PERCEPTION OF CHARCOAL PRODUCERS ON THE ESTABLISHMENT OF WOODLOTS FOR CHARCOAL PRODUCTION AND ITS IMPACT ON THEIR LIVELIHOOD - A CASE STUDY IN THE KINTAMPO NORTH MUNICIPAL ITY OF BONO EAST REGION OF GHANA

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Introduction

Charcoal is recognized as an important commodity globally, within the Sub-Sahara Africa Region and in Ghana. The importance of charcoal is established in its contribution as;

- a **source of energy** (Agostino et al., 2015; IEA, 2016
- a **Livelihood source** (Zulu and Richardson, 2013; FAO 2014; Obiri et al.,2014)
- **income for the state** (Kambewa et al., 2007; Agyei et al., 2018)

- Studies have revealed the **challenges and difficulty** of charcoal producers in **accessing raw materials** for production

- Research shows that the alternative approach to restore and increase the depleted raw materials base is to **establish woodlot** (LTS International and ONF International, 2011; Obiri et al., 2009; World Bank, 2009)

- However, what is lacking in most of these researches is the **assessment of the perception** of the individuals involved in charcoal production on woodlot establishment for charcoal production

Research objectives

i. To determine the knowledge and awareness of charcoal producers on woodlot establishment for charcoal production

ii. To assess the perception of charcoal producers on the feasibility of establishing woodlots for charcoal production and the effect of this on their livelihoods.

iii. To identify and analyze charcoal producers perception of the challenges they may encounter when establishing woodlot for charcoal production.

iv. To determine the factors that could motivate charcoal producers to establish woodlots for charcoal production

RESEARCH METHODOLOGY

Heading	Description of research methods
Study area	Kintampo North Municipal Assembly
Research design	Mix method approach (Qualitative and Quantitative)
Study population	The study population comprise of mainly charcoal producers Key informants (traditional leaders, individuals who have establish woodlot, FC, District assembly)
Sample size	Charcoal producers 186 Key informant 6
Sampling techniques	Purposive sampling Simple random sampling (lottery method Study communities (Asantekwa, Atta Akura, Dawadawa and Kunsu)
Data analysis	Quantitatively (SPSS) Qualitatively (content analysis)

Respondents knowledge and awareness of woodlot

	No of respondents	Percentages of respondents (%)
Never heard about woodlot	140	75
Heard about woodlot	46	25

Respondents' sources of information on woodlot		
	No of Resp.	Percentages of respondents (%)
FC	2	4.4
NGO	24	52.1
Researchers	20	43.5

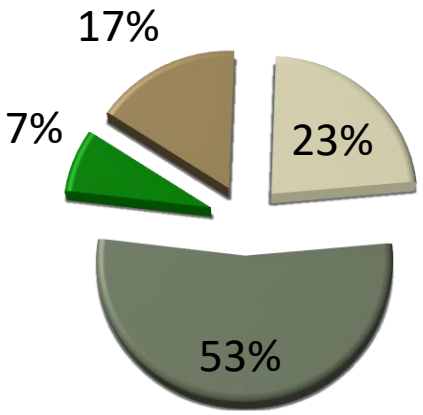
EFFECT OF WOOD SHORTAGE ON CHARCOAL PRODUCTION/LIVELIHOOD

Effect of wood shortage on charcoal production	No of resp.	Percentage resp.
Reduction in quantity of charcoal produced	109	58
More trees must be fell for few bags	55	30
Quality of charcoal reduced	22	12
Effect of wood unavailability on livelihood		
Reduced income	139	75
High cost cost of production	47	25

PRODUCERS PERCEPTION OF THE FEASIBILITY OF WOODLOT ESTABLISHMENT

	Strongly agree	Agree	Neutral	Strongly dis
No of resp.	148	30	6	2
Percentages of resp.	79.6	16.1	3.2	1.1

How woodlot could be established



- Integrate trees in your farms
- Private woodlot establishment
- Communal woodlot establishment
- Establishment of woodlot through smaller groups

How to improve wood availability

- Establish woodlot 86%
- Stop producing charcoal 8%
- Wait for the tress already cut to regenerate 6%

Producers perception of challenges they may encounter when establishing woodlot

Challenges	No of respondents
Financial constrains	178
Seedlings unavailability	165
Technical know-how	143
Land unavailability	59
Tree tenure	45
Land tenure	45
Wild fire	37
Cattle grazing	25
Labour cost	24
Pest and diseases	12

How challenges may obstruct woodlot establishment

Challenges	How challenges may obstruct woodlot	How challenges may be addressed
Financial	Woodlot is capital intensive	Low interest gov't loan
Seedlings	Unavailability of seedlings	Supply of seedlings by the FC
Technical know-how	Limited knowledge in tree planting and nurturing may kill the sapling	Training by the forest commission
Tree tenure	Uncertainty regarding who owns planted trees will hamper project	Simplification of tree registration process and who owns planted trees
Land tenure	Litigation with land owners when trees mature	The use of abunu and abusa method for sharing

Factors that could influence woodlot establishment

- Financial support
- Giving tree planters ownership of planted trees
- Provision of seedlings
- Security of land tenure
- Education and training
- Availability of land
- Provision of incentives for those already into tree planting (boots, cutlass, fertilizers etc.)

- Provision of incentives for those already into tree planting (boots, cutlass, fertilizers etc.)
- Institution of award scheme for tree planters similar to that of "National best farmers' award
- Mandatory tree planting act to compel all farmers and charcoal producers to establish woodlot or plant trees
- Protection from merchant price determination
- Provision of irrigation dam for woodlot establishment

Discussion

- **Low knowledge of respondents' on woodlot plantation**-Majority of charcoal producers are not aware that plantation could be establishing for the sole purpose of charcoal production

FAO (2010) reported that even though woodlot establishment is increasing globally, it is not much known among many individuals in some part of Africa

- The **most popular institution that interact** with respondents on woodlot is **NGOs and Researchers**.

Schwoppe & Wojewska (2018) reported that some people from Dawadawa community were more familiar with tree planting or woodlot because of the implementation of DGM project.

Discussion Cont.

- Majority of respondents **strongly agreed** to the establishment of woodlot- an indication of the **feasibility** of the innovation

(kimaro et al., 2005; Sepp et al., 2014; Brobbey et al., 2015)

How to improve wood availability

- Woodlot establishment- this can be done through

Private woodlot establishment

Sepp & Sepp (2014) reported that individual reforestation in Madagascar was strikingly successful coupled with other sound measures, as described by GIZ

Discussion cont.

- **Financial difficulty-** because woodlot establishment is capital intensive producers perceived that it will be a major challenge.

Study by Patricia McAleer (2011) and Oduro et at.,(2018), have all reported that financial constrains pose a great challenge to individuals involved in tree planting

- Even though almost all respondents are farmers, they however lack the **technical knowledge** in tree planting

Oduro et al., (2018) shows that low technical knowledge and management in planting trees and others such as pruning, thinning and weed control could impede tree plantation among farmers

- **Seedlings unavailability** is perceived a challenges because planters have no idea where and how to access seeds for planting

Oduro et al., (2018) noted in their study that lack of seedlings supply to farmers in the Oda-kotoamso community Agroforestry project and forest resource creation project was one of the barriers to the successful implementation of project

- **Tree and land tenure** is a challenge due to the risk associated.

Where is it possible to control the resource and not manage it or manage it and not control it.(Agyeman, 1993; Acheampong et al., 2014)

Discussion cont.

- **Respondents' willingness** to establish woodlot were high (90%) which is a positive behavioral change and also in relation to what respondents' stand to benefit.
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Zubair and Garforth (2006) stated that in Pakistan farmers' willingness to plant trees is functional to the benefits of planting the trees

- **Security of land and tree tenure**-It was understood during an interaction with producers that a policy that will seek to ensure respondents security of owning planted trees or an arrangement with landowners on acceptable benefit sharing could go a long away to motivate their tree planting behavior –

This view corroborate with Oduro et al., (2018) opinion saying external factors like land tenure and favorable national policies motivate farmers to plant trees

- **Financial support** is key because some of the challenges regarding planting woodlot could be addressed if producers receive financial support

This confirms Oduro et al., (2018) report which states that grant support to farmers in the OCAP and FRCP was key influence to their tree planters' participation in the projects

Conclusion

- Low knowledge of respondents' on woodlot plantation-Majority of charcoal producers are not aware that plantation could be establishing for the sole purpose of charcoal production

- Reaction towards woodlot establishment was receptive among producers who believe that it is a feasible innovation that will sustainably restore raw materials for charcoal production

- findings indicates that planting woodlot would not be devoid of challenges.

- It was revealed that even though producers are willing to establish woodlot, the willingness will be influence by financial support, giving tree planters ownership of tree planted, supply of seedlings etc.

Recommendation

- That woodlot awareness creation and promotion should be intensified among charcoal producing communities by the Forest Commission.

- The processes involved in tree registration and ownership should be simplified to enable farmers with low or non-formal education complete the process with ease by the FC.

- Formulation of policy to back recognition of tree planters' award scheme

- The Forestry Commission could also institute field-farms similar to the ones owned by Ministry of Food and Agricultural (MoFA) for demonstration and training of framers and tree planters at the district and community level

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