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*Full Lenght Research Paper*

# Participatory forestry intervention: assessing the contribution of the expanded plantation program to community livelihood sustainability and poverty reduction

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**Abstract**

**Efforts aimed at combating deforestation have in the past neglected the involvement of households in forest fringe communities [FFCs] therefore the National Forest Plantation Development Program implemented from 2001 and re-launched in 2010 as the Expanded Plantation Program [EPP] was a participatory forestry intervention that included households in FFCs as well as the public sector in the management of forest resources. This study was embedded in the DFID Sustainable Livelihood Framework and presents the viewpoint of 85 respondents randomly selected from four communities in the Asante Akyim South District of Ghana. It highlights how the EPP contributes to sustainable livelihoods of households in FFCs. Both quantitative and qualitative techniques were employed in this study. In-depth interviews and questionnaire were the method and tool respectively used in gathering data whereas statistical tools such as linear regression, frequencies and percentages were used in analyzing the quantitative data. Content analysis was used in analyzing the qualitative data. The study established a strong positive correlation between the total monthly income and the monthly income from the EPP. An average income of GH¢ 229 ($72) was earned by households from the EPP which was twice the average income earned from other sources. Also, natural (land) and social assets were transferred to households contributing to their livelihood sustainability. Efforts must therefore be geared towards increasing the participatory role of households in forest fringe communities since it contributes to forest reparation, sustainable livelihood and poverty reduction.**

**Keywords:** Participatory forestry, Expanded Plantation Program, poverty reduction, livelihoods

## INTRODUCTION

Forests are crucial for the sustenance and existence of life on earth especially for the rural poor in forest fringe communities [FFCs]. One out of four of the world's poor depend directly or indirectly on forests for their livelihood (World Bank, 2000). Ghana's forest cover of approximately 8.2 million hectares by the turn of the 18th century has reduced significantly to about 1.2 million hectares (Forestry Commission of Ghana [FCG], 2012a). This situation has been ascribed to the rapid rate of deforestation estimated to be about 65,000 hectares annually (ibid). In addressing the alarming rate of deforestation, significant progress has been made in developing forest policies, laws, and national forest programs. Sungsuwan-Patanavaniah (1992) has concluded that any attempt to halt deforestation and to accelerate reforestation must deal with poverty first or at the very least, concurrently. However, most of the forest policies enacted in Ghana over the years have until

recently focused mainly on forest preservation and conservation overlooking the important role forest play in alleviating poverty.

Marfo (2000) attributed forest degradation and rural poverty to Ghana's forest policy, with particular reference to ownership and management of forests estates. He mentioned that forest policies marginalized forest fringe dwellers given that forest were solely managed by government in trust for such people which empowered government and alienated rural farmers from their forestlands consequently exacerbating rural poverty. To address this, recent efforts aimed at replenishing Ghana's degraded forest have included forest fringe dwellers as partners and aimed at reducing rural poverty. Ghana's National Forest Plantation Development Program [NFPDP] launched in 2001 aimed at both developing sustainable forest resource base and generating employment as a means of poverty reduction (FCG, 2009).

In 2010, the NFPDP was re-launched as the Expanded Plantation Program [EPP] which saw the introduction of the private sector in the development of forest plantation. Under this program, the private sector was empowered to employ local households on behalf of the Forestry Commission to participate in managing forest resources by planting trees on degraded forestlands and also permitted to cultivate food crops in between the planted trees till the trees mature. Households were also entitled to a monthly wage based on work done with no future share in the planted trees. The coverage of the program was also expanded to cover the establishment and maintenance of plantations outside Forest Reserves on private lands. After three years of implementing the EPP, its capacity to contribute to sustainable livelihood and poverty reduction among households in FFCs calls for monitoring and evaluation. This paper thus evaluates the contribution of the program to the livelihoods of households in FFCs.

## Forest governance, livelihoods and poverty: a theoretical review

### The EPP in the context of forest governance

The concept of governance has become an important aspect in international development discourse since the late 1980s, including discourse regarding forests (Larson and Petkova, 2011). Different people and different groups have looked at governance from different perspectives. From the World Bank (2006), Governance is the traditions and institutions by which authority in a country is exercised. Legality, legitimacy and participation are key attributes of the rules and processes associated with governance. Who makes decisions and how decisions are made, from national to local scale, including formal and informal institutions and rules, power relations and practices of decision making constitute governance.

Forest governance therefore is the means through which officials and institutions acquire and exercise authority in managing forest resources to sustain and improve their economic productivity, environmental values and the welfare and quality of life for those whose livelihoods depend on the sector (Contreras-Hermosilla, 2011). It is the way in which decisions about forests are made, who is responsible, how the power is distributed and how they are held accountable (CIFOR, n.d). The EPP is a broad forest governance policy that stipulates the management of forest resources in fringe communities. Its takes into consideration participation (an important aspect of forest governance) as indicated by the World Bank. The private sector which is considered as the engine of growth in every economy as well as individual household heads and the institutions charged with the management of the forest are all included as partners. The private sector serves as the intermediary between the forest governing body and the individual households engaged in the program which ensure broader participation and consultation in the management of forest resources. Under EPP, authority is transferred to the private sector to engage household heads in the management of forest resources. The household heads are allocated portions of degraded forest land to cultivate food crops and trees to improve their livelihoods and to restore degraded forestland with the broader goal of contributing to climate change. The household heads are also paid monthly wage for cultivating and further nurturing trees into maturity.

### The EPP and the Sustainable Livelihood Approach (SLA)

Livelihoods are closely linked to poverty in development discourse (Chambers and Conway, 1992) and have thus been given various definitions. Carney (1998) defines a livelihood as "the capabilities, assets (including both material and social resources) and activities required for a means of living". A livelihood is considered to be sustainable if it is able to cope with and recover from stress and shocks, maintain or enhance its capabilities and assets, and provide sustainable livelihood opportunities for the next generation (Chambers and Conway, 1992). The Sustainable Livelihood Framework (SLF) put forward by the DFID (DFID,1999) and which forms the core of the Sustainable Livelihoods Approach [SLA] and serves as an instrument for the investigation of poor people's livelihoods, whilst visualizing the main factors of influence (Kollmair and Gamper, 2002) was adapted for this study. The SLF reveals how poor people in rural areas build their livelihoods. This framework extends beyond the economic approach to poverty to the multifaceted dimension of poverty and offers a framework through which to understand the way people express their agency, the assets they draw upon, the strategies they devise, and activities they take part in. Moreover, the

SLF recognizes that the poor know best what their needs are and thus should thus be involved in processes that can contribute to policies being made (Krantz 2001 cited in Legger, 2009).

The SLF recognizes five main assets or capitals that contribute immeasurably to the livelihoods of people. Natural/Environmental capital e.g. land, water, wildlife, biodiversity, environmental resources. Physical capital which comprises access to basic infrastructure such as adequate water and sanitation, affordable energy, transport, communication, housing and the means and equipment of production that support livelihoods. Human capital which comprises health, knowledge, skills, information, ability to labour etc. that together enable people to pursue different livelihood strategies and achieve their livelihood objectives. Social capital which include the relationships of trust, membership of groups, networks, access to wider institutions and other social resources upon which people draw in pursuit of their livelihood targets. Financial capital comprises financial resources available such as regular remittances or pensions, savings, supplies of credit and other financial resources that are used to achieve livelihood objectives (Adjei and Eshun, 2013). Thus access to essential assets engenders livelihood outcomes in the form of more/adequate income, increased well-being, reduced vulnerability, improved food security, more sustainable use of natural resource base which enhances people's living conditions or enable them escape poverty (Kollmair and Gamper, 2002; DFID, 1999).

To ascertain the assets and the livelihood outcomes that the EPP delivers to household heads in forest fringe communities and how it contributes to sustainable livelihood and poverty reduction, the SLA was imperative as a guide.

### Participatory Forestry and Livelihood sustainability and poverty reduction

The tendency for participatory forestry to contribute to livelihood sustainability and poverty reduction has received much attention which has translated into various studies to establish the relationship or otherwise (See Collett et al. 1996; Pokharel and Tumbahangphe 1999; LFP 2003; Dev et al. 2004).

Some positive synergies have been identified between participatory forestry and livelihood outcomes which include increase in natural, social and financial capital. Participatory forestry efforts has resulted in increased transfer of land (natural capital) and social capital through the allocation of forestland by forestry departments and the formation of community forest user groups respectively. A study by Safa (2004) on the effect of participatory forest management on the livelihood and poverty of settlers in a rehabilitation program of degraded forest in Bangladesh established that participatory forestry increased household income, employment opportunities and financial and non-land assets of the settlers. His study concluded that participatory forestry is a forest management options that ensure the sustainability of forest resources and also contributes to the livelihood security of households. Notwithstanding, there are also some documented evidences indicating that households especially the poor have been forced to have reduced access to benefits from forest as a result of the implementation of participatory forestry policies in the field (Neupane 2000, Malla 2000, and Paudel 1999). However, recent study by Chen et al., (2012) discovered a positive impact of participatory forestry in the forms of community- based co-management (CBCM) on local people's livelihoods in Gansu Province in Northwest China. They observed in their study that, generally, CBMC of forest resources significantly improved local residents livelihoods, their forest conditions as well as their attitude towards forest resource conservation, even though levels of improvement are not uniform across their study region.

## RESEARCH METHODS AND SITE DESCRIPTION

The research was based on a case study design with emphasis on carefully selected communities in the Asante Akyim South District in Ghana. The Asante Akyim South District is situated at the Eastern part of the Ashanti region with its eastern boarder forming part of the regional boundary dividing the Ashanti and Eastern Regions of Ghana. It covers a total surface area of about 1217.7 square kilometers (472.4 sq. miles) which form about five percent (5%) of the total area of the Ashanti Region, and 0.5 percent of the total area of the country. The relief of the District is generally undulating with few hilly areas. It has uniformly high temperature throughout the year and falls within the moist semi-deciduous forest region where different species of tropical hard woods with high economic value are located .Currently, the District has four forest reserves which cover a total of about 109.6 sq. km including, Formangsu, Prakow, Domi River and Mirasa Hills (AASD, 2010). These reserves are however degraded due to increase logging activities and bush burning therefore necessitating the implementation of the EPP in the district. The study was embedded in the DFID Sustainable Livelihood Framework. Eighty (80) beneficiaries were randomly selected from four communities in the study area and five (5) officials implementing the program were purposively included in the study. The forest fringe communities were Pra River, Kajo Formaso, Bompata and Breku. In-depth interview guide and questionnaire were used in gathering data.

### The EPP, livelihood assets transfer and poverty reduction outcomes

To ensure sustainable livelihood and reduction of poverty

**Table 1.** Descriptive statistics of income of households

| Income | Mean | Standard deviation | Min | Max |
|---|---|---|---|---|
| Total monthly income from program (Wage + food crop sales) | 229 | 111.33 | 92 | 592 |
| Total monthly income from other sources | 89.5 | 92.31 | 50 | 450 |
| **Total monthly income** | **318.5** | **143.25** | **92** | **692** |

Source: Fieldwork, 2012

**Table 2.** Monthly income of households before and after enrolling on program

| Average total monthly income | Orbs | Mean | Std.Err. | Std. Dev. |
|---|---|---|---|---|
| Before | 80 | 142.75 | 8.35 | 74.71 |
| After | 80 | 318.5 | 16.02 | 143.25 |
| Diff | | 175.75 | 18.06 | |
| **t = 9.7294 degrees of freedom = 158 Pr(\|T\| > \|t\|) = 0.0000 Pr(T > t) = 0.0000 * diff = mean (Total income) - mean(income before)** | | | | |

Source: Fieldwork, 2012

**Table 3.** Regression Statistics of total monthly and income from the program

| Multiple R | R Sq. | Adjusted R Sq. | S.E | Coefficient | Orbs | F( 1, 78) | Prob >F |
|---|---|---|---|---|---|---|---|
| **0.76** | **0.58** | **0.58** | **92.88** | **0.98** | **80** | **109.92** | **0.0000** |

Source: Fieldwork, 2012

among forest fringe communities, the EPP transferred some livelihood assets to households. Among these assets were natural (land) and financial (income) assets. Livelihoods are practically built entirely on the use of local natural resources in forest fringe communities with land being an important natural asset. Nevertheless access to this asset is a major challenge especially among the poor who reside in rural areas therefore the allocation of an average land size of one (1) ha to households to both cultivate food crops and plant trees to replenish degraded forest is a major contribution of the EPP towards sustainable livelihood. Land tenancy agreements and the availability of arable land for farming activities limits the livelihood opportunities of households in FFC thus the arrangement of the program to allocate degraded forests to households is really appreciated and serves as a great motivation for household's involvement in the program. The program thus addresses the challenge of securing arable land for farming activities which consequently contributes to household food security.

Farming was the most important income generating activity in the selected communities in which the program is being implemented and given the seasonal nature of agriculture coupled with the numerous challenges of pests and diseases, access to land and market among others, household heads within the selected community have low income which make poverty to manifest district wide (AASD,2010). Notwithstanding, with the introduction of the program, financial assets in the form of monthly wage for work done and income from food crop inter planted was transferred to household heads thereby improving their livelihood security.

Table 1 indicates that an average income of GH¢ 229 ($72) was earned by household head through the monthly income received for planting and nurturing trees as well as from the sale of food crops planted in between the planted trees. This income earned was twice as much as the average income household earned from other sources thereby indicating the immense contribution of the program to the livelihoods of beneficiaries.

A two-sample t-test conducted to establish the difference between the average total monthly income of households before and after enrolling on the program reveals that the average monthly income of household heads changed from GH¢ 142.75 ($44.8) at the beginning of the program to GH¢318.5 ($100.1) after enrolling on the program. This shows an increase of GH¢175.75 ($55.2) which was statistically significant given t (158) 9.7294, P< 0.0005 (See Table 2).

A statistically significant (r=.765, P< .005) strong positive correlation was thus established between the total monthly income and the monthly income derived from the program. Approximately 58.5 % of the change in total monthly income was explained by the change in the monthly income derived from the program (See Table 3).

Increased income as result of the program translated into improved wellbeing of households within the selected communities. The results of the study indicated that 65% of the total number of households had all their children of school going age in school as at the time of the study

with most of them being able to provide with ease the educational and health needs of their household members after enrolling on the program compared to before enrolling on the program. The monthly wage in addition to the income derived from selling food crops inter planted between the planted trees made it possible for households to be able to meet the educational and health needs of their household members. A household head in Breku emphasized this as follow:

> *"Before this program I found it difficult sending money to my ward at the senior high school level and getting the required books to enhance his study, however with the additional income from the sale of the food crops from the plantation site I am now able to send him money regularly"*

## CONCLUSION

Evidence from the Asante Akyim South Forest District indicates that participatory forestry which actively involves local people in forest fringe communities contributes immensely to livelihood sustainability and poverty reduction. In addition, it contributes to efforts towards replenishing degraded forest given the commitment of households in replanting trees is sustained through the transfer of livelihood assets (land and wages). Efforts must therefore be geared towards increasing the participatory role of households in forest fringe communities since it contributes to forest reparation, sustainable livelihood and poverty reduction.

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