

## FUNCTIONAL FORESTRY EXTENSION: A MISSING LINK IN PROMOTING FOREST PLANTATION DEVELOPMENT IN GHANA

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**Abstract:** *Ghana has over the years initiated various programmes and schemes aimed at promoting plantation development. The success rate of these programmes and schemes has not been as expected, particularly, but not exclusively due to the absence of a functional forestry extension system. This ultimately appears to be the missing link that will provide the technical backing to support investors and smallholder farmers who take to plantation development. Some private investors have put in place their own structures to respond to this need. However, the majority of farmers and investors do not have access to this crucial input to make their drive for plantation development a success. This paper examines the situation on the ground based on a field survey, and discusses the need and options for addressing this missing link. It concludes by recommending pragmatic solutions, including institutional alignments, that could result in a functional forestry extension system that promotes forest plantation development.*

**Key words:** Forestry Extension, Forest Plantations, Small holder Farmers.

### INTRODUCTION

#### Background and Rationale

Forest ecosystem restoration is a priority on the global agenda towards sustainable development. This is because about 13,468 ha of forests are lost annually – equivalent to 36 football fields per minute (WWF, 2014). Deforestation and forest degradation result in: loss of biodiversity and livelihoods; disruption of water cycles; soil erosion and increased emission of Green House Gases (GHGs). In the quest to tackle deforestation and forest degradation and minimise its impacts, numerous common but differentiated actions are being implemented globally (Holloway and Giandomenico, 2009). In Ghana, the government has enacted a number of policies and legislations aimed at empowering and harmonising efforts with non-state actors, including smallholder forest plantation developers, to tackle deforestation and forest degradation. Among these policies and legislations are: the Timber Resources Management Act (547) of 1998 and its amendment (Act 617) in 2002; the Forest Plantation Development Fund Act (583) of 2000 and its amendment (Act 623) in 2002; the Forest and Wildlife policy 2012; and the National Climate Change Policy 2012. Furthermore, some strategies and activities that promote plantation development have been implemented.

Examples include the: Biodiversity Conservation Strategy; Natural Resource Management Programme (NRMP I) Phase I; Forestry Development Master Plan (1996 – 2020); and Ghana Forest Plantation Strategy: 2015 – 2040. All these underscore the dedication of the Government of Ghana to tackle deforestation and mitigate its impacts.

Research suggests that efforts directed towards smallholder plantation development have not yielded commensurate results. This has been attributed to the fact that communities and smallholder plantation developers lack the capacity to successfully plan, implement and manage smallholder plantations (TBI Ghana, 2014). A visit to a typical Modified Taungya System (MTS) plantation and smallholder forest plantations shows low survival rate and poor forms of established stands. This could be attributed to bad seed sources or absence of technical know-how on the part of the smallholder plantation developer. Either way, smallholder plantation developers have been encouraged into plantation development devoid of the requisite knowledge and skills (Forestry Commission, 2013<sup>a</sup>; Forestry Commission, 2013<sup>b</sup>). Moreover, forestry extension systems have not been developed to augment the capacity needs of these smallholder plantation developers to function effectively. In this paper, we report;

- 1) existing forestry extension arrangements within Ghana's forestry sector,
- 2) the extension needs of forestry stakeholders, and
- 3) propose pragmatic ways of improving forestry extension in Ghana to boost the capacity of smallholder plantation developers for enhanced forest plantation development.

### **Study Area**

The issues presented here are findings from 12 communities within 3 forest districts in Ghana: Sunyani (Asiakwa, Fiapre, Dumesua and Abesim), Offinso (Asempaneye, Nkwankwa, Abofour and Techiman) and Oda (Aprokumase, Asuoso, Akroso, Aboabo) These forest districts have a rich history in smallholder forest plantation development hence initiatives that provided forestry extension are most likely to be prevalent in them.

### **Research design, data collection and analysis**

A mixed method approach (quantitative and qualitative) was used for this study. In accordance with recommendations from (Grinnell and Unrau 2014), responses were collected until the team was confident that it was learning nothing from subsequent interviews. This was attained with 94 stakeholders: Forest Services Division (14); Plantation Developers (32); farmers (41), Civil Society Organisations (2); Traditional leaders/landowners (2); Ministry of Food and Agriculture (3). Data collected was cleaned, coded and subjected to analyses using Statistical Package for Social Scientist (SPSS) 20.0. Mainly descriptive statistics were employed. Also, Microsoft (MS) Excel was used to generate a chart to enhance clarity.

### **Stakeholder Analysis**

Forestry extension stakeholders can be broadly categorized into extension service providers and beneficiaries (clientele) (Anderson and Farrington, 1996). In the context of this study, the Forestry Commission, MoFA, Non-Governmental Organizations (NGOs), academia and private practitioners were identified as forestry extension service providers. Their roles included; capacity building in plantation development, linking plantation developers and tree

growers to service providers (finance) and markets. Smallholder plantation developers, landowners, Traditional Authorities (TAs), farmers, Non-Timber Forest Product (NTFP) collectors and forest fringe communities were identified as potential clients or beneficiaries of forestry extension. Other stakeholders include financiers/donors who support the operations of both government and Civil Society Organisations (CSOs). Table 1 is a summary of the stakeholder analysis.

Table 1 Summarised stakeholder analysis on forestry extension service delivery in Ghana.

<b>Stakeholder</b>	<b>Stakeholder's Interest</b>	<b>Perceived Problem</b>	<b>Resource</b>	<b>Mandate</b>
<b>Forest Services Division, Forestry Commission</b>	Improved management of forest resources, including plantations	Non availability of extension framework, limited trained staff and resources for forestry extension	Willingness to carry out forestry extension services	<ul style="list-style-type: none"> <li>▪ Effective management of Ghana's forest resources</li> </ul>
<b>Ministry of Food and Agriculture</b>	Improved agricultural production and poverty alleviation	Limited availability of logistics and funds to operationalize extension services Adulteration of extension message to farmers	Willingness to provide extension services Trained staff to provide extension services	<ul style="list-style-type: none"> <li>▪ To provide relevant information and training for improved agricultural production</li> </ul>
<b>Civil Society Organisations</b>	Improved community participation in plantation development and poverty alleviation	Limited smallholder participation in plantation development Lack of funds to actively operationalize projects, including forestry extension	Could mobilise funds to support forestry extension services Have trained staff to carry out forestry extension services	Not applicable
<b>Plantation developers (smallholders)</b>	Improved benefits from plantations	Lack of adequate support from FSD Lack of capacity to effectively establish and manage plantations	Desire to invest in plantation development	Not applicable
<b>Traditional Authorities and/or landowners</b>	Improved used of traditional fallow lands	Plantation development could hold up lands set aside for development in the immediate future.	Can mobilise communities to participate in plantation development	Not applicable
<b>Communities (farmers)</b>	Improved availability of fuel wood and Non-timber forest products	Lack of desire to effectively integrate trees with crops	Strength in numbers to protect plantations from illegalities	Not applicable

### **Forestry Extension Arrangements in Ghana**

Analysis of data revealed that there is a low awareness of a structured mechanism for forestry extension delivery. From the Figure, 28.6% of FSD staff claimed that there is structured forestry extension service within the FC. They see extension service as part of the FC's mandate. According to them, the use of Range Supervisors/ Technical Officers (TOs), the Customer Service Concept and the Wildfire Campaign Concept were all structured

mechanisms for forestry extension service delivery. Upon probing further, it was revealed that all those instruments were implemented under projects and are currently dysfunctional. Majority of FSD staff (71.4%) had a contrary view. According to them the extension services that they provided does not imply the presence of a structured extension service within the forestry commission, because the extension activities that were carried out are circumstantial, and not as a job description. This view was shared by 81.2% of plantation developers who reported that extension services rendered by FSD staff are unplanned and ad hoc. It was mainly in response to events like bush fire outbreaks. They further indicated that most of the extension services were provided by forest guards, technical officers and Non-Governmental Organizations (NGOs) as and when, they encounter people carrying out plantation activities. They also indicated that NGOs provide some form of forestry extension information predominantly via mass media (radio), workshops and sometimes field visits. This was corroborated by 73.2% of the farmers interviewed.

### **Extension Needs of Forestry Stakeholders**

#### **a) Needs of informal forestry extension service providers**

It became apparent that informal forestry extension service providers, including NGOs, CBOs and FSD staff are constrained in two main ways: underdeveloped capacity (knowledge and skill); and lack of logistics. Most informal extension service providers lack qualified personnel, have poor communication skills and low media awareness and are not au fait with innovations that guarantee improved performance with regards to plantation establishment and management. Furthermore, it was reported that, their operations were smothered by: lack of funds; inadequate means of transport; lack of supporting accessories and equipment such as computers, projectors, diameter tapes and Global Positioning System (GPS) gadgets; and poor organization of people at the grassroots.

#### **b) Extension needs of beneficiaries**

Beneficiaries of extension activities revealed that, the success of their operations depend on the availability of credible information and support in at least one and/or a combination of the following: land acquisition; seed collection; nursery establishment; plantation management (including wildfire management); plantation accounting and record keeping; harvesting; marketing; and forest benefit sharing.

### **Lessons from Directorate of Agricultural Extension Services (DAES) on Effective Extension Service Delivery**

Interviews with staff of the Ministry of Food and Agriculture (the Brong-Ahafo Regional Extension Officer, District Development Officers (DDOs) and Agricultural Extension Agents (AEAs) across the three (3) Forest Districts) revealed that extension service is well structured in MoFA. Under the structure (the Directorate of Agricultural Extension Services), Agricultural Extension Agents (AEAs) are responsible for fieldwork (transmission of information from research to farmers) in their operational areas. District Development Officers (DDOs) play a dual role of providing technical backstopping and supervising the aforementioned AEAs. Furthermore, District/ Municipal/Metropolitan Development Officers (DMMDOs), and Regional Extension Officers play a supervisory role to improve the performance of all extension officers within their jurisdiction. Also, all people along the chain as well as clients play an important role

in policy formulation to drive the quality of extension service delivery. However, the directorate has been ineffective in meeting the extension needs of farmers due the following: bureaucracy in decision-making; excessive liberalism; inadequate supervision; insufficient qualified personnel (high AEAs-to-farmer ratios), lack of logistics (vehicles, communication materials), undue interference of NGOs, lack of funds for operations and poor conditions of service.

### **Analysis of findings**

#### **Existence of a structured forestry extension service in Ghana**

Our results suggest that there is some informal information sharing between forestry staff and plantation developers (a top down approach). Although a review of literature indicates that the Resource Management Support Centre (RMSC) of FC should “participate in the exchange of technical expertise locally and internationally” (FC, 2015), none of the respondents even within the FSD, including those who affirmed to the existence of a structured forestry extension service, attested to receiving any kind of support from the RMSC. Thus, it can conveniently be inferred that no structured forestry extension service unit exists within the FC.

#### **Extension needs of forestry stakeholders**

The study revealed that the lack of qualified personnel, poor linkage with researchers to keep them up to date with innovations, lack of logistics and funds limit the operations of informal forestry extension service providers. In addition, beneficiaries require information on land acquisition, seed collection, nursery establishment, plantation management, record keeping, SRAs and alternative livelihood schemes.

#### **Pragmatic mechanisms for improving forestry extension service delivery in Ghana**

- **Policy Environment**

A good policy is the backbone of the success of most forestry and forestry related interventions. Ghana’s 1996 -2020 forestry development master plan seeks to promote public awareness and involvement of rural people in forestry and wildlife conservation. This objective is reiterated in the current Forest and Wildlife Policy 2012 – “provide advisory services through a dynamic forestry extension service to promote social acceptance of forestry”. Our results show that there is no evidence regarding the existence of a structured forestry extension service directorate to drive this recurrent objective.

On the bright side, the Draft Plantation Strategy 2015 – 2040 acknowledges the role of forestry extension in achieving its fourth objective – “increase investment in research and development, extension, training and capacity building for forest plantation development”. It identifies the facilitation of linkages between the forest plantation industry, the forest managers and research and academia to ensure effective transfer of technology and the provision of feedbacks to promote the adoption of best practices generated by research.

Furthermore, it recognizes collaboration with the following entities to provide extension services: plantation developer associations or groups; relevant Civil Society Organizations (NGOs); and the National Service Secretariat. However, our results show that these groups have limited capacity to undertake the above. History shows that the enactment of appropriate policies has not been the problem but rather the lack of a dedicated department to drive policy objectives.

- **Institutional Alignments**

Three options are suggested for strengthening the organisational and institutional capacity of forestry extension service providers to improve their operations in Ghana. From our results, it is worth noting that the options can only attain a maximum impact if mechanisms that are designed are further integrated into civil society organisations so as to utilise them in their forestry extension activities.

**Option 1: Formation of a forestry extension service directorate within the Forestry Commission**

The experience of some countries suggests that, the formation of a recognized forestry extension service could improve a country's ability to sustainably manage its forest landscapes and that of others. For example, the Danish Forestry Extension has since 1904 provided forestry extension services to plantation developers. As at now, it has helped to sustainably manage 80,000ha of private plantation (State of Green, 2014).

Recent events also suggest that Civil Society seems to be advocating for devolution of forest management rights to communities (FORIG, 2014). Should this ever happen, forestry extension will be required more than ever for effective community forest management.

Establishing a directorate of forestry extension service will be a strategic choice since it will position the Forestry Commission to meet future extension needs, while creating an avenue for employment. Also, a structured unit that deals exclusively with forest extension services will result in a greater inclusion of forestry extension issues in development frameworks.

**Option 2: Strengthening existing informal forestry extension service delivery within the Forestry Commission**

Another alternative for improving forestry extension service delivery in Ghana is to strengthen the existing informal framework. As shown from our results, some forest guards, range supervisors and technical officers provide forestry extension services to beneficiaries at no cost at all. This informal mechanism for forestry extension service delivery could be retooled. Existing technical staff can be trained, equipped and incentivised to deliver forestry extension services. By incorporating extension service delivery in the job description of the technical officer and recruiting others to augment their relative low numbers, the forestry extension needs of smallholder forest plantation developers can be met.

**Option 3: Confederacy of the Directorate of Agricultural Extension and the Forestry Service Division**

The Directorate of Agricultural Extension Services (DAES) of MOFA has vast experience in extension service delivery in terms of organization and nationwide coverage. Given their expertise and the global recognition of agro forestry as a tool for mitigating climate change, managing and enhancing the ecological integrity of savannah ecosystems (the last two of which are integral parts of the 2012 forest and wildlife policy), it is logical to propose that a merger between these two entities (DAES and FSD) could yield some economies of scale. A merger could further enhance the reputation of both entities, hence, their ability to solicit for funds for their operations.

### **Training Arrangements**

Effective forestry extension requires a variety of skill set; forestry, livelihoods, communication skills, negotiation, advocacy and lobbying skills. These could be provided by facilitating linkages between academia (training institutions) and forestry extension service delivery agencies to produce forestry extension oriented (technical) graduates. Furthermore, regular in-service training could be used to develop the capacity of forestry extension service delivery staff. Moreover, provisions could be made for exchange and mentorship programmes with reputable forestry extension agencies such as the Danish Forestry Extension Agency (Skovdyrkerne) to keep staff au fait with global forestry extension innovations as well as better position them to effectively execute their mandate. In a nutshell, functional collaboration between academia and FES providers is crucial for effective forestry extension.

### **Prompt and adequate supply of logistics**

Our interactions with MOFA and other global examples (Negi, 2007), suggest that there is the need for prompt and adequate supply of logistics to make forestry extension service effective. There is the need for housing units for extension service staff, means of transport, and media and communication equipment, like computers, projectors, as well as stationary. These must be provided in a timely fashion, because plantation development, like agriculture in Ghana, is primarily rain-fed and seasonal (Swamikannu and Berger, 2009).

### **Financing forestry extension in Ghana**

Another critical success factor for a forestry extension service delivery is sustainable finance. Consequently, in moving forward, there is the need to explore options for financing forestry extension in Ghana. Here, instituting levies on plantation timber could be vital. The levy could be seen as a long-term payment for the extension services that contributed to the success of plantation timber under consideration. Another avenue could be allocating a percentage of revenue from confiscated or abandoned timber to forestry extension activities. In this case, the said percentage could be conceptualised as payment for re-planting the illegally harvested trees.

Furthermore, Climate Funds and Payment for Environmental Services (PES) could be reliable sources. Here, special levies can be placed on fuel products and the revenue used to promote forest plantation development, thus sinking some of the carbon dioxide contributions from fossil fuel combustion. Finally, once established, the Forestry Extension Service delivery unit could generate income by under taking consultancy services to mining firms and other local and international agencies.

### **Concluding thoughts and the way forward**

Ecosystem restoration remain a global priority and Ghana is putting in measures to restore its degraded forest ecosystems, most of which, we have reported in this paper. Smallholder forest plantation developers remain central to the successful implementation of most of these schemes. Nonetheless, we have shown that they remain constrained by inadequate capacity to effectively and efficiently engage in these restoration initiatives. We propose that developing and implementing a functional forestry extension unit could bridge this gap and improve smallholder forest plantation developers' contributions. However, in moving forward, there is the need to constitute a multi-stakeholder team to consider the options we have suggested in

order to establish and prioritise the most effective and efficient way for forestry extension development in Ghana. Further studies on the financial viability and feasibility of the options suggested could generate information of particular interest to all forestry extension stakeholders.

## References

1. Agyeman, K. O., Amponsah, O., Braimah, I., and Lurumuah, S., 2012. "Commercial Charcoal Production and Sustainable Community Development of the Upper West Region, Ghana." *Journal of Sustainable Development*, Vol. 5 (4).
2. Agyemang, V.K., 2006. Promoting smallholder plantations in Ghana. *Arborvita* 31, 6.
3. Anderson J. and Farrington, J. 1996. Forestry extension: facing the challenges of today and tomorrow. *Unasylva*, (41) 184:3-12.
4. Food and Agriculture Organization 2012. 2012 State of the World's Forests available at [www.fao.org/docrep/016/i3010e/i3010e.pdf](http://www.fao.org/docrep/016/i3010e/i3010e.pdf) Date accessed 4/08/2014.
5. Forestry Commission, 2013<sup>a</sup>. National Forest Plantation Development Program, Annual Report 2012 available at <http://www.ndpc.gov.gh/GPRS/Dist%20and%20Sec%20APR%202012/SECTOR%202012%20APRs/Ministry%20of%20Lands%20&%20Natural%20Resources.pdf>. Date accessed 08/07/2014.
6. Forestry Commission, 2013<sup>b</sup> Draft Ghana Forest Plantation Strategy: 2015 – 2040. Available at [http://www.fcghana.org/userfiles/publications/Plantation\\_Strategy.pdf](http://www.fcghana.org/userfiles/publications/Plantation_Strategy.pdf) accessed 21/07/2014. Date accessed 20/07/2014
7. Forestry Commission, 2015. Functions of the Resource Management Support Centre. Available at <http://www.fcghana.org/page.php?page=46&section=22&typ=1&subs=252> accessed 24/08/2014.
8. Forestry Research Institute of Ghana, 2014. First national forestry conference. Keynote Address by Nana Kobina Nketsiah, September, 2014.
9. Grinnell, R. M. Jr. and Unrau, Y. A., 2014. *Social Work Research and Evaluation: Foundations of Evidence-Based Practice*. Oxford University Press.
10. Holloway, V. and Giandomenico, E., 2009. *Carbon Planet White Paper: The History of REDD Policy*. Carbon Planet Limited. Adelaide.
11. Insaadoo, T.F.G., Ros-Tonen, M.A.F., Acheampong, E., 2010. Addressing forest degradation and timber deficits: reforestation programmes in Ghana. *ETFRN News* 53, 230-239.
12. Ministry of Lands and Forestry, 1996. Forestry development master plan 1996 – 2020. Available at <http://www.clientearth.org/external-resources/ghana/forests-and-wildlife/1996-forestry-development-master-plan.pdf>. Accessed on 04/07/2014.
13. State of Green, 2014. Danish Forestry Extension. Available at <https://stateofgreen.com/en/profiles/danish-forestry-extension>. Access on 25/08/2014.
14. Swamikannu, N. and Berger, T., 2009. Impacts of Small Scale Irrigation on Poverty Dynamics in the White-Volta Basin of Ghana: An Integrated Multi-Agent Simulation Approach. CGIAR, Indonesia.
15. Tropenbos International Ghana, 2014. Proceedings of Landscape Restoration Project Inception Workshop held at Forestry Commission Training Centre, Kumasi, on 5<sup>th</sup> August, 2014.
16. Willis B. G., 2005. *Cognitive Interviewing: A tool for improving questionnaire design*. Sage Publications Inc. UK.
17. World Wildlife Fund (WWF), 2014. Responsible forestry available at <http://www.worldwildlife.org/industries/responsible-forestry>. Accessed on 25/08/2014.