Sustainability outcomes of teak plantation development in Dormaa, Ghana

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Abstract

Teak (Tectona grandis) plantation development in Ghana is an integral component of the National Forest Plantation Development Programme, a state-supported programme to conserve forests and sustain timber production for economic development, through refurbishing degraded forests and establishing new ones. The plantation development offers opportunity for understanding the sustainability outcomes of forest plantation development in environmental, social, economic, and political terms. With a case study of the Dormaa region in Ghana, this paper discusses how the sustainability of forest plantation development can be better appraised when target communities are considered heterogeneously. There is high state responsibility to the attainment of environmental and timber revenue goals from the teak plantations. However, there are social and political difficulties that confront different farmers but these difficulties are not emphasized for redress in the management of the plantations. To this end, this paper contends that teak plantation development in Dormaa is only partially successful in terms of its sustainability. The paper calls for an inductive approach to plantation development in Ghana that recognises the heterogeneity of the community of people affected, and which addresses the different conditions and possible implications of forest management for equitable benefits from the forests for all categories of people.

1. Introduction

Drawing from empirical data gathered qualitatively in the Dormaa Municipality in Ghana, this paper discusses the development of teak (Tectona grandis) plantations in Dormaa and its outcomes on different groups of community people in terms of key sustainability measures – environmental, economic, social, and political implications. The paper addresses the question of how different community people experience the current development of teak plantations in terms of their livelihoods. It is therefore framed on the concept of sustainability in forest plantation development. Through policies that draw from development paradigms, sustainability has been pursued in various environmental programmes, including the National Forest Plantation Development Programme (NFPDP) in Ghana. The programme is now an integral component of the Ghana Forest Plantation Strategy (GFPS), 2016–2040, and had been supported a great deal with funds from the Highly Indebted Poor Countries Initiative (HIPC), a debt relief and poverty reduction initiative of development partner countries and global economic organisations such as the IMF.

In response to forest degradation in Ghana over the years, government supports the establishment of teak plantations in degraded protected forests, within the GFPS, and also encourages private landowners to develop teak farms. The main goal of the GFPS is to achieve sustainable supply of forest timber for export and domestic markets and to deliver a range of environmental, social, and economic benefits to the country. The NFPDP plantations in Ghana have been described as successful in improving the conditions of forests, provide timber, and increased access to land for affected communities through participatory arrangements (FSD, 2016). Thus, it is expected that the teak plantation programme will contribute to community transformations and enhance the livelihoods for different groups of people.
1.1. The concept of sustainability

The concept of sustainability is considered a moral question of confronting the prioritisation between environmental, economic, social, and political goals to integrate all these related goals for the sustenance of the human and non-human worlds into the future (Keiner, 2006; Jenkins, 2010; White, 2013). In its various strands of environmental, economic, social, and political sustainability, a more holistic view can be taken of the relevance of forest plantation development for communities and forest managers. The various strands of sustainability can be explained as follows: Environmental sustainability “seeks to improve human welfare by protecting the natural resource base from which human needs in all dimensions are met and ensuring that nature as the sink for human wastes is not abused” (Goodland, 1995). Economic sustainability is the maintenance of various kinds of natural resources as capital for the continued production and consumption of goods and services into the future (Moldan et al., 2012), while social sustainability is the search for equity and justice in benefits from and responsibility towards the efficient harnessing of environmental resources (Agyeman, 2005; Agyeman et al., 2003). Access to resources grant political power to people and therefore equitable access to power through resource access is a key goal of sustainability.

The concept is indeed defined within a broad scope for interpretation, and this gives space for undue justification of actions that negatively affect other people. However, the submissions in this paper agrees with Marco Keiner that the common concern that run through all the sustainability dimensions is that some kind of transition toward more conservation of resources and enhanced livelihood is crucial to the future of mankind (Keiner, 2006: 3–4). In extension of this, it is necessary to understand that without concrete and conscious measures, not all groups of people will benefit from the harnessing of nature even if participatory resource management approaches exist. Sustainability goals remain only conceptual for certain groups of people while inequalities linger around any project implementation. Until practical efforts are made to attain sustainability goals for all shades of people, failure of programmes and projects will be unavoidable. Some compromises can be made in the trade-off between the different sustainability goals for all groups of people to attain sustainable livelihoods, even if some groups may be vulnerable with little or no power to influence the incidence of project outcomes to their advantage. In this sense, all four dimensions of sustainability are related and are equally relevant such that understanding their incidence and effects on different groups of people is essential for the harmony and flourishing of all humans (Jenkins, 2010).

2. Sustainability in forest management in the tropics, with emphasis on Ghana

From the colonial era to the present, capital formation from forests has been the dominant paradigm of forest management in Ghana. It is a paradigm that promotes harnessing forests for timber revenue and overshadows a consideration of how outcomes of forest management on communities reflect the fullness of sustainability in terms of who bears environmental, economic, social, and political costs, benefits, and responsibilities from forest exploitation. The evolution of forest management in Ghana can be placed in the context of the evolution of forest management in the tropics in general (Table 1). Six stages of this evolution shed light on the current outcomes of forest management for communities in Ghana, most of these stages having been characterised by a curtailment of the rights of communities to forests in the name of national development goals. Since the 1990s participatory approaches to forest management is increasingly being adopted (Kotey et al., 1998). But the evidence from Dormaa shows that participatory approaches alone do not guarantee sustainable outcomes of forest management for all groups of people. “

There is no agreement in the literature on when exactly formal intervention in forest management began from the colonial era in Ghana, which was between 1844 and 1956. Teye (2011: 129) writes that there was no attempt to control forest exploitation in the first few decades of the colonial era up to 1900, since forests satisfied the interests of the dominant policy actors, namely customary authorities and the colonialists. Nonetheless, the late 19th Century is generally acknowledged as marking the beginning of the colonial formal intervention in forest management in Ghana (Agbosu, 1983; Kotey et al., 1998). Table 1 shows that timber revenue from tropical and Ghanaian forests were the main interests of colonial governments (Hawthorne and Abu-Juam, 1995; McEwan, 2000; de Grassi, 2003; Grainger and Konteh, 2007 Pretzsch, 2014). These interests continued through the immediate post-colonial era (Asante, 2005: 40; Teye, 2011: 359) until widespread forest degradation and deforestation occurred that warranted some forest conservation in collaboration with communities. The outcomes of the extensive exploitation of forests for timber in the colonial and post-colonial eras were borne by communities whose access to land were severely constrained, negatively affecting their livelihoods (Kotey et al., 1998; Edusah, 2011).

Deforestation and forest degradation have become a national challenge to development. Over the last years now, forest resources in Ghana such as tree stands have been declining at an alarming rate of over 2% per annum, the country having lost a large swathe of its forest cover in the 1980s through to the 1990s (Odoro et al., 2015). Ghana’s high forest cover has decreased from about 7.5 million hectares in 1990 to about 4.9 million hectares in 2010 (FAO, 2010b). Measures of the state in sustainably harnessing forests have contributed to some level of forest and livelihood improvements (Odoro et al., 2015). Nonetheless, these measures have also been characterised by insensitivity to the differential economic, social, and political outcomes of forest management for different groups of people. It will be seen in Sections 5 and 6 below that in the Dormaa case, interests for capital from teak trees, based on the capital formation paradigm is still strong in forest management and this overshadows concerns over constrained access to and productivity of agricultural land for migrants, women, and indigenous farmers.

Through the Ghana Forest Plantation Strategy, 2016–2040 and its predecessor policies, forest plantation development is a key thrust of current state forest policy. Forest plantations are encouraged to regenerate old forests and afforest new lands for timber production and enhanced environmental conservation. The next section illustrates the Modified Taungya System as an instance of forest plantation development programme in Ghana.
Table 1,
Evolution of forest management in the tropics, with particular reference to Ghana.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Content of stage in tropics</th>
<th>Content of stage in Ghana</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precolonial era (before 1900)</td>
<td>Forests was harnessed on subsistence basis, and on traditional and religious values</td>
<td>Forest was managed by traditional societies along with minimal exploitation by foreign merchants. Both traditional and foreign interests were sustainably served.</td>
</tr>
<tr>
<td>Colonial era (1900 to 1950s)</td>
<td>Forests were exploited mainly for timber. Communities lost their close relations with nature as colonialists restricted rights and access to forests.</td>
<td>Colonialists legislated to exploit forests for timber, which significantly restricted access of customary land owners to their forests and disrupted their livelihoods. For instance, the Native Jurisdiction Ordinance were enacted in 1883, the Timber Protection Ordinance, No. 20 in 1907, and the Land and Native Right and Forest Ordinance (CAP 157) in 1927. Forest management philosophy and practice were like those in the colonial era. Immediate post-colonial governments controlled and exploited forests to build the new Ghana, further constraining access to land for communities. For instance, the Concessions Act, 124 was passed in 1962, vesting all timber rights in the President in trust for customary landowners.</td>
</tr>
<tr>
<td>Immediate independence era (1950s to 1970s)</td>
<td>Forests continued to be harnessed by the state for foreign exchange from timber, which intensified the curtailment of access of communities to forests.</td>
<td></td>
</tr>
<tr>
<td>Intensive capital formation (1970s to late 1980s)</td>
<td>Multilateral institutions gained increased access to forests for timber, rooted in modernisation theory to pass down benefits to communities. Customary institutions were further weakened, and negative consequences for forests were visible.</td>
<td>Deep economic decline saw intensive international presence in forest exploitation through structural adjustment policies that deregulated the economy to enhance foreign exchange earnings. Extensive deforestation and forest degradation occurred. For instance, forests in Ghana then had been declining at an alarming rate of over 2% per annum.</td>
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<tr>
<td>Emergence of social forestry (1980s to 1990s)</td>
<td>Due to negative consequences of past forest policies, a significant shift from economic growth models and capital formation orientation towards a more ecological and social thinking occurred, which promoted conservation of forests partly on traditional values.</td>
<td>To arrest the forest degradation of the previous decade, the state from early 1990s implemented stricter controls on forest harvesting and more collaborative approaches with communities. Forest conservation discourse promoted forest development on customary lands that could support timber, livelihood, and environmental goals for both state and communities.</td>
</tr>
<tr>
<td>Contemporary era (late 1990s to present)</td>
<td>Multilateral firms and international interests increased in forests due to globalisation. Nonetheless, forest conservation is pursued parallel to forest harvest for timber.</td>
<td>Community direct participation in and benefit from forest management was intensified and acknowledged as vital. The Ghana Forest Plantation Strategy, 2016–2040 notes the interest of the state in forests is to satisfy demand for timber, social benefits, and enhance environmental quality.</td>
</tr>
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3. Forest plantation development in Ghana

Oduro et al. (2015) found that Ghana has shown evidence through various national and international programmes towards pathways to forest transition, that is, the shift from a shrinking to an expanding forest area of conservation and reforestation. Among the forest expansion programmes are small holder agroforestry and planted forest development on degraded lands. Moreover, approaches to forest conservation in Ghana include state regulated access to forests utilisation, and efforts to Reduce Emissions from Deforestation and Forest Degradation (REDD), and foster Conservation, Sustainable Management of Forests, and Enhancement of pathways to forest transition, that is, the shift from a shrinking to an expanding forest area of conservation and reforestation.

In MTS, various forest trees are interplanted with food crops. In Dormaa, farmers interplant food crops with teak for up to a few years, usually about five years, when the food crop cultivation ceases due to canopy formation by the trees, which does that not permit sunlight and enough rainfall to the undergrowth. The Forest Services Division (FSD) provides technical direction, survey and demarcation, and supplies seedlings to farmers, while the farmers provide all the labour inputs in the form of site preparation, pegging, planting, tending and fire protection. The MTS is based on Modified Taungya System Benefit Sharing Agreements (MTSBSA), in which revenue proceeds from the teak when they are harvested are shared between the state, individual teak farmers, traditional authorities, and communities where the teak is cultivated, in the proportion of 40, 40, 15, and 5% of the standing tree value (STV), respectively.

Teak cultivation is one of the most preferred means for forest development in Ghana due to its simplicity of development (Hawthorne and Abu-Juam, 1995). Nigeria was about the first country in Africa to have introduced teak plantation to the continent in the earliest periods of the last century, around 1920 (Drechsel and Zech, 1994), then to Ghana in 1930 (von Hellermann, 2007 cited in Kalame et al., 2011; 520). From small holdings, teak plantations were promoted in Ghana on large-scales in the 1960s to halt decreasing forest cover and supplement the supply of wood products from the indigenous natural forests of the country (Lozano, 2008). However, in Ghana, just as in Kenya and Nigeria, little success was achieved under the traditional Taungya System where purely teak farms were developed and maintained by farmers. The failure of the taungya system was due majorly to inability of the
Ghanaian state to effectively manage huge plantations throughout the country (Kalame et al., 2011: 520). Also, farmers had ownership of food crops but not the teak trees they toiled to develop and maintain. Moreover, they did not have financial benefits accruing from the trees they planted (Milton, 1994 cited in Kalame et al., 2011: 520). As a result of these challenges, the system was suspended in 1984, but was reviewed and reintroduced in a new form in 2002 as the Modified Taungya System (MTS).

A number of works have highlighted the benefits that communities and forest managers derive from the MTS. Blay et al. (2008) contend that forest plantation development through MTS is a productive option that provides benefits for local communities and national forest managers, especially when both exotic and indigenous tree species are used. They note that when forest plantation development results are poor, then this could be due to a combination of poor partnership approaches. Access to fertile land through the MTS is identified in their work as the most significant incentive for local people to remain committed to the development of the plantations. While this finding is significant in sharing insights, the authors did not specify the categories of farmers or community people who are most encouraged by access to land and the incentives. Kalame et al. (2011) address the forest plantation development option in Ghana noting that it is a win-win process for all involved. They used vulnerability, policy, and financial analysis to conclude that the MTS actually is the best adaptation strategy in forest management in Ghana. However, though they leaned heavily on economic analysis of forest plantation programmes, they went further to discuss their findings in sustainability terms, concluding that the win-win benefits from MTS so far is short-term, and medium to long-term challenges exist. They note that a single programme such as the MTS cannot improve all aspects of the social and economic lives of people, for instance health and educational status. (p. 522). Yet, they also failed to see the community as heterogeneous with MTS having implications differently for people. In Bentil and Banor (2014), a cost-benefit analysis of teak cultivation in Dormaa concludes that it is a financially beneficial industry to farmers, besides its environmental benefits. This is also a finding in Badu (2016). Bentil and Banor (2014) conclude that teak plantation establishments in Dormaa are financially viable and a profitable venture, and according to them this can be inferred from the surging world demand for teak.

All these works emphasise cooperation between forest plantation farmers and managers largely in terms of financial arrangements and financial benefits to be derived. Differential economic, social, and political implications of the MTS for women, indigenes, migrants, youth and so on, have not been analysed in literature on teak plantations in Ghana. Reference to farmers in these works imply a homogenous group of people with same interests and level of benefit derived from the forest plantation. In Dormaa, politically indigenes do not have all positive reception for teak plantation development due to its consumption of land and competition with agriculture. For women, teak plantation programmes deprive them of access to land for food crop cultivation which is their main means of income, while migrants face livelihood challenges even though they have access to protected forest land. The lack of attention to the social and political outcomes of teak plantation development for different groups reflects the dominance of the teak plantations in playing what Pirard et al. (2016) referred to as a passive economic role where the main interests in forest plantations are the wood, timber, and the direct financial gains. Indeed, the key objective of the Ghana Forest Plantation Strategy, 2016–2040 (non-dated: 2) is to support the development of a sustainable forest resource base that will satisfy future demand for industrial timber and enhance environmental quality. Similarly, the REDD and successive REDD+ programmes are uncritical of social and political consequences that result from high concentration of financial rewards to some farmers (Hansen et al., 2009).

4. Study site and methods

4.1. The study area, Dormaa

The Dormaa are a part of the Akan in Ghana. They constitute a traditional area or chieftain in the midwestern part of Ghana. The two study areas, Dormaa Municipality and Dormaa East District, are political administrative regions that together form the Dormaa Traditional Area, which is a cultural and traditional political delineation. The Dormaa Municipality and Dormaa East District together they lie within latitude 7° and 7°30′ degrees north and longitude 2°30′ and 2°48′ west (Fig. 1). The field research for this work was conducted in four communities in the Dormaa Municipality and three in the Dormaa East District. The communities are Dormaa Ahenkro, Nkrankwanta, Masu, and Taforo in the Dormaa Municipality; and Wamfie, Koradaso, and Dormaa Akwamu in the Dormaa East District (Fig. 1). These were among the communities in the two Dormaa regions where teak is grown extensively.

The Dormaa Municipality and Dormaa East District have a total land area of 1373 square kilometres (917 square kilometres for the Dormaa Municipality, and 456 square kilometres for the Dormaa East District). There are over 500 settlements in the two areas combined, but with one paramount chief and three electoral constituencies, that is, Dormaa East, Dormaa West, and Dormaa Central constituencies. Teak is grown more extensively in some of these communities than in others. As at 2010 when the last population census in Ghana was taken, the Dormaa Municipality and Dormaa East District together had a total population of 210,660 (159,789 for Dormaa Municipal and 50,871 for Dormaa East) (GSS, 2012: 102).

The Dormaa Municipality and Dormaa East District lie within the semi-deciduous ecological zone of Ghana. The major land use types are the protected forest reserves, non-protected forests (off-reserves), and extensively cultivated areas (Fig. 2). Forests in Ghana are classified as on-reserve and off-reserve. The on-reserves are forest areas strictly controlled by the state and its agencies such as Forestry Commission and Forest Services Division. On-reserves are mostly located within the south-western and some parts of the middle ecological belt where forest cover is high. Within the on-reserves are two types of forest – Production reserves exploited for timber (about 80%) and Protection reserves (about 20%) established for conservation purposes (MLNR, 2011: 3). The forest reserves in Dormaa, both natural stands and plantation forests, fall within the production reserves. Off-reserve forests are vegetation types with significant tree cover that are defined as forest by the state, but are not controlled by the state. They are owned and managed by customary owners, in this context customary owners being the Dormaa people.
The vegetation in the study area in large parts is dominated by patches of forests, elephant grass, and short scattered trees. Zwart and Voorhoeve (1990) introducing the Dormaa in their book on Dormaa traditional herbal medicine note that the original Dormaa vegetation of tropical rain forest has by the late 1980s been largely turned into cocoa and food crop farms. State Forestry officials say most of the cocoa farms have now been replaced with food crops due to drier climate. However, Forestry officials believe currently the micro-climate is improving due to sustained refurbishment of forests. Due to this, and coupled with increasing market price for cocoa beans, some farmers are establishing new cocoa farms.

Fig. 1. Map of Dormaa East District and Dormaa Municipality showing study communities in 2013. Source: Centre for Remote Sensing and Geographic Information Services (CERSGIS), University of Ghana, Legon.

Fig. 2. Major land use types in Dormaa East District and Dormaa Municipality, including forest reserves in which teak is cultivated. Sources: Dormaa Forest Services Division; Centre for Remote Sensing and Geographic Information Services (CERSGIS), University of Ghana, Legon. SF, LF, and VF in the legend stand for ‘Short fallow, Long fallow, and Variable fallow respectively, that is, length of time land may lie uncropped.
The threat that extensive cultivation and irregular logging pose to all kinds of forest has been a major discourse promoting statutory intervention in natural resource management in Dormaa to replenish deforested areas. The justification for statutory protection of forests in the Ghanaian 2012 Forest and Wildlife policy is that customary land use and unsustainable logging practices are degrading the forests (MLNR, 2011). Key environmental concerns in the Dormaa Municipality and Dormaa East District include deforestation, indiscriminate sand/clay/gravel extraction, pollution of water bodies, persistent annual bush fires, illegal lumbering, indiscriminate disposal of poultry waste, and excessive use of agro-chemicals in farming (DMA, 2012: 34; DEDA, 2012: 33). These environmental concerns are present in the dominant discourse of environmental degradation in state policies that profile communities as primary causes of land and forest degradation and deforestation.

Geologically, soils in the Dormaa Municipality and Dormaa East District belong to the Bekwai-Nzema compounds, with quartz gravels and ironstone constituents, and are moderately drained. These soil types tend to support both industrial and food crops, including teak, cocoa, coffee, oil palm, citrus, cola-nuts, plantain, cassava, and maize (DMA, 2012: 11; DEDA, 2012: 29). Yet, most of these soils have been less productive for agriculture in several communities where patches of sandy fields can be seen. Especially in Nkrankwanta and Taforo communities, sand extraction is common, to feed the construction industry in and around the study area. However, agriculture dominates land use activities. Over 60 per cent of the labour force of the study area engages in agriculture for their livelihood. Poultry farming is another important activity in the area. According to the Dormaa Municipal Assembly, about 57 per cent of the youth is involved in different activities of the poultry industry (DMA, 2012: 11).

4.2. Fieldwork

A qualitative cross-sectional research design informed the methods followed to collect field data. Fieldwork was done in the Dormaa Municipality and Dormaa East District in 2013 and 2016. The qualitative field data collection methods included unstructured interviews with farmer representatives, household heads, and official forest managers. Sixty individual interactions were held, and eight separate focus group discussions with women, migrant farmers, and indigene farmers, all over a cumulative period of six months in 2013 and two months in 2016. The cross-sectional design and qualitative field methods are justified on the grounds that there was need for understanding narratives of unique experiences with teak plantation development across different actors, conscious of the heterogeneity of farmers in Dormaa. The data analysis was facilitated by the use of the Atlas.ti qualitative data analysis computer software, where codes and themes were drawn inductively from the interview transcripts to form categories to understand thematic relationships in interviewee narratives. Some transcript segments queried from the Atlas.ti are presented in various sections to support the discussions.

5. Results and analysis

5.1. Teak plantation development in Dormaa

Over 60% of the labour force of the two districts engages in agriculture (DMA, 2012; DEA, 2012), many of whom are also teak farmers. Two groups of farmers are involved in teak cultivation in Dormaa, under the guidance and support of the Forest Services Division. One group includes those farmers, mainly migrants from the northern parts of Ghana beyond Dormaa. The migrant farmers are granted access to state protected but degraded forest reserves to develop teak farms with initial periods of food crop cultivation. The state protected forests in Dormaa in which teak is cultivated include Mpameso (197.67 square kilometres), Pamu-Berekum (116.80 square kilometres) and Tain II (297.60 square kilometres) (DMA, 2012; DEDA, 2012). These are natural forests but refurbished with planted trees and are strictly controlled by the state through the Forestry Commission (FC) and the Forest Services Division (FSD). Access to the state protected forests is regulated under the MTSBSA. The second group of farmers include indigenes, usually men, who develop teak on private customarily lands, often described as off-reserves, for their own household ends. These farmers are not subject to the MTSBSA, and they sell their teak stands to teak buying firms on privately arranged markets.

As of April 2012, teak plantations have been successfully established in the state protected forest reserves in the area and managed by the Dormaa District Forest Services Division, as well as in off-reserves. The Dormaa FSD does not have statistics on teak plantations developed on private lands. But the FSD is convinced that such farms are growing and contributing to the sustained supply of timber, improvement in the micro climate in the area, and good financial rewards to farmers expected into the future. These benefits of teak were expressed by a Forest Services Division officer as the following:

P41: D_FA_ID_Da_OA, forestry official_dormaa district_01mar2013.rtf - 41:32 (66:66)1

1 Beginning each quotation used in this work is a set of words and letters together as reference for quotations obtained from transcripts analysed in the Atlas.ti software. The quotation reference provides basic information about the quotation. For example, P41: D_FA_ID_Da_OA, forestry official_dormaa district_01mar2013.rtf - 41:32 (66:66) should be read as:

P41 means Primary Document 41, that is, the discussion transcript document 41 in the Atlas.ti software; D refers to Dormaa, that is, the study area; FA stands for Formal Authority, that is, the discussion participant is associated with a formal, statutory agency. Since discussion participants are associated with different agencies or situations, the acronyms for associating the participants will be different from quotation to quotation; ID refers to Individual Discussion, that is, distinct from a group discussion; Da means Dormaa Ahenkro, that is, the town in which the discussion was first held, thus this initial is also different from one participant to the other; OA are the initials of the discussion partner, to anonymise them; forestry official_dormaa district is the official title of the discussion partner; 01mar2013 is the date the discussion was first held; rtf is a computer
OA: Oh I think…you cannot plant trees just for planting sake, no, I don’t think it is wise to do that. You plant a plantation because you want to make some money. However, this also helps sustain the environment. It is the value of the trees for the environment. People have realised they can make a lot of money from teaks. A lot of people earn good money from the trees. We also educate them about the improvements that protecting the environment can bring to them. For the people in Koradaso, they are doing very well. They are hardworking. And now, with this modified taungya system that we have you agree with the people that if you farm this place, the paramount chief has got 15 per cent, the community has got 5 per cent; I mean the community in which you are living, then the government has got 40 per cent, and you the one planting the tree and taking care of it has got 40 per cent…//

Migrant farmers, in the quotation below, also acknowledge and appreciate the contribution of teak to improving the climate and natural environment:


ALL: Also we have realised that in the parts we have been cultivating the trees, rain falls much more now than before when fire destroyed most parts of the forest. #00:20:37-0#

EK: You see, trees bring rain. #00:20:43-6#

ALL: ☺☺☺ we see it ourselves. We see it ourselves that now rain falls much more than before. #00:20:55-4#

However, interactions with the different groups of teak farmers reveal that important challenges exist in the development of teak plantations. They describe circumstances that teak plantation development constrain access to land, stimulate unhealthy changes in political and social relations in communities, and reduce livelihood certainties. These circumstances are presented in turns below, concerning migrant farmers and women indigenes, two groups chosen here in view of their direct experiences of the challenges from teak farming.

5.2. Land access and livelihood challenges for migrant farmers

Usually, teak plantations in the state-controlled forest reserves in Dormaa are mostly developed through the state granting access to the forest for migrant farmers based on the MTSBSA. Yet, access to forest land in real terms spans only about five years and migrants face deep difficulties sustaining livelihoods in the long term. The transcript below is a segment of a focus group discussion with migrant farmers that captures migrants’ concerns over their livelihoods:

P14: D_MF_GD_Kd_Taungya group members_25mar2013.rtf - 14:25 (345:345)

MY: Another thing too is that when we had the government forest, honestly, we have peace of mind. If you go and rent some land from someone, that landowner will only show you the land: he or she will not give you anything else. Whether you have food to depend on to enable you farm, whether you have anything else to do the farm, he or she does not care. And when the crops you plant are ready, and you harvest even just a little and bring home, it is usually trouble, it is a problem; he or she will not agree and will send you to the chief’s palace that you have wronged him or her. So, such renting from other landowners really bring hardship to some of us. But now that we have this forest land, we really have peace. So, this is one thing that helps us so much from cultivating government land. #00:22:11-4#

(footnote continued)

file format; 41:32 means the quotation used is the 32nd quotation generated in Atlas.ti from transcript document 41; (66:66) means the quotation used begins and ends in paragraph 66 of the transcript document 41.

2 Abusa tenancy is a contractual cultivation of land by a tenant for the production of farm crops (food or cash crop) in consideration of a third of the produce or proceeds of the farm to the landowner at the end of every season. The tenant meets all the costs of farming at their own expense (Alhassan and Manuh, 2005: 7).
Land can also be accessed through abunu. An interesting dimension of the challenge for those migrants who manage to acquire land from indigenes on land sharing basis is that while the migrants believe that they acquire usufructuary rights, that is, permanent use right in their share of customary land, indigenes reject such a claim and contend that migrants can never hold usufructuary rights in customary land however that land was acquired. These conflicting sentiments are presented below, compounding the challenge of access to land for migrants. For the migrants they believe that:


KP: ...for that when you take land from an indigene and you pay the consideration fee, and when you plant the crops and after some time you share the land, the portion of land you get is yours. Even when the plants die, the land is yours #00:11:28-8#

ALL: That is why you will have to pay some money as consideration before you acquire the land in the first place. #00:12:53-9#

EK: That is why they make you pay the consideration fee. The money you pay is quite huge. #00:13:01-6#

However, a chief, an indigene, argues differently, that:

P3: D_TA_ID_Da_Nana YA Dormaa Aduana...hene_24mar2012.rtf - 3:67 (25:27)

NY: No, they [the migrant farmers] are wrong. The problem is that most people do not know about this principle or rule in Dormaa that land is not permanently transferred. Every land is supposed to be negotiated for according to the use of the land. For instance, agricultural land can be transferred for only 50 years, residential land for 99 years, industrial land for 25 years and so on, after which any rights in such land return to the landowner. These lease periods are provided for in the 1992 Ghana constitution. All land transactions should observe these time limits. If for example a migrant comes to acquire land here, it is only a temporary transfer of the land and he has to pay consideration for such transfer.

The fieldwork for this paper did not encounter deep tensions or conflicts between migrant farmers and the original indigene landowners Nonetheless, such different views on landownership rights is a potential source of conflict that can erupt anytime with dire consequences.

5.3. Land access and livelihood challenges for indigene women farmers

Some indigene farmers engage in teak cultivation on customary land in off-forest reserves. Most of these farmers are attracted by not only the financial rewards from teak but also use teak as a political tool to secure their rights to land. Due to its perennial nature, indigene farmers use teak farms to protect their land rights against forcible acquisition by state authorities or the paramount chief who is the holder of allodial rights to land in Dormaa. The acquisition of land developed with perennial trees attract potentially high compensation and teak trees are suitable to ward off acquisition. The data segment below explains this further:


AK: You see, when the town extends and people need plot to build, the planning scheme will be extended to the outlying lands. In that case, the committee can allocate your land to people to build. What happens is that, when your land is taken, the committee will divide it and give you a piece of it as your own. But usually, your part is very small. Then they will sell the rest. If you don’t have a compensation plan, you suffer. But where there is say teak or cocoa plantation on the land that Osagyefo [the paramount chief] needs, he will have to pay compensation to the person. Even where there are crops on the land, Osagyefo will pay compensation to the person. The same applies to any investor. The compensation will have to be paid by any investor who acquires that particular land. Also palm trees, teak, or cocoa take a long time on the land. One can keep harvesting them for a long time, even 50 or more years. So if the Dormaahene [the paramount chief] wants to compensate for all the proceeds you are likely to make for all these years ahead, it will cost him so much money, even beyond the worth of the land. So usually, they avoid the land. Yes, that is what many people do here. It is a compensation plan. So if you don’t want the allocation people to come take your land, you will have to plant teak or cocoa or palm trees. That is partly why you will see many teak trees around here, especially around the towns.

In view of this relevance of teak for tenure security, family lands are sometimes contested between family members and between chiefs and their subjects, but this is not a full-blown conflict in Dormaa. Coupled with the increasing attraction of extracting sand to sell for quick cash, the consequence of developing teak on customary land is that land for food crops are getting increasingly scarce in Dormaa and cost of living is rising as prices of basic food increase. Women bear the brunt most, as the following transcripts show:

P 7: D_TA_ID_Ms_Masu queen mother_25mar2016.rtf - 7:7 (15:15)

QM: A number of women are planting the teak. But the problem is that the teak destroys the land and nothing else can be planted

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3 According to da Rocha and Lodoh (1999: 84), and Amanor (1994) the abunu tenancy is the occupation of a contracted land by a tenant for the cultivation of mainly cash crops. The yield of the farm is shared equally between the tenant and the landowner every season. Subsequently, after a number of seasons they normally divide the portion of the farmland cultivated into two equal halves between the tenant and landowner. The tenant has complete ownership rights over any food crops cultivated to defray costs incurred in developing the farm. The food crops may also be divided into two or three, one-half or a third due the landowner, depending on the extent of contribution they make to the cultivation of the land.
on the land [after a few years] when the teak grows.

QM: For us women, you know that we have to cultivate a lot of food stuff yearly to sell to take care of the home. So, when one plants the teak and she does not have another farm elsewhere, with the time the teak takes to mature, it is lots of hardship for the woman. The problem is that the teak destroys the land and nothing else can be planted on the land [after a few years] when the teak grows.

P16: D_IF_GD_Ms_Women group discussion_25mar2013.rtf - 16:29 (29:29)

AF, MA, AT: Here in this place, we cultivate eggplant, tomato, maize, pepper, plantain, and cassava. If you want good eggplants, pepper etc, please come to this place. This is where we cultivate them... MA: I have maize and plantain, and some eggplants too. We all farm these crops: that is our livelihood, so that is why we are worried when there is wild fire, because you often lose your livelihood and there is nothing else in this community to do.

P16: D_IF_GD_Ms_Women group discussion_25mar2013.rtf - 16:29 (47:47)

ALL: We inherit our ancestors’ land and we are not supposed to sell it but continue to bequeath it down the generation. But now a lot of the land is spoilt. We have done so much cultivation on the land, so now even when you plant something, it does not yield well like in the recent past, unless you buy fertiliser, but that is also expensive.

Though the Dormaa land inheritance system is matrilineal, a man’s landed property is inherited by the eldest son of his, (the man’s) sister. Thus, women do not have the resource to purchase or rent land. Consequently, in practice women do not have as much land as men do and this poses significant stress on their livelihoods.

6. Discussion: Implication of forest plantation development for livelihoods

From the presentation in Section 5 above, teak plantation development has consequences for community people as a heterogeneous group, for state forest policy, and for sustainability theory. These three sets of implications are discussed in turns in this section. So far assessments of teak plantation development in Dormaa portray mostly positive outcomes (Kalame et al., 2011; Bentil and Banor, 2014; Badu, 2016), suggesting that all shades of community people involved directly in teak plantation development benefit. Environmentally, the positive assessments are not far from right because environmental improvements benefit a wider group of people beyond limited geographical areas. Yet, social and political consequences occur for different categories of people but this heterogeneous approach to appraising teak plantation development has been ignored in the literature and in forest policy and practice. Farmers on teak plantations have been taken as a homogenous community and this certainly help to make generalised assessments that misses important nuances. Graedel (2002) and also Morelli (2011) already warn that there is the tendency to appraise environmental sustainability projects less holistically depending on the purpose to which such appraisal serves. The Dormaa context gives credence to this warning.

A consideration of farmers as a heterogeneous group, and the necessary integration of environmental, economic, social, and political interests in the harnessing of resources is the only way to ensure society’s overall welfare. It helps understand peculiar burdens and responsibilities of categories of community people, as Boon et al. (2009) inform, that women and children bear the brunt of forestry programmes if these programmes do not fit community livelihood practices. Churning out statistics of how much timber revenue targets has been met is a skewed, imbalanced, and unsustainable analysis of outcomes of forest plantation developments. Morelli (2011) for instance argues for the integration of all dimensions of sustainability interests, noting that the definition and practice of sustainability should focus on understanding sustainability as a systemic interaction between different human goals and ecological conditions. In this sense, teak plantations in Ghana should be about creating conditions of balance, resilience, and interconnectedness that allow different community groups to meet different needs into the future while neither exceeding the capacity of supporting ecosystems (Morelli, 2011: 5). The Dormaa case is a pointer that different societal interests must be responsive to each other so that their respective goals are met from the same available environmental resources (Atkisson, 2006: 237; Jenkins, 2010: 380). A forest management programme for instance that promotes some values to only a section of farmers at the expense of other farmers is questionable and not sustainable (Pirard et al., 2016). The tendency is high that such a programme will face threats of destruction from competing interests.

For state policy, the Dormaa case demonstrates that the dominance of state interests in forest management continues to affect communities negatively in social, political, and even economic terms. Forest Services Division (FSD) officials in Dormaa are dedicated to their role as stewards to ensure the replenishment of the forest cover and sustained timber production (Narh, 2014). Indeed, the achievements of the FSD, in cooperation with traditional authorities and sister organisations such as the Rural Fires Department of the National Fire Service in refurbishing fire and human-degraded forests in Dormaa cannot be overemphasised. Community people in Dormaa are in praise of the state for restoring their forests. Nonetheless, constraints that teak plantation development poses for sustainability of livelihoods for migrant and women farmers is evidence to contend that the main mission of the Ghana Forest Plantation Strategy, 2016–2040 to develop forests Ghana for timber and environmental considerations is a limited one that does not serve sustainability ends in full. In this respect, emphasis is made in this paper for the relevance of applying a broad definition of forest management on sustainability terms. The frustrations of migrant and indigene women farmers over the effects of teak on their livelihoods can pose threats to the legitimacy of teak plantation development into the future. Already, this author found from informal interactions that some farmers in Dormaa find it more economic to cut down teak farms in place of cultivating cocoa and cashew. Moreover, FDS officials lament that some people clandestinely burn the protected forests perhaps to provide the perpetrators
with the justification to gain access to the forests.

Drawing on the outcomes of teak plantation development for migrant farmers and women, it can be concluded here that the dominance of state economic interests (timber revenue) in forest development in Ghana that ran through the colonial and immediate post-colonial eras Kotey et al. (1998), Edusah (2011), Teye (2011) continues today. But participation of communities in forest management has improved immensely over the years (FSD, 2016). As noted also in Kotey et al. (1998), there has been a concerted drive towards collaboration and community participation in forest management as a way of encouraging the commitments of communities to conservation of forests. Participatory forest management offers opportunity for migrant farmers to gain access to forest land and be co-managers of the teak plantations. Nonetheless, participation alone is not enough to secure sustainable livelihoods for people. Responsibility towards sustainability goals that provide for sustained livelihoods of different groups of people can accompany participation and ensure that communities in their different categories do not bear the burden of the pursuance of economic and environmental interests of the state.

The relevance of sustainability theory to forest management that benefit all stakeholders is invaluable but teak plantation development in Dormaa has been oblivious of this relevance. Sustainability theory stresses that for a resource to be said to be sustainable, not only environmental and economic benefits are relevant considerations; social and political outcomes are as essential (Agyeman, 2003, 2005; Atkisson, 2006: 237; Keiner, 2006; Jenkins, 2010: 380). In Dormaa, what should be sustained in the context of sustainability theory, that is, the resource, is not only the teak plantations, but also equity conditions in access to cultivable land, continued productive conditions on teak farms for food crops, and the sustained livelihoods of farmers. As reviewed above, sustainability theory has environmental, economic, social, and political objectives, all of which can be met at the same time, with strenuous, conscious efforts.

The environmental and economic objectives in teak plantation development in Dormaa is high on the priority of forest plantation development in Ghana as in the Ghana Forest Plantation Strategy (GFPS), 2016–2040. These goals are generally met for the majority of farmers, but the sister goals of social and political equity for different groups of community people are woefully not emphasised. For instance, the literature does not discuss the vulnerability of migrants to the shocks of possible conflicts over access to land in Dormaa outside of the state-protected forests. It is observed that migrants, in most instances in several economies, are often vulnerable in relations over resources in their host communities (Nkamleu and Fox, 2006; Geschiere, 2009). Some studies have already found teak plantation development in Dormaa financially rewarding and thus should be encouraged (Bentil and Banor, 2014; Badu, 2016). Yet, politically those migrant farmers who may manage to acquire some land from indigenes may have their lands rights abrogated if indigenes decide to enforce their original ownership rights over such lands.

7. Conclusion

Clearly an inductive approach to forest plantation development in Dormaa is necessary to complement global frameworks for forest development. Forest management in Dormaa is deductively based on theories and models of pure economic scientific forestry, which emphasises markets, capital, and mono-culture. It has been demonstrated in this paper that the economic approach to forest management in Dormaa have negative implications for equitable land access and livelihoods for different groups of people, that is, for migrants and women. The deductive approach blind forest managers and policy makers to the real incidences of forest management. An inductive approach however is where forest management can be developed based on the knowledge and clear analysis of what existing environmental, economic, social, and political implications are for different groups of community people.

The inductive approach can stimulate innovations in forest management that is appropriate for local contexts; that make forests beneficial to all community people in all dimensions of sustainability. Thus, the inductive approach to forest management is an assessment of how and where the influences of a forestry technology are likely to be felt to inform innovations. Following this, the whole practice of mono-species forestry where a species of tree such as teak is the only kind grown on large tracts of forest land, needs to be re-considered. Multi-species forest plantations where different kinds of trees are grown and that also support agricultural production simultaneously through the lifespan of forests should be encouraged. If the development of multi-species forestry with agriculture is based on specific local-contexts, all shades of interests in forest plantations, be it environmental, economic, social, and political - can still be met with minimal costs to the environment, farmers, and the state.

Though the development of forest plantations on sustainability terms is not easy, different legitimate interests in the plantations can all be met in ways that do not exhaust this resource if a heterogeneous approach to managing project outcomes is adopted. Analysis of outcomes of forest management in Ghana will holistically address communities when the heterogeneity of the community is acknowledged. In Ghana, property rights in natural resources for various groups of people have significant implications for their participation in, responsibility to, and benefit from natural resources. Therefore, it is only proper that community people are not all the same in particular regards to access to, control on, and benefit from forest lands and other natural resources. Thus, the differential outcomes of teak plantation development for different groups of community people cannot be ignored in any analysis of the plantations.

References


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