Dry season farming in Northern and Upper East Regions of Ghana: A potential to improve income and nutrition of smallholder farmers

Mahama Abass, Tamale Ghana
Post office box TL 2813, Tamale- Ghana

*Corresponding author email: mahama.abass@ymail.com
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ABSTRACT

This study was conducted in twenty communities in six districts (Karaga, Savelugu/Nanton, Tolon, West Mamprusi, Talensi and Kumbungu) of the Upper East and Northern regions of Ghana to determine the potential impact of dry season farming in improving smallholder farmer income and nutrition. The study also looked at migration trends during the dry season and the willingness of smallholder farmers to engage in dry season farming as well as existing interventions to support dry season farming. Data was collected through focus group discussions, key informant interviews and personal observation. A total of 600 respondents made up the discussions, specifically 30 respondents (10 males and 20 females) were contacted from each community. The results showed that farmers especially youth farmers (men and women) travel to the big cities in the dry season to work and some return home to farm in the wet season and others do not return home at all. The income they earn is used to buy agricultural inputs to support wet season farming and also used to support domestic needs. Farming is the major occupation of the target respondents and as such they are ever ready and willing to engage in dry season farming if the necessary support is made available. Ongoing interventions by NGOs and the government have not looked at large scale irrigation farming in the dry season, this makes it difficult for majority of smallholder farmers to acquire land and access water for farming. Also some interventions have only targeted commercial farmers engaged in dry season irrigation farming (GCAP). Farmer’s main source of income is through the sale of crop produce from wet season harvest and also some petty trading they are engaged in (especially women) and also remittances from wealthy family members. The major crops cultivated in the areas of this study are; maize, cowpea, rice, soybean, cassava, groundnuts and millet. Very little or no vegetable cultivation is done because of excess water during the wet season which doesn’t really support vegetable survival/growth. There is therefore the need for dual season farming, where farmers can do wet season farming (rain water dependent) and dry season farming (irrigation) to help improve the income and nutrition of the smallholder farmer. With this approach smallholder farmers can have the luxury of consuming and selling cereal, legume and vegetable combination.

Keywords: Smallholder farmer, income/nutrition and dry season farming

INTRODUCTION

In Ghana, the agricultural sector is one of the most important sectors in the Ghanaian economy. This is mainly because the sector is a major contributor to the livelihood of the rural population. The sector employs
about 80 percent of the rural population (MOFA, 2010) and contributes directly to food security and also to economic growth through its extensive contribution to foreign exchange earnings, employment in the formal and informal sectors and also serves as the key source of raw materials to the agro-based industry in the country.

In Ghana there are two main seasons-the rainy and dry seasons. During the rainy season, farmers depend on rainfall for farming but during the dry season, farmers tend to the use of water stored either on the surface and sub-surface. The availability of water management technologies plays a vital role in the lives of farmers, as the absence of these facilities normally encourages population drift to urban areas to undertake menial jobs during the dry season (Faulkner et al. 2008).

Irrigated agriculture in Ghana accounts for approx. 30 percent of agricultural production in the country (MOFA 2012). Within Ghana, water demand for irrigation in the year 2000 has been estimated as 652 million cubic meters per year (MCM), compared with 235 MCM for domestic use. With a total cultivated irrigated land area of 30,345 ha in 2012 (MOFA, 2012) irrigation is the dominant source of consumptive demand of water resources in the country.

According to the Ministry of Food and Agriculture (2010), Northern Ghana has a huge potential for agricultural productivity, coupled with relatively high rural workforce and good market potential. Despite this huge potential, farmers in these areas are faced with a number of issues including prevalence of food security, access to farm inputs, and access to water in the dry season, and low soil fertility. These effects are further worsen by the effects of climate change manifested through flooding, waterlogging and drought.

A number of interventions have been implemented across northern Ghana as a way of finding a sustainable solution out of poverty for rural farmers in Northern Ghana. A number of organizations implementing these interventions allude to the fact that dry season farming is one sure way to reduce poverty, unemployment and also improve the nutrition of rural poor farmers especially the youth.

Limited access to water to support farming activities especially during the dry season accounts largely for the poor household incomes, rural urban migration and livelihoods among rural communities that depend on subsistence farming as the major economic activity in Northern Ghana.

The Savannah Accelerated Development Authority (SADA) in 2014 indicated that most smallholder farming communities in Northern Ghana cultivate their lands for only 5 months during the entire year resulting in food shortages. This is even made worse by the short cropping seasons, post-harvest losses in the wet season, and limited or no cropping in the dry season. The Ghana Health Service (2014) therefore labeled the northern region as the most nutrition challenged regions in Ghana.

In addressing this challenge, improving the income and nutrition of smallholder poor farmers which will ensure at least two season farming has been identified as one of the surest routes for poverty eradication in Northern Ghana. According to the Millennium Development Authority (2012), improved water and land management practices within Northern Ghana could lead to substantial increase in agricultural productivity.

OBJECTIVES

1. To study the migration trend and potential impact of dry season farming on rural-urban migration
2. To study the willingness of farmers to engage in dry season farming and potential impact of dry season farming on sustained income and nutrition of smallholder farmers
1. To identify and examine immediate interventions by NGOs, government and other private organizations to support dry season farming
2. To identify and examine source of income of smallholder farmers in the dry season

METHODOLOGY

This study was recently conducted through farmer group discussions, key informant interviews and personal observations.

Farmer group discussions were conducted in selected communities of Karaga district, Nyong, Nyong-Guma and Yong Yipalsi; Savelugu/Nanton Municipal, Kpano, Tindan and Zion; Tolon District, Jerigu, Tivonaayi and Daboghee; Kumbungu district, Gbullung and Zangbullung; West Mamprusi District, Silinga, Dipsi, Nabari, Janga, Nakpaya and Sariba; Talansi-Nabdam District, Bingo, Nungu, Digare of the Upper East and Northern Regions of Ghana. This was to obtain general information on income source, migration and the willingness to farm during the dry season. A total of 600 respondents were contacted and made up the various focus group discussions held. In each of the 20 communities where focus group discussions were held, 30 respondents were contacted (20 women and 10 men).

The discussions were mainly focused on migration trend in the dry season and potential impact dry season farming can have on rural urban migration, ongoing interventions by NGOs and the government to support dry season farming, willingness of smallholder farmers to engage in dry season farming and income source in the dry season.
DISCUSSION

Focus Group

Migration trend and potential impact of dry season farming on rural-urban migration

Migration trend examined by researcher and shared local communities in target districts is that migration is predominant among the youth and women who travel to big cities (Accra, Kumasi and Tamale) to work as head potters and scrap metal dealers in the dry season. Some of the migrants return to their communities in the wet season to engage in farming, however most of the migrants do not return home because they either do not earn enough income to enable them buy agricultural inputs to support them in the wet season farming or they find the work they do in the big cities more lucrative and do not season reason to return home to engage in farming (particularly now the rainfall pattern is not predictable).

This migration trend has however been found to have significant negative impact on human resource and food production particularly that most of the migrants are the youth. Migration among the youth is attributed to lack of income earning jobs in the dry season and that, when smallholder farmers are able to engage in dual cropping (wet and dry season farming) it could have a potential reduction on rural-urban migration among the youth. (Figure 1 above).

Willingness of farmers to engage in dry season farming and potential impact of dry season farming on sustained income and nutrition of smallholder farmers

Farming is the major economic activity in northern Ghana and as such any support that seeks to enable farmers to engage in dual season farming will be approached with enthusiasm by smallholder farmers. Farmers in the local communities targeted by this research expressed willingness to engage in dry season farming when the necessary support/assistance is available to them since they are always idle in the dry season with no farming activity going on and as such do not feel happy in the state they are currently in now. This is confirmed in a report by the Savannah Accelerated Development Authority (SADA) in 2014 indicating that, most smallholder farming communities in Northern Ghana cultivate their lands for only 5 months during the entire year resulting in food shortages.

Farmers in the local communities have the potential to increase their income and nutrition since they would have the option to either choose to sell what they produce in the wet season or consume what they produce in the dry season. With this, they could also produce vegetables and high nutritional value crops in the dry season to balance their diets and ultimately improve on their nutrition and wellbeing. Most of the women engaged in the discussions expressed interest in vegetable production in the dry season because it will provide them and their families a source vitamins and fiber which will ultimately improve their nutritional status as they are over dependent on carbohydrates. They also stated that, balancing their diets with some vegetables will improve their children malnourished condition and their overall health will also improve. (Figure 2 below).

Immediate interventions by NGOs, government and other private organizations to support dry season farming

Immediate interventions by NGOs (IDE-Ghana) and government (Botanga irrigation project, GCAP, Golinga irrigation project) and other private bodies in irrigation development have really not looked at smallholder
farmers on a large scale. Most of the interventions have been targeted at commercial farmers and a few private irrigation schemes have not actually looked at engaging smallholder farmers at all. However, the few irrigation schemes developed to support smallholder farmers in few parts of northern Ghana are done on small scale with the construction of small dams. This has resulted in just a few of smallholder farmers been engaged in dry season smaller scale farming. In areas where bigger dams are constructed, water availability to serve farmers throughout the dry season becomes a challenge. This could be due to loss of surface water to evaporation as well as domestic and animal use.

Source of income of smallholder farmers in the dry season

Farming is the main economic activity in local communities in northern Ghana- which is done only in the wet season. The major crops cultivated in the wet season are; maize, cowpea, rice, soybean, cassava, groundnuts and millet. Very little or no vegetable cultivation is done in the wet season and dry season. In the dry season farmers rely on the sale of their crop produce to earn income to support domestic needs. The farmers feed on what they produce and sell just some few bags of crop produce to support their needs. They often will have to buy crop produce from the market for domestic consumption. Since majority of these farmers do not engage in dry season farming, they often depend on remittances from other family members-which is often not assured. However, women and youth apart from migration to big cities to work engage in petty trading to earn some income-which is not a reliable source of income since they could end a whole day without selling any of their products. Most women involved in the discussions believed strongly that, when they engage in dry season vegetable production they would earn enough income to offset some of the wet season loss and also add up to what they earn through the sale of wet season crop produce. Most women expressed their interest in producing leafy and fleshy vegetables like; tomatoes, onions, cabbage, lettuce, carrot, cucumber, pepper and other vegetable types commonly grown in Ghana. (Figure 3).

Personal observation and key informant interview

Observations in all the 20 communities the research study targeted revealed that, during the wet season
excess water (waterlogging) accumulates on arable lands for over 2 months. This often results in the destruction of crops and ultimately leads to poor yields. It was also observed that, in cases where farmers do not prepare their lands early before the onset of the rainy season, excess water from rainfall could make land preparation impossible since tractors and other farm machinery cannot work on waterlogged lands.

Further observations also revealed that, excess water found on arable lands are not in any way stored for dry season use- excess water is often lost to evaporation and runoff. This means that in a situation farmers lose their crops to excess water or are unable to crop their lands because of excess water on their farmlands, they may possibly lose out for the rest of the year with no crop produce-since they do not engage in dry season farming. The key informant reveals that, it often serves as a disincentive to most of the farmers particularly the youth and has contributed to the migration of the youth to big cities in such of work.

CONCLUSION

This research looked at the migration trend and potential impact of dry season farming on rural-urban migration. It also looked at the willingness of farmers to engage in dry season farming and potential impact of dry season farming on sustained income and nutrition of smallholder farmers. It further identified and examine immediate interventions by NGOs, government and other private organizations to support dry season farming and finally identified examine source of income of smallholder farmers in the dry season. Farmers especially the youth (men and women) travel to big cities to engage in all kinds of work in the dry season and return in the wet season to do farming. Those who find the work they do in the big cities lucrative and sustainable do not return in the wet season to engage in farming. The impact of migration over the years has had a significant negative effect on food security since man power continuous move from farming to non-farming activities.

Farming is the major occupation of most people engaged in this research in northern Ghana and they have expressed great enthusiasm to engage in dry season farming when the necessary support is made available to them.

Most interventions by NGOs and governments have been to capture rain water on the surface and subsurface, this approach make it difficult for water to be made available throughout the dry period due to water loss to evaporation and animal as well as domestic use.

Farmers earn income through the sale of their crop produce. They also sell livestock sometimes to solve their needs when the sale of crop produce do not raise sufficient cash. Some farmers especially the women engage in petty trading and some youth also migrate to big cities to work to earn some money. A number of farmers also rely on better off family members for support through remittances given either monthly, occasionally or yearly. When dry season farming is made available and the necessary support offered to farmers particularly women, they can earn income through the production of vegetables.

Excess water during the wet season contributes to crop loss and low yields and also makes it difficult for farmers to crop their lands. Appropriate water harvesting and management technologies are essential to dual season farming and also conserving excess water in the wet season and making it available for use in the dry season for irrigation purposes.

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