MICHIGAN STATE UNIVERSITY/UNIVERSITY OF GHANA CASE STUDIES

VALIDATION WORKSHOPS ON 'LINKING WEST AFRICAN SMALLHOLDER FARMERS TO GREATER VALUE-ADDED ACTIVITIES'

Dates: 12th and 19th May, 2016
Venues: Chances Hotel, Ho and Fiesta Royale' Hotel Accra, Ghana

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Introduction

This report presents the outcome of two validation workshops on ***Linking West African Smallholder Farmers to Greater Value-Added Activities: the case of selected rice and cassava value chains in Ghana.*** The workshops were held at the CHANCES Hotel, Ho (Volta Region) and Fiesta Royale Hotel, Accra (Greater Accra Region), respectively, on Thursday 12th May and Thursday 19th May, 2016. The objective of both workshops was to share the preliminary findings of the case studies with the stakeholders for their input. The study team made the same presentations at both workshops, which are provided in this report. The Ho workshop started at 09:15 GMT with a prayer by Dr. Nathalie Me-Nsope. Similarly, the Accra workshop started with registration of participants at 08:30 GMT and workshop proceedings at 09.00 GHT with a prayer by one of the participants. In each case after the prayer there was self-introduction by workshop participants.

Welcome address: Prof. Samuel Asuming-Brempong (Ghana Study Coordinator)

The study team wishes to thank everybody for making time of your busy schedules to attend this important workshop. You are warmly welcome to this function. This workshop is a follow-up to the one held in Accra in August 2015 which sought to bring stakeholders in the rice and cassava value chains in Ghana to help find answers to concerns that smallholder farmers may be left out of the potential gains emanating from the current trends in African agriculture which are directed at commercial orientation. That workshop was very important as a buy-in platform for our stakeholders in this study. We have come to you after that workshop and interacted with you and sought data and views from you. Today's workshop is to present the preliminary results to you and seek to streamline the results and fine-tune them. The team urges all of us to contribute to this objective so that our positions on the issues raised in the report are accurate so we are on the same slate during dissemination. As indicated at our inception workshop, this study is a collaboration between Michigan State University (MSU) and University of Ghana (UG) with funding from the Syngenta Foundation. I welcome you all and wish you fruitful deliberation.

Project overview: Dr. Nathalie Me-Nsope (Study team member, MSU, USA)

This study was conducted because it had been realized that the demand for processed foods is increasing. Also, processing factories are looking for reliable supplies of quality raw materials for their factories. Hence, the study set out to determine what systems were being used to ensure effective food processing, and how it affected farmers involved, especially in the way they worked and produced their crops. Support for the work was provided by the Syngenta Foundation for Sustainable Agriculture, which was established to help small-scale farmers to meet the demands of processing firms with regard to the quality and quantity of yield of food crops. This they did by providing farmers with the needed resources.

In consonance with this, the study was designed to look at how transaction cost affected the cassava and rice value chains in Ghana. The participating firms with regard to the cassava value chain were Guinness Ghana Breweries Limited (GGBL), Ayensu Starch Company (ASCo), Accra Breweries Ltd (ABL), MAXPO Transport Services, DADTCO Ghana and Caltech Ghana; while WIENCO/CopaConnect and Mawuwoe Cooperative Rice Processing and Marketing Society (MCRPMS) were studied with regard to the rice value chain. The workshop

is designed to validate analyzed data and results. MSU is happy to have this collaboration with UG and with all of you in this study.

Value Chains Activities On Cassava And Rice In The Volta Region

Presenter: Mr. Frank Mattah (Volta Regional Crops Officer, MOFA)

a. Value Chain Activities on Cassava in the Volta Region

Introduction

The value chain of a commodity can be described as a series of sequential activities where at each step in the process, the product/commodity passing through this chain of activities gains some value. The value chain if well developed and organized can create employment and give income to a lot of people.

Some cassava value chain related Programmes undertaken

- ✓ Root And Tuber Improvement And Marketing Project (RTIMP)
- ✓ West Africa Agriculture And Productivity Project (WAAPP)

Cassava Value Chain Actors in Ghana include the following:

- The producer - needs the services of the following:
  - Tractor services providers;
  - Agro-input dealers;
  - Transporters;
  - Credit providers (Financial Institutions)
  - Extension services (MoFA)
- Inputs and services providers
  - Planting material suppliers
  - Tractor services providers
- Processors - (Small or Large scale) process roots into the following:
  - Fufu (Chop bar operators)
  - Gari (Gari processers)
  - Cassava chips
  - Industrial Starch High quality cassava flour (HQCF) for bread, pastries, cakes etc., Drinks (Breweries), Medicines, Animal feeds
- The marketer
  - Wholesalers
  - Exporters
  - Retailers
- Financial institutions (for credit)
- Transporters (movement of Inputs and End – products from one point to another)
- Fabricators (manufacture of tools and machine parts)
- Extension services (Transfer of improved technologies) throughout the chain.

The Potentials of Volta Region for Cassava Production

- Cassava can be grown in all the 25 districts of the region
- Rainfall amount and distribution throughout the region can support cassava production

- Vast stretches of land good for cassava production can be found in all the 25 districts of the region

Figure 1: Area under Cassava Cultivation -2008-2015

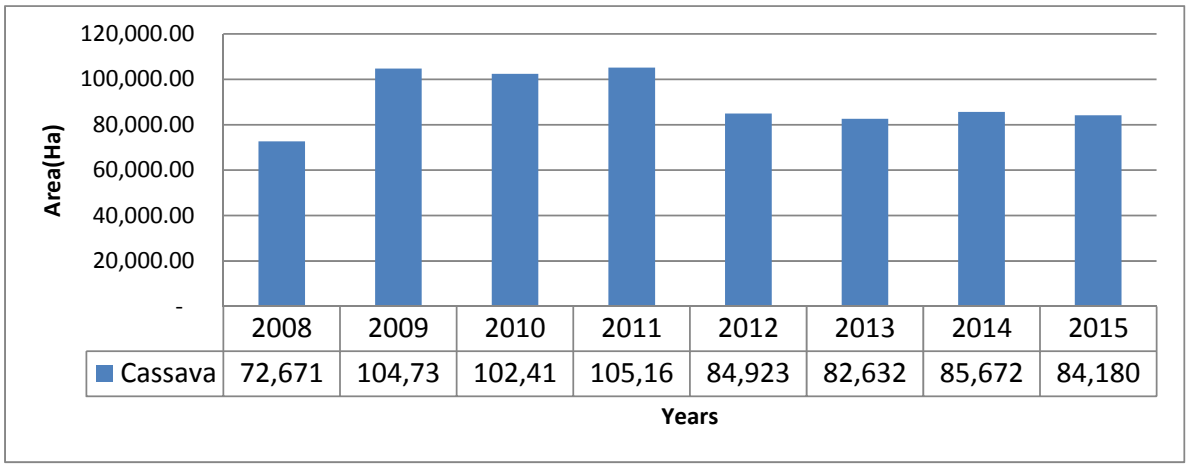


Figure 2: Yield of Cassava-Volta Region (2008-2015)

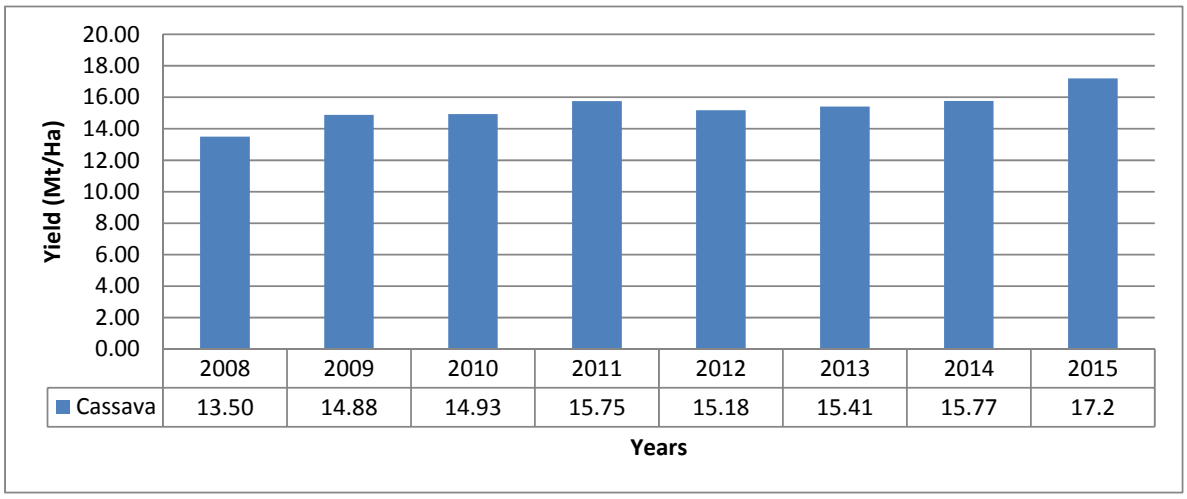
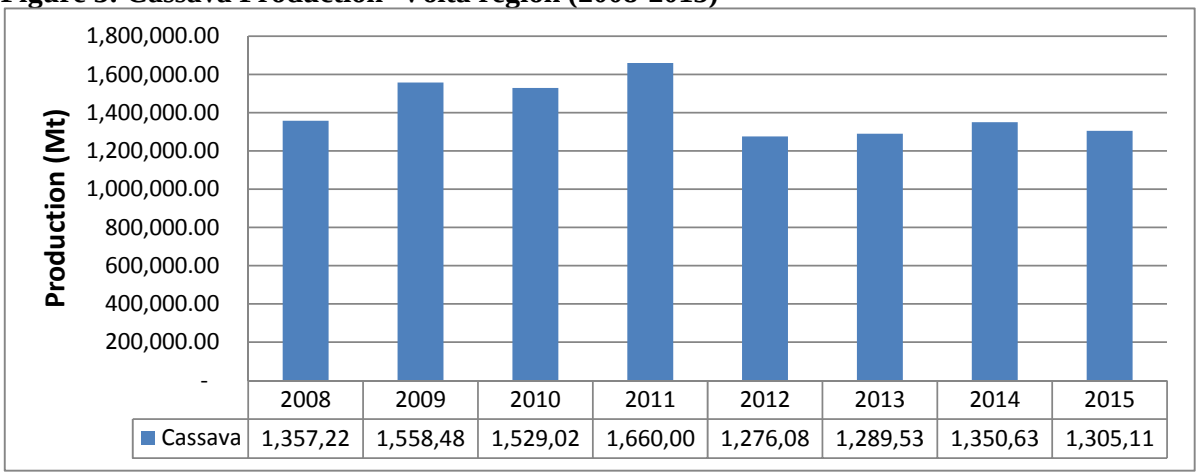


Figure 3: Cassava Production -Volta region (2008-2015)



Improved Cassava Varieties Grown in the Volta Region include Afisiafi, Bankye hemaa, Sika bankye and Ampong

Success Stories of agribusiness firms that are important in the cassava value chain

- **CALTECH**
  - Caltech in partnership with Kasapreko is putting up an ethanol processing plant at Hordzo and this is providing over 1500 direct and indirect jobs.
  - Caltech also cultivated over 6,000 ha and processed over 3,500 mt of cassava into High Quality Cassava Flour (HQCF) for Accra Brewery Limited in 2015.
  - Caltech sold about 2,500 mt of fresh cassava roots to Ayensu Starch Company (ASCo) for further processing.
  - Between 2008 and 2015, Caltech bought 1000 Mt of cassava from contracted farmers at Adaklu, Mafi, Deveme, Takala, Hodzo, Abutia Teti, Abutia Kisifli, Abutia Kpota, and Abutia Agbetekpo to augment what it produces.
  - Out of the sale (GHC120,000) of cassava in these areas farmers were able to pay their children's school fees, farmers roofed their buildings with iron sheets and others; also bought tricycles for their farming activities.

- **West Africa Agriculture And Productivity Project (WAAPP)**
  - WAAPP produced over 850 ha of improved cassava planting materials and distributed to farmers in the Volta Region.
  - There are still more planting materials on the multiplication fields to be distributed to farmers.

b. Value Chain Activities On Rice In The Volta Region

Introduction

- Rice is one of the most important stable crops in Ghana as a food security crop
- Ghana is around 43% self-sufficient in rice production
- Range of Domestic Production (milled) between 2004-2013: 167,000-393,000 Metric Tonnes (MT) per annum
- Area under cultivation from 2004 to 2013 was between 119,000 ha and 216,000 ha per annum

- Average import between 2004 and 2013 was nearly 440,000 MT, equivalent to USD 220 million per annum.
- Range of consumption between 2004-2013 was 421,000-908,000 MT per annum
- Per capita consumption in 2013 was 32 kg
- Consumption rate keeps increasing as a result of:
  - Population growth
  - Urbanization
  - Change in consumer behaviour

Projects/Organizations that have Supported Rice Production in Volta Region
NERICA, Rice Sector Support Project, Ghana Commercial Agricultural Project, Green Innovation Center, IFDC 2SCALE, CARI Ghana, FAO

Key actors in the Ghana domestic rice value chain

- The Producer (Large or Small scale)
- Inputs and Services Providers
  - Tractor services providers
  - Agro - input dealers
  - Planting material suppliers

- Aggregator
  - Buy the harvested paddy from individual smallholder farmers
  - They then sell to processers or process themselves
  - They are dotted all over the rice growing areas in the region.
- The Processor
  Examples: - RichAPaul milling centre (Akrofu), Mawuwoe Cooperative Rice Processing and Marketing Society – MCRPMS (Hohoe)
- The Marketer
- Financial institutions (for provision of credit)
- Transporters (movement of inputs and output from one point to another)
- Fabricators (manufacture of tools and machine parts)
- Extension services (Transfer of improved technologies) throughout the chain.

Major rice varieties grown in the Volta region and their potential yield:

- Togo marshal – 8mt/ha
- Jasmine 85 – 7mt/ha
- Sikamo – 6mt/ha
- Amankwatia – 9mt/ha
- CSIR-AGRA – 8mt/ha
- Brown rice ---

Some statistics on farmers in rice production in 2014

- Males - 31,245
- Females - 12,151
- Average holdings: 0.6 ha
- Area under rice cultivation: 42,558 ha
- Average yield: 4.21 mt/ha (Smallholders)
- Production: 190,450.30 mt
- Big commercial farms in rice production: Brazilian Agro, WIENCO, Prairie Volta Limited, Weta Irrigation, Aveyime irrigation, Okata Farms, Mawuko Rice Farmers Group, Elite Volta Farms. (Average yield: 4.5-7 mt/ha - Commercial Farms)

Opportunities for rice production in the Volta region:

- Available land
- Over 20,000 ha of arable available for upland rice production
- Over 40,009 ha (in valleys) is available for lowland rice production.
- Abundant water bodies available for irrigation.

Table 1 : Cropped Area (ha) for Rice in Volta Region (2004-2014)

Year	Area cropped	National	% Contribution to National
2004	12,700.00	119,392.20	10.64
2005	15,240.00	120,000.00	12.70
2006	15,917.00	125,331.00	12.70
2007	16,170.00	108,928.14	14.84
2008	18,134.00	132,795.10	13.66
2009	20,460.00	162,360.00	12.60
2010	21,860.00	181,228.28	12.06
2011	22,759.00	197,000.00	11.55
2012	25,296.00	189,000.00	13.38
2013	27,785.00	216,000.00	12.86
2014	43,186.00	224,457.00	19.24

Source: MOFA (Volta Region), 2015

Table 2: Production (Mt) of rice In Volta Region (2004-2014)

Year	Production	National	% Contribution to National
2004	42,243.00	241,806.95	17.5
2005	32,642.00	236,540.00	13.8
2006	34,499.38	249,999.91	13.8
2007	36,959.40	185,341.38	19.9
2008	43,943.90	301,921.45	14.6
2009	60,700.40	391,440.40	15.5
2010	67,228.80	491,603.03	13.7
2011	75,332.30	463,000.00	16.3
2012	82,465.00	481,000.00	17.1
2013	93,079.80	590,000.00	15.8
2014	190,450.30	604,041.00	31.5

Source: MOFA (Volta Region), 2015

Table 3: Average Yield (Mt/ha) For Rice In Volta Region (2004-2014)

Year	Average Yield (Volta)	Average Yield (National)
2004	3.33	2.03
2005	2.14	2.0
2006	2.17	2.0
2007	2.29	1.7
2008	2.42	2.3
2009	2.97	2.4

2010	3.08	2.7
2011	3.31	3.3
2012	3.26	3.3
2013	3.35	3.2
2014	4.41	2.7

Source: MOFA (Volta Region), 2015

Challenges

- Prevalence of uncertified and contaminated seed rice, which results in different maturity periods for different varieties on the same field leading to shattering of grains.
- Poor and untimely land preparation as a result of inadequate machinery.
- Undeveloped rice fields - not levelled and have no bunds. Hence, farmers cannot manage irrigation (for those farmers on irrigation schemes).
- Farmers broadcast and this results in incorrect spacing and low plant population.
- Untimely and difficulty in controlling weeds as a result of inadequate labour and broadcasting respectively.
- Inadequate/no credit facilities.
- Inadequate labor.
- High cost fertilizers.
- Aging farmers.
- Inadequate extension (1 AEA: 3,000 Farmers).
- Difficulty in accessing market.

Way Forward

- Increase investment in rice seed and grain production
- Close gap between achievable and actual yields
- Invest more into machinery for rice production and processing
- Facilitate farmers access to market by developing a strong value chain, creating awareness on nucleus out-grower schemes and contract farming
- Expand area developed under low land rice production
- Develop a strong value chain
- Entice the youth into rice production by providing them with all the necessary facilities (credit, land, training, machinery and market).

Questions/Comments

1. *What accounted for the dip in production of cassava after a high in 2011 to lower figures from 2012 to 2014?*

Response:

Production of cassava in 2011 was very high and this created a glut in the output market. Consequently, prices fell so low and this became a disincentive to farmers. This resulted in lower acreages under cassava in 2012 and 2013. The industry has not fully recovered from the shock - 2014 and 2015 production figures have still not reached the levels attained in 2011.

2. *There have always been issues with post-harvest losses of cassava. How is MoFA addressing this?*

Response
Currently, post-harvest losses are very low (between 3% and 5%). This is because there are many competing uses of cassava now. Some research has even suggested that presently about 98% of cassava produced in Ghana is utilised unlike in the past when post-harvest losses were as high as 20% or more.

3. *In 2015, famers in the Volta region were supplied with contaminated (different varieties of seed rice mixed) seed rice for planting. What accounted for this?*

Response:

The seed rice was supplied by a private firm but the contract to supply the seed rice was not awarded by MoFA. However, MoFA took steps to find solutions to this challenge by mopping up the remaining seed rice that had not been sowed. To forestall this situation, MoFA is taking steps to establish its own seed base, which is expected to be have pure seed.

4. *Are there any programmes to help farmers achieve potential yields of rice?*

Response:
MoFA has been engaged in farmer education that aimed at helping farmers achieve potential yield and the major advocacy has been discouraging broadcasting of rice and encouraging row planting. MoFA is also in the process of liaising with other agencies like the GRATIS foundation and recommending fabrication of simple farm equipment to help reduce drudgery in crop production in general.

Value Chains Activities On Rice And Cassava In The Greater Accra Region (GAR)

Presenter: Miss Spendilove Frimpong (Greater Accra Regional M&E Officer, MOFA)

About 6.6% of the 1,036,426 households in the GAR have agriculture as the main orientation and income-earning activity. Rainfall in the region is bimodal, with the major rainy season occurring between March and July, and the minor season occurring between September and October. The major commodities engaged in by farmers include vegetables, cassava, rice, mango, watermelon, pineapple, poultry, livestock, piggery, and fish. Other alternative livelihoods include non-traditional livestock such as keeping of rabbits and grass cutters. Mushroom production is increasing significantly in the region.

a. Value Chain Activities on Rice in the Greater Accra Region

The rice value chain comprises the input provision component, which involves the dealers; the producers, which involves the farmers; the produce transformers, which comprises the processing firms, the marketers, which comprise traders, and finally, the consumers.
Currently, rice-producing districts in the Greater Accra Region include Shai Osudoku, Ningo Prampram, Ashiaman, and Ga West.

Production systems

- Irrigation is by gravity, and the pumping of water from water bodies,
- Individual farmers bear the cost of irrigation.
- Current planting methods included broadcasting and transplanting.
- Current local rice varieties included Jasmine 85, Agra rice, Thai Jasmine, Get 3, and short aroma rice.

Challenges to production of rice

- The tilling and harvesting of rice is often delayed due to inadequate machinery.
- High Cost of labour.

Some interventions by MoFA

- ✓ Provision of improved technologies to farmers, leading eventually to increased income and improved living standards among farmers.

b. Value Chain Activities on cassava in the Greater Accra Region

Almost all districts in the Greater Accra region are into cassava production, even within the Accra Metropolis (AMA). For planting materials, farmers travel to the Central or Volta Regions.
Land preparation is done through mechanized means, and the slanted planting technique was often used by farmers.

Cassava processed into:

- ✓ Gari
- ✓ Cassava dough (Agbelema),
- ✓ Kokonte (cassva flour)
- ✓ Starch.
- ✓ Fufu

Challenges to cassava production:

- Inadequate machinery such as combined harvesters for the rice farmers;
- Little arable land for farming due to sand weaning activities
- The high cost of agro-inputs and agro services, as well as hiring labour
- The unreliable rainfall patterns and distribution in recent years

Way forward:

- The need for support with regard to mechanized farming systems
- The need for more arable land for agriculture
- The need for more stakeholders along the value chain
- The need for more land for drying

Questions/Comments

1. *How can cassava yields be maintained each year if the same piece of land is being used year after year?*

   Response:
   Yield decreases with each year of land use. Hence, farmers should get in touch with MOFA as to how this can be managed. It is also suggested that farmers should obtain their cuttings from the nearest MoFA office, practice crop rotation, and should check the variety of cassava used in planting, as some varieties give low yields.

Linking West African Smallholders to Greater Value-Added Activities: A Case Study of Selected Rice Value Chains In Ghana

Presenters: Mr. Patrick Ofori/Mr Alfred Asuming Boakye (study team members)

Introduction

Generally, the value chain for rice in Ghana falls under two main channels – local rice and imported rice value chains.

The local rice value chain consists of:

- Rice input dealers (including seed rice).
- Smallholder farmers who produce about 80% of production
- Bulkers who act as an intermediaries between smallholder farmers and processors
- Processors –whose main activities are milling and packaging
- Importers – some also repackage local rice and sell to retailers (sometimes as imported rice)
- Retailers – sell to final consumers in 50 kg, 25 kg, or 5 kg bags,

The imported rice value chain consists of

- Importers who directly distribute to wholesalers all over the country
- Wholesalers who have distribution networks of retailers who in turn sell to consumers in 50 kg, 25 kg, or 5 kg bags, or in accepted units known as '*olonka*' or margarine tins.
- Ghana's major trading partners in rice (top 5): Vietnam, Thailand, the USA, Pakistan, and Togo.
- Main rice importers: Royal Bow Company Ltd., CCTC, Cereal Investment Co. Gh. Ltd, Olam Ghana Ltd., and Ezal Trading GH. Ltd

Two partnerships in rice value chain in Ghana were studied:

1. Smallholder farmers and Copa Connect – a subsidiary of WIENCO Ghana Ltd. at Kpong irrigation scheme at Asutsuare (Greater Accra Region) and Weta Rice Irrigation Scheme (Volta Region);
2. Outgrowers and Mawuwoe Cooperative Rice Processing and Marketing Society Ltd. (MCRPMS) at Hohoe (Volta Region)

Main Objective of the Study

The study sought to identify the factors that affect the degree of success or otherwise of various approaches (e.g. contract farming and vertical integration by farmer cooperatives) under different settings in the Ghanaian rice value-added partnerships. Specifically, we investigate and analyzed the transaction arrangements between rice farmers and their major trading partners – buyers

Study Approach

This study used the transaction cost analysis/approach based on its four attributes to determine whether the partnerships had been successful or not.
The attributes include:

- Asset Specificity in the value chain
- Frequency of Transaction
- Risks/Uncertainties associated with the partnerships
- Externalities in the partnerships (or opportunities)

Key Factors Determining Successes of Partnerships

Asset Specificity

- Physical asset specificity among individual farmers is by and large very low because farm productive assets used in rice production could be redeployed towards other crops at nearly no cost. However, buyers (Copa Connect and MCRPMS) make substantial investments in the acquisition of rice processing equipment, which is highly specific towards rice production.
- There have been no reports of cases of buyer failure. Additionally, very minimal product diversion is experienced on the part of farmers, providing security and assurance in the continuous benefits from the highly specific assets invested by buyers.

Frequency of Transactions

- The search costs associated with purchases from the buyer end is reduced since farmers are organized. This helps to save costs in terms of reducing search time.
- Agribusiness firms (esp MCRPMS) have also established on-going relationships with other farmers outside the partnership (e.g. with their outgrower farmers) by forming trading **groups.**

The Degree of Risk/Uncertainty Involved

- Farmers are insulated against price risk, which is very high on the Ghanaian market. This is an integral part of their forecast of income levels in the ensuing season.
- Farmers access interest-free credit in the form of inputs. This eliminates uncertainty with accessing inputs for timely production.
- Primary uncertainty is very small since farmers in the partnerships do not deal directly with consumers whose sudden change in preferences could have an adverse effect on the transaction costs.
- On secondary uncertainty, lack of communication is nearly absent since farmers deal directly with buyers. This eliminates the uncertainty associated with information asymmetry as well as inability to control the business contracts specified.
- Uncertainty with production cannot be eliminated and is a major threat to farmers. This is evident with natural occurrence in that primary agricultural production is prone to poor weather conditions, pest and disease invasion.

The degree to which one trading partner can impose externalities on the other

- The externality associated with lower pre-negotiated prices compared to prevailing market prices at time of delivery of paddy is not present
- Negative externality associated with diversion of inputs is non-existent in the partnerships
- Buyers have no avenues to seek monopsonistic rent because there are many output market options farmers could explore after they honor payment of input credit.

The degree of Opportunities in partnership

- Farmers have enhanced access to inputs and adoption of improved technologies
- Farmers get the opportunity to increase their incomes while serving as an incentive to increase production and productivity.
- Partnerships provide opportunities for them to control to some extent the quantity and quality of paddy supplied by farmers.

MAJOR HIGHLIGHTS OF PARTNERSHIPS

The structure of partnerships:

- Farmers receive a package of agricultural inputs, extension services, and training on farm activities from the agribusiness firms (WIENCO Gh. Ltd and MCRPMS)

- The agro-inputs are given on credit and farmers pay back in-kind based on the value of inputs advanced on credit at the end of the season
- Farmers payback in-kind based on the value of inputs taken on credit at end of each season

Incentives to Participate In Partnerships

From the farmer's perspective, partaking in the partnership meant:

- Timely Access to inputs
- Assurance of ready market for output (paddy)
- Provision of transport services in carting harvested paddy to mill
- Opportunity to increase acreages under cultivation

From the perspective of the Agribusiness firm, partaking in the partnership meant:

- Ensuring continuous and reliable supply of paddy to meet processing capacity of mills
- Selecting farmers who were trustworthy and could also produce better quality paddy for milling.
- Ensuring timely provision of inputs on credit so that farmers could expand on the area cultivated for rice leading to expected higher production and subsequent higher yields, implying supply side assurance of paddy

Pricing Negotiations and Payments (Smallholder -Wienco/Copaconnect)

- Paddy price based on farm budget for season under review
  - Margins of between 25% and 30% used in estimating price/kg of paddy
  - Price negotiations done few weeks to harvest
  - Payments made through TIGO mobile money.
  - *no price adjustments after negotiations*

Pricing Negotiations and Payments (MCRPMS)

- Paddy price based on farm budget for season under review
  - Price Negotiations done PRESEASON
  - Prices are based on prevailing market prices
  - Payments made through bank transfer.
  - *opportunities for price adjustments after negotiations (MCRPMS always adjust prices -higher than prevailing market prices)*

Some Successes of Partnerships

- Timely supply of inputs for rice production and readily available market for farmer produce.
- Improved agronomic practices – through technical support to farmers leading increases in productivity
- This has directly contributed to improvement in farmer incomes.
- Mean farmer income of GH¢ 12,900 in 2015 compared to GH¢ 9,675 in 2014 (25% improvement) at Weta
- Mean farmer income increased to GH¢ 10,395 from GH¢ 6,756 in 2014 at Asutsuare (increase of 35% compared to 2014).
- Mean harvest increased from 7.74 metric tons in 2014 to 8.6 metric tons in 2015 at Weta, whilst mean harvest increased from 6.17 metric tons in 2014 to 6.93 metric tons in 2015 at Asutsuare.
- Total acreages under cultivation grew from 468.17 ha in 2014 to 687.67 ha in 2015 representing about 47% increases in area under cultivation over the period (when WIENCO

fully took over the operations of GADCO) at Weta; while at Asutsuare, total acreages under cultivation also increased by about 30% from 350.65 ha in 2014 to about 455.85 ha in 2015.

- Farmers realized a mean income of GH¢ 17, 613 (28% higher) compared to GH¢ 13,738 in 2014 at Hohoe. These figures correspond with increase in mean harvests of 10.2 metric tons in 2014 to 12 metric tons in 2015; as well as increases in acreage cultivated which is currently an average of 25 acres (some farmers can now cultivate up to 50 acres per season) compared to an average of 5 acres before the partnership.
- Partnership has led to improved agronomic practices, thus increasing productivity
- There is access to soft loans provided by management of MCRPMS to meet immediate needs such as the hiring of labor for harvesting; or for social events like weeding or funerals
- There is also easy access to transport services in carting harvested paddy to the mill

Challenges of Partnerships

Some of the challenges encountered in this partnership include:

- High transportation costs of paddy from farmer fields to the point of drying and purchase by CopaConnect.
- High cost of labor for farm activities.
- CopaConnect does not make provision for monetary support to farmers. MCRPMS provides monetary support to outgrowers but insufficient (according to famers).
- To meet immediate financial needs, farmers often fall on market women who exploit them with high interest charges (between 30% and 50%).
- Intermittent delays in payment to the farmers, which force farmers to sometimes divert output to meet immediate needs
- Inadequate harvesting machinery, especially at peak harvest periods, hence leading to high losses because farmers are forced to engage in manual harvesting, which is very inefficient

Conclusions

- Physical asset specificity among individual farmers is very low because farm productive assets used in rice production could be redeployed towards other crops at no cost.
- However, buyers (CopaConnect and MCRPMS) have invested in assets with high specificity – rice mills.
- The frequency of transaction between rice producers and trading partners among partnerships (farmer- CopaConnect and – MCRPMS) is low translating into lower transaction costs.
- The degrees of uncertainty within the partnerships in this study are low because farmers are insulated against price risk.

Recommendations

For Government and Donors:

- Emphasis on information and training of FBOs in rice production to help sustain such partnerships.
- Draft and implement value chain and farmer-buyer contractual policy that ensures both parties are secured, especially for farmers such that they are not exploited in such partnerships
- Farmers must be encouraged to form stronger associations to ensure stronger bargaining positions in negotiations with trading partners (buyers). This would provide opportunities to farmers and assure a ready market for their produce. It would also provide an opportunity for increasing farmer incomes, and serve as incentives to increase production and productivity.
- Buyers should continue to strictly monitor the quality standards of farmer practices so that the inherent benefit with productivity increases would also accrue to them.
- An enabling environment supporting privates businesses to thrive should be created.

- More public-private partnerships should be encouraged and established, in that regard, the partnership between CopaConnect and GIDA could be upscaled since the current arrangement works well

Questions/Comments

1. *Does MCRPMS produce throughout the year?*

   Response:
   Yes. That's the reason why the firm sources for paddy outside partnership with outgrowers. The firm also operates a walk-in policy for processing so that any individual can walk in to mill their paddy.

2. Apart from the inputs CopaConnect advances to farmers on credit, they have also facilitated the formation of farmers groups. They train the leaders of the farmer groups in proper agronomic practice and the farmer leaders in turn train their members. This has contributed immensely to increases in productivity.

3. In the presentation, the information that there are no price renegotiations when prevailing markets prices changes at time of delivery of paddy in the CopaConnect-smallholder partnership is correct. However, this is only part of the story. The prices are fixed such that they are always higher than what would prevail on the open market i.e. CopaConnect studies price trends on the output market and forecasts price levels for the season adjusting prices of paddy bought from farmers so that they are higher than the levels on the open market. Since the partnership started, there are no records of price discrimination against farers, i.e. prices are always skewed to favour farmers.

4. Farmers may complain with respect to the conditions attached to pricing – no price renegotiations after agreement, but in actual fact the measurement system (use of scales) by CopaConnect is very fair as compared to the use of buckets by market women. However, the farmers are deluded that they receive better prices from the market women because they are used to the system used by the women (use of empty paint or tomato tins). This accounts for one of the reasons why farmers like to sell part of their paddy to market women. *A major response to this phenomena is to educate farmers on the CopaConnect measuring system by conducting a major comparison at a forum.*

5. The issue about varietal contamination should be considered well by adopting the same model as that used in producing seed maize. The seed rice industry must be developed. This recommendation has been given in previous research. Recommendations have also included the establishment of brand identity for rice produced in Ghana so that the same rice brand can be found on the shelves anytime and anywhere. Packaging must also be improved to make local rice attractive to consumers

6. Before the current WIENCO/CopaConnect partnership with farmers, the latter were not organized in groups but the commencement of the partnership brought the farmers together as a group. It is noted that WIENCO dealt with smallholder farmers before acquiring GADCO/CopaConnect. The partnership has also helped lift a major burden off the shoulders of farmers with the provision of transport of paddy from farmers' fields to aggregation points

7. Farmers must also be trained on group dynamics to minimise default and share responsibilities. Cluster champions must be selected in such programs and these champions will be trained in leadership skills to impart to those in their groups. The group formation will also help create a common voice in expressing and finding solutions to challenges.

8. *What would entail the creation of an enabling environment to help parties in such partnerships?*

   Response:
   Infrastructural development (road, drainage), production and readily available improved seed rice, provision of affordable farm machinery

9. *Considering that the cost involved in harvesting rice is very high, can CopaConnect consider the possibility of including that in the package they advance to farmers?*

   Response:

   Yes. This model was tried in the past by trying to include post-harvest service provider in the value chain so they also could benefit from the partnership but unfortunately, they (service providers) failed to respond on time and this caused late harvesting leading to great losses of paddy. Farmers got discouraged with the post-harvest service providers and therefore the model was stopped. However, CopaConnect is considering the possibility of reintroducing this model with new set of reputable service providers so that job opportunities could be created for them in the partnership. This is one of the corporate social responsibility objectives of WIENCO.

10. *Wouldn't it be more helpful to Agriculture if rice farmers were educated on how to use farm machinery (and provided with easy-to-operate machinery) especially for harvesting since it is a major challenge to them?*

    Response:

    WIENCO is developing a model to educate some farmers on the use of post-harvest machinery to reduce drudgery involved in harvesting of rice

Linking West African Smallholders to profitable markets: a Case Study of Selected Cassava Value Chains in Ghana

Presenter: Prof. Samuel Asuming-Brempong

The cassava study has the same objectives as the study of the rice value chain. It uses the transaction cost approach to ascertain the success or otherwise of partnerships between smallholder farmers and agribusiness firms in the cassava value chain in Ghana.

The partnerships are namely:

- Guinness Ghana Brewery Limited (GGBL) – Ayensu Starch Company Limited (ASCo) – MAXPO Transport Services (Aggregator) – Smallholder farmers;
- Accra Brewery Limited (ABL) – DADTCO Limited – Smallholder farmers;
- Accra Brewery Limited (ABL) – CALTECH Limited – Smallholder farmers;

Major Highlights of the Partnerships

The structure of partnerships:

- GGBL, ASCo, MAXPO TS and Smallholder farmers Partnership

GGBL is not directly involved in the primary production of cassava but plays a facilitating role (mainly by pre-financing activities of ASCo) to produce High Quality Cassava Starch (HQCS) for GGBL to produce ruut beer. ASCo sells 99 percent of its output (HQCS) to GGBL due to GGBL's funding of its operations (approximately U$1Million in ASCo for operational and recurrent expenditure). MAXPO TS acts as an aggregator and transporter of cassava roots from farmers to ASCo (within and outside catchment area of ASCo). MAXPO TS also has informal agreements with sub-aggregators to help assemble roots from all parts of Ghana. Currently only 12 block farmers are provided with land from ASCo. Initially, ASCo provided inputs on credit to the block farmers. However, all farmers within the catchment area of ASCo receive technical support on agronomic practices. MAXPO TS, the third player in this partnership, also advances credit support to farmers in the form of soft loans to fund farm activities. The credit is paid back when the farmer supplies cassava roots to MAXPO TS.

Regarding requirements of the contract between parties:

- ASCo buys cassava from smallholder farmers and processes it into (HQCS) for GGBL at an agreed price;
- ASCO is then paid by GGBL for the starch and also provided with any capital that may be needed for recurrent expenditure.
- Other costs including transportation of HQCS from ASCo to GGBL production sites, as well as the pre-financing of some operations of ASCo, are borne by GGBL.
- MAXPO TS purchases cassava roots from smallholder farmers and supplies them to ASCo, which performs quality checks (MAXPO TS pre-finances payment to farmers where necessary).
- ASCo pays MAXPO TS through GGBL. Hence, payment to MAXPO TS is made by GGBL after submission of invoices approved by ASCo

- Accra Brewery Limited (ABL), DADTCO and Smallholder farmers Partnership

This was a brief contract which ABL initiated with DADTCO-Ghana in 2012 to supply ABL with High Quality Cassava Cake (HQCC). The contract was, however, terminated due to unacceptably high levels of fibre in the HQCC, which increased ABL's production costs. The initiative was established to create a social enterprise that would help stem the annual glut

associated with cassava, and also help stem the loss of income to farmers as a result of unfavourable market prices

- *Accra Brewery Limited (ABL), CALTECH, and Smallholder farmers*

Currently, ABL obtains its raw materials, High Quality Cassava Flour (HQCF), from Caltech. Caltech has no contractual agreement with ABL or any of its clients but sells on the spot market. Caltech initiated a block farm model as a way of involving displaced farmers in their primary cassava production (after land acquisition) to minimise economic shocks suffered to displaced farmers. It also has contractual agreements with individual farmers in both block farm and out-growers groups. Existing arrangements between Caltech and smallholder farmers are as follows:

- Caltech provides funds for land preparations, based on the acreage that the farmer cultivates;
- Caltech provides input credit including planting materials for farming (this excludes labour);
- Caltech provides technical training on best agronomic practices such as weed and disease control, among others;
- Caltech respects off-taker agreement (Caltech buys all the cassava supplied by farmers (especially block farmers)). Out-growers sell in-kind to cover the value of pre-planting assistance received from Caltech. For out-grower farmers, price renegotiations are only possible if the going market price is substantially different from agreed price at time of delivery. The duration of the contract is one year and could be renewed after expiration.

Key Factors Determining Successes of Partnerships

Asset Specificity

- The processing plants of GGBL and ABL - specifically designed for the production of beer and can be redeployed at minimal cost for the production of other brands of beer, hence making them highly specific to production of beer.
- Processing plants of ASCo, DADTCO and CALTECH are highly specific to production of HQCS, HQCC and HQCF respectively.
- The lack of market for HQCS, HQCC and HQCF will come at a great cost to the companies since their processing plants are not easily re-deployable
- Human resources (which are mostly specialists in the agricultural and cassava flour production) may have to be trained at high costs for redeployment to other sectors

Frequency of Transaction

- Frequency of transaction (FT) between GGBL and ASCo is irregular because in most instances, ASCo is unable to provide the quantity of starch required by GGBL. Thus, GGBL is not making any effort to expand its production capacity of the Ruut beer
- High and constant demand of HQCS from GGBL adversely affects the starch processing plant at ASCo leading to frequent breakdowns, which adds significantly to the operational cost of ASCo.
- The frequency of transactions between MAXPO TS and ASCo is certain such that the former is able to supply the quantity requirement of the latter, and the latter always purchases all quantities supplied
- FT between CALTECH and partners (buyers and farmers) is also certain, regular and is increased. Caltech is able to meet its production cost and makes profits thereby staying in business.

Degree of Uncertainty and Risk in Transaction

- Major risk inherent in GGBL-ASCo partnership is the inability of ASCo to always meet the quantity requirement of GGBL. ASCo is also the only producer of HQCS in Ghana and as such GGBL is ‘locked-in’ the partnership (trade relationship) because there are no alternatives on the local market.

- There are no major risks or uncertainties in the MAXPO TS-ASCo partnership. Any risk encountered is borne by individual parties. This is to say that there are no arrangements for risk or uncertainty sharing
- The main uncertainty to the ABL-DADTCO relationship was the inability of the parties to predict changes in consumer taste in the future. If consumer preference negatively affected the demand for eagle beer, the uncertainty in the partnership would increase since the whole production continuum would be affected
- There is certainty in the quantity and quality of cassava supplied to Caltech by farmers thereby decreasing transaction costs and promoting stability in the partnership as well as encouraging Caltech to assure its buyers of quality products**.**

Externalities or Opportunism in Contracts

- Parties in the GGBL-ASCo-MAXPO-Farmer partnership did not display any opportunistic behaviour in their dealings with each other
- However, an instance of a principal opportunism in the relationship between Caltech and its partners was when some buyers decided to renegotiate the prices for goods (HQCF) delivered.
- Side-selling by farmers when the prevailing market prices are even slightly higher than what is offered by Caltech

Partnership Successes

- Due to the GGBL-ASCo-MAXPO TS-smallholder partnership, ASCo is now revived and has been operating consistently for the past 3 years.
- Productivity and returns on investment in labour (for ASCo staff) has improved, and the global agenda of Guinness International to use more local raw materials in the production of its products has been achieved.
- The partnership has provided farmers with a ready market and reliable source of income**.**
- The presence of an aggregator like MAXPO TS has eliminated transportation challenges farmers faced with respect to conveying the produce from their farms to the processing sites.
- Tremendous improvement in corporate social responsibilities of GGBL, ABL and Caltech to the local economy and the catchment areas of their operations
- Improved food security for farmers as they are currently able to harvest more per hectare due to improved agronomic practices. This has led to the creation of more job opportunities to farmers who otherwise would have remained unemployed, as well as the increased number of acreages (most farmers who hitherto were cultivating less than one acre (0.4 ha) have increased to more than 3.75 acres (1.5 ha)).

Challenges of the Partnerships

- Regarding the GGBL-ASCo-MAXPO TS-smallholder partnership, there is a supply constraint whereby ASCo is unable to supply the quantity of starch needed by GGBL
- Managerial challenges despite training provided by GGBL: most of the workers at ASCo lack the necessary knowledge and skills to work on the starch processing plant effectively.
- Price discontentment: ASCo is unable to bargain for better prices since GGBL is offering ‘life-support’ for their operations. The price per metric tonne offered to ASCo barely enables ASCo to break even.
- Financial difficulties in cassava production: inadequate funds provided by ASCo to assist farmers in production.
- For ABL-CALTECH-Smallholder farmers, there is opportunistic behaviour exhibited by some farmers in partnership with Caltech by way of frequently requesting for upward

review of prices when the going market price is even slightly higher than that offered by Caltech
- Socio-cultural challenges: unwillingness of farmers to harvest their fields during periods of social events (festivals and funerals), sometimes leaving Caltech's plant idle.
- Difficulties in assembling and transporting cassava roots from out-grower farmers who are scattered over a wide geographical area **(**for Caltech-farmer partnership)

Conclusions

- Major players (GGBL, ASCo, ABL, DADTCO and CALTECH) have invested in assets with high specificity. This provides certainty that buyers will keep to contractual terms with farmers
- Transaction costs were low in all partnerships studied except the model adopted by MAXPO TS (assembling roots from all over Ghana, which came at significant cost).
- None of the partnerships faced any major risk that could be fatal to their existence save for that between GGBL and ASCo, which is reflected in the inability of ASCo to meet quantity requirements of GGBL.
- Caltech's unique relationship with farmers exposed the partners to a win-win relationship (farmers had timely access to inputs and funds for farming while Caltech secured access to raw materials for their operations)

Recommendations

For improvement in partnerships

- GGBL should pay to ASCo an appreciable and fixed percentage of the total value of the HQCS so that operational cost of running the company (ASCo) per month could be adequately covered.
- Future contractual agreements between ASCo and GGBL should allow ASCo to supply more than 1 percent of its total output to any prospective buyer to reduce its total dependence on GGBL and allow ASCo some flexibility in its operations
- There should be restructuring of ASCo and more investment made in the processing plant to make it more efficient
- Highly qualified workers with high technical expertise should be recruited to help address the technical challenges facing ASCo in its operations
- Parties should do Consignment Stocking in ABL's future dealings with other suppliers - since stored HQCC deteriorated in ABL's stores when they were in partnership with DADTCO. This would shift liabilities associated with inventory management to the producer rather than the off-taker (ABL)

For Government and Development Partners

- Government and/or Development Partners must be encouraged to provide financial support to ASCo to increase capacity to reap benefits from economies of scale in its operation
- Trust and good reputation in dealings between partners in producer-buyer relationships are essential for long term benefits inherent in such relationships
- To minimise side selling, out-growers in the Caltech-smallholder partnership should be integrated into the block farm system.
- To help increase production and expand the market for HQCC, future contracts should refrain from exclusivity clauses so that DADTCO, for example, can deal with other market players instead of only one buyer (as was the case in the terminated contract with ABL).

Questions/Comments

1. Suspicions arise with respect to output pricing (especially when prevailing market prices are significantly higher than that offered to farmers) and this fuels perception of cheating on the part of agribusiness firms. Farmers therefore respond to this perception by side selling cassava. If there are suspicions among partners, independent reviewers could be appointed to mediate with respect to gray areas in the contract signed between partners, especially as concerns pricing of roots. The office of FBOs in Ghana could help resolve such issues so they do not unduly disrupt the sooth running of partnerships. Independent reviewer is also important in the GGBL-ASCo partnership to find common grounds so no partner feels short-changed.

2. Although the presentation indicates that Caltech has no official contract with ABL, the process is on-going and very soon an official contract will be signed. Caltech currently supplies ABL with 10 Mt of High Quality Cassava Flour (HQCF) weekly.

3. *Was the reason for truncating of the contract between DADTCO and ABL due to agronomic or processing issues?*

   Response:
   It was due to processing preference. ABL wanted dry High Quality Cassava Cake (HQCC) which has longer shelf life compared to the wet one but DADTCO reasoned that since ABL would eventually use the HQCC in the wet state, they supplied the wet form which was also cheaper to produce than the dry form to ABL. However, the wet HQCC was highly perishable and led to high inventory costs to ABL.

4. Currently, ASCo has initiated a Private-Public Partnership (PPP) with Tiberis (which owns 70% of the company) and government (which owns 30% of the company), and hence, the capacity of the company to increase cassava and starch production for export is higher.

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