
**TAUNGYA AGROFORESTY SYSTEM IN NIGERIA: A PATHWAY TO
SUSTAINABLE LIVELIHOOD**

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ABSTRACT

Agroforestry has over the years contributed undeniably to farmers' livelihood. In Nigeria, most practiced form of agroforestry is the home gardens and the taungya farming system. This review has its spotlight on the latter. In recent years, farmers' livelihood situations have progressively worsened with growing food insecurity. A good number of studies has shown that farmers who participate in taungya farming have been able to increase their income considerably and had improved crop productivity. Overexploitation of forest resources however remains a major challenge for farmers towards achieving sustainable livelihood. Integrating agricultural food crops with tree planting will curb unnecessary deforestation to large extent, serving as an effective buffer. Population rise has also been a constant problem creating pressure on available land leading to land shortage. The taungya system thus supports the landless and poor farmers and helps in reforestation. Although taungya farming system is not an automatic remedy to alleviating rural poverty, decisions of rural farming households to participate in the farming system can clearly aid their coping abilities during emergency situations, thereby preventing them from wallowing deeper in poverty. Evidences from studies reviewed shows clearly that farmers' cash income were increased and their well-being enhanced. The Nigerian scenario agrees with what is obtainable across Africa, therefore consolidated action at both national and international level is needed to take full advantage of benefits embedded in the taungya farming system to successfully improve smallholder farmers' livelihood.

Keywords: Agroforestry , Taungya, Livelihood

1. INTRODUCTION

1.1 Agroforestry for Sustainable rural livelihood

The science and tradition of Agroforestry has immense potential to improve rural livelihood as it offers beneficial alternatives to smallholder farmers who desire improved farm productivity and income while protecting the environment (FAO, 2004).

Farmers' livelihood situations have progressively worsened over the years with growing food insecurity. Therefore this situation beggars for consolidated action at both national and international level to take full advantage of benefits embedded in agroforestry to successfully improve smallholder farmers' livelihood (FAO,2004).

Integrated farming method of tree planting with crop can play a major role in achieving a high level of diversification and sustainability. Forest-crop resource industry linkages have increased the sustainability potentials of agroforestry as compared with conventional agricultural practices (Kareemullah et al., 2005, Saxena, 2000).

Overexploitation of forest resources is a major challenge for farmers towards achieving sustainable livelihood. Including agricultural food crops with tree planting will curb deforestation to large extent, serving as an effective buffer. (Prabhat et. al, 2017).

2. THE TAUNGYA AGROFORESTRY SYSTEM

Agroforestry has been an indigenous sustainable agricultural practice dating over thousands of years and a very important aspect of traditional rural landscape in both the tropics and temperate regions of the world. The Taungya farming system of agroforestry mitigates the effect of deforestation and help to promote an integrated farming system that is more diverse and productive (Garrett et.al., 2000) It is a system where by arable food crops are cultivated together with forest trees at onset of plantation. (Negi, 2000). The system is designed in such way that farmers provided farm plots to farm for four to five years, afterwards, the plantation is managed as a monoculture. The combination of trees and food crops promotes production diversification and sustainability and this further enhance socio-economic and environmental benefits.

The increasing Nigerian population and its associated effect of population pressure has caused land shortage over time, also leading to shorter fallow periods (Oke, 2002). Furthermore, land tenure system in Nigeria has led to many farmers becoming landless. Due to situations like this, Taungya system supports the landless and poor farmers and helps in reforestation. Household economy is improved through availability of food, energy and more income (Nsien *et.al.*, 2010).

3. INFLUENCE OF TAUNGYA SYSTEM ON RURAL FARMERS' SUSTAINABLE LIVELIHOOD: THE NIGERIAN SCENARIO

According to Adeoye, Agbeja and Ajewole, 2014, the taungya system played a significant role in income generation and yield productivity. The study conducted in Ondo state, South West Nigeria, affirmed that households can boost their income and also improve their livelihood needs by actively participating in the taungya system. Although taungya farming system is not an automatic remedy to alleviating rural poverty, decisions of rural farming households to participate in the farming system can clearly aid their coping abilities during emergency situations, thereby preventing them from wallowing deeper in poverty. The evidence from the study showed clearly that farmers' cash income were increased and their well-being enhanced (Adeoye *et.al.*, 2014).

In a study conducted by Oyebamiji, Adedire, Aduradola and Agboola, (2013), there was a positive relationship between integrated farming of trees and crops with yield and returns from sales of farm produce. This implies that the taungya sytem of farming has tendencies of improving and sustaining farming households' livelihood. Phiri et.al (2004) and Kiel et.al (2005),affirmed that there is a relationship between wealth and agroforestry practices. Ajayi

et.al.(2003), further buttressed this when he stated that tree planting with crops is prominent among the wealthy than among the poor households.

In Benue state north central Nigeria, reports showed that farmers practicing taungya farming realized better yields ranging from 306.67kg/ha(melon) to 1698.33 kg/ha (cassava). Corresponding yields show 250kg/ha (melon) to 1372.67kg/ha for cassava on non-taungya farm plots this implies that farmers in taungya farming and are able to realise more cash from sales of farm produce than farmers who are not into taungya farming, hence, they enjoy higher standard of living as a result of increased farm income (Agera, Adegeye and Jimoh, 2010).

Further studies have shown that taungya system of farming have commendable impact on sustainable livelihood of farmers. Farmers generated a reasonably high amount of income through taungya farming. This is seen from reports of Izekor and Ajobi, (2016), where they conducted a study in South South region of Nigeria. It was observed that income of farmers in taungya farming varied from N389,445.9 per acre /annum to N490,203.7 per acre /annum.

According to Enabor (1975), farmers require less factor inputs and no fertilizer under taungya farming. This enhances their ability to accrue more income at the end of the farming season. Profit margin are higher as shown from some economic-cost benefit analytical studies of N128,673 per ha per year (Adesiyani et al, 2007). This is also because weeding costs are reduced as number of times of weeding is considerably reduced in taungya farming than other conventional form of agriculture.(Kalu, Oboho and Ihama, 2011).

4. TAUNGYA AGROFORESTRY SYSTEM AND IMPACT ON FARMERS' LIVELIHOOD IN AFRICA

Countries in Africa like Ghana has been able to upgrade from the traditional system of taungya farming to the Modified Taungya System (MTS) under the National Forest Plantation Development Programme (NFPDP) (Agyeman et.al, 2003) which aimed to create livelihood opportunities for farmers (FC, 2008). Under this arrangement, farmers are co-owners of the plantation and they are not chased away from their plots after harvest as usually done in the old taungya system. There is a unique proceed-sharing agreement among core stakeholders with farmers having a share of 40% share of tree revenues and 100% of their farm proceeds (Acheampong, Insaideo and Ros-Tonen 2016). This is a lot of benefits to the farmers.

Acheampong, Insaideo and Ros-Tonen (2016), further reported that farmers were entitled to soft loans before tree revenues start rolling in. Other benefits include opportunities of embarking on livelihood projects such as animal rearing which will help generate additional income between canopy closure and timber harvest.

In a study carried out in Tanzania, where improved tree planting with cash crops was practiced, farming household experience a major boom in annual income by adopting modified and improved practice (Teija, 2008). Cardamom farmers in Tanzania who practiced the modified agroforestry practice recorded a doubled total income from US\$157 versus US\$74 with net income thirteen times higher at US\$387 versus US\$29. This goes a long way to show that this method of agroforestry is very profitable and sustainable for farmers who practice it.

Another study carried out by Gebrehiwot (2017) in Ethiopia reported that many farmers generate financial income from practicing the home garden agroforestry system very similar to the taungya farming system. It greatly enhanced farmers' resilience by providing food for consumption in emergency situations (Mbow et.al, 2014; Millat-E-Mustafa et. al, 2002). Farmers further acknowledged that such farming practice enhance livelihood outcomes while maintaining human capital (Morse et.al, 2009).

5. CHALLENGES AND 'BREAKDOWN' OF THE TAUNGYA FARMING SYSTEM IN NIGERIA

In as much as taungya farming can enhance the livelihood of farmers, it has been seen to be detrimental to the forest natural resources and can affect biodiversity. In Vandeikya Local Government of Benue state North Central Nigeria, forest land utilized by taungya farmers have reduced from 312ha in 1955 to 83.5 ha in the year 2000 (Agera et.al., 2010). The declining forest area has continued to divert supposed symbiotic relationship between the farming system and forestry as a non-sustainable and parasitic one.

In Nigeria, the taungya farmers are expected to plant trees especially on plots they , farmed upon previously but according to a brief by the forestry department, farmers no longer obey the forestry rules and regulations, will refuse to plant trees because they want to farm same piece of land again (Edo State Forest Department, 2002).

Corruption on the part of the forest officials in charge of allocating plots is also a significant issue causing major challenges and breakdown of the taungya system. According to an extensive research carried out by Hellerman (2007) in Edo state South-South Nigeria, some taungya practicing farmers were interviewed and they decried the deteriorating situation of the taungya farming mainly caused by corrupt forestry staff. They (forestry officials) do always allocate more plots than initially applied for by farmers in order to make more income for themselves. They also do not give tree seedlings to these farmers for replanting. This has continuously led to a major reason for forest decline under the taungya system.

According to the Hellerman (2007) narrative, despite the issues of corrupt forestry staff cum "disobedient" farmers, a very important underlying factor to consider when analyzing the challenges of the taungya system is the increasing farming population which has led to increase in demand for farm land, making the implementation of the strictest principles of the taungya farming unworkable.

6. CONCLUSION AND RECOMMENDATIONS

Empirical evidence shows that taungya farming system can significantly impact farmers yield and income (Adeoye et.al, 2014). Taungya farming alone cannot completely alleviate poverty but adopters of this form of sustainable agriculture can significantly move above the poverty line with impact on income generated and better livelihoods. Evidences have shown that more cash income from the taungya helps farm families achieve better well-being.

Therefore, to get the optimum economic potential for sustainable livelihood from taungya farming, stringent policies must be made by the Nigerian Government and farmers must adhere to the rules of sound management practices. Eventually, this will checkmate the destructive effect of forest encroachers, 'disobedient' farmers and corrupt forest officials. It will ultimately enhance valued premise to be acted upon to maximize the many inherent economic potentials of the taungya farming system.

7.Acknowledgement

I acknowledge all the authors of the research works I reviewed.

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