridhar Rao, personal communication, June 22, 2021).

Transhumance grazers

A right often ignored is the transhumance grazing right of distant people. Indigenous and traditional knowledge systems, assurance of at least some incomes even during the most adverse circumstances, and mutual benefits of both the local communities and the transhumant herders have led to the continuance of transhumant pastoralism over generations but it is now threatened by widespread socioeconomic changes, migration and labor shortage,

and conflicts between herder and local communities (Gentle and Thwaites, 2016). Traditional nomadic and seminomadic people in arid and semi-arid parts of western India have been grazing their cattle over very distant lands, as much as a thousand kilometers from their home settlements, but exercising this right only in years of drought. In distant forests this transhumance right is now under the greatest threat from Joint Forest Management (JFM) when the local JFM participants do not allow these distant claimants of rights to enter their areas (Dobrial 2021). A fair solution to this issue should be explored which would likely differ from case to case.

Spending public money on private lands for restoration

Private lands of low agriculture productivity and those belonging to older people who are unable to cultivate the land are usually offered for afforestation by their owners. Yet, when spending huge amounts of public money caution should be exercised in including these lands in restoration efforts. Restoration is a long-term venture, and people change their priorities as times change, ownerships pass on to next generation, and new opportunities develop. An example of this is the Clean Development Mechanism (CDM) Afforestation Project in Sirsa district of Haryana, once famous as the first small scale CDM forestry project in the whole world, where farmers offered their then uncultivable desert lands of small sizes for the CDM project in 2007. Within a year the larger area came under a new development plan – including a new road and a canal – and everything changed. The landowners uprooted the young saplings and the project met with complete failure (Subhash Yadav IFS, personal communication, June 21, 2021). Such investments in private lands carry with them the great risk of pullback by landowners at a future date and this must be taken into consideration from the beginning.

Local rules and regulations

Local land and vegetation related regulations have serious impacts on restoration works and should be taken into consideration from the very beginning. Large scale mechanized tree planting often requires land clearing including the removal of dead and decayed trees and bushes. However, in many places local rules may not permit the felling of naturally grown trees. In other places even an invasive like Lantana camara may not be clear-felled when preparing land for planting in unstable hill slopes. Ploughing on hill slopes is also often impermissible. Prohibitions regarding the use of water for horticulture and forestry are widespread in water starved parts of most countries. It is best to negotiate with local communities for the sharing of water from streams and make the related payments from project expenditure. Rainwater harvesting for plantations by way of developing well distributed pools across the restoration area for collecting rainwater is advisable but should also be made part of negotiations with the local people since even these can become a source of conflict.

Labour issues present another serious challenge in regions with low levels of employment. In these places use of local labour, even when costly, would be in the interest of a restoration project. When arranging labour from outside is unavoidable it should be done in consultation with local elected authorities, the period of import should be kept as short as possible and the imported labour should not be allowed to settle down except with the permission of local elected authorities. Local laws should be followed in regard to wages, housing and other amenities and when there are no legal provisions it would be best to follow fair practices.

Making effective use of local institutions

It is never enough to pick good and competent officials for initiating FLR in any area because restoration of forests is a long-term task and good officials may not remain there long enough to ensure success of the project. They may also have limited abilities to solve local conflicts, particularly if they come from other regions. It is very important to empower and build capacity of local institutions and develop new institutions to continue the work in the future (IDR 2020).

Transparency and accountability

Lack of transparency and accountability is the primary cause of corruption and waste of resources in forest landscape restoration efforts. Corruption kills the enthusiasm of participants in a community activity when the costs are borne by all but benefits go to a few. The difficulties in ensuring good quality oversight in remote forest localities makes these sites particularly vulnerable to corrupt practices. Setting up transparency in the system deters corrupt practices as wrongdoings are easily exposed and quick remedial actions taken in time. Investment of money and time in developing transparency by using technology (video recordings of works) more than pays for itself.

Social Media and governance

When properly used the social media enables widespread dispersal of relevant information to stakeholders and can be a very strong tool for good governance in FLR. It helps in getting a good overall picture, not merely a briefing from one or two interested parties. Social media also helps in quickly organizing discussions and does not permit local elites to control the flow of information.

4.8 Conclusions

Identification of stakeholders, along with an assessment of their interests , i.e., the nature and extent of rights and privileges over lands and other resources, is one of the most important task that ought to be performed at the beginning of the restoration process. Another important task is to understand the entire complex web of local rules and customs that can impact restoration activities, record them, and use them in training the project staff. This should be followed by developing a detailed plan of action in consultation with the stakeholders but recognising that consultation does not vest anyone with veto power. As far as possible restoration activities should avoid competition with agriculture and with households for the use of limited resources like water. Local labor should be used for project activities except when unavoidable for reasons of skills and expertise. Several laws exist to protect the rights of women and the weakest communities, but their implementation needs to be monitored in so far as they relate to restoration tasks. The rights of transhumance graziers, coming from afar and exercising their rights only during years of droughts in their native lands, are often compromised. Adequate compensations of appropriate nature closer to their primary habitations would be required in such cases.

A very tactful approach would be needed where the degraded lands to be restored are under illegal occupation or used for criminal activities. Vacating the lands is a prerequisite for restoration but caution is needed as it can be quite risky for the forestry personnel engaged in restoration unless effectively backed by police and the government. Local institutions must be used effectively, creating new ones where necessary. Transparency and accountability are key to preventing corrupt practices. Skillful use of social media can enhance the reach and effectiveness of institutions and increase transparency and accountability multifold.

5

5. CASE STUDIES – GHANA

5.1 Forest landscape restoration in Ghana

Forest cover in Ghana declined from 9,924,000 ha in 1990 to 7,986,000 ha today. Plantations account for 297,000 ha, an almost six-fold increase since 1990 (FAO 2020). Forests in Ghana are divided into on-reserve and off-reserve areas, where on-reserve forests are legally demarcated areas vested in the traditional land-owning communities but set aside to be managed in trust by the national Forestry Commission (Osafo 2005), effectively making them "government" lands. The degraded forest reserves are of major concern to the Government of Ghana because approximately 94% is in a deplorable condition as a result of unsustainable harvesting and encroachment. Restoring these areas is therefore a key component of Ghana's 1994 Forest and Wildlife Policy and the 1996-2020 Forestry Development Master Plan, as well as other related sector policies including the Ghana Poverty Reduction Strategy (GPRS) paper. Furthermore, there is an increasing need for timber from sustainable sources. The conversion of the degraded land into well-managed forest plantations provides a sound solution for the required increase in supply.

In response to the high incidence of deforestation and forest degradation in Ghana, both government and private sector have over the years embarked on several programs to restore degraded forests. A major one was the government-led National Plantation Development Program (NPDP), which was launched in 2001 with the aim to develop a sustainable forest resource base to satisfy future demands for industrial timber and enhance environmental quality. After eight years of implementation, the NPDP was reviewed and expanded in 2009 to introduce the National Forest Plantation Development Program (NFPDP). The objectives of the NFPDP were to restore degraded forest areas and to create livelihood opportunities for forest fringe communities, effectively rendering it a forest landscape (FLR) program.

The NFPDP introduced the Expanded Plantation Program that expanded efforts to include private lands located outside forest reserves. It consisted of several components such as Government Plantation Development Project (GPDP), the Community Forest Management Project (CFMP), Private Commercial Plantation Development, and the Model Plantation (Foli et al. 2009, Foli 2018). The NFPDP uses three strategies to increase the timber resource: (1) partnering with farmers to establish plantations using the Modified Taungya System MTS; (2) directly establishing industrial plantations using contractors; and (3) releasing degraded forest reserve lands to private entities.

In more recent years, Ghana has joined the global community to tackle deforestation and forest degradation problems under the Bonn Challenge, which seeks to facilitate the restoration of 150 million ha of degraded forest lands by 2020 and 350 million ha by 2030. Under this global goal, the African continent through the African Forest Landscape Restoration Initiative aims to restore 100 million ha in Africa by 2030 (Humphreys et al. 2020) and Ghana committed to bring 2 million ha under restoration by 2030 (Bonn Challenge 2020). The stage for making this commitment possible was greatly facilitated by the needed policy reforms undertaken in Ghana's REDD+ Readiness effort (Andoh and Lee, 2018, Tegegne et al. 2018). Having joined the international REDD+ Readiness Programme through the World Bank's Forest Carbon Partnership Facility in 2008, Ghana's REDD+ Readiness Preparation Proposal

was approved in 2010 (FCG 2015). There are multiple pathways for FLR that ensure the simultaneous attainment of multiple forest-related ecosystem services including timber productivity. Three case studies of FLR efforts in Ghana are described in the following section.

5.2 Introduction to Ghana case studies

Here we report on three forest landscape restoration efforts in the Bono region of Ghana that mirror Ghana's NFPDP strategies. The three projects are (1) a plantation development project under a joint initiative by the Forestry Commission (FC) and the Ghana Timber Millers Orgazination (GTMO); (2) a partnership between local communities and the CSIR-Forestry Research Institute of Ghana (CSIR-FORIG) funded by the International Tropical Timber Organization (ITTO); and (3) a Public-Private Partnership between the Forestry Commission and Form Ghana Ltd. These three projects are being implemented in two Forest Reserves: the public-private partnership between the FC and FORM Ghana Ltd. is within the Tain II FR while the other two projects are within different parts of the Pamu Berekum FR (Figure 2).

FLR Case Study 1: Joint initiative between the Forestry Commission (FC) and the Ghana Timber Millers Organization (GTMO)

The FC and GTMO plantation project is managed more as a joint public-private scheme under the FC/Timber Industry Fund Board comprising members from both the FC and the GTMO. It is

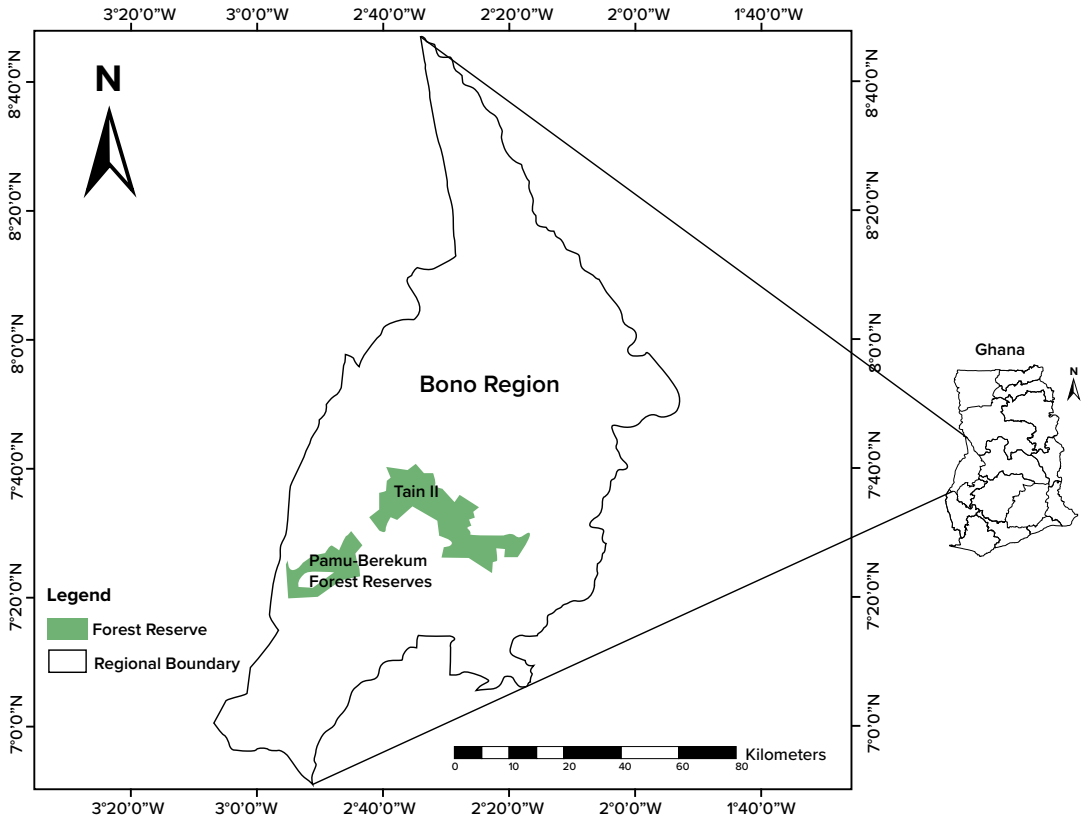

Figure 2: Map of the Bono Region of Ghana, showing the locations of Forest Landscape Projects in the Tain II and Pamu-Berekum Forest Reserves.

implemented in the northern parts of the Pamu Berekum FR near Jinijini. The Pamu-Berekum Forest Reserve covers an area of 189 km^2 and lies within latitude 7°30'N and longitude 3°30'W. The area lies within the dry semi-deciduous forest zone and used to be dominated by rich flora consisting of both evergreen and deciduous canopy trees. The surrounding off-reserve areas also used to be one of the richest and leading producers of cocoa and citrus in the country. However, recurring bushfires since 1983 and human activities led to the conversion of large portions of the remaining forests into savannah woodland and grassland (Appiah et al. 2009, 2010).

The overall aim of the project is to ensure the development of best practice timber plantations of both indigenous and exotic species to supplement raw material supply to the timber industry of Ghana. The specific objectives of the project are: to (i) restore degraded forest lands, (ii) develop the timber resource base of both indigenous and exotic tree species, and (iii) serve as outstation centre for research and training/experiential learning, and (iv) support job creation for rural forest fringe communities.

The FC/Timber Industry Fund Board engaged CSIR-Forestry Research Institute of Ghana (CSIR-FORIG) as the implementation agency to establish best practice plantations of fast-growing indigenous and exotic commercial species at various locations in the country. Accordingly, CSIR-FORIG has been establishing forest plantations funded through the FC/Timber Industry Fund since 2010. At the Pamu Berekum site alone, CSIR-FORIG was allocated a total of 17 compartments (approximately 2,176 ha) and as at the end of the 2020 planting season (i.e. August), 15 compartments had been planted covering ca. 1,968.96 ha.

The availability of funds and degraded forest areas for plantation establishment facilitated the scale of work in the landscapes allocated for the project. The project management board (the FC/Timber Industry Fund Board) regularly made funds available to support the expansion of the area for planting, as well as for the management of already established stands. Other factors that enhanced the scaling-up of the project include communication, involvement of and close collaboration with stakeholders; the cooperation of the local fringe communities and leaders; and the commitment of the implementation partner towards successful execution of the project.

Concerning the improvement in the quality of the restoration, a key factor has been the close monitoring and supervision of activities by the implementing partner. The project has a monitoring team at CSIR-FORIG that inspects work progress on a quarterly basis. There is also a project manager responsible for regular supervision of work and provides monthly reports on work progress. At the project site, there is a site manager who supervises the daily operations with several technical officers under his supervision. This allows for continuous monitoring of the progress of work.

At the time of writing (2020), restoration continues and in the next couple of years it is expected that the project will expand by at least two additional compartments (ca. 128 ha per compartment). After that, within the next five years, the land area allocated to CSIR-FORIG for restoration (17 compartments covering approximately 2,176 ha) will be almost completely planted. After the entire area has been planted, the project activities will continue, but mainly focus on the maintenance of established stands, involving weeding, singling, pruning, and thinning.

FLR Case Study 2: Community-based FLR in Pamu-Bekerum forest reserve

The project, implemented in two phases, was initiated by the CSIR-Forestry Research Institute of Ghana (CSIR-FORIG) and supported financially by the International Tropical Timber Organization (ITTO) and partly by the government of Ghana. It involved national institutions such as CSIR-FORIG, the Forest Services Division (FSD) of the Forestry Commission (FC), the Faculty of Renewable Natural Resources at the Kwame Nkrumah University of Science and Technology and the local communities.

The first phase of the project was initiated in 2000 while the second phase started in 2012 and was implemented in three locations (Forest Districts) of Ghana. The sites were selected because they had been severely disturbed after years of shifting cultivation, heavy timber exploitation, and rampant bushfires (Appiah et al. 2009, 2010). For the purpose of this governance analysis, we focus attention on Pamu-Berekum Forest Reserve in the Dormaa Forest District where restoration was implemented, mainly in the southern parts of the reserve near Dormaa Ahenkro and covered a total area of 250 ha.

The overall aim of the project was to reduce the decline and degradation of forests, as well as improve the livelihoods of local communities. The specific objectives included: (i) determining the underlying causes and impact of degradation on local communities and ecosystems; (ii) restoration of the degraded forest with active participation of local communities; and (iii) development of models/ identification of strategies for management of forests established by local communities leading to enhanced conservation and provision of forest goods and services.

The project was carried out using the Modified Taungya System (MTS) under the theme of "Rehabilitation of degraded forests with collaboration of local communities" (PD 30/97 Rev 6 (F)). Under the MTS, farmers were given land on which to grow annual agricultural crops along with tree species during the early years of the plantation's establishment (Appiah et al. 2015). Food crops, especially annuals such as plantain, cocoyam and vegetables, were inter-planted with a predetermined set of high-priority tree species, often economically valuable timber trees. The key advantage of the MTS concept is that farmers essentially co-own forest plantation products with the Forestry Commission, landowners and adjacent forest communities as partners. All participants in

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the MTS are eligible for a share of the benefits that accrue from the plantation (Agyeman et al. 2003).

FLR Case Study 3: Public-Private Partnership (PPP) arrangement in Tain II Tributaries Forest Reserve

The public-private partnership (PPP) arrangement in Tain II Tributaries Forest Reserve in the Bono region was established in 2007 between a private firm, Form Ghana Ltd., the traditional landowners and the Forestry Commission of Ghana (Naaijen and Hol 2018).

The Tain II Tributaries Forest Reserve covers an area of ca. 50,900 ha, and lies within latitude 7°28'N and longitude 2°40'W. The reserve forms part of the dry semi-deciduous forest zone, where fire is predominant (Hall and Swaine 1981). Over the years the reserve has been degraded to the extent that much of it is finally completely deforested with large portions converted to farmlands and settlements as a result of annual bushfires, logging, slash and burn agriculture, and felling of trees for fuelwood (Kosoe et al. 2015). The remaining vegetation is now a mosaic of savannah, farmlands, unmanaged teak plantation and degraded forest (Tollenaar 2013). There have been efforts through both government and private sector initiatives to reforest the degraded/deforested reserve (Kosoe et al. 2015).

Form Ghana Ltd., a subsidiary of Sustainable Forestry Investments, B.V. in the Netherlands, is a forest plantation management company established in 2007 in central Ghana. It provides services in the field of reforestation of degraded forest reserves and plantation management. Its core business in Ghana is the establishment and management of sustainable forest plantations in degraded forest reserves. The vision of Form Ghana Ltd. is to operate in a sustainable environment and to contribute significantly to the quality of people's lives in the project area, to environmental protection and to the Ghanaian economy. The public partnership is aimed at large-scale reforestation (14,596 ha) of degraded forest reserves in Ghana to conserve and restore natural, riparian forest, while considering the livelihoods of forest fringe communities. In addition to Tain II FR, both Asubima and Afrensu Brohuma Forest Reserves, which are heavily degraded, have been allocated to Form Ghana Ltd. for restoration activities. Excessive degradation caused by over-exploitation, forest fires and conversion to agricultural use had converted the original dry deciduous forest into a mosaic of agriculture and savannah landscape, and many of the plants and animals typical of the forest environment had been lost in the process.

Form Ghana Ltd. operates in a socially, ecologically and economically responsible way. This has resulted in the award of a certificate for sustainable forest management by the Forest Stewardship Council (FSCTM) in 2010. The company's reforestation activities have also been independently validated under the Verified Carbon Standard (VCS), which shows the company's contributions to climate change mitigation.

5.3 Legal framework, policies and programmes

The national policies, legislations, strategies and programs discussed in this section are those that have generally influenced forest landscape restoration efforts, including the three case areas that are the focus of this governance analysis. These policies and legislations provide an enabling environment for restoration activities. In general, the operations of the three case studies align with the existing policy and legal framework in the country.

The policy and legislative frameworks in Ghana provide guidance and direction with regard to land ownership, security of (land and tree) tenure, and financial support for forest landscape restoration activities. Currently, the broad policy and legal framework for forest plantation and landscape restoration in Ghana are hinged on Ghana's Forest and Wildlife Policy (2012), the 2016 Forestry Development Master Plan (FDMP), the Forest Plantation

Development Fund (FPDF) Act, 2000 (Act 583), and its amendment Act, 2002 (Act 623), the Timber Resources Management (Amendment) Act, 2002 (Act 617), and the National Land Policy (1999). Other national strategies and programmes have also been introduced over the years to support forest landscape restoration. These include the National Forest Plantation Development Program (NFPDP) of 2001 and modified taungya system in 2009, the Ghana Forest Plantation Strategy (GFPS) 2016 – 2040, the Ghana Shared Growth and Development Agenda (GSGDA) II, and the Ghana Poverty Reduction Strategy Programme (GPRSP).

The 2012 Ghana Forest and Wildlife Policy aims to promote the rehabilitation and restoration of degraded landscapes through the establishment of forest plantations, enrichment planting, and community forestry; it also seeks to promote and develop mechanisms for transparent governance, equitable sharing of benefits, and citizens' participation in forest and wildlife resource management (MLNR 2012). In addition, the policy seeks to enhance the active participation of the private sector, communities and landowners in managing resources and addressing issues concerning tree tenure and benefit sharing. The policy also aims to increase government commitment to restoration of degraded forest landscapes through substantial forest plantation development schemes. This policy thus sets the stage and helps provide a conducive environment for all forms of landscape restoration activities in the country.

The FDMP aims to support farmers, landowners, and civil society groups in initiating the restoration of degraded forest landscapes in forest reserves and off-reserve areas by 2025. In line with this, the FDMP supports local farmers to increase the stocking of trees on farms and in fallow areas, thus enhancing carbon stocks within the agricultural landscape by promoting sustainable cocoa and agricultural practices. It also aims to offer payments for environmental services by 2030. In addition, under the FDMP, forest plantation development will be executed by establishing and managing planted forests through enrichment planting and by managing trees on farms by 2030.

The Ghana Poverty Reduction Strategy (GPRS) Programme emphasizes the need to protect, rehabilitate and sustainably manage the national land, forest and wildlife resources through collaborative management, and aims at increasing the incomes of rural communities who own these resources. It also aims at enhanced community involvement in the management of forest, wildlife and savannah woodland resources and improves the benefit flows to communities from resource sales. These objectives of the GPRS have been central in designing and implementing all the three FLR projects under consideration in this governance analysis. The Ghana Shared Growth and Development Agenda (GSGDA) II, recognises the need to reverse forest degradation and restore degraded landscapes through sustainable land management and intensification of the National Forest Plantation Development Programme.

The government of Ghana has made efforts to improve farmers' involvement and performance in relation to forest landscape restoration through forest plantations by providing systematic support systems. The Forest Plantation Development Fund (FPDF), for example, enables farmers to acquire grants to boost their investment in forest plantations on a landscape level (Kumeh et al. 2019). Established in 2000 by Act 583, the FPDF is meant to provide financial assistance for the development of forest plantations and provides funds for research and technical advice. Although the Act mainly focused on commercial plantations in the initial stages, it was later amended by Act 623 of 2002 to support public and private investment in forest plantations (Kumeh et al. 2019).

The Timber Resources Management (Amendment) Act, 2002 (Act 617) excludes private forest plantations from being allocated by government under a Timber Utilization Contract (TUC), and provides fiscal and other incentives and benefits to investors in the forestry sector (Forestry Commisson 2016). The National Land Policy aims at ensuring

the judicious use of the nation's land and all its natural resources by all sections of the Ghanaian society in support of various socio-economic activities undertaken in accordance with sustainable resource management principles and in maintaining viable ecosystems.

Over the years, both the government and the private sector have embarked on several programs to expand plantation development in the country as already mentioned under section 5.1 above. Key among them was the government-led National Plantation Development Program (NPDP) and the National Forest Plantation Development Program (NFPDP). The NPDP, launched in 2001, aimed at developing a sustainable forest resource base to satisfy the future demand for industrial timber and enhance environmental quality while the NFPDP, introduced in 2009 after revision and expansion of the NPDP, had additional objectives to restore degraded forest areas, and to create livelihood opportunities for forest fringe communities. The NFPDP introduced the Expanded Plantation Program to cover private lands located outside forest reserves (Foli et al. 2009, Foli 2018).

In 2015, a national strategic plan known as the "Ghana Forest Plantation Strategy (GFPS)" was formulated to provide a comprehensive framework for plantation forestry in the country. The plan is to optimize the productivity and sustainability of smallholder farming systems by developing appropriate technologies that involve the integration of trees on farms (Kumeh 2017). In addition, the GFPS aims at exploring innovative financing mechanisms such as reforestation levies and taxes, REDD+ Carbon Credits, Payments for Ecosystem Services (PES) and environmental offsets from which grants, concessionary loans, and performance-based payments may be sourced for the establishment and maintenance of forest plantations. Furthermore, the GFPS aims to explore avenues for providing smallholders with extension services, as well as linking them to well-developed markets where they can receive fair prices for their products (Kumeh 2017).

5.4 Land and resource tenure and benefit sharing arrangements

General forms of land tenure in Ghana

Legally, there are two types of land in Ghana, namely public land and private land (Republic of Ghana 1992). Public land is vested in the President on behalf of and in trust for the people of Ghana. On these lands the Government of Ghana, through the Lands Commission or other such government agencies, holds management, regulatory, and user rights. The Forest Reserve areas, such as the lands being used for the three FLR cases in this governance analysis, constitute an example of such government-managed land. The usage of such forest reserve lands is strictly controlled by the Forestry Commission (FC), which is the relevant government agency responsible for forest resources management. Decisions concerning the use of such lands are made by the FC and the information is communicated to the traditional leaders (chiefs) in order to obtain their support and thus the cooperation of the communities who are directly under the chiefs.

Private land on the other hand is vested in citizens and is usually managed in accordance with customary law and usage (Republic of Ghana 1992). It is estimated that the customary sector holds about 80 to 90% of all undeveloped land in Ghana (MLF 2003). Private land ownership is further categorized into several forms including stool ownership, family ownership, individual ownership, and common property. The majority of private land is classified as "Stool" or "Skin" land which is vested in the Stool (Chieftaincy) on behalf of and in trust for the subjects of the Stool. Stool lands are owned by the Paramount Chief, who has allodial title over all such lands but has decentralized the management of lands under his jurisdiction to his sub-chiefs. The stool lands are managed by the traditional authority in such a way that multiple management and user arrangements can prevail. The sub-chiefs ensure that the different clans, families, and individuals who are subjects of the stool have a fair share of their inheritance.

Under customary tenure arrangements, stool or family land can also, for example, be leased or rented to migrants or fellow community members for specific types of management/use. These contracts are most frequently witness or oral agreements (Asare 2010). For example, farmers can access land for agricultural purposes through share-cropping arrangements locally referred to as "abunu" or "abusa". "Abunu" refers to dividing a farm yield into two equal parts and shared between landowner and farmer, while "abusa" entails dividing the farm produce into three parts; one part goes to the landowner and two parts go to the farmer. This system is particularly popular among farmers who do not own any lands in the area; usually migrants. These arrangements differ with respect to the crop under consideration and the kind of agreements reached between the parties from the onset. In the three FLR project case areas, "abunu" often goes for tree crops such as cashew and cocoa, while "abusa" is often associated with food crops such as yam, beans, maize and cassava.

From the foregoing, dual tenure and land management systems operate concurrently in Ghana. Officially, Ghana has a formal land administration system managed by the Lands Commission. In practice, land is predominantly regulated and managed by customary rather than statutory laws. However, as and when the state official land machinery is applied and enforced, the customary system is weakened. The State has the power to appropriate land anywhere in the country for development purposes; however, compensation must be paid to the traditional owners. Landowners exert substantial control in deciding whether an area should be set aside for reservation or not. Although national law grants the government the authority to constitute a reserve on any land it deems appropriate, landowners must be consulted through an arbitration process that is under the jurisdiction of a Reserve Settlement Commissioner, who must take landowners' concerns into consideration.

In Ghana insecure land tenure is usually considered by many stakeholders as an underlying driver of deforestation and forest degradation. For example, Leach and Fairhead (2000) indicate that farmers who are landowners and have tenure rights in the Wenchi District of the Bono East Region of Ghana preserve and encourage a variety of forest tree species in their fields. Where population growth has forced fallows to be shortened, the farmers with secure land tenure rights engaged in fallow enrichment and integrated fast-growing trees into their cropping system. But tenant farmers in the same community who had insecure tenure rights lacked incentives to plant and protect trees on their farmlands (Leach and Fairhead 2000). Similarly, Damnyag et al. (2012) argue that the tenure system in Ghana aggravates deforestation because under informal rules governing land holdings, such as sharecropping and lease-holding, farmers with short-rotation farming systems are reluctant to undertake long-term reforestation investments such as tree planting.

Land tenure conflicts are difficult to clearly define, have many interdependencies and are multicausal. Specifically, dysfunctional policy, commoditization of land, infringement on user rights, shift from communal to private land ownership, renegotiation of rights, and unclear roles and responsibilities of government agencies, exacerbate conflicts among resource users, managers and policy makers in Ghana.

Land tenure arrangement under the three projects

In all the three cases considered under this governance analysis, the lands belong to the Government of Ghana, and were acquired under law and set aside as Forest Reserve areas. The management and regulation of these lands are therefore under the Forest Services Division of the Forestry Commission. Access to these lands for restoration activities were obtained from the FC by all the three projects under formal legally binding agreements. For example, the FC and Form Ghana Ltd. signed a 50-year Public-Private Partnership (PPP) lease agreement to jointly reforest 14,596 ha of degraded forest land within the

Tain II Forest Reserve (Case 3) near Berekum in the Bono Region. Also, in the case of the FC and GTMO plantation project (Case 1), there is an existing agreement between the FC and the GTMO to replant 17 compartments (ca. 2,176 ha) of degraded forest land within the Pamu Berekum Forest Reserve. Under these agreements, every infrastructural development on these lands during restoration has to be made known to the FC. These include construction of access routes and work camps. As legal owners of the land, the FC reserves the right to take decisions concerning the usage and to enforce them.

Resource tenure and benefit sharing in Ghana

Management rights to many of the most valuable natural resources (e.g. timber, minerals, etc.) are legally de-coupled from the land in which they are found. For instance, Article 269 (1) of the 1992 Constitution vests in Parliament the responsibility of ratifying any arrangement involving the allocation or exploitation of mineral, water or natural resources. This ratification process can be simplified if Parliament designates a Commission to approve resource use or extraction pursuant to Article 269 (2). Timber is one resource based on the Parliamentary exemption that is now managed by the Forestry Commission (Asare 2010).

Concerning benefit sharing, when natural resources are exploited from private land, the government shares a proportion of the revenue with the landowner under a legally backed benefit sharing arrangement. For example, in the case of timber harvested on stool lands in agricultural landscape or areas outside forest reserves (also called Off-reserve areas), the FC takes 50% of stumpage fees for the management of this resource, while the remaining revenue is divided according to a constitutionally-agreed formula between the Office of the Administrator of Stool Lands (OASL), the Stool, the local Traditional Authority, and the District Assembly/local government authority (Asare 2010). When timber is harvested from natural forest reserves, the FC takes 60%, the OASL takes 10% and the remaining 30% is divided amongst the District Assembly (16.5%), Traditional Council (6%) and Landowner/Stool (7.5%).

By contrast, ownership of commercial forest plantations and other planted trees are legally treated differently. Management rights to commercial plantations or planted trees rest with the entity that planted them (Asare 2010). For example, timber rights cannot be granted on land with a private forest plantation or on land where timber is grown or owned by an individual or group of individuals according to the Timber Resources Management (Amendment) Act, 2002 (No. 617 of 2002).

There is a specific benefit sharing arrangement for the Modified Taungya System (MTS, as in case study 2, i.e., the community-based restoration in Pamu Berekum FR), which integrates communities into the establishment and management of plantations.

FLR Case Study 1: Joint initiative between the Forestry Commission (FC) and the Ghana Timber Millers Organization (GTMO)

In the case of commercial plantations such as this one, the private sector bears the cost of replanting the degraded areas; therefore, FC allows the company to retain 90% of the revenue, while the Stool receives 6%, communities 2%, and the FC 2%.

FLR Case Study 2: Community-based FLR in Pamu-Bekerum forest reserve

In the community-based restoration case, the MTS

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was used for restoration and as stated above, there is a specific benefit sharing arrangement that applies. Here, 40% of harvesting revenues goes to the farmers and farmer groups that planted and managed the trees. These farmers also receive additional social and economic benefits from their participation, including land for planting food crops and the proceeds from the food crops. The other 40% goes to the FC, while 15% goes to the Traditional Authority (landowner), and 5% to the local community.

FLR Case Study 3: Public-Private Partnership arrangement in Tain II Tributaries Forest Reserve

In the case of this PPP, the Forestry Commission, Form Ghana Ltd. and the Berekum Traditional Council signed a Benefit Sharing Agreement to formally document the responsibilities and future benefits of each of the three key stakeholders. The benefits accruing from the commercial thinning and harvesting of timber and other benefits, after deduction of project costs, will be shared among the different PPP partners according to the following formula:

- The Forestry Commission shall receive 12% of the Standing Tree Value (STV) of commercial thinnings and of the final harvest obtained from the Project and shall receive the same percentage of other benefits less the costs of Form Ghana Ltd. that would accrue from the project.
- Form Ghana Ltd. shall receive 80%.
- The landowner shall receive 6%, and
- Local community shall receive 2%.

5.5 Actors, power relations, representation and participation

Different stakeholders/organizations participate in forest landscape restoration activities in Ghana. This section provides information on the roles and processes involved in the selection of the different actors/organizations involved in FLR activities in Ghana, particularly at the landscape level. The stakeholders may broadly be divided into two categories: national statutory agencies and the non-statutory agencies.

Statutory agencies

These are the national agencies mandated by Ghanaian law to perform certain functions and may therefore cut across different kinds of FLR projects in the country. Largely, FLR activities in Ghana fall under the jurisdiction of the Ministry of Lands and Natural Resources (MLNR) and the Forestry Commission (FC). The MLNR has the responsibility for overall forest sector planning and policy direction and for monitoring sector programs. Other ministries such as the Ministry of Environment, Science, Technology and Innovation (MESTI) and the Ministry of Food and Agriculture (MoFA) are key actors in FLR on issues related to cross-sector policy coordination. The FC is responsible for the implementation of sector policies and other technical issues through its Forest Services Division (including the regional and district forest offices) and the Resource Management Support Centre (RMSC). The Forestry Research Institute of Ghana of the Council for Scientific and Industrial Research (CSIR-FORIG) also plays a key role in conducting research on forestry issues with the aim to provide scientific information that ensures the implementation of best practices in forest management and FLR.

The Private sector, civil society and communities

Stakeholders under this category include commercial forest plantation developers who usually have large plantation holdings and are often capable of meeting their capacity and support needs. Traditional authorities (chiefs/landowners) are fiduciaries of land resources. Their ownership of land and their proximity to forest lands makes them key actors in forest landscape restoration. Local communities are also key actors and their roles in FLR are primarily tied to investment decisions regarding the allocation of resources to plantation development. In most cases, they are farmers who often establish

plantations to augment income from their farm produce. Additionally, civil society organizations such as Non-governmental Organizations (NGOs) and Civil Society Organizations are also important stakeholders in FLR.

Stakeholders' participation and decision making in the three FLR cases

FLR Case Study 1: Joint initiative between the Forestry Commission (FC) and the Ghana Timber Millers Organization (GTMO)

The main statutory actors involved in the plantation development project in Pamu-Berekum Forest Reserve by the Forestry Commission (FC) and the Ghana Timber Millers Organization (GTMO) are the Forest Services Division of the FC, the Ministry of Lands and Natural Resources (MLNR), the Ministry of Environment, Science, Technology and Innovation (MESTI), the Ghana National Fire Service and the CSIR-Forestry Research Institute of Ghana. The non-statutory actors include the Traditional Council of the Jinijini Traditional Area, the sub-chiefs of fringe communities, the local political leaders (the Assembly Members and Unit Committee members) of the fringe communities, opinion leaders and inhabitants in the fringe communities.

In the implementation of the landscape restoration project, some actors are more powerful than others. The FC as well as the Project Management Board (comprising representatives from the FC, MLNR, MESTI and the GTMO) are the most powerful in terms of decision-making. The planning and implementation of the project is mainly the responsibility of the Project Management Board. This includes the decisions of where to plant, what area to plant, species to plant, and whether planting should be monoculture or mixed. Also, they are responsible for taking decisions about who the implementation partners should be and, together with the selected partners, for decisions about the silvicultural management regimes to adopt. Ultimately, the initiators of the project are also responsible for decisions relating to how the restored areas should be used and what the final product should be used for.

High level decision-making does not involve other actors except that the implementing partner (CSIR-FORIG) is sometimes consulted especially on certain technical issues. In most cases, the other project actors are just informed about the decisions emanating from the highest decision-making body. CSIR-FORIG also holds some power specifically related to the project implementation. The traditional authorities (chiefs and elders) also hold and exhibit some power especially relating to the enforcement of some cultural laws such as taboo days on which days project activities are not allowed. The inhabitants and farmers in the fringe communities wield the least power in the project implementation in the sense that they are the last group of people to hear of or be consulted about decisions concerning the progress of the project.

The involvement of the project implementing partners is based on formal agreements in the form of short-term contracts which clearly spell out the responsibilities and benefits of the implementing partner, who is normally engaged in the form of a contractor. Other actors such as the chiefs, opinion leaders and people of the fringe communities are not involved in formal agreements but participate in meetings and discussions. Prior to the start of the project, the traditional and political leaders of the area to be restored were consulted to obtain their consent and support for the project's implementation. Throughout the implementation, regular meetings and consultations are held with the community leaders to update them about the progress of work and to continue to obtain their support and commitment. The community members are an integral part of the project implementation because they are offered temporary jobs on the project. The fringe communities are also offered land, under a kind of agroforestry practice (Taungya), to plant food crops during the first three years of the restoration activity, i.e., before canopy closure.

Generally, the key stakeholders/actors were selected through a consultative process, based on

decision-taking about several important factors critical for the successful implementation of the project. Important among the reasons for selection are political support, technical knowledge of the restoration project, land ownership and use rights, traditional support and obtaining support and consensus from the local people who interact most with the land and resources.

FLR Case Study 2: Community-based FLR in Pamu-Bekerum forest reserve

For the community-based forest land restoration (Pamu-Berekum Forest reserve), the main statutory actors were the government of Ghana, CSIR-FORIG, the FC, and the Kwame Nkrumah University of Science and Technology. The other actors included the International Tropical Timber Organization (ITTO), the community leaders and the inhabitants of local fringe communities. Funding was made available by the ITTO with support from the government of Ghana. The CSIR-FORIG as initiators were responsible for planning and implementing the project and did this in close collaboration with other actors like the FC, KNUST, community leaders and local people. For example, the FC contributed technical expertise, trained farmers to carry out their functions efficiently, supplied equipment and tools, and was responsible for stock inventory and auctioning or marketing of products. The district forest managers and the technical officers of the Forest Services Division of the FC were involved in almost all project activities during the implementation of the project. These include the survey data collection, focus group discussion, plot demarcation on degraded forest reserves, distribution of seedlings to farmers, and registration of their planted trees for benefit sharing. The District forest managers were involved in project steering committee meetings. At all stages of

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project implementation, regular consultations were done with community leaders to obtain their support. Local farmers were also consulted regularly to ensure that they support the project. For example, local farmers were interviewed about their preferred species, and this informed the species selection for the restoration activity.

FLR Case Study 3: Public-Private Partnership arrangement in Tain II Tributaries Forest Reserve

Here, the Forestry Commission has been a partner in the Public-Private Partnership arrangement with Form Ghana Ltd. where the FC leases the land to Form Ghana Ltd. for the restoration activities. Other government agencies, such as the Environmental Protection Agency, are indirectly involved concerning the environmental impacts of the restoration efforts by Form Ghana Ltd. Other statutory actors in this case study are the regional and local government agencies because of Form Ghana's large impact on employment in the region of operation. Additionally, the local government office is a relevant actor since it is likely to have information on the main issues that are at stake in the agricultural sector. For this case study, restoration activities involved actors who were service providers. The main service providers in the region were assessed and a selection was made for those providers that were likely to be affected by or involved with project establishment. The following service providers were selected: (1) the Ghana National Fire Service local office and (2) National Commission for Civic Education (NCCE). The Ghana National Fire Service isthe main institution for fire prevention and firefighting. Since fire is one of the main challenges that reforestation projects face, the fire office was selected to be involved to assist with fire prevention during the period of plantation development. – The NCCE was selected for awareness-raising among local communities. NCCE has good understanding of ongoing issues in the region and has the means to reach out to a large group of people.

Other important actors involved in the project include the local leaders such as chiefs, assemblymen and community opinion leaders, as well as the people living in the local fringe communities. These are critical for sustainability of the project. For instance, all labour for restoration activities comes from the fringe communities.

A critical drawback in the representation of stakeholders for participation and decision making on FLR projects in Ghana has to do with the lack of considering gender issues. Although women are included in the casual workers who are engaged to work on the project and also allowed access to land for food cultivation just like their men counterparts, there is no deliberate effort to capture gender issues in decision making so as to include male and female perspectives. As a result of this, there is likelihood that critical decisions concerning FLR projects in Ghana may be biased in favor of men since they are traditionally the more outspoken group when it comes to decision-making and negotiations. Without a gender-inclusive participatory processes to capitalize on the knowledge and experiences of both women and men in decision-making, all aspects of FLR would likely be affected including decisions about selecting target areas for restoration, choice of stakeholders for FLR governance and how to include them, choice of restoration approaches, selection of priority species and monitoring progress.

5.6 Connections to international processes, initiatives and agreements

The three FLR projects contribute greatly to achieving the Sustainable Development Goals (SDGs), particularly SDGs 13 (Climate Action; Target 13.2.1) and 15 (Life on Land; Targets 15.2, 15.5 and 15.9). The projects also contribute positively to the socioeconomic development of the area through the jobs that have been created as well as the provision of lands for agroforestry, which leads to improved food security (SDG 2, Targets 2.3; 2.4). Additionally, these projects fit well into the framework of ongoing

Global Forest Landscape Restoration efforts and they align with international initiatives towards landscape restoration such as the Bonn Challenge and African Forest Landscape Restoration Initiative (AFR100). The objectives of the three FLR projects have strong linkage to the overarching aim of restoring 150 million ha of deforested and degraded lands and constitute part of Ghana's earlier efforts to restore the degraded forests in the country (Danquah et al. 2013). Furthermore, the Government of Ghana pledged to restore 2 million ha of degraded and deforested lands between 2015 and 2030 as part of its commitment to the Bonn Challenge (Dave et al. 2019). The FC and GTMO plantations development project in Pamu Berekum, for example, aims to bring over 5,000 ha of degraded forests into restoration.

In Ghana, the Government is committed in tackling deforestation and forest degradation, especially as part of Ghana's REDD+ strategy to deal with climate change and other on-going processes, such as the VPA/FLEGT. The three FLR projects activities are key components of Ghana's strategies to conserve biodiversity and mitigate the effects of global climate change through the reduction of emissions. Also, potential REDD+ strategies in Ghana include measures to support sustainable supply of timber to meet international and regional exports, as well as domestic timber demand. The restoration efforts in the FLR case study sites help to achieve these goals.

5.7 Conclusions

This study analysed governance issues related to Forest Landscape Restoration in Ghana using three cases. The cases considered adopted different management and operational strategies, namely industry-based restoration, community-based restoration, and public-private partnership restoration. The major driving forces for FLR in Ghana were identified as the large-scale deforestation and degradation of forest lands in the country and the increasing need for timber resources from sustainable sources. The cases reviewed here show that irrespective of the strategy being used for FLR, four factors are critical for ensuring success and sustainability, namely: (1) existence of policy and legislative frameworks that provide an enabling environment; (2) existence of clear ownership and benefit sharing arrangements; (3) close collaboration with all stakeholder groups, particularly local communities; and (4) availability of financial support for FLR activities.

In Ghana, the existence of relevant policies and legislation has played a major role in providing a conducive environment for FLR activities to operate successfully. The study analysis revealed that such policies are required at both national and local levels (e.g. District Assembly and Traditional Rulers) to complement and reinforce one another. For instance, land tenure policies must be synergistic at both national and local levels if FLR activities are to succeed, and for this both state and traditional power holders and legislations need to function well. In addition to existence of relevant policies and legislations, the study shows that there is a need to have national level programmes (e.g. National Forest Plantation Development Programme and Ghana Forest Plantations Strategy) that take advantage of existing legal and policy frameworks to drive FLR on the ground.

The success and sustainability of FLR activities would be greatly enhanced if clear ownership is determined and benefits are clearly spelt out. Therefore, there is need for strong tree and land tenure arrangements to guide FLR. Additionally, benefit sharing modalities need to be worked out collectively among stakeholders to ensure that no one is left behind. Such benefit sharing agreements need to be concluded early during the lifespan of FLR project and be strictly adhered to by all stakeholders along the power hierarchy.

Many FLR activities in Ghana are carried out in close collaboration with all stakeholder groups, particularly local communities. Most FLR activities are designed to reduce rural poverty and promote socio-economic development by offering employment opportunities and income to local communities and

increasing food production. At the local community level, socioeconomic benefits from FLR activities include cash income, employment, livelihood opportunities, improvement in ecosystem services, and wellbeing. For example, cocoa farmers have been encouraged to integrate shade trees into their farming systems in order to sustain yield, diversify farmers' incomes, and to improve biodiversity conservation. In order to ensure sustainability of farmers' livelihoods and continued maintenance of planted trees even after canopy closure, there is the need to explore the potential of introducing shade tolerant crops (e.g. spices, herbs, medicinal plants) that farmers could continue to cultivate.

While the outlook for FLR in Ghana is promising, this study recognises that the availability of funds is important to sustain the success of any FLR efforts in Ghana. In most cases, funds are needed to provide technical assistance, supply of seedlings and other farming inputs to motivate farmers and local communities to engage in FLR activities including on-farm tree planting and management. However, among the major challenges to FLR activities in Ghana are funding and land tenure issues. The funding related challenges include inadequate financing, inadequate transparency in the management of funds, and delays in the release of funds for restoration activities. The lack of a clear and well-defined land tenure and tree ownership arrangement is also a major difficulty for FLR as this affects both the access to land for restoration as well as the equitable distribution of benefits.

A national discourse on FLR investments in Ghana is critical, accompanied by governance reforms to address barriers that militate against the efficient use of investments in forest landscape restoration efforts. There is also a need to improve the tenure and benefit sharing arrangements of tree/forest products as this is critical for motivating individuals and businesses to commit investments into FLR. In order to ensure greater success of FLR projects and ensure general sustainable land use, it is recommended that gender equality and rights be made central in FLR activities. This would help to avoid perpetuating gender inequalities, while incentivizing women and men to contribute to restoration efforts and to provide greater opportunities and enhanced wellbeing for women and men alike. It is expected that equitable participation in restoration initiatives e.g. in decision making and influence, and the distribution of (labour) costs and benefits would generate broader local acceptance of FLR projects and enhanced capacities among local people. In the broader perspective, this improves prospects for both human and socioeconomic development and environmental outcomes (Metcalf et al. 2015, Horlings 2015, Lescourret et al. 2015). It is recommended that a long-term strategy be developed to ensure sustainability of the restoration projects being undertaken in the country. This strategy should be based on the experiences of the past and aimed at preventing destruction of the restored areas.

6. CONCLUSIONS FROM THE CASE STUDY ANALYSES

Forest degradation and deforestation are major concerns in both India and Ghana, and the need to reverse these trends has led to large-scale efforts for restoring forest landscapes for mitigating climate change and for enhancing the ecological and societal adaptation while ensuring the provision of forest ecosystem services, including forest and tree based products. National legal frameworks and polices have in recent years been updated, revised and complemented to better support and enable forest restoration in both countries. Specific programs to this end have also been developed. India has set ambitious national level restoration targets and both countries have committed to restoration targets under the Bonn Challenge. In India, the country-wide restoration programme is also backed-up with large central government funding, which has facilitated its implementation, while in Ghana the lack of funding and transparency in managing funds are seen as important factors impeding forest restoration and tree planting.

Land use and land tenure related issues pose serious challenges in both countries. While the reserved forest areas are officially under government control, overlapping customary and statutory tenure systems cause uncertainty, may lead to conflicts and disincentivize sustainable land and resource use and restoration, especially in Ghana. In India, customary tenure has for a large part merged with the formal tenure, but the formal laws and rules may not in all cases respect or align with locally evolved customs and norms. The unsolved issue of the traditional grazing rights of transhumance populations is also a continuous source of conflict. Encroachment, illegal settlements and illegal activities have as well led to conflicts and increase risks when implementing restoration.

The case studies analysed in this report represent different approaches to forest restoration reflecting the diverse ecological and social contexts in the case study areas. In the Ghana case, the emphasis is more on plantation development, while the India case study demonstrates an effort to more widely engage local people and organizations to tree planting and restoration efforts.

In the Indian case study, restoration efforts are undertaken in forest reserves by the forest department. Areas adjoining villages are managed under joint forest management contracts, which entitle villagers to collect NTFPs for subsistence use and some products for sale. Also, practically all available lands in the village panchayats, excluding cultivated areas, are targeted for restoration and tree planting. The activities are planned, discussed and decided at the village level and implemented by the villagers. Farmers owning agricultural lands have full control over these lands and enjoy the benefits, but a widely used practice of leasing agricultural land with short term contracts does not encourage cultivators to plant trees.

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In Ghana, the national restoration efforts under the National Plantation Development Programme, the major national programme for forest restoration, have concentrated on the restoration of severely degraded forest reserves through public-private partnership arrangements, or by using contractors. Restoration has aimed at responding to the future demands for industrial timber while also providing environmental benefits and livelihood opportunities, mainly through employment. As demonstrated by the case study, local farmers can also be involved by allowing them to cultivate annual crops in the planted areas during the first years after tree planting. They are also entitled to a share of the timber harvesting revenues. Overall, different benefit sharing schemes have been devised for different restoration approaches, but the traditional authorities, as landowners, are entitled to a share of the proceeds in all cases.

In general, the strength of the tenure rights of different stakeholders is reflected in their ability to influence land use, land use planning and management and to take part or be represented in the related decision making with implications for land allocation, use and benefit sharing.

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