The Impact of Large-scale Pineapple Companies on Rural Livelihoods in the Akuapim South Municipality of Ghana

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DECLARATION

I, Mark Akanko Achaw, do hereby declare that the work presented in this thesis is the result of my own original research work with the exception of quotes and work of other people, which I have duly referenced and acknowledged herein. This work has not been presented to any other university or institution for the award of a degree or its equivalent.

Student: Mark Akanko Achaw …….

Supervisor: Mariel Cristina Aguilar-Støen …….

DEDICATION

To my family, whose love and support are incomparable!

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ABSTRACT

The importance of pineapple production as a major foreign exchange earner to the economy of Ghana has long been realized. The pineapple sector alone generates over US$31,632,939 to the economy each year. Ghana's pineapple industry was developed for two main reasons: First, to reduce the country's overdependence on its main export commodities, and second, to provide livelihood alternatives for rural farmers. Revenue figures show significant growth in exports but there is little information about rural peoples' participation in the industry. This study therefore examines the impact of the industry on rural livelihoods.

This study describes rural people's involvement in the industry, the benefits they derive from it as well as explain how their livelihoods have been affected by activities of large-scale pineapple companies. Employing the Sustainable livelihood Approach (SLA), analysis has been made of the findings to establish the impact of large-scale pineapple companies on rural livelihood. Data has been collected through household and key informant interviews, satellite images, participatory observation and examination of documentary data.

I found that the pineapple industry which was initially supported by small-scale systems has now shifted into the hands of large-scale producers. The small-scale farmers were displaced by unparalleled competitions of big pineapple companies and the Costa Rican MD2 pineapple. In addition, the pineapple companies have also taken over most of the rural lands, leaving the local people fewer livelihood options. The youth are migrating to cities while others offer cheap labour to the companies. Soil fertility is declining as a result of bad farming practices of pineapple producers. Deforestation activities of pineapple producers have modified the local climate and vegetation. Consequently, crop yields are declining and food prices are increasing thus affecting rural standards of living.

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LIST OF ABBREVIATIONS

AgSSIP	Agricultural Services Sub-Sector Investment Programme
AMEX	American Experience
EU	European Union
EUREPGAP	European Good Agricultural Practices
FAO	Food and Agriculture Organization
FGL	Farmapine Ghana Limited
GAP	Good Agricultural Practices
GEPC	Ghana Export Promotion Council
GoG	Government of Ghana
GPRS I	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy
GTZ	Gesellschaft für Technische Zusammenarbeit – German Government agency for international co-operation
HAG	Horticultural Association of Ghana
HEII	Horticultural Exports Industry Initiative
IFAD	International Fund for Agricultural Development
Kg	Kilogram
KIA	Kotoka International Airport
Lb	Pound (unit of mass)
MOAP	Market Oriented Agriculture Programme (of GTZ)
MOFA	Ministry of Food and Agriculture
NEPAD	New Partnership for Africa's Development

NGO	Non-Governmental Organization
NTAEs	Non-Traditional Agricultural Exports
SPEG	Sea-Freight Pineapple Exporters of Ghana
T	Tonne
TIPCEE	Trade and Investment Programme for a Competitive Export Economy
US	United States of America
USAID	United States Agency for International Development
WB	World Bank
WTO	World Trade Organization

Conversions:

Metric units are used where possible in this report

1T	=	1000Kg
1Kg	=	0.0001 Kg
1ha	=	2.471Acres
1acre	=	0.4047Ha

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1. INTRODUCTION

1.1. BACKGROUND

Ghana's economy, which is largely agro-based, has in the past especially between the late 1970s and early 1980s, been characterized by high rates of inflation, dwindling foreign reserves, excessive public debt burden and fluctuating growth. Inflation rate in 1983 reportedly rose to a record high of 122.8%. Real wages, employment numbers, exports and production volumes and agriculture growth also stagnated, resulting in deepening poverty (GoG 2005: GPRS II). Food sufficiency-ratio declined from a recorded 83% in 1964 to 60% in 1982 (World Bank 1984). Additionally, local consumption needs far exceeded production supplies with capacity utilization in manufacturing dropping from 53% in 1975 to 25% in 1980. Further, the prices of the major export commodities, mainly gold and cocoa plummeted at the world market.

In order to halt and reverse these negative economic trends and relocate the country back on a sustained growth path, improve foreign exchange earnings as well as alleviate poverty, the government adopted and actively executed the IMF-World Bank recommended Structural Adjustment Programmes (SAPs) in the 1980s. The SAPs which comprised restrictive monetary and fiscal policies, exchange rate and trade liberalization and agriculture and industrial reforms were vigorously implemented (Sarris and Sham 1991, World Bank, 1984; Seini & Nyanteng 2003). To reinforce an economy which was suffering from sharp price declines in its main export commodities, the government of Ghana in the 1980s instituted diversification programmes which incorporated commodities like aluminum, timber, and nontraditional export crops (NTAEs) such as papaya and pineapples into its export portfolio (ISSER 2002), thus resulting in a rapid growth in the NTAEs sector from the mid 1980s.

Between 1984 and 1997, the NTAEs sector grew by 30%, resulting in an increase in export revenue from US$1.9 million in 1984 to US$330 million in 1997 (Dixie and Sergeant 1998). Furthermore, between 1997 and 2004, total volume of exports more than doubled with pineapple representing the most significant growth, reaching an export number of 70,000 tons —roughly US$22 million—in 2004 (Danielou & Ravry 2005). Also, between 1980 and 1998 revenue from fruits and vegetables export increased from US$1,848,000 to US$26,383,000 (FAO 1981; 1999); and increased further to US$1.3 billion by the close of 2008 (GNA 2009)[1]. With these development and growth, Ghana became along with Côte d'Ivoire and Costa Rica, one of the most important suppliers of pineapple to the European market. The pineapple industry is the most developed NTAEs sector, generating income of about GH¢6 million (US$4,020,000) to 2500 households in rural communities (PEGNet).

Danielou & Ravry (2005) noted that in the case of Ghana and contrary to many assumptions, the production system associated with large, commercial foreign owned farms did not have a role in the development of the pineapple industry. On the contrary, Ghana is an example of a country that was able to link up small-scale production systems in the 1980s to a very demanding and rapidly changing market, dominated by few players.

It was during this period of development in the NTAEs sector that pineapple production intensified in my study area, the Akuapim South Municipality. Prior to the 1980s, the municipality was a major cocoa growing area. However, swollen shoot diseases in the 1960s and bushfires in the early 1980s destroyed most of the cocoa farms resulting in many inhabitants migrating to new cocoa frontiers in the west as tenant farmers and others to big cities such as 'Agege' in Lagos-Nigeria and Accra in search of better standards of living.

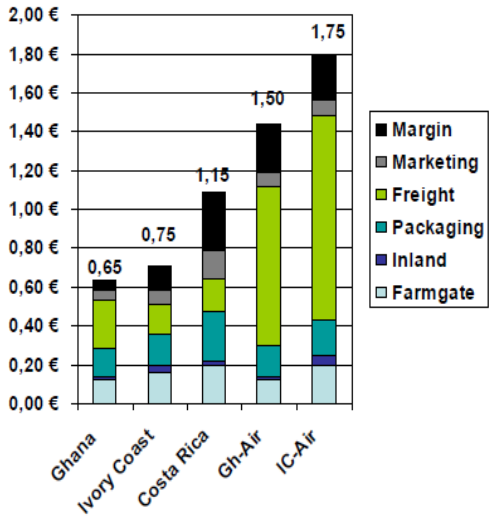
[1] Ghana News Agency (GNA), http://www.ghanaweb.com/GhanaHomePage/NewsArchive/artikel.php?ID=162465, Thursday, 21 May 2009

Governmental support of the nontraditional agriculture sector (NTAEs) in the 1980s therefore came as a great relief to most farmers. The farmers in the area, mainly rural small-scale farmers, took advantage of their competitive advantage including the fact that the area is endowed with improved agronomic practices, local processing industries, relatively good infrastructure including feeder roads, negligible wilt, proximity to major market centres and ports (the Tema sea port and the Kotoka international airport), and most importantly the support from government to actively engage in pineapples production, thus by the close of the 1980s the municipality had become a major pineapple growing area. In 1995, two-thirds (60%) of the nation's total pineapple export came from the municipality, accruing to the country about US$5 million in foreign earnings (refer Danielou and Ravry 2005; Voisard & Jaeger 2003; Fold & Gough 2008), increasing further to US$12milion at the close of 1997.

The pineapple industry became even stronger and more productive in the 1990s. Factors that accounted for this included the following:

- Entry of new players: the large-scale companies including Jei River, Farmapine, Milani, Prudent, Blue Sky Products (GH) Ltd, John Lawrence Farms, Prudent Exports, Tack Farms, and Tongu Fruits, and Georgefields. Most of these companies were initially only exporters but due to supply irregularities and structural inadequacies from their main

Figure 1: Comparative cost structure of the pineapple industry



***Source*:** Danielou and Ravry 2005

suppliers, the smallholders; and favourable policies (including trade/market liberalization, currency devaluation, privatization etc) and support from central government and donors agencies including the World Bank in the 1990s resulted to most of them vertically integrating into production (Fold & Gough 2008).

- Market positioning of the country's pineapple export: Ghana targeted the lower margins of the EU discount market which offered competitive price for its fruits hence reducing its marketing cost and making it more competitive (see Figure 1) and,
- Comparatively low air-freight cost: Ghana had over its competitors – At the time, pineapples were entirely exported by air. Exporters in Ghana were therefore able to negotiate cheap air-freight agreement with cargo aircrafts that delivered goods from Europe to Nigeria to stop over at Accra to collect northbound freights. Space available increased when northbound freighters from South America also began to transit in Accra (Jaeger 2008).

The industry however, came under threat in 1996 when Costa Rica introduced a new pineapple variety called MD2 which was regarded by consumers in the European Market[2] as better than the widely grown and exported variety from Ghana, the smooth cayenne. As a result, between 2004 and 2007, Ghana's pineapple export volumes fell by 44%, with number of exporters also reducing from 42 to 8 (Fairtrade Foundation 2009). According to Takane (2004), the most affected players in the industry are the small-scale producers because the investment involved in MD2 production is way above the means of most of them. As a result of this, Jaeger (2008) noted that smallholder export of pineapples has closed down. The MD2 virtually eliminated supermarket shelf space for all other pineapple varieties in the EU market including the smooth cayenne. It gained a strong hold on the global market because it benefited

[2] The European market is the only market for Ghana's pineapples

[3] A chemical used to de-green fruit before harvest

[4] Euro-Retailer Produce Working Group

[5] This was the boom period of Nigeria's oil industry

from extensive research, supply chain improvement, and a massive marketing campaign from large multinational corporations such as Del Monte and Dole.

While producers were trying to maintain their competitiveness against the MD2 at the European Market, they met another obstacle in their production when in 2001, residual samples of ethephon[3] collected from Ghana's pineapples were found to have exceeded the European Union (EU) Maximum Residue Levels (MRLs), thus bring the entire industry to disrepute (Gogoe 2004). Since then Ghana's pineapple industry has been struggling to gain back a market share in the European market. As a result of these challenges, many large-scale producers in 2001 applied for EUREPGAP certification with one-third obtaining certification by late 2003 (Vossenaar 2006; Gogoe 2004). Compliance to the EUREPGAP standards was the only way they could access the European market which is the destination of Ghana's pineapples. The EUREPGAP (GLOBALGAP) certification embodies a set of voluntary pre-farm-gate standards for Good Agricultural Practice (GAP). Compliance is said to be very tasking and expensive (see appendix 1). In Kenya for instance, the estimated annual cost of complying with EUREPGAP (GLOBALGAP) Option 2 standards is US$1 (Jaeger 2008). As a result of the high cost, only few small-scale farmers in Ghana have been able to obtain certification, meaning that the majority of the pineapple producers in Ghana are unable to access the export market. TechnoServe (1998) reported that without access to the export market, production is unprofitable (see Table 5.2). A consequence of this is that, many small-scale farmers are falling out of business. Although Danielou and Ravry (2005 do not contend with this fact, they however indicated that the impact of the EUREPGAP is not comparable to what the MD2 had done to the demand for small-scale farmers produce.

In the early 2000s, while producers were trying to obtain certification, the government was also funding programs to help reestablish the country's place

[3] A chemical used to de-green fruit before harvest

as one of the world's leading exporter of pineapple. A major success was achieved when the government in partnership with the World Bank injected an amount of US$2 million into the pineapple sector for the development and supply of MD2 plantlets to farmers. This invigorated the industry and in 2008, 42,000 tonnes of MD2 pineapple were exported, accounting for more than 95% of total pineapple export. In spite of this, smooth cayenne production still remains the most common and widely grown variety, mainly among the over 600 small-scale farmers who used to be the main suppliers of fruits to the export market.

1.2. RESEARCH QUESTIONS

Following the phases of development of Ghana's pineapple industry, and the discussion and concerns raised above, I decided to explore how the changing trend has impacted small-scale farming activities and rural livelihoods as a whole. To address this, the following questions were raised:

General Questions

1. What are the opportunities available to rural people with the growth of the pineapple industry in Ghana?
2. What is the role played by large-scale pineapple companies in rural livelihoods?

Specific Question

1. Does the inception of large-scale pineapple companies contributed to improve rural livelihoods in the Akuapim South Municipality of Ghana, and if so, in what ways?

1.3. RESEARCH OBJECTIVES

The study has two main objectives;

1. To explore how rural livelihoods have been affected by the pineapple industry, and

2. To investigate if, and how large-scale pineapple companies have contributed to rural livelihoods.

1.4. RATIONALE OF STUDY

With an industry that successfully and effectively linked small-scale production systems to a very demanding and rapidly changing market, resulting in dramatic growth in export volumes from 30 tonnes in 1979 to 42,049 tonnes in 2008, one would have expected that such a working system be maintained and improved upon for the dual purpose for which it was promoted in the 1980s i.e. to diversify Ghana's export portfolio and to create livelihood opportunities for rural people towards poverty alleviation. However, Fold & Gough 2008 noted that activities of smallholders over the years have been undermined and eroded by competitive strategies of transnational companies which have global activities in production, processing and exports. Also, it has been noted by other researchers including Jaeger 2009, Takane 2004, Barientos 2001, Raikes and Gibbon 2000, Dolan and Humphrey 2000, Watts 1994, and Barrett *et al.*, 1999 that global trends and dynamics such as changing EU consumers taste and the influence of European supermarket chains manifested in the EUREP[4] Good Agricultural Practices (GAP) standards, constrained the production activities of small-scale farmers in Ghana even further. These developments and trends have potential implication for rural farmers and rural people as a whole, especially rural people in the Akuapim South Municipality whose main economic activity is pineapple production, thus a concern explored in this thesis.

Also, Takane (2005) noted in his study of the Ghana's pineapple industry that there are unequal power relations in the industry stemming partly on the argument that large-scale companies and exporters always set the pace in the industry, including dictating the prices of fruits, thus usually promote their interest over the interest of all other players in the supply chain. Accordingly,

[4] Euro-Retailer Produce Working Group

the most vulnerable players, the smallholders, are those whose interests are usually compromised. Blaikie and Brookfield (1987:13) noted that in the event of such inequalities, a ‘situational rationality’ is usually bound to occur which could potentially compel land users to degrade their environments in acts of 'desperate ecocide, thus an interesting area to explore while finding out the interplay between large scale pineapple companies and rural livelihoods.

Finally, Fold and Gough (2008) argued that Global Value Chain (GVC) analysis of the impact of agriculture globalization processes on smallholders usually takes a one dimensional focus evaluating the relationship between firms and smallholders leaving out equally important areas such as the impact on livelihoods. They therefore recommended that future GVC analysis should try to relate much more to how agricultural globalization processes affect the livelihood of individual smallholders, thus, a motivation for selecting this thesis topic.

1.5. STRUCTURE OF THE THESIS

This thesis consists of six chapters. Chapter one gives a brief introduction to the thesis including highlighting the research questions, objectives and rationale. Chapter two is a detailed explanation of the research methods adopted in the thesis. Chapter three presents the theoretical framework of the thesis. It explains how power manifest itself in all human activities including access to assets. Assets here means all the stocks of capitals namely, natural, physical, financial and social capitals, “that can be utilized directly, or indirectly, to generate the means of survival of the household or to sustain its material well-being at differing levels above survival” (Ellis 2000:31).

Chapter four is the chapter that puts the thesis in perspective of other related researches. It drew from facts and figures presented by other researches about the pineapple industry. Chapter five presents the research findings. In this chapter, the empirical data collected is analyzed and interpreted in relation to

existing theory on assets accessibility and power relations; and more generally to literature on the pineapple industry in Ghana. The last chapter presents an overview of the thesis. This chapter also contains the conclusions drawn from the research as well as my recommendations.

2. RESEARCH METHODOLOGY

2.1. INTRODUCTION

A methodology refers to the choice we make about cases to study, methods for data gathering, forms of data analysis etc in planning and executing a research (Silverman 2006:15). My thesis adopts a qualitative research approach, drawing upon methods such as sampling and interviews. I also employ Remote Sensing (RS) and Geographical Information Systems (GIS) techniques as complementary research tools. This chapter explains all the research methods I used in my study. In the first part of this chapter I give a brief description of critical realism and its relevance to my thesis. This is followed by detailed discussions of qualitative research methods including sampling methods and interviews. Further, I give a description of Remote Sensing (RS) and Geographical Information Systems (GIS) and how I applied them in my studies. I follow this with an explanation of how my data analysis was done. Towards the concluding phase of the chapter, I discuss the relevance of ethics to my research. This is followed by a further discussion on the reliability and validity of my field data. I conclude the chapter by enumerating some of the challenges I faced on the field.

2.2. CRITICAL REALISM

> *"Realism is concerned with how the complexly layered and often unobservable strata of reality impact upon our action and thinking … Realism can help to uncover issues of power, representation and subjectivity and how discursive and other social practices produce real effects" (Joseph & Roberts 2004:17)*

The basic underlying argument of critical realism is that "the world exists independently of our knowledge of it" (Sayer 2000:2). According to Bhaskar (1978:12) who argues from the intelligibility of experimental activity, "there is an *ontological* distinction between scientific laws and patterns of events". Such laws depend upon the existence of 'natural mechanisms', and "it is only if we make the assumption of the real independence of such mechanisms from the events they generate that we are justified in assuming that they endure and go on acting in their normal way outside the experimentally closed conditions that enable us to empirically identify them" (1978:13). Similarly, he also noted that events occur independently of the experiences in which they are understood so that structures and mechanisms then are real and distinct from the patterns of events they generate; just as events are real and distinct from the experiences in which they are apprehended. He therefore concluded that "Mechanisms, events, and experiences thus constitute three overlapping domains of reality, viz. the domains of the *real*, the *actual*, and the *empirical*" (1978:56) – where "real" refers to all the things that exist in the world such as structures, causal powers and causal liabilities (Sayer 2000); the "actual" refers to the ability to release or activate these causal powers; and the "empirical" simply the experience of the two. As a social researcher, my task is to distinguish between these relations and finding out how they interact with each other. By applying this approach to my study, I was able to get a holistic picture of how activities of large-scale pineapple producing companies affect the lives of rural people in my study area.

2.2.1. Research Method

Social systems are the product of multiple components and forces; subject to continual changes. Bergene (2008) further argues that despite social reality being real enough; it is not fixed and unchanging but rather remolded by human activities. Additionally, Sayer also noted that:

> ‘*Social systems are products of multiple components and forces; they are always complex and messy. Unlike natural science, we cannot isolate out these components and examine them under controlled conditions’ (Sayer 2000:19)*

It is based on these concerns about social systems that I decided to use a qualitative approach to my research. The qualitative approach provides a multiplicity of methods and techniques, otherwise called triangulation, that help in simultaneously displaying multiple diffracted realities (Denzin and Lincoln 2005:6) of the world toward an “in-depth understanding of the phenomenon in question” (Denzin and Lincoln 2005:5). Also, according to Masons (2002:3), qualitative research is grounded in a philosophical position which is broadly ‘interpretive’ in the sense that it is concerned with how the social world is interpreted, understood, experienced, produced or constituted. It is based on methods of data generation, analysis, explanation and argument building which involve understandings of complexity, detail and context aimed at producing rounded and contextual understandings from rich, nuanced detailed data.

I therefore chose the qualitative approach because of the opportunities it provides i.e. a means of assessing unquantifiable aspects of social actors through interactions, observation and interviews.

Apart from the good promises of the qualitative method, it has also been criticized severely, the most common criticism being that it is biased and lacks structure. Some practitioners have also been accused of choosing qualitative research approach because they lack the skills to handle statistical data (Silverman 2006). Silverman further claims that use of qualitative approach is a promise to avoid or downplay statistical techniques used in quantitative studies. As Patton (1990) will argue, it is not necessary to pit these two paradigms against each other in competing stance; rather a choice of a paradigm must seek ‘methodological appropriateness’ as a primary criterion

for judging methodological quality. Following this, my choice of the qualitative approach is not based on its superiority over other approaches but on how effectively it can address my research questions under investigation. Perceptions, and power relations etcetera, which are central themes in my research, cannot be quantified. However, since the qualitative approach gives the opportunity to interact, observe and interpret, some of these unquantifiable concerns can easily be studied.

2.2.2. Sampling

According to Silverman (2006:404), sampling is a statistical procedure for finding cases to study. Its function is to allow the estimation of the "representativeness" of case studies as well as the degree of confidence in the inference drawn from them.

Stake (1994:243) noted that many qualitative researchers employ purposive and not random sampling method. According to (Mason 1996), purposive or theoretical sampling is the process of selecting groups or categories to study on the basis of their relevance to the research questions, the theoretical position of the research and most importantly to the explanation or account which is being developed (Mason 1996:93-4).

My thesis adopted a similar style of choosing cases that are specific and relevant to the questions raised in this thesis. Because my primary objective for this study is to find out how large-scale pineapple companies impacted on rural livelihood, I felt my choice of case must be sufficiently relevant to the objectives, i.e. from where to study to whom to study. Below explains how I arrived at choosing my relevant cases.

Choosing the Researchable areas

My research area was chosen based on its importance as a pineapple cultivation region. My initial objective was to cover most rural communities in the study area. However, in the field I realized that time and resources will not permit me to conduct effective studies of the over twenty rural communities in

my study area. I therefore scaled down my study to cover only communities in my study area. I used the following criteria to select the three rural communities: (i) their proximity to the municipal capital, (ii) their proximity to large-scale pineapple producing companies,, (iii) accessibility of the area in terms of transportation, (iv) the population and area size of the community, (v) the economic structure of the area, (vi) the amount (volume) of pineapples produced in the community, (vii) the period when pineapple cultivation began in the community, and finally (vii) the number of people engaged in pineapple activities. In addition to these criteria, I also sought advice from some key people in the municipality.

I spent my first week in the field deciding on which communities that a better suited for my research. In the course of the week, I arranged meetings with key public servants (including the municipal planning officers) and established contact with community leaders in the municipality so as to facilitate smooth execution of my data collection. By the end of the week, I was able to gather enough information to about relevant pineapple growing area in the municipality. I finally settled on Fotobi, Nsabaa and Oboadaka as the three most relevant. After selecting these three communities, I spent my first weekend mapping-out strategies on how to start my household survey. Prior to the fieldwork, I decided to use the household as the relevant social unit for my rural level survey. Ellis (2000:18) notes that the household is a site in which particularly intense social and economic interdependencies occur among a group of individuals. This is regarded as a sufficient reason for the household to be a relevant unit of social and economic analysis. Conventionally, the household is conceived as the social group which resides in the same place, shares the same meals, and makes joint or coordinated decisions over resource allocations and income pooling (Ellis 2000:18).

During the planning stages of my household survey, one of the tasking moments was the decision on how many household to interview. I considered

among other factor the total population of the three selected communities (4545 people), land size, and approximate total number of farmers and finally decided to interview 70 households in total; 30 in Fotobi, and 20 in Nsabaa and another 20 in Oboadaka. I realized that both Nsabaa and Oboadaka were fairly similar in several ways but Fotobi was comparatively bigger in terms of area and even number of pineapple farmers, hence the reason why I decided to interview more people there.

Choosing the household

After I had decided to interview 70 households, the next challenge was how to select my households. The initial idea was to use a simple random selection method. However, when I got to the communities I noticed that the houses were so scattered apart that I could hardly come up with logical criteria for the selection. Most of the houses I visited that day were empty. I was so determined to achieve some level of randomness in the selection and interview people that I decided to adopt two techniques in my household survey. Firstly, I defined that since most of the houses I visited were empty any house where I could find somebody to interview was a randomly selected household. Secondly, I decided to use the people I interviewed to discover other households where I could find someone to interview. This last technique is what is usually termed the snowballing technique (See Bryman 2004).

Selection of the large-Scale companies

Selection of the large-scale pineapple companies did not follow any strict rules. However, preference was given to companies located within my three study communities. Additionally, I purposively sampled out companies to reflect the diversity of large-scale pineapple companies in my study area. I included transnational companies, processing companies, companies by locals, companies owned by expatriates, companies that are local-market-oriented and companies that are export-oriented. I felt the level of influence of these companies on the rural people should differ, hence by listening to them I could

get a better picture of the role they play in the lives of the rural people. In total, I interviewed one person (in management position) in each of the five companies (see Table 1 below). The interviews were recorded and transcribed.

Table 1: ***Pineapple companies in study area***

Name	Activity	Location	Size	Type of pineapple produced	Ownership
Annhu Ntem Farms Ltd	Out-grower (to Blue skies)	Pokrom near Nsabaa	Medium 2,000t annually (650acres)	MD2 & Smooth Cayane	Local
Blue Sky Products Ghana Ltd	Processing and exporting	Dobro near Nsawam	Large-scale (2,500t annually)	MD2 Sugar loaf & Smooth Cayenne	Foreign (TNC)
BOMART Farms Ltd	Producing and exporting	Dobro near Nsawam	Medium 6,000t in 2008 (1,500 acres)	MD2 & Smooth Cayane	15% foreign and 85% Local
Koranco Farms Ltd	Producing and exporting	Abotweri near Fotobi	-	MD2	Local
Combined Farmers Ltd	Out-grower to Blue skies	Obodan near Fotobi	Medium (250 acres)	MD2	Local

Source: Fieldwork 2009

Key Informants

Since the pineapple industry is an important sector of Ghana's economy and many people are interested in it, I felt it was fair to give other people the chance to tell what they knew about the activities of the large-scale pineapple companies. It is in the light of this that I introduced this third category of informants. Selection of my key informants was done to include a wide range of relevant parties such as agriculturists, botanists, planning officers, pineapple consultants, development economists and specialist farmers. My key informants were also interviewed and the conversations recorded using a digital recorder. In total, I interviewed 7 key respondents, one female, and 5 locally based workers.

2.2.3. Interview

According to Silverman (2005) an interview is the exclusive interaction between a researcher and an interviewee where both parties have different

constructive narratives of the world they live in. Noak and Wincup (2004) identify four main types of interviews: the structured interview, unstructured interview, focus group and the semi-structured interview.

Structured interview as the name implies are interviews that strictly adhere to pre-established list of questions. The rationale behind these pre-established questions is that respondents will have approximately the same level of stimulus so that their responses to the questions can be comparable (Bryman 2001). Although this may allow neutral assessment, it does not promote creativity and probing for clarity of opinions.

The unstructured interview on the other hand has no pre-established questions and can be to some extent likened to having an informal conversation with a purpose. The assumption in this kind of interview is that interviewees will necessarily find equal meaning in like-worded questions. With unstructured interviews, questions emerge from the conversation. Because of this, it is expected that qualitative researchers have the skill to formulate their questions in an intelligible manner so that they do not miss out on anything (Denzin & Lincoln 2005).

The third category of interviews is the focus group. The focus group is similar to the unstructured interview, just that in the focus group questions are thrown to groups instead of individuals. In this kind of interview, the researcher takes a less active part in the discussions but acts as a facilitator.

The last type of interview is the semi-structured interview. It also involves predetermined questions, asked in a systematic order. In addition to the predetermined questions, researchers have the flexibility to ask other questions for clarity in responds. It is this level of freedom and flexibility that made me choose the semi-structure interview over the other types of interviews. Besides its flexibility, it is also noted to promote rapport creation between the researcher and the respondents. This was particularly useful in the sense that through my interpersonal relationship with my respondents, I was able to

explore the complexity and richness of their opinions, values, experiences and challenges as they lead their lives (Bryman 2001; Silverman 2006) to the advantage of my research objectives.

Conducting the interviews

Of all the field experiences, the interviews were the most exciting and the most rewarding. Generally, before I begin an interview, I will usually want to find out from the respondent which language they will feel comfortable in. I did not need a translator for this since I can speak most languages in Ghana. My ability to express myself in the native languages of my respondents served as the icebreaker and as a way of getting my respondents to accept me as one of their own. Also, it gave the respondents the comfort and freedom to express themselves without the feeling of any restrictions. According to Gacula (1997), language uses words to present concepts, objects, or attributes. It permits observers to tune their perceptions to certain differences rather than others. Following from this I felt it was of utmost importance to find a medium in which my respondents could easily express their thoughts. The good side with this approach was that I got my respondents to engage, but the challenge was how to get them to speak on only the issues that I was out to address. Most of them usually diverted in the course of the interview to share an experience. Because of this, I spent much more time with each respondent than I planned. The average time per respondent was an hour and half.

Fortunately for me, I complemented my note-taking with a digital recorder. But for that, I would have had a very tough time recording everything that my respondents said. According to Weiss (1995), note-taking alone tends to simplify and flatten informants' speech patterns (Weiss 1995:54), hence the need to complement it with digital recording. He however cautioned that permission should be sought from respondents before they are recorded (Weiss 1994). I made sure that my respondents gave me their consent before I recoded their conversation by assuring them of confidentiality. According to

Weiss (1994), assurance of confidentiality is a commitment that the interviewee will not be adversely affected, hence an element of research partnership of the researcher and the interviewee. Even with the assurance of confidentiality, some respondents refuse to have their conversations recorded, this I respected.

Transcription of the interviews

> *When people's activities are tap-recorded and transcribed, the reliability of the interpretation of the transcript may be gravely weakened by failure to transcribe apparently trivial but often crucial pauses and overlaps Silverman (2006:287).*

After I had successfully completed my field research, the next thing I did was transcribe my interviews. According to Atkinson and Heritage (1984 in Silverman 2003:356) the production and use of transcripts is very important 'research activities' because it involves close, repeated listening to recordings that often reveal previously unnoted recurring features of the organization of speech. As a result of this, Bryman (2001) noted that transcriptions could take very long times, usually between 3-5 hours to correctly (verbatim) transcribe an hour of audio recording. This I found to be true when I started transcribing my interviews. For each of the recorded interviews, I spent not less than three hours, listening and listening over and over again in order to correctly write word-for-word all the things that my respondents said. True to Atkinson and Heritage's observations, I realized during my transcriptions that there were other important things that my respondents said that I could not capture in my notes.

2.3. REMOTE SENSING (RS) AND GEOGRAPHIC INFORMATION SYSTEMS (GIS)

I adopted Remote Sensing (RS) and Geographic Information Systems (GIS) techniques in the field and successfully applied it to my studies. RS and GIS became popular in scientific studies from the early 1950s (De Bruijn, 1991;

Bocco and Sanchez, 1995). Because of their comparative effectiveness in handling large spatial data, they are fast replacing conventional mapping methods.

In conducting Remote Sensing (RS), energy emanating from the earth's surface is measured using a sensor mounted on an aircraft or spacecraft platform. These measurements are then used to construct images of the landscape beneath the platform (Richard and Jia 2006:1). These images usually contain coded information of the earth. Depending on how it is captured, an image may be termed an aerial photograph or a satellite image.

According to Eastman (2006), satellite imageries can help in establish explanatory relationship between two images. For instance, comparisons could be made between images of a point in space taken at different depths; from different points; or from different periods. The decision depends on what is being sought after. In my case, I used two images (land-use images) from different periods in order to find out whether there have been any significant disparities between the images.

I acquired my two sets of Landsat1 images from the Centre for Remote Sensing and Geographic Information Service (CERSGIS), which is an accredited data company in Ghana. I requested two Landsat images of my study area, one taken in the early 1980s and another from the late 2000s. However, the earliest image of my study was one from the early 1990s and the latest from the early 2000s. Both images were taken during the wet season of my study area.

Having acquired and stored my spatial data in my computer, I then started the GIS process. According to Eastman (2006), GIS is a system that is capable of storing, retrieving, manipulating, and analyzing huge spatial data such as satellite and aircraft images. It is designed to carry out operations on stored data according to a set of user specifications without the need to be knowledgeable about how the data is stored and what data handling and

processing procedures are utilized to retrieve and present the information required (Eastman 2006:18). GIS allows us to view, understand, question, interpret, and visualize data in many ways that reveal relationships, patterns, and trends in the form of maps, globes, reports, and charts (ESRI 2010). With the aid of GIS software such as ArcGIS and Idrisi Andes, I started the analysis process of my images i.e. manipulating, classifying, analyzing and comparing the two images in an effort to identify trends in the land-use cover of my study area.

2.3.1. Application of Remote Sensing (RS) and Geographic Information Systems (GIS)

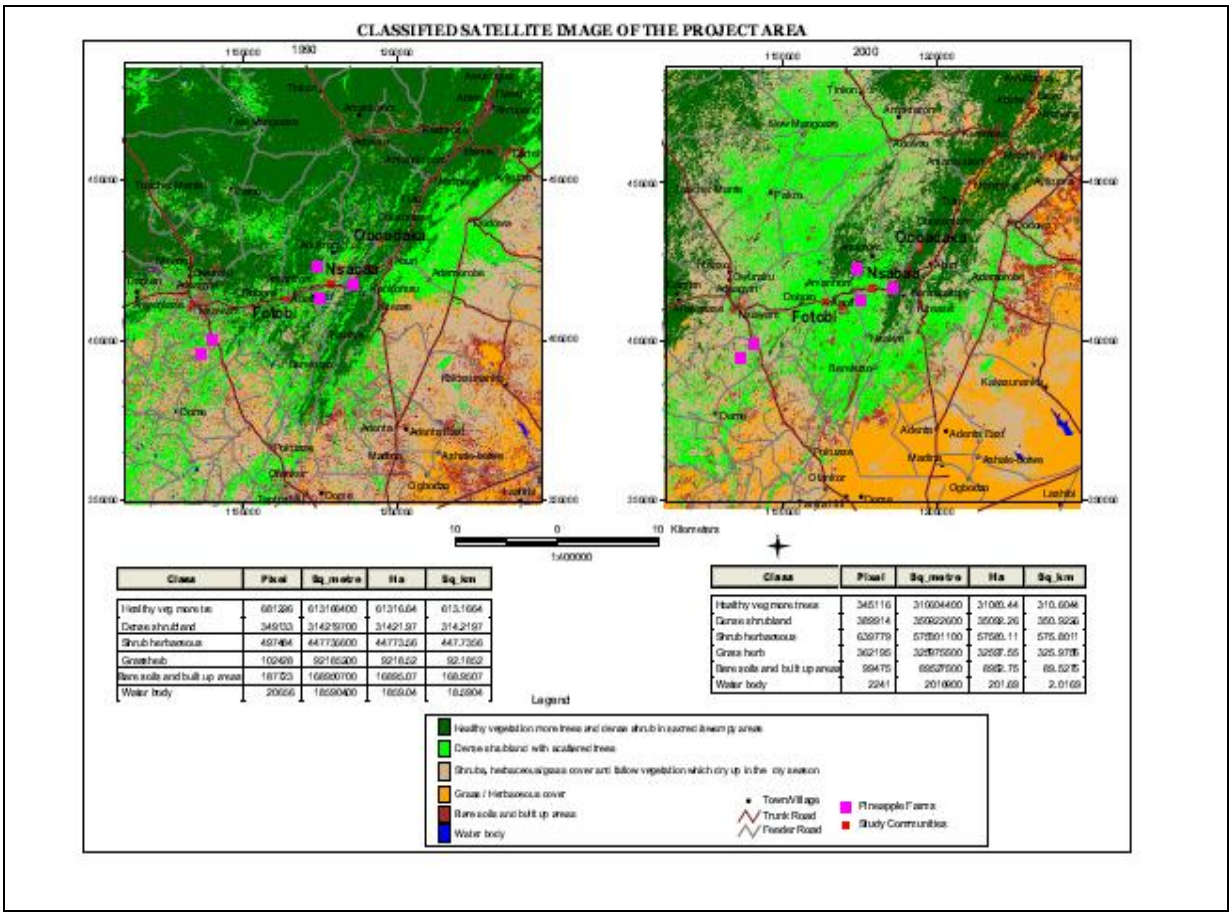
The images I purchased from CERSGIS were from the Enhanced Thematic Mapper (ETM+) sensor of Landsat-7. The images, which were geo-referenced to UTM 31, were re-projected to UTM 30 and re-sampled to a 30m-pixel resolution. With the 2000 ETM+ image as master, I then performed an image-to-image geometric projection on my images.

After restoring my images, I used the ATMOSC module to minimize the effect of haze. Radiance values of all image bands were normalized using the RADIANCE module. Three image transformation techniques were performed prior to image classification. First, a principal component analysis was performed to select most suitable bands for further analysis and reduce data redundancy. This was followed by image ratioing of the red and near-infrared bands of each image scene to generate a normalized difference vegetation index (NDVI) image, as a measure of biomass over the landscape. The last transformation was a tasselled cap transform of the six bands (excluding the thermal band in each case) to produce orthogonal soil, vegetation, and soil moisture-related bands. The first two principal component images together with the NDVI and tasseled cap bands were finally used to generate a final classification. Apart from producing relevant input training data for land cover classification, the transformations also enhanced the visual discrimination of

land cover types. Training sets were defined for each land cover class from which spectral signatures were created for image classification. Classification was carried out using the maximum likelihood algorithm. The classification scheme used to assign pixels to land cover classes include the following: Healthy Vegetation more trees, Dense Shrub land, Shrub herbaceous, grass herb, bare soils and built up areas, and water bodies (see figure 2 below). The outputs were digital images of which each pixel was assigned to one of the classes. Ground truth data for validation of classified images were obtained from my field work. On the field, I used the handheld Geographic Positioning System to map the locations of the selected pineapple companies and study communities.

A detailed discussion of my findings is can be found in the discussion chapter below.

Figure 2: ***Classified satellite images of study area***



2.4. DATA ANALYSIS

Dey (1993:30) defined data analysis as ‘a process of resolving data into its constituent components to reveal its characteristic elements and structure”. Also, Svarstad (2003) noted that data analysis implies making connection between empirical basis and theoretical abstraction. According to Halkier (1999: cited in Svarstad 2003:222), data analysis is done “in order to see patterns, relationships, deviations, paradoxes and dynamics in the material in another way than the actors do”.

Dey (1993) noted that qualitative analysis involves three main processes: description, classification and the establishment of connections. Description involves reciting the characteristics of a person, object or event. The first step in qualitative research is the development of a thorough and comprehensive description of a phenomenon under study (Geertz 1973). In qualitative analysis, strong emphasis is placed on describing the world as it is perceived by different observers. The process of classification also entails interpretation and explanation of data to develop a meaningful account. This requires the development of a conceptual framework through which the actions or events being researched can be rendered intelligible.

2.4.1. Doing the Analysis

In my data analysis process, I classified the responses (both field notes and transcriptions) under the relevant questions asked. Later, I encoded the responses into manageable blocks of answers for easy handling and analysis. With these blocks of questions and answers, I used the Statistical Package for Social Science (SPSS) to design a template where I entered all my questions and answers. After this, I used the SPSS (version 16.0) analyze tool to statistically generate frequencies, correlations, trends, and even to graphically illustrate the responses gathered from my respondents. This made my interpretation much easier.

2.5. RELIABILITY AND VALIDITY OF DATA

> *Unless you can show your reader the procedures you used to ensure that your methods were reliable and conclusions valid, there is little point in aiming at concluding a thesis (Silverman 2005:209).*

2.5.1. Reliability

According to Hammersley (1992), reliability is the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions (Silverman 2006:283). In a related definition, Kirk and Miller (1986) defined reliability as the degree to which the findings of a study are independent of accidental circumstances of their production (Silverman 2006:283).

Qualitative researches are usually faulted as unreliable (see Marshall and Rossman 1987) As an escape from reliability, some qualitative researches will argue that since we treat social reality as always in a flux, it is pointless to worry about how accurately we can verify our findings in the future.

Moisander and Valtonen (cited in Silverman 2006) suggested the following as a way of achieving reliability in non-quantitative researches:

- Non-quantitative works must be transparent. The research strategies and data analysis methods must be sufficiently described in details
- They must also pay attention to 'theoretical transparency' through making explicit the theoretical stance from which the interpretations take place and show how this produces particular interpretations and excludes others

Keeping of notes is also a recommended way of maintaining the credibility of a research. According to Bryman (1988) notes or extended transcripts could help readers formulate their own hunches about a people who have already

been studied. According to Spradly (1979), effective and credible notes keeping must follow the below format:

- Make short notes at the time of field work
- Expanded notes made as soon as possible after each field session
- Make a field journal to record problems and ideas that came up during the field work
- And finally, make a provisional running of analysis and interpretations

These ways of keeping notes improves the reliability of a research (Silverman 2006).

Reliability of Interviews

Silverman (2006:286) noted that in other to have reliable interviews, it is important that each respondent in an interview understands the questions in the same way so as to minimize uncertainty. To achieve this, he suggested that the steps listed under be followed:

- thorough pretesting of interview schedule
- Thorough training of interviewers
- as much use as possible of fixed-choice answers
- inter-rater reliability checks on the coding of answers to open-ended questions

In addition to the above, I adopted a strategy of making telephone calls to some of my respondents a day or two an interview. I usually used such occasions to thank them for the time spend in answering my questions and as well make quick cross-check of some of the responses they gave to my questions. This exercise was a very useful tool for checking the degree of consistency in the responses.

2.5.2. Validity

> *By validity, I mean truth: interpreted as the extent to which an account accurately represents the social phenomena to which it refers (Hammersley 1990:57 cited in Silverman 2006:289).*

Kirke and Miller (1986 cited in Silverman 2006) noted that in every research, two kinds of errors are likely to occur:

I. Believing that a statement is true when it is not

II. And rejecting a statement which, in fact, is true

To eliminate these kinds of errors, Silverman (2006) recommended triangulation, i.e. the usage of more than on research approach (quantitative and qualitative) and method (observation, interviews, RS, GIS etc) in any kind of research. He also recommended that findings should always be sent back to the subjects to verify.

Because of lack of time and resource, I was unable to use more than one research approach, nor sent the final findings to my respondents for verification. However, I employed a number of research strategies including observation, interviews, remote sensing etc to ensure that my research is credible. Digital audio recordings of interviews were made in order to capture all the responses of my interviewees. Also, since pictures speak louder than words, I also took digital photo photos of pineapple farms, the local landscape and some pineapples species.

Additionally, in order to ensure reliability of my data, I employed a strategy of making follow-up telephone calls to key informants including managers of selected large-scale pineapple companies. During such telephone conversations the informants were usually asked to clarify certain facts and figure. It was identified that the telephone calls were sometimes even more productive than the main interviews. An explanation of this may be because

respondents get more relax and are less pressured during such conversations. It could also be because they were often taken off guarded by my call.

2.6. RESEARCH ETHICS

> *[Ethical decision making in research] arises when we try to decide between one courses of action and another not in terms of expediency or efficiency but by reference to standards of what is morally right or wrong (*Barnes 1979, cited in Scheyvens et al 2006:140)

Fieldwork raises a lot of ethical dilemmas. Right from the point of deciding on a topic of a research to the very end of the research are ethical issues to be considered. Some ethical questions that usually arise in every research include the following: what is the purpose of the research, which individuals or groups might be interest in or affected by research, what are the implications of research etc (Silverman 2006). In considering all these questions, Silverman advised that concerns of ethics will be addresses if researchers are focused on serving the common good. With this in mind, researchers will be more prepared to tell their subjects every truth about their activities, prepared to keep the confidentiality of their respondents, prepared to build mutual trust and loyalty with their subjects and finally, prepared to give back something worth the assistance they received from their subjects.

On the field, before I start conducting my interviews, I will usually spend the first few minutes explain the objectives of my research to the respondents. This included mentioning my research topic, where I came from (I showed my respondents and introduction letter I took form my University confirming my study), why I chose their community, what they should expect from the interview, and that I guarantee them of confidentially. I was always very clear about rewards and benefits. The only assurance of benefit was that my research will add to the number of academic researches done about the area.

2.7. CHALLANGES

I had some number of challenges on the field and they include the following

2.7.1. Rainfall

The timing (June/July) of my field research coincided with the peak of rainfalls in my study area. The erratic rainfalls made it almost impossible to have an effective plan for each day. As a result of this, I had to always stay closer to my study communities in order to take advantage of the day when the skies were clear of clouds. Even on such occasion, I had difficulties reaching my potential respondents in their homes. Because most people in my study communities were farmers, they also took advantage of the days when there were no signs of rains to go to work on their farms whiles others also sent their farm produces to nearby markets to sell.

2.7.1. Apathy by some household heads

The second challenge on the field was how to get some household members to answer my questions. On the field, I simply could not get some people to talk to me. Their indifferent behaviour as I later came to understand was as result of some bad experiences they had with earlier 'researchers'. Apparently, some few years back, some researches came to them with several promises which they failed to heed to.

2.7.2. Arranging official Meetings

I have very difficult times arranging meetings with officials including the managers of the large-scale companies. The bureaucracies were long and slow. There was no single case where I had a one touch access to an official. I had to arrange meetings over and over again. An occasion worth recounting was that day when I finally met this manager (name withheld) who on countless number of occasions rescheduled my meeting with him. On my arrival at his

office, I didn't even get the opportunity to brief him about me project when all of a sudden he got up and said "hey me friend, I have no time for these kind of things. If it is about publicity, I have had enough publicity. I don't need your kind of publicity". In other related events, the managers gave me only fifteen minutes to conduct my interviews. On such occasions, I tried to make the best out of the limited time by asking compound questions which intent received compounds answer. Through this, not only did I get much from my respondents, they also saw the need to spend more time with me in order to clarify and address all my concerns.

2.7.3. Official Information

Official documents were also very difficult to acquire even when I was ready to pay for them. Just as the case of the official meeting arrangement, arrangement/application for official documents was very bureaucratic. Application for documents usually took weeks of constant reminders (through writings, visits and telephone calls) before I finally get them. There were times when the wrong documents were sent to me. There was an instance when I requested for a technical report on pineapples but was handed a report on pawpaw with the excuse that the report on pineapples could not be located.

2.7.4. Research Assistants

After a week research of my study area, I realized that the weather and its associated challenges will not permit me to complete my research work as scheduled. I therefore decided to recruit field assistants. It took me two weeks to identify and recruit my field assistants. As a requirement, I need people who were versatile including the ability to speak a number of Ghanaian languages, have field work experience and knew the terrain of my study area. In the very first week of my search, I identified two prospective assistants. However exorbitant fee charges were too much for my budget. Upon a further search, I finally met two agricultural extension agents from the Municipal's Food and Agriculture Office who were ready to help me out. Their experience in field

work and knowledge of the terrain of my research communities were an added advantage for my research work. Additionally, because of their occupation and their involvement with rural farmers, they knew exactly what to do to get to as many respondents as possible. There were occasions when they visited some people on their farms. This timely intervention helped me complete my field work on schedule.

Beside the challenges on the field, it is worth mentioning that some respondents were very receptive and nice. Whiles others were ready to go all the way with you to get you all the information you needed, others parted me with a head load of farm harvest after a good conversation. Although I will usually try to shirk the idea of the gift, I was also careful not to offend my respondents by rejecting their kind gesture out rightly. In most cases I reciprocated the gesture by bringing a present from the city.

2.8. CONCLUDING REMARKS

In this chapter I have documented the philosophical underpinnings of the choice of method, the practical issues relating to the collection of field data and showed clearly the quality and credibility of the information I collected and how it was analyzed.

This chapter has sought to provide the practical execution of qualitative research from the various stages of selecting a case through to the interview process. It is worth mentioning that false leads and dead ends are just worth reporting as the method chosen. The experiences on the field were not very easy, the worse being the weather. Because of this, I had to limit the number of study communities to three, and the number of household interviews to seventy. But notwithstanding these limitations, the experience of gaining access to peoples' lives and experiences even for a while was worth the time and resource spent. Having outlined the tools and procedures used in collecting and analyzing my data, the next chapter deals with the agenda setting.

2. CONCEPTUAL FRAMEWORK

3.1. INTRODUCTION

This thesis combines concepts from several perspectives. In writing this thesis, I adopted Ellis's Sustainable Livelihood Approach as the set of notions and ideas that give structure and coherence to understanding how power plays out in resource (assets) accessibility in rural areas. This I found to raise two interesting points for my thesis. Firstly, I drew on Ellis's (2000) focus on assets, as the platform on which I link the activities of the large-scale pineapple companies to that of the rural people in my study area. Secondly, his explanation about the role of power/social relations in assets accessibility is used to examine how activities of large-scale pineapple companies affect rural livelihood strategies in my study area.

3.2. SUSTAINABLE LIVELIHOOD APPROACH

According to Ellis (2000),

> *'A livelihood comprises the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household' (Ellis 2000:10)*

This definition was a modification of an earlier definition by Chambers and Conway (1991:7). According to them, livelihood comprises 'the capabilities, assets (stores, resources, claims and access) and activities required for a means of living. They noted that most livelihoods are predetermined by the 'accident of birth'. For example, a person by virtue of his birth into a certain family or caste may inherit a certain trade. Also, they noted that some people improvise their livelihoods with 'degrees of desperation', what they do being principally

determined by the economic, social and ecological environment in which they live (Chambers and Conway 1991)

Irrespective how livelihoods are determined, whether by virtue of birth or through the individual's own effort, it is the availability of assets and the capability of the individual to harness these assets that matters in making a viable living (see WCED 1987; McCracken et al 1988; Grown and Sebstad 1989; Swift 1989; Chambers and Conway 1991; Chambers 1994 & 1995; Reardon and Vosti 1995; Davies 1996; Scoones 1998; Moser 1998; Carney 1998; and Rakodi 1999; Bebbington 1999; Farrington 2001; and Dani and Moser 2008). By capability, I mean

> *'the ability of individuals to realize their potential as human beings, in the sense both of being (i.e. to be adequately nourished, free of illness and so on) and doing (i.e. to exercise choice, develop skills and experience, participate socially and so on)' (Sen 1983; 1997; cited in Ellis 2000:7).*

Following the above therefore, a sustainable livelihood is defined as when an individual

> *'can cope with and recover from the stresses and shocks and can maintain or enhance capabilities and assets both at the time and in the future, while at the same time not undermining the natural resource base' (Carney 1998:1).*

In line with this, Moser (1998:1) recommended that for poverty policies to be sustainable, they must aim at raising the asset status of the poor, or enabling existing assets that are idle or underemployed to be used productively; as well as "strengthen people's own inventive solutions, rather than substitute for, block or undermine them" (Moser 1998:1). By this, institutions that obstruct people's ability to create meaningful livelihood must be identified and eliminated. As a starting point to the elimination of these obstructions, it will

be interesting to understand how power play off in peoples access to resources or assets. This therefore brings us to the next level of this discussion.

3.2.1. Power and Access to Assets

In my thesis I use Foucault's concept of power:

> *" I do not mean "Power" as a group of institutions and mechanisms that ensure the subservience of the citizens of a given state. By power, I do not mean, either, a mode of subjugation, which, in contrast to violence, has the form of the rule. Finally, I do not have in mind a general system of domination exerted by one group over another, a system whose effects, through successive derivations, pervade the entire social body (Foucault 1978:92).*

According to Foucault, power should be considered in a more fluid way than that brought to mind by an inventory of formal laws and rules, or a vision of an exercise of power by one dominant group over another. He also thought of power as a "complex strategic situation", consisting of "multiple and mobile field of force relations" that are never entirely stable (Foucault1978:93-102)

Additionally, Foucault sees power as a relationship rather than as an entity, as flowing from multiple of sources rather than from a single source. He claims that power is so inextricably linked to knowledge that one cannot be analytically considered without the other. He thus noted that "[t]he exercise of power perpetually creates knowledge and, conversely, knowledge constantly induces effects of power", Foucault (1980a:52).

Against this background, I found certain features of Foucault's definition of power very relevant and worth elaborations. They include: the omnipresence of power, and the idea that power is found in a network of relations.

The omnipresence of power

Focusing principally on power in explaining all human affairs, Foucault sees power as in all places, "…not because it has the privilege of consolidate everything under its invincible unity, but because it is produced from one moment to the next, at the very point, or rather in every relation from one point to another" (1978:93).

This claim leads one to infer that all state of affairs embody power relationships. Thus, power exists 'between every point of a social body, between a man and a woman, between the members of a family, between a master and a pupil" (1980d: 187). Given such a direction, power is expected to be present in all institutions. Foucault makes an argument that the question of power is not only limited to institutions of economic significance but also extends to the lesser ones of "psychiatric internment, the mental normalization of individuals, and penal institutions" (1980c:116). Following from the above claims therefore, one can also conclude that power is expected to be present in all institutions, organizations and activities of the human being including his/her access to assets.

Power in a network of relations

In this second feature of power, Foucault focuses on the processes that enforce power. He therefore noted that,

> *'We must not look for who has the power … and who is deprived of it; nor for who has the right to know and who is forced to remain ignorant. We must seek, rather, the pattern of the modifications which the relationships of force imply by the very nature of their process (1978:99).*

Foucault's claim of power existing in a network of relationships is opposed to the notion that power originates from a subject or an agent. He emphasized that power exists in one's place or position within a network of relations. At

the same time, he also admits that human agency and its power has the ability to transform society. That is, individuals "are not only its inert or consenting target. Individuals are vehicles of power not its points of application" (Foucault 1980b:98).

Given the obscured nature of power therefore, i.e. power as a "circulating and never localized here or there, never in anybody's hands, never appropriated as a commodity or piece of wealth" 1980b:98), it is difficult to delimit power and the extent of its effect. Thus, power can exist in a range of activities, events, processes, era, place, persons, situations etc.

Foucault's idea of power relations also defies the two-way flow of social structure, i.e. "dominators" on one side and "dominated" on the other. He noted that specific and multiple production of relations of power manifests itself in different localized settings with their own rationalities, histories, and mechanisms (Foucault 1988b:37–38). Where the localized settings mark "the point where power reaches into the very grain of individuals, touches their bodies and inserts itself into their actions and attitudes, their discourses, learning processes and everyday lives" (1980a:39). According to him therefore, the task is to identify the *targets* and the *agents* that structure the differentiated positions of individuals in a localized institution or system: "What is needed is a study of power in its external visage, at the point where it is in direct and immediate relationship with that which we can provisionally call its object, its target, its field of application" (1980b:97).

Following from the above discussion, power relation in asset accessibility can be addressed in two main ways: Firstly, by identifying the sources of power in assets accessibility and secondly, by identify the targets and agents of such power, where targets are the subordinate actors in the relationship and exists in relation to the agents. Ellis's (2000) Sustainable Livelihood Framework (SLF) provides the structure to address these concerns, i.e. it identifies the foundation

of agents' power i.e. to act and to reproduce, challenge or change the rules that govern and control the use and transformation of resources.

3.2.2. The Sustainable Livelihood Framework (SLF), Assets accessibility and Rural Livelihood strategies

Ellis (2000) postulated six categories of parts in which micro policy analysis of rural livelihood could be made.

According to him, livelihood consists of a platform of assets. These assets consist of stocks of capitals namely, natural, physical, financial and social capitals, "that can be utilized directly, or indirectly, to generate the means of survival of the household or to sustain its material well-being at differing levels above survival" (Ellis 2000:31).

Natural capital refers to the natural resources available to a household including land, water and biological resources that are utilized by them to generate means of survival.

Human capital includes the health status, education levels and the skills of individuals which allows them to produce more and effectively, as well as it gives them the capability to engage more fruitfully and meaningfully with the world towards a change (Carney 1998; Sen 1997).

Physical capitals are brought about by economic production processes including buildings, irrigation canals, electricity, roads, tools, and machines. In some respect, physical assets can facilitate livelihood diversification and in many circumstances can substitute natural capital over time mainly through technology, industrialization and urbanization. For instance, a water canals can substitute an open canals.

Financial capital refers to stocks of cash which the household can access including savings, availability of livestock, jewellery, food stock and access to credit in the form of loans.

Finally, social capital is the ‘reciprocity within communities and between households based on trust deriving from social ties’ or ‘the trust and expectations which flow within those networks’ (Moser 1998:8) include both networks of inscriptive and elective relationships between individuals, which may be vertical as in authority relationships, or horizontal as in voluntary organizations from which the individual or a population can derive support for their survival (Coleman 1990; Putnam et al, 1993).

It is the level of accessibility to these capitals by a household that determines their livelihood status. Ellis noted that availability and accessibility to these assets are influenced by certain factors which he termed mediating processes.

Mediating processes are classified into endogenous and exogenous processes, where the former includes social relations, institutions and organization; and the latter, trends and shocks. Among the two categories, the endogenous processes are said to be very critical in the sense that they encompass the agencies (agents) that inhibit or facilitate the exercise of capabilities and choices by individuals or households (targets) (Ellis 2000:39). Also, Chambers and Conway (1991) classified these mediating processes into two categories of stresses and shocks. Stresses are pressures that are typically continuous and cumulative, predictable and distressing, e.g. indebtedness, ecological changes that leads to lower bio-economic productivity, seasonal shortages, rising population or declining resources and pressures on resources leading to declining farming size and declining returns to labour. Shocks on the other hand are typically sudden, unpredictable, and traumatic, such as fires, flood, epidemics etc.

Both Chambers and Ellis concur that pressure of these stresses and shocks always leads to the adoption of different kind of livelihood strategies by different individuals and households according to their capabilities – the most common strategy being diversification.

According to Hussein and Nelson (1998:3), diversification refers to attempts by individuals and households to find alternative ways to raise incomes and reduce environmental risk, which differ sharply by the degree of freedom of choice (to diversify or not), and the reversibility of the outcome. It includes both on- and off-farm activities which are undertaken to generate income additional to that from the main household agricultural activities, via the production of other agricultural and non-agricultural goods and services, the sale of waged labour, or self-employment in small firms, and other strategies undertaken to spread risk. Similarly, Ellis (1998 & 2000) defined Livelihood diversification as the process by which households construct an increasingly diverse portfolio of activities and assets in order to survive and to improve their standard of living. The diverse portfolio of activities include natural resource-based activities such as cultivation, hunting, gathering, herding etc, and non-natural resource-based activities such as trading, carving, processing, reciprocal/wage labour, begging and other non-farm income sources including remittances (Chambers and Conway 1991). The common trend is that most stressed rural household usually will diversify their occupations as a strategy. However, some households or household members may even relocate to another place. For example, the decline in world cocoa prices in the 1970s and the land widespread bushfires that swept through Ghana in the 1980s disrupted the activities of cocoa farmers at the time. As a result, most rural people in cocoa growing areas migrated to urban centre including 'Agege' in Nigeria[5].

Effects of coping strategies on Livelihood

It is noted that coping strategies to pressures from social relations[6a], institutions[1b], and organizations[1c] may either strengthen or weaken a

[5] This was the boom period of Nigeria's oil industry

[6a] Social relation refers to the position of individuals and households in a society, comprising factors such as gender, caste, class, age, ethnicity and religions (Ellis 2000:38). [1b]Institutions are formal rules, conventions and informal codes of behaviour. [1c]Organizations are groups of individuals bound by some common purpose to achieve objectives (e.g. NGOs, farmer associations, private firms etc)

household's food security and the environmental sustainability; and these intend may either minimize or increase the vulnerability status of a household.

Blaikie and Brookfield (1987:13) acknowledge the effects of social relations and institutions pressures on the environment when they noted that, any attempt to increase the integration of the third-world land users into the global market of an unequal power relation will rather undermine their localized environmental knowledge and long histories of successful adaptation to sometimes harsh and unpredictable environments. This accordingly, may create a 'situational rationality', a condition that could potentially force land users to degrade their environment in an act of 'desperate ecocide' (Blaikie and Brookfield 1987:13). They argued further that the long term payback period of capital-intensive and natural reclamation processes will also force resource managers to adopt coercive labour mobilization tactics or seek opportunities to capture inequitable subsides in achieving stabilization goals.

Similarly, Ellis (2000:23) acknowledged that households and peasant communities as a whole could negatively yield to the pressures of institutions and social relations. He therefore warned that forces of competition, uneven technical change, and privatization of land results in increasing differentiation between families in rural society. This ultimately leads to breakdown of peasant communities and the emergence of the two distinct social classes of landless wage labour and labour hiring capitalist farmers.

From the foregoing discussion of assets, mediating processes and livelihood strategies, one can conclude that livelihood is mainly about the individual's or household's cope capability to cope and adapt to both internal and external pressures – so that in the absence of such capabilities, such a household is considered vulnerable and distressed.

3.3. SUMMARY

I started this chapter by firstly defining the concepts of livelihood and sustainable livelihood. Secondly, I used Foucault's ideas about power to argue that the issue of resource (assets) accessibility entails power relations. I further argued that factors such as institutions, organizations and social relations influences rural household access to assets, a consequence of which may be diversification or the depletion of the environment. Finally, I conclude that for a household to sustain its livelihood then it must have the capacity to cope and adapt to the stresses and pressures on its resources.

4. SETTING THE AGENDA

4.1. INTRODUCTION

This chapter gives general background information about agriculture activities in Ghana with specific reference to pineapple cultivation. The chapter begins with an overview of the research study area, followed by a general description of the agriculture industry in Ghana. It continues further with a history of pineapples production in the world with emphasis on the Ghanaian Industry. The history of Ghana's pineapple is discussed in relation to changing global trends. For instance I highlighted on how the introduction a new variety of pineapple called MD2 pineapple by Costa Rica in the 1996 affected the Ghanaian industry. Also I explained how producers and government dealt problems faced by the industry in the early 2000s including the rejection of its pineapples in 2001 on the grounds of poor quality. Finally, I ended the chapter with an overview of the structure of the local industry.

Generally, the discussion in this chapter revolves around literature and information gathered about the Ghanaian pineapple industry.

4.2. CASE STUDY – AKUAPIM SOUTH MUNICIPALITY OF GHANA

> A case study is – "*an empirical inquiry that: investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used" (Yin 1989:23).*

The capital town of my study area is Nsawam. It is one of 22 districts in the Eastern Region of Ghana. It is located in the catchment area of the Densu

River. The region lies within the wet semi-equatorial climate which is characterized by a bimodal rainfall regime with different intensities (Dickson and Benneh 1980). The major rainy season begins from May and last until July and the minor from September and last until November. Mean annual rainfall is about 1600mm. Temperatures are uniformly high throughout the year with mean annual temperature of 27^{o}C; March/April being the hottest (32^{o}C) while August the coldest month (23^{o}C). The vegetation of the area is characterized by semi-deciduous forest with lush growth of thick and tall trees in the north and savanna and scrub forest with only few isolated trees in the southern low-lying areas. The topography is undulating with craggy summits, which gives a striking appearance to the landscape (Yidana 2000).

The Municipality shares boundaries with Ga West Municipal and Tema Metropolis in the south, and in the north-west with Suhum-Kraboa-Coaltar district, Akuapim North district and West Akim Municipal. The area is 45 kilometers from the Kotoka International Airport and 75km from the Tema Harbour (see Figure 3 and4)

4.2.1. Study Communities

My study communities are Fotobi, Oboadaka and Nsabaa (also called Pokrom Nsabaa). They are located half way along the road connecting Nsawam and Aburi. Oral tradition has it that the settlements date back to about 200 years ago when the Nsawam-Aburi road was first constructed. Official census conducted in 2000 reported a population of 2008 (960 males, 1048 females) in Fotobi, 356 (184 males, 172 females) in Oboadaka, and 2181 (1051 males, 1130 females) in Nsabaa (GSS 2000).

Figure 3: ***Location map of Study area***

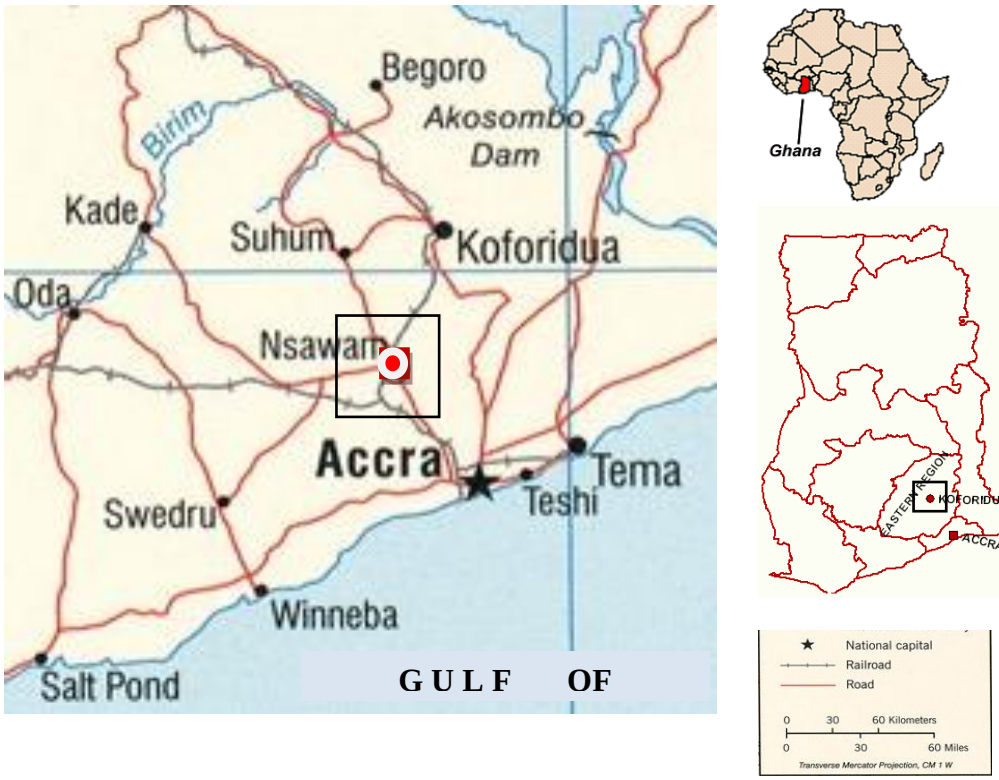
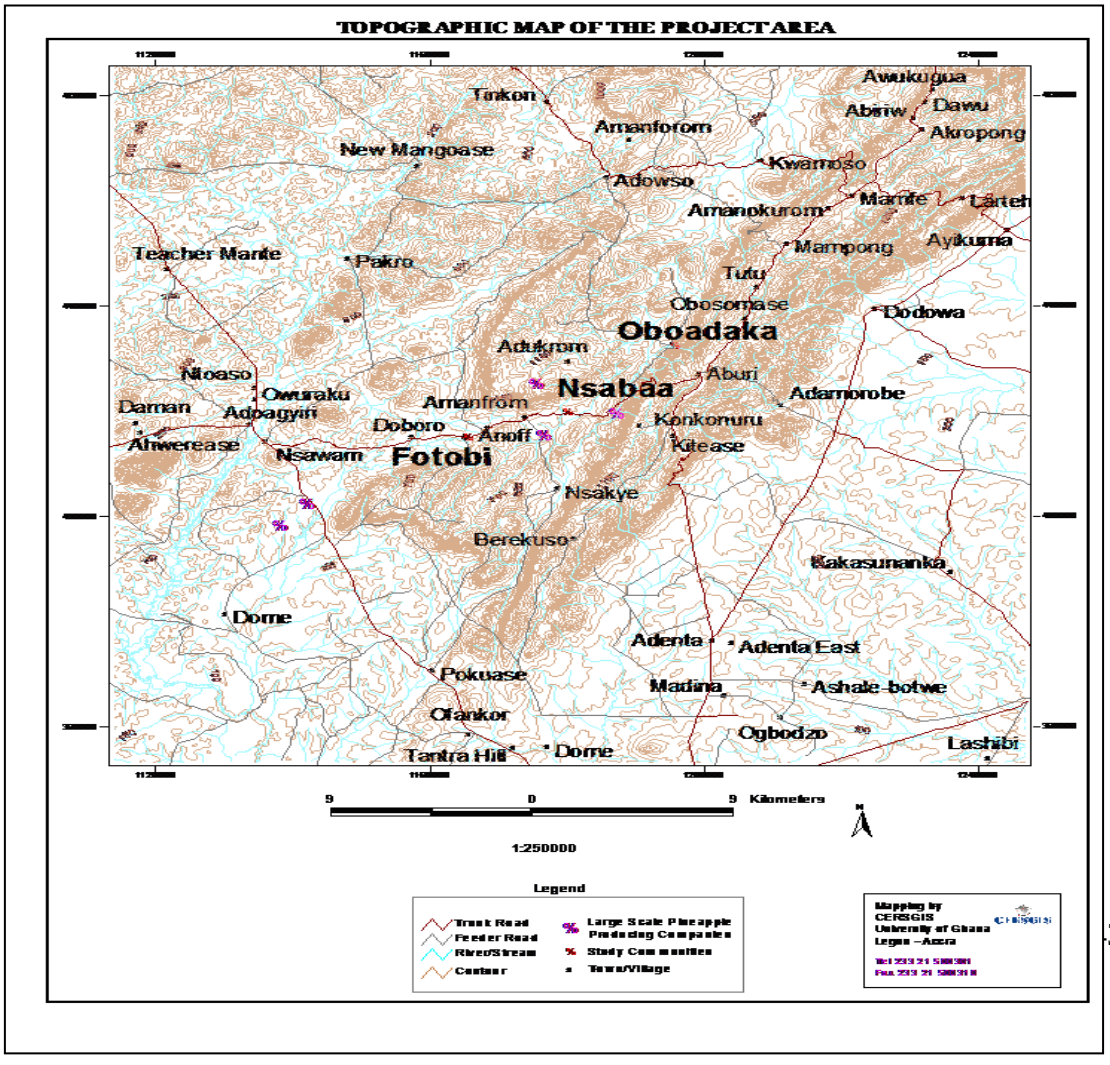


Figure 4: ***Topographic map of Study area***



4.3. AGRICULTURE IN GHANA

Ghana's agricultural sector is the highest contributor to GDP and the largest employer of its labour force. In 2002, the sector accounted for 39% of GDP, 35.5% of total export earnings and employed 55% of the total labour force (ISSER 2003). The sector is dominated by activities of smallholder farmers, usually low-skilled rural peasant subsistent farmers. In 2009, the sector registered a growth rate of about 4.9 percent (GoG 2009). Because farming is generally rain-fed, agriculture activities intensify during the wet season.

Agriculture in Ghana can be sub-divided into traditional including crops such as cocoa, cotton, oil palm, and coffee; and nontraditional (NTAEs) sector including papaya, mango, pineapples, and cashew nuts. The latter category is so called because of its relative recentness as a crop produced in the country. Crops produced in the country can also be categorized into staple crops e.g. maize, cassava, rice, yams, coco yams, plantain, millet, guinea corn, and vegetables; and cash crops such as coffee, oil palm, cotton, pineapples, kola nuts and cocoa.

Cocoa is the single most important cash crop in Ghana, normally accounting for between 30-40 percent of total export. Between 1998 and 1999 production increased to 400,000 metric tons and grew further by 5.0% in 2008 (GoG 2009). Ghana is one of the world's leading cocoa producing countries, coming second after Côte d'Ivoire as the world's leading cocoa producing country. A bulk of Ghana's cocoa is produced by small-scale rural farmers in the Eastern, Brong Ahafo, Western and Volta regions of Ghana.

In recent times, Ghana's export industry has become very formidable with the growth of the nontraditional crops (NTAEs) sector. Between 1980 and 1998, exports of fruits and vegetable grew fourteen folds, increasing from US$1.8 million to US$26.8million. Additionally between 1997 and 2004, the figures more than doubled, with pineapple as the main contributing crop (Danielou

and Ravry 2005). In 2004, pineapple exports alone fetched the country about US$22 million (ibid).

Besides crop production, the agriculture sector is also well established in livestock keeping and fishing. Livestock rearing is popular in the savanna regions and parts of the Afram Plains in the Eastern region of Ghana. Generally, the most common livestock reared in these areas include cattle, goats and sheep. Fishing activities are concentrated in coastal communities and settlements located along the Volta River.

4.3.1. Agriculture in my study Area

The Akuapim South Municipality is one of the few food basket regions of the Ghana. It supplies foodstuffs such as cassava, maize, cocoyam, plantain, vegetables cocoa, oil palm, citrus, mango, pineapples, and pear to major town centres including the national capital, Accra (Dickson and Benneh 1988)

The first inhabitants cultivated basic foodstuffs such as maize, cocoyam, and cassava but the advent of cocoa in the country, caused most of them to divert to cocoa production. Between 1930 and the early 1980s however, many cocoa farms were lost to diseases infections (swollen shoot diseases) and widespread bushfires thus, causing some farmers to return to food crop production. Many also migrated to new cocoa frontier areas in the west to become tenant cocoa farmers, whiles a few others migrated to big cities including ‘Agege’ in Nigeria search of opportunities for a better life.

In the 1980s, the government of Ghana implemented several agriculture diversification programs, resulting in the introduction of nontraditional crops such as papaya, citrus and pineapples my study area. The improved agronomic practices in the Akuapim Municipality including other favourable factors such as availability of local processing industries, relatively good infrastructure including roads to and from farms, negligible wilt and pest infestation, and high farmer literacy rate, and proximity of the area to major market centres and ports including the Tema Seaport and the Kotoka International Airport in

Accra, resulted in fast growth of the nontraditional industry in the area. The potentials of NTEAs in the area was identified and attracted many farmers from all over the country including the inhabitants who left to other places in search of better lives. By close of the 1980s therefore, pineapple production successfully established itself as the most important and popular nontraditional crop.

4.4. HISTORY OF PINEAPPLE

The pineapple (*Ananas comosus)* is native to southern Brazil and Paraguay. It was domesticated by the Indians who carried it through Central America to Mexico and the West Indies long before the arrival of the Europeans. Christopher Columbus first saw the pineapple on the island of Guadeloupe in 1493 and then later in Panama in 1502 (Morton 1987).

In the early 16th Century, the Spaniards introduced the fruit to the Philippines. In 1548, the fruit spread to India, and the east and west coasts of Africa through the trading activities of the Portuguese (ibid). Arrival of the fruit in China, Europe, and South Africa dates back to 1594, 1650, and 1655 respectively. Pineapple is one of the leading tropical export crops.

Over the past 100 years pineapple has increased both in variety and in volumes. Between 1953 and 1963, pineapple production increased from 1,500,000 tonnes to 3,000,000 tonnes. It increased further to 3,600,000 tonnes in 1968 with Mexico, Brazil and Puerto Rico as the main producers. By the close of the century, production figures had reached 12.6 million tonnes with Thailand (16%), Philippines (12%) and Brazil (10%) rising to the top as the three leading producing countries (I.C Ti 2000). The trend has since changed and today the leading producing countries include (arranged in ascending order) Thailand, Brazil, Philippines, Costa Rica, Hawaii, Malaysia, Taiwan, Mexico, South Africa, and Puerto Rico. However, the three leading exporting

countries to the EU market are Costa Rica (300,000 tonnes), Cote d'Ivoire (150,000 tones), and Ghana (71,000 tonnes) (GEPC 2008).

4.4.1. Types of Pineapples

Since Columbus' visit to Gualoupe, several varieties of pineapple cultivars have been developed. Six are known internationally and the others are regionally based. The six well know varieties are MD2, Smooth Cayenne, Sugarloaf, Red Spanish, Queen, and Abacaxi, and the others include Valera, Castilla Cumanesa, Morada Monte Oscuro, Brecheche, Caicara, Chocona Congo Red Panare, Santa Marta Amarilla de Cambao, Amarilla de Tocaima, James Queen, Ripley, Alexandria, Egyptian Queen, Kallara, Hilo, St. Michael, Giant Kew, Charlotte Rothschild, Perolera, Bumanguesa, Esmeralda, Typhone, Piamba da Marquita and Monte Lirio.

4.4.2. Environmental requirements for pineapple production

Depending on the variety, pineapple can be cultivated under a wide range of biophysical conditions. They therefore thrive better at tropical and mid-tropical regions of the world. An optimum annual rainfall of 1500mm is required although it can grow in areas receiving 500mm – 5550mm. The fruit also requires an optimum temperature ranging between 20 and 30^{o}C (68-86^{o}F). Low temperatures and poor sunlight affect the quality of fruit, thus it is recommended that pineapple fields are cleared of all forms of shades including tree canopies. This recommendation is in contravention to Ghana's law on Timber Resources, Act 547, which forbids indiscriminate felling of trees (GoG 1997). Altitude also affects the quality of the fruit. Pineapples grown at altitudes above 1700m are generally acidic and those grown at elevations lower than 1200m are sweeter and less flavoured. The ideal height is therefore between 1200 and 1700mm.

The best soil for pineapple is a friable, well-drained sandy loam with high organic content. Soil pH within a range of 4.5 to 6.5 is required but a 5.5-6.0 range is considered optimum. The soil should be well drained and of light

texture. Heavy clay soils are unsuitable but sandy, alluvial or lateritic soils are the best. See appendix I for a step by step description of how pineapple farm is made (Training guide for MD2 pineapple site preparation and planting)

4.5. HISTORY OF GHANA'S PINEAPPLE INDUSTRY

Even though the other nontraditional crops promoted in the 1980s including papaya, citrus and mangoes performed well and are still doing well, their contribution in terms of employment, revenue generation and exports are no where comparable to pineapple. The arrival of pineapple in Ghana can be traced to 1548 when the fruit was first introduced to the west coast of Africa by Portuguese traders. According to Pinto (1990), pineapples were first cultivated in Samsam, a small village in the Greater Accra region. However, commercial production of the crop started in the 1980s. Unlike the other Sub-Saharan African countries that had their pineapple industry developed by activities of multinational corporations such as Del Monte, Dole, and Compagnie Fruitière, and large-scale commercial foreign-owned farms, Ghana's pineapple industry was supported by small-scale production systems (Danielou and Ravry 2005). Its establishment was to serve two main purposes – firstly, to complement the nations export portfolio which was facing spiral declines in revenue generation; and secondly it was to improve the livelihood chances of rural farmers especially farmers who had lost their cocoa farms as a result of diseases and bushfires in the 1980s, thus alleviating poverty (GPRS I and II).

4.5.1. Structural Adjustment Programs (SAPs): Agriculture Diversification and the pineapple industry in Ghana

The 1980s, also called the "lost decade" by Edelma (1999), marked an era of great economic crises for most countries around the world, particularly countries of the developing world. At the time, social advancements and economic growth had "stalled or reversed in a deadly combination of spiraling

indebtedness, stagflation, trade and budget deficits and plummeting living standards" (Edelma 1999:1-2; Takane 2004). This was also the situation of Ghana at the time.

In 1983, inflation in Ghana was reported to have risen to 122%. Real wages, employment numbers, exports and production volumes declined dramatically. Poverty and income levels also widened (Sarris and Sham 1991), with food sufficiency-ratio declined from 83 percent in 1964 to 60 percent in 1982 (World Bank, 1984). Additionally, local consumption needs far exceeded production supplies and capacity utilization in manufacturing dropped from 53% in 1975 to 25% in 1980. Further, the prices of the main export products of the country, gold and cocoa, fell drastically at the world market.

These negative economic trends coupled with unstable political regimes prompted interventions from foreign development partners such as the World Bank and the International Monetary Fund (IMF), who recommended the implementation of specific economic recovery and structural adjustment programs influenced by the development paradigms at the time, neo-liberalism. Ghana in the early 1980s therefore adopted these programs under the rubrics 'Structural Adjustment Programs' (SAPs) and actively implemented all the three phases of the programs.

The first phase called the stabilization phase was aimed at injecting incentives to stimulate the productive sector of the economy by realigning relative prices in favour of domestic production of import substitution and exports. Under this phase, several diversification programs were also implemented, notably among them is the support given to the nontraditional export sector facilitated by institution of specific programmes including the Agricultural Sector Rehabilitation Program (ASRP), Agricultural sector Investment Project (ASIP), National Agricultural Research Project, Small-holder Rehabilitation and Development Program (SRDP), and the Rural Enterprise Project (REP), thus leading to the development of the country's nontraditional agriculture

export (NTAE) industry (Voisard and Jaeger 2003; Takane 2004). Diversification of the export industry was particularly important at this stage of the SAPs because, the main export crops gold and cocoa which are also the main contributors to GDP were experiencing spiral price declines. For instance between 1980-1989, UNCTAD reported a 20.3% price volatility index for cocoa and within the same period FAO reported a 25.3% volatility in the export value of Ghana's cocoa (UNCTAD.org; FAO.org).

The second phase involved removal of all structural impediments in the economy in an effort to put the economy back in the course of growth. It included measures such as foreign exchange reforms, monetary and fiscal policies and trade liberalization. The third and final phase which may be considered as the marshal plan was aimed to deepen economic liberalization through deregulation of the commodity and services market so as to reduce the domestic price distortion and also to liberalize the export and import market (Seini and Nyanteng 2003). This final phase which was aimed to enforce the private sector as the engine for growth, created the enabling environment for private investment.

Following the support that the nontraditional agriculture (NTAE) sector received in the first phase of the SAPs, by the close of the 1980s, great landmark successes were achieved both in export volumes and revenues, with the pineapple industry accounting for a larger proportion of the exports. For example, between 1984 and 1997 a growth of rate 30% was recorded in the NTAE sector, resulting in an increase in export revenue from US$1.9 million in 1984 to US$330 million in 1997 (Dixie and Sergeant 1998). Also, revenue from fruits and vegetables export increased from US$1,848,000 in 1980 to US$26,383,000 in 1998 (FAO 1981; 1999). Pineapple exports alone increased from a figure of 30 tonnes in 1979 to 27,603 tonnes in 1996, fetching the country US$10.99 million in export earnings (Norman 2006).

Prior to the mid 2000s, Ghana produced only two main varieties of pineapples, the sugarloaf (Pan de Azucar) and smooth cayenne (see figure 5 and 6) (FAO 2009; Ouma 2008). The smooth cayenne or cayenne originated from Cayenne (French Guyana) in 1820. In spite of its susceptibility to diseases and problems of shipment, it was the most important and widely marketed varieties in the world until the 1996, and has been the main variety produced and exported from Ghana to the EU market until 2008. Smooth cayenne is almost free from spines except for the needle at the leaf tip. It weighs between 1.8- 4.5 kg, has cylindrical shape, shallow eyes, orange rind, yellow flesh, and low fiber. It is also juicy, has rich mildly acid flavor and suitable for canning. Unlike the smooth cayenne, Ghana's sugarloaf is produced for local markets, partly because the fruit is tender and difficult to export. The sugarloaf variety is popular in Central and South America, Puerto Rico, Cuba and the Philippines. This variety is conical in shape but sometimes round, not colourful (near white or yellow colour) but very sweet and juicy. The leaves and crown easily pulls out, and it weighs between 0.68-1.36 kg. It is drought resistant and thrives well in heavier soils. In Ghana, it is mainly grown in the central region.

Figure 5: MD2 variety

Figure 6: MD2 in Pan, Smooth cayenne on table and Sugarloaf against table

Source: Field Photos 2009

4.5.2. The Early 1990s and Ghana's Pineapple industry: the success story

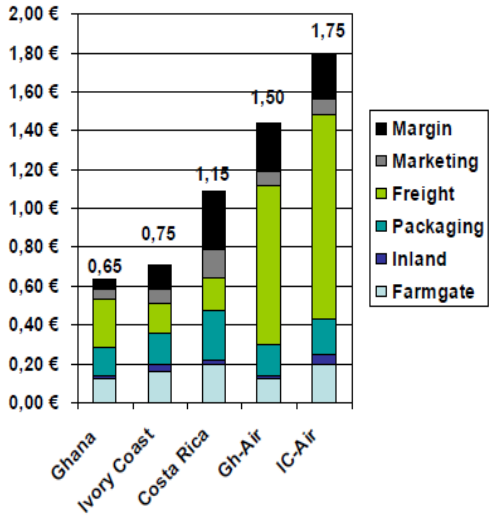
Under the SAPs, the state was recommended not to interfere with the free operation of the market but rather create an enabling environment for a private sector driven economy. As a result and by the early 1990s, the government implemented programmes such as trade liberalization, withdrawal of all forms of interventions/subsidies, privatization, devaluation, and institution of a Land Title Registration Law (1986) to protect investors' property rights. These programmes attracted both local and international investments into the private sector including the pineapple industry which at the time was driven by small-scale producers and a small numbers of exporters. As a result of this, the pineapple industry in the early 1990s began to witness a growth in the numbers of large-scale producers, the majority of whom were initially exporters. According to Takane (2004), the exporters vertically integrated into direct production because the small-scale farmers who were their main suppliers could not guarantee them of quality and consistent supply.

Although growth in the number of producers positively affected production and revenue levels in the pineapple industry, Takane's (2004) report of a takeover of the industry by large-scale producers seems to have defeated the dual purpose for which the NTAE industry was established i.e. to increase export revenues and improve rural livelihood opportunities through encouragement of smallholder participation.

Besides the number of producers, Daniel and Ravry (2005) noted that the success of Ghana's pineapple industry in the early 1990s was as a result of certain comparative advantages the local industry had over its major competitors. They include the market positioning of the industry and comparatively low airfreight cost advantage.

Contrary to the market strategy adopted by other pineapple producing countries that focused on large supermarket chains, Ghana in the 1990s rather saved on cost of marketing by targeted the lower margins of the EU discount market which offered competitive price for its fruits thus making the local industry very competitive (see Figure 7).

Figure 7: Comparative cost structure of the pineapple industry



***Source*:** Danielou and Ravry 2005

Also, in the early 1990s, exporters in Ghana took advantage of available space on cargo aircrafts that stop in the country and in Nigeria to negotiate cheap delivery agreements for their northbound freights (Jaeger 2008). These arrangements were timely and crucial for the local industry in the sense that at the time, all pineapple exports were done through air-freighting. These advantages as we will later see below were quickly undermined by certain dynamics and changes in the global pineapple industry.

4.5.3. Global dynamics and the Ghanaian pineapple industry: from mid 1990s to late 2008

According to Kloppenburg (2004), economic and scientific power over the seed industry falls in the domain of a few biotechnology companies whose need for income –accumulation now – has shaped their release of products in ways that have significant consequences for the environment, farmers and society as a whole. Paul and Steinbracher (2003) also noted this in their study by indicating that a few number of companies have gained an alarming level of control over the global food chain through industrialization of agriculture, the forces of globalization, and vertical and horizontal integration of

businesses. Accordingly, more than 50% of the world's market for seeds and agrochemicals are controlled by just five agro-based companies. These observations are to an extent applicable to the global pineapple industry.

Among all the global nontraditional agriculture export (NTAE) crops, pineapple production is one of the most politicized and yet controlled industry. Over the years, both private companies and state governments have tried to dictate and maintain their position as pacesetters in the industry. This contest of superiority is manifested in the hundreds of pineapple cultivars developed and marketed around the world within the past century. Even though this promoted competition and rapid growth, some companies however, such as Del Monte and Dole succeeded in exerting their influence over the global pineapple industry.

In 1996 for instance, Costa Rica introduced a new pineapple variety called the MD2[7] or gold extra sweet. This strain of pineapple originated from a breeding program of the now-defunct Pineapple Research Institute in Hawaii which was co-financed by Del Monte and Dole, the world's two most important pineapple producing companies. It is alleged that the MD2 was developed for a target market which was looking for an extra sweet fruit with uniform ripeness and size. The gold extra sweet as the name implies has a golden yellowish flesh and outer shell, it is less acidic, more complex in taste, has a distinct coconut flavor and contains 2-3 times more vitamin C than other pineapple varieties. After its introduction, the MD2 benefited from extensive mixture of research and development; supply chain improvement; and marketing, and thus within few years of its existence had become the preferred variety by consumers who considered it as better in taste and appeal than the smooth cayenne. This sudden switch, especially by European consumers and supermarket chains undermined the cost advantage and competiveness of Ghana's smooth cayenne, thus resulting in spiral declines in pineapple exports

[7] It is named after Mrs Dillard, the wife of the vice president of Del Monte Hawaii (Source: http://www.pr-integra.com/de/news/d_delmonte/en_Ananas_Geschichte.php?integracss=true&doklang=english, 14/03/2010)

volumes in the 2000s (see table 4 and 5; figure 9). According to Takane (2004), the most affected players in the industry were the small-scale farmers who are the majority and largest suppliers of smooth cayenne to the export market. The impact was particularly hard on the small-scale producers because unlike the large-scale producers, their limited capital could not allow them to switch to MD2 production which requires very huge capital investment. In a cost estimation conducted by Koomson's (2007) he noted that to develop an acre of smooth cayenne farm, an amount of ¢1,448.90 (US$1,506.86) is required as against ¢16,805.80[8] (US$17,478.03) required to develop the same size of MD2 farm. The reasons given for these disparity include high operational and production costs of MD2 - while the operational cost of smooth cayenne is estimated at 89% that of MD2 is 99%; and whereas the cost of planting materials needed for an acre of smooth cayenne farm is estimated at ¢557 (US$579.28) that of MD2 is ¢14,520(15,100.80).

While the Ghana was trying to adopt and switch to production of MD2 in order to reestablish itself as one of the leading producers and exporter of pineapples, the industry encountered yet another challenge in 2001, when fruits exported to the European market were rejected on the grounds that the residual samples of ethephon[9] collected on them exceeded the European Union (EU) Maximum Residue Levels (MRLs), thus bringing the entire industry to disrepute (Gogoe 2004). At about this time, there was an evolving agriculture certification standard called the EUREPGAP, developed purposely for Agriculture producers whose target market was the European consumers. Because of the high cost of compliance to the EURUGAP standards, most Ghanaian pineapple producers in the early 2000s did not find it compelling and attractive enough to apply for certification. However, after the rejection of Ghana's pineapples in 2001, many large-scale producers/exporters felt the need to protect and maintain their hold on the EU market, thus many applied

[8] Approximate exchange rate in 2007 (GH¢1 ≈ US$1.04)
[9] A chemical used to de-green fruit before harvest

for certification and by the end of 2003, about one third of them had obtained EUREPGAP Compliance Certificate, as either individual companies or as a grower group under the Produce Marketing Organization (PMO) (Vossenaar 2006; Gogoe 2004).

The EUREPGAP (GLOBALGAP)[10] certification embodies a set of voluntary pre-farm-gate standards which producers must adhere to in order to maintain their access to the international market. It is currently one of the widely accepted Good Agriculture Practice (GAP) standards in the world with over a 100 independent and accredited certification bodies in more than 100 countries. The EUREPGAP protocols integrated what is sometimes known as "the triple bottom line - people, planet and profit" – recognizing the importance of agriculture producers and ensuring that their activities are undertaken in responsible ways that respect food safety, the environment, workers welfare and the welfare of animals The GLOBALGAP has four main options: Option 1 for Individual farmers, Option 2 for group certification, Option 3 for individual certification under benchmarked standards, and Option 4 for group certification under benchmarked standards (See appendix I for certification procedures) (www.globalgap.org – GLOBALGAP website).

In recognition of the important role played by small-scale producers in food supplies to the EU market, the EUREP working group designed 'Option 2' to give the smallholders the flexibility of apply for group certification so as to spread out the cost of compliance. Even with this in place, the cost of compliance for group certification is still high. In a study conducted in Kenya it was found that groups would need an initial capital of $1,270 to establish the process of compliance and a yearly amount of $350 for maintenance (Jaeger 2008). In addition to this, each individual farm was required to have basic facilities on the farms such as toilet and water. As a result of these

[10] Euro-Retailer Produce Working group for Good Agricultural Practices (EUREPGAP)

requirements, only a few small-scale pineapple farmers in Ghana have been able to acquire certification. What this implies is that only those few certified smallholders were able to access the export market since certification has become a prerequisite for access to the EU market. As a result, the majority of the small-scale farmers began to find the industry unprofitable. In a market survey conducted by TechnoServe in 1998, they realized that if smallholders were to produce only for local market, they would make loses of ¢10.87 (US$46.31) on every acre of pineapple they produce, however if they produced for processing companies and the export market, they will make profits of ¢2.9 (US$12.35) and ¢352.95 (US$1,503.57) respectively (see table 2 below). With this additional challenge, Danielou and Ravry (2005) argued that the impact of the MD2 on smallholder production activities in Ghana was far greater than the EUREPGAP. In efforts to help the local industry adapt to the changing trends in the global pineapple industry, the government of Ghana instituted and supported various programs including: providing support for farmer groups e.g. Farmapine Ghana Limited (FGL); and financing research projects including Bioplantlet Ghana Limited. Also, donor organizations and NGOs such as the German Technical Co-operation (GTZ), TechnoServe Inc., USAID Trade and Investment Program for a Competitive Export Economy (TIPCEE) and Amex International and Natural Resources Institute in UK provide various forms of supports programs to producers in the industry especially to small-scale farmers. One of such programs is the development of training manuals by TIPCEE, GTZ, Ministry of Food and Agriculture Horticulture Export Industry Initiative (HEII), and the Sea-freight Pineapple Exporters of Ghana (SPEG) to help small-scale farmers attain GLOBALGAP group certification (see appendix I) (TIPCEE 2007).

Table 2: ***Market options and Net Margins for smallholder Pineapple Production (Cedis per acre), 1999***

Item	Processor	Local Market	Export
Price per Kilogram	0.015	0.012	0.040
Total cost Per kilogram	0.014	0.014	0.014
Net Profit (Loss) Cedis per kilogram	0.0006	(0.0024)	0.026
Total Net Harvest (Kg)	22,2950	22,2950	22,2950
Percentage harvest for each Market	20 (4,950 kg)	20 (4,950 kg)	20 (4,950 kg)
Net Profit (Loss) Cedis per Kilogram	2.9	(10.87)	352.95
Source**:** TechnoServe (1998)		***Exchange rate in 1998 GH¢1 ≈ US$ 4.26***	

Farmapine Ghana Limited (FGL) and small-scale pineapple farmers

In the early 1990s, pineapple farmers in my study area formed farmer cooperatives with the aim of establishing farmer-based producer and marketing organization to expand exports and consolidate smallholder participation. The successes of these farmer groups formed the basis for the establishment of FGL in 1998. Ironic as this may seem, Farmapine, a Famer Ownership Model (FOM) was initiated by the government of Ghana and financed by the World Bank[11], an institution which in the 1980s and early 1990s advocated for noninterference of the state in private business operations. At its inception, FGL had a membership of 179 small-scale farmers, increasing drastically to 300 farmers in 2005 (Danielou and Ravry 2005). In 2000, the company exported over 3,500 tonnes of pineapple, making it the second largest exporter that year with about 20% share of total exports (Takane 2004; Fold and Gough 2008). Yeboah (2005) noted that Farmapine farmers regularly achieved profit margins that were twice as high as non-member small-scale farmers.

[11] The World Bank provided a seed capital of $1.4 million loan to Farmapine Ghana Limited (FGL) to be repaid in 10 years at a 7% interest rate (http://www.choicesmagazine.org/2005-1/grabbag/2005-1-16.htm, 20/04/2010)

Generally, FGL's operations included provision of training and logistical support such as working capital and production inputs to its members. It also sourced pineapples from the farms of its members, providing a guaranteed market for small-scale farmers.

After obtaining EUREPGAP certification in 2004 and fair-trade status in 2005, Farmapine Ghana Ltd helped most of its members to do same. According to Takane (2004) the arrangements made by Farmapine can be seen as an institutional solution to overcome the disadvantages faced by smallholders such as lack of production information and inability to secure bulk and consistent supply. Farmapine tried to overcome these disadvantages by arranging for its agronomists to give disseminated information about good farming practices as well have them pay regular visits to farms of the smallholders in other to enforce compliance of the GLOBALGAP standards. These supports provided by the company were working out very well for the small-scale producers until the latter part of the 2000s when the company ran in to a pile of problems. Between 2005 and 2007, the company over-invested in office buildings, a shed (for grading and packing) and trucks, to the extent of using up their working capital (Fold and Gough 2008). As a result of this, they could not supply their members with inputs, and payments of pineapples collected were delayed. This sudden change caused many farmers to lose confidence in the operation of the company. As result, most of them started selling their fruits to other buyers thereby disrupting the supply program of the company. As a consequence of this, the company could not meet its supply needs and so was forced to close down its pack house in 2006 and later folded up its operations in 2007 (Jaeger 2008; Golub and McManus 2009).

Bioplantlet Ghana Limited and how Ghana earn back its place a leading pineapple producing country

After the MD2 had succeeded in displacing the smooth cayenne in the EU market shelves, a need for the rethinking of the Ghanaian industry was

created. The government instituted radical to regain its share of the EU market (HEII 2006; GEPC 2008). An amount of US$2 million was therefore given to the Ghana Export Promotion Council (GEPC) to be invested in industry, specifically in the development of MD2. Part of the money was given out as loans to individual companies and the other part was invested in a pineapple research firm called Bioplantlet Ghana Limited, charged with the responsibility of multiplying and supplying the new MD2 plantlets to farmers (GEPC 2008). In 2003, Bioplantlet successfully used tissue culture techniques to duplicate the MD2 variety, and in 2008, it produced and distributed 2million plantlets to farmers in and around Ghana. As a result of these, export of MD2 in 2008 increase to 42,000 tonnes, accounting for about two-thirds of total pineapple exports that year (GEPC 2008).It must be noted that in spite of this dramatic growth in MD2 production and exports, production of smooth cayenne still remains the most common and widely grown variety in Ghana, mainly among small-scale farmers.

4.5.4. The Structure of Ghana's Pineapple industry

Pineapple production has become a specialty product in Ghana, driven principally by innovative entrepreneurs in the private sector (Danielou and Ravry 2005). Generally, the sector is characterized by activities of three main actors: large-scale companies/commercial producers (including local and transnational companies); out-growers; and small-scale producers (see Figure 8). However, the arrival of Compagnie Fruitière (locally registered as Golden Exotics) in 2005, added a fourth category to the sector i.e. international agribusiness corporations. This diversity has stimulated internal competition thus enhancing the dynamism of the sector (ibid).

Large-scale companies/commercial producers

Large-scale companies are mainly large-producers who cultivate land areas of between 20 – 100ha. Typically, these lands are obtained through long lease

agreements, usually for a period of 50 years. Large-scale production is all year round and supplies are structured to meet specific market needs.
In 2000, 60 large-scale pineapple companies were recorded and the top five[12] accounted for 72 percent of total export.

Originally, as mentioned above, most of these large-scale pineapple companies started off as exporters, relying solely on supplies from smallholders and a few large-scale producers. However, Takane (2004) noted that the constraints of quality and timely delivery of supplies to trading partners resulted to most of them vertically integrating into direct production with just a few specialized in specific stages of the chain as producers, processors, or exporters (also see Danielou and Ravry 2005).

Generally, large-scale pineapple companies in Ghana operate under different business models, ranging from medium-sized local companies, cooperatives, and joint ventures.

Compagnie Fruitière in Ghana

Compagnie Fruitière is a French company in which Dole, the world's largest fresh pineapple producing company has 30% share. The company is registered locally as Golden Exotics Ltd and it is the first multinational operator in the country.
Since its arrival in Ghana, Golden Exotics has progressively increased its cultivable lands and it is currently cultivating about 2500 acres of pineapples. The long term objective of the company is to expand its farm land area to 7,500 acres, which will equate to an annual production of 50,000 tonnes of pineapples.

The arrival of Golden Exotics has had a positive impact on the Ghanaian industry. Firstly, their state-of-the-art agronomic know-how helped in

[12] The main companies included Jei River (6,431 tons), Farmapine (4,766 tons), Milani (4,503 tonnes), Prudent (3,820 tonnes), and Georgefields (2,890 tons) (Danielou and Ravry 2005). The others were Koranco Farms Lt, Blue Sky Products Ghana Ltd, BOMART farms Ltd and Combined farmers Ltd

spreading the MD2 technology to producers. Secondly, their well-tested logistical capability in shipping fresh fruits helped to improve the local industry's competitiveness in sea-freighting. Currently, the Sea-freight Pineapple Exporter of Ghana (SPEG) has a biweekly sea-freighting program with Africa Express Line (AEL), a shipping company owned by Compagnie Fruitière.

Out-grower

Unlike the large-scale companies, the out-growers and smallholders are not distinguished by sizes. Both out-growers and smallholders generally cultivate very small pieces of land. However in most cases, cultivable plots of out-growers are comparatively bigger than that of smallholders.

The main distinction between out-growers and smallholders is usually based on the level of access of the two producers to exporters. Most out-growers are subsidiaries of large-scale companies or contracted by exporters who in return provide various forms of supports including input supplies and technical support to their out-grower. The contractual terms arranged with the out-growers are usually formal. These arrangements are often blamed by both parties, i.e. the out-growers complain about low prices offered for their produce, and exporters accusing out-growers for defaulting on the terms of contract by selling their produce to outside buyers who promise them higher price (Danielou and Ravry 2005).

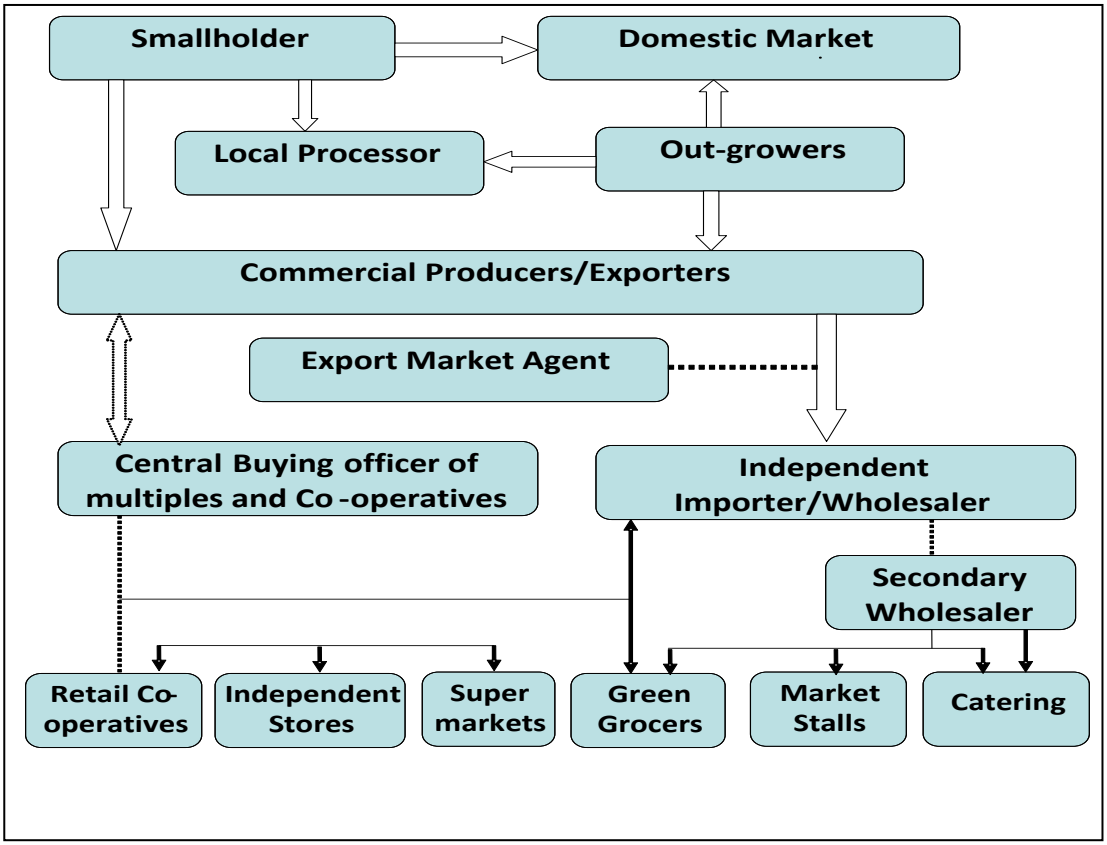
Smallholders

In 2000, 600 small-scale pineapple farmers were recorded by TechnoServe. As stated above, most of the small-scale farmers in Ghana cultivate very small pieces of land usually less than an acre. Their activities are characterized by limited access to farm inputs and training; seasonal production; and poor harvest due to difficulties in meeting farm requirements (Danielou and Ravry 2005). Even with the poor harvest, supplies from farms of smallholders'

account for 45% of total pineapple export in Ghana (Dixie and Sergeant 1998; Takane 2004).

Unlike the out-grower, the smallholders do not have any formal arrangements with exporters thus have the freedom to sell their produce to any buyer. However, the negative consequence of this freedom is that, they hardly reached their preferred buyers, the exporters, who in comparative terms offer better prices for their fruits than the itinerant traders and local processing companies who usually buy their produces. It has been noted that even the few lucky ones who succeed in access the export market, are often offered poor prices and long terms of payment. Fold and Gough (2008) reported instance where exporters defaulted in payment, forcing many smallholder farmers to stop production. According to Takane (2004), these dynamics and uncertainties reflect uneven power relations among players in the industry.

Figure 8: ***Organizational Structure of pineapple Production and Export in Ghana***



***Source*:** Ghana Export Promotion Council (GEPC)

4.5.5. Export destinations of Ghana's pineapples

The European market is the main export market for Ghana's pineapples. In 2004, a total of 70,000 tonnes of pineapples were exported resulting in Ghana being ranked as the third largest exporter of pineapples to the European market (Danielou and Ravry 2005). The main destination countries are Belgium, Switzerland, the Netherlands, Germany, UK, Italy and France (COLEACP 1998; Dixie and Sergeant 1998) (see table 3).

Table 3: ***Initial Destination of Pineapple Exports to Europe (1999)***

Country	**Belgium**	**Switzerland**	**Netherlands**	**Germany**	**UK**	**Italy**	**France**
Volume	14,300	5,450	3,000	2,600	1,000	850	275
(tonne)							
Percentage	52	20	11	10	4	3	1

Source: Dixie and Sergeant (1998)

4.5.6. Performance of Ghana's pineapple industry at the Global level

Within the past three decades, the performance of Ghana's pineapple industry has been remarkable even in the light of known challenges such as the introduction of the MD2 which undermined the industries competitiveness at the global level. Today, pineapple is the single most important and lucrative NTAE crop (accounted for 25% of total exports of NTAEs) and the third most important export crop after cocoa and palm oil in Ghana (Technoserve1998; GEPC 2002; Danielou and Ravry 2005; FAO 2009).

From the beginning of this millennium, Ghana's pineapple grew to fill a void in the West African export, created by a decrease in exports from Côte d'Ivoire (see Figure 9; Table 4 and 5 below). Today, Ghana is ranked third

after Costa Rica and Côte d'Ivoire as the leading exporter of pineapples to the EU market. In 2007 the country exported a total of 90,000 tonnes of pineapples (Jaeger 2008).

Table 4: ***Exports of Pineapple in selected countries from 2000 – 2005 (in Tonnes)***

Countries	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Ghana	60,000	60,000	46,391	45,421	72,000	52,574
Thailand	2,248,000	2,078,000	1,739,000	1,899,000	2,101,000	2,183,000
Philippines	1,560,000	1,618,000	1,639,000	1,698,000	1,760,000	1,788,000
Cote D'Ivoire	238,000	249,000	228,000	243,000	216,000	195,000
Costa Rica	903,000	950,000	992,000	984,000	1,077,000	1,605,000
Brazil	2,004,000	2,145,000	2,150,000	2,160,000	2,216,000	2,292,000

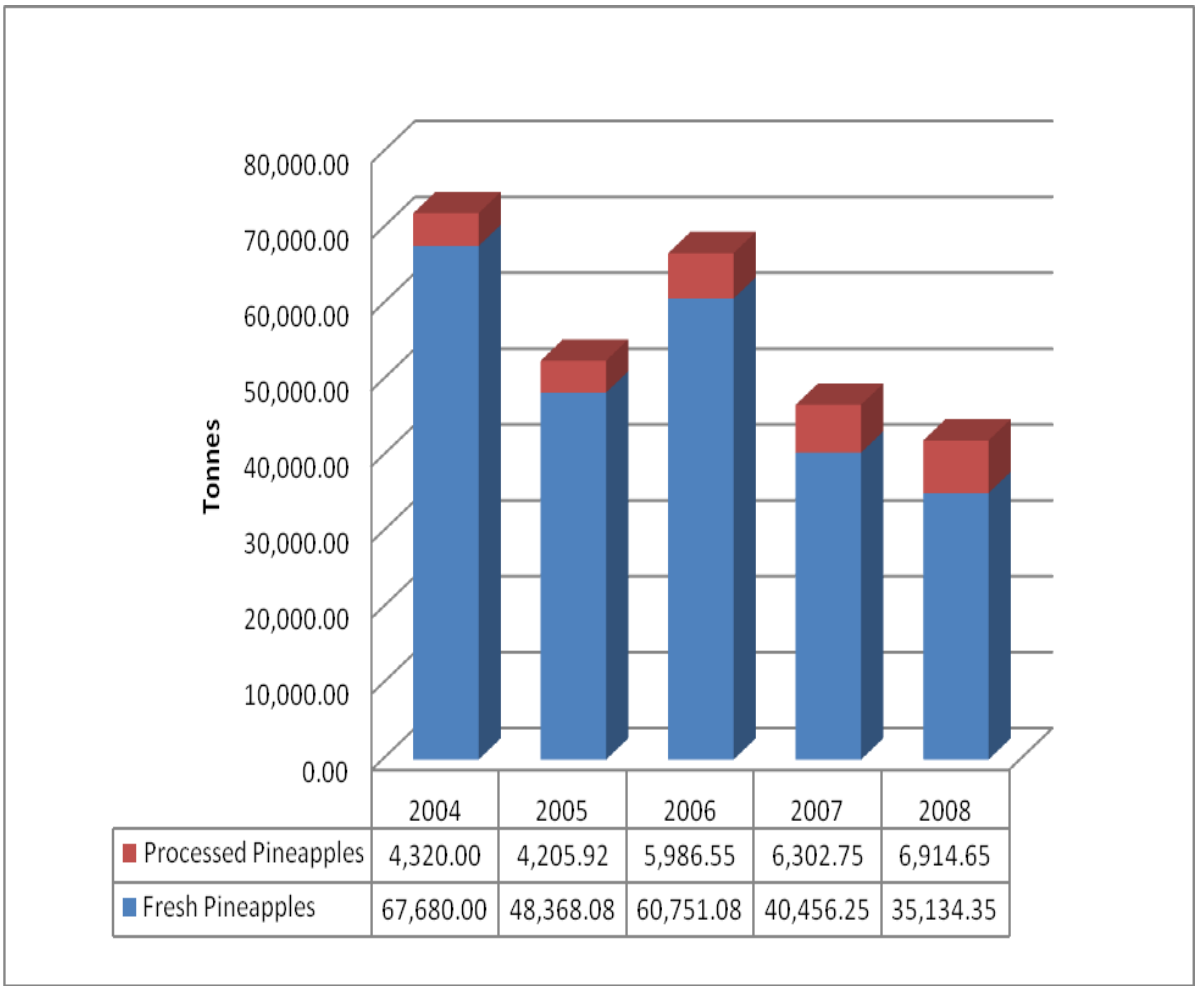
Source: Ghana Export Promotion Council (GEPC); www.faostat.com

Table 5: ***Volumes and Earnings of Ghana from Exports of Fresh Pineapples (2000-2005)***

Year	***Approx. Volume (tonnes)***	***Approx. Earnings ($millions)***
2000	60,000	11.85
2001	60,000	13.00
2002	46,391	15.52
2003	45,421	14.00
2004	72,000	43.19
2005	52,574	27.55
2006	66,737	46.57
2007	46,759	41.40
2008	42,049	43.48

Source: Ghana Export Promotion Council (GEPC); www.faostat.com

Figure 9: ***Volumes of Export of Fresh and Processed Pineapples (2004-2008)***



Source: Ghana Export Promotion Council (GEPC); www.faostat.com

4.5.7. Cost of producing pineapples in Ghana

Production figures gather from the office of Sea-Freighted Pineapple Production Exporters of Ghana estimated the cost of producing a kilogram of pineapple between US$0.32 and US$0.39 (SPEG). In a similar report compiled in 1998, TechnoServe estimated the cost of cultivate an acre of pineapple farm at ¢329.75 (US$1,404.74) and the cost of producing a kilogram of pineapple at ¢0.014 (US$0.06) (see table 6).

Table 6: ***Summary of Pineapple Production cost (cedis per acre), 1999***

Item	Cedis/acre	Percentage of Total Cost
Land Preparation	12.2	4
Purchase of Sucker	116	35
Treatment of suckers	8.5	3
Planting of suckers	12	4

Application of Chemicals	47.4	14
Application of fertilizer	29.2	9
Forcing	14.4	4
Harvesting	15	5
Total variable cost (VC)	254.65	77
Total Fixed Cost (FC)	75.1	23
Total Cost (VC+FC)	329.75	100
Total Net Harvest (per Kg)	2.3	
Total Cost per Kg	0.014	

Source: TechnoServe (1998) ***Exchange rate in 1998 GH¢1 ≈ US$ 4.26***

The literature suggests that in nontraditional export crop production, small-scale farmers usually have cost advantage over their competitors, the large-scale producers (LSP), in the sense that they do not pay for labour (they depend on their household labour) as the LSP do. Jaffee (1994) noted that this is not the case with Ghana's pineapple industry, however figures obtained from TechnoServe puts the cost of production by commercial producers way about that of smallholders (see Table 7). Even with the figures below, what is not clear is, to which pineapple variety (MD2 or smooth cayenne) are the estimates representative of?

Table 7: ***Estimated Net Margins for Commercial Producer and Smallholder (US$ per tonne), 1999***

	Exporter	**Smallholder**
Revenue	450-500[1]	170[2]
Costs		
Growing cost	55[3]	48
Purchase of small holder fruits	76.5[4]	-
Packaging	120	-
Fixed Cost	130[5]	13[6]
Total Cost	381.5	61
Net margin	68.5-118.5	109
Net Margin as percentage of Turnover	15-24%	64%
Total Cost		

[1]*Free on Board (FOB) price $450-$500/MT*
[2]*Smallholder purchase price ¢0.040/Kg, equivalent to $170/MT*
[3]*Assummed as 55% of total export supply with growing costs ranging ($0.087-$0.12)*
[4]*Assummed as 45% of total export supply with purchase price ¢4000/Kg*
[5]*Based on estimated figures from APEG*
[6]*Based on crop budget calculation by TechnoServe*

***Source*:** TechnoServe (1998)

4.6. CONCLUSION

This chapter has shown how the Ghanaian pineapple industry started from a very little village in the Greater Accra region to become a very important industry in the nontraditional agriculture export (NTAEs) sector. It also gave an overview of how competitive strategies of large-scale companies and global structures and dynamics including the introduction of the MD2 pineapple variety eroded a thriving smallholder-based pineapple industry.

5. RESULTS AND DISCUSSION

5.1. INTRODUCTION

My fieldwork answered a wide range of questions but special attention was given to the impact of large-scale pineapple companies on rural livelihoods. This chapter presents my research findings in two parts. The first part gives a general overview of the results and the second part addresses the two main questions of the thesis, that is:

3. What are the opportunities available to rural people with the growth of the pineapple industry in Ghana?

4. What is the role played by large-scale pineapple companies in rural livelihoods?

In addressing the above questions, I give an account of how my respondents' perceive the pineapple industry in Ghana. Further, I adopted Ellis's (2004) sustainable livelihoods framework to explain the impact of large-scale pineapple companies (LSPC) on rural livelihoods. In discussing this, I also explore Takane's (2004) claim that Ghana's pineapple industry embodies unequal power relations. Since Foucault (1978) noted that power is everywhere and in all networks of relations, I try to establish the substance of Takane's assertion by looking at the relationship between rural people and large-scale pineapple companies in my study area. In explaining 'power in a network of relations', Foucault (1978) emphasized the importance of the processes that enforce power over who has or is deprived of it, thus, I also aim to understand and explain how patterns of modifications have been created in rural communities and people's lives as a result of their interactions with large-scale pineapple companies.

PART I

5.2. GENERAL DISCUSSION OF FINDINGS

5.2.1. Household Characteristics

The data collected from the field is representative of a sample of 70 households containing 378 members and an average household size of 5.4 persons. 77% (54 out 70 households) of the households are migrant families. In Ghana, a combination of factors determines the composition of a household, however, in this thesis, a household is defined as a person or a group of persons, who live together in the same dwelling and share the same house-keeping arrangements.

Sex Distribution of Respondents

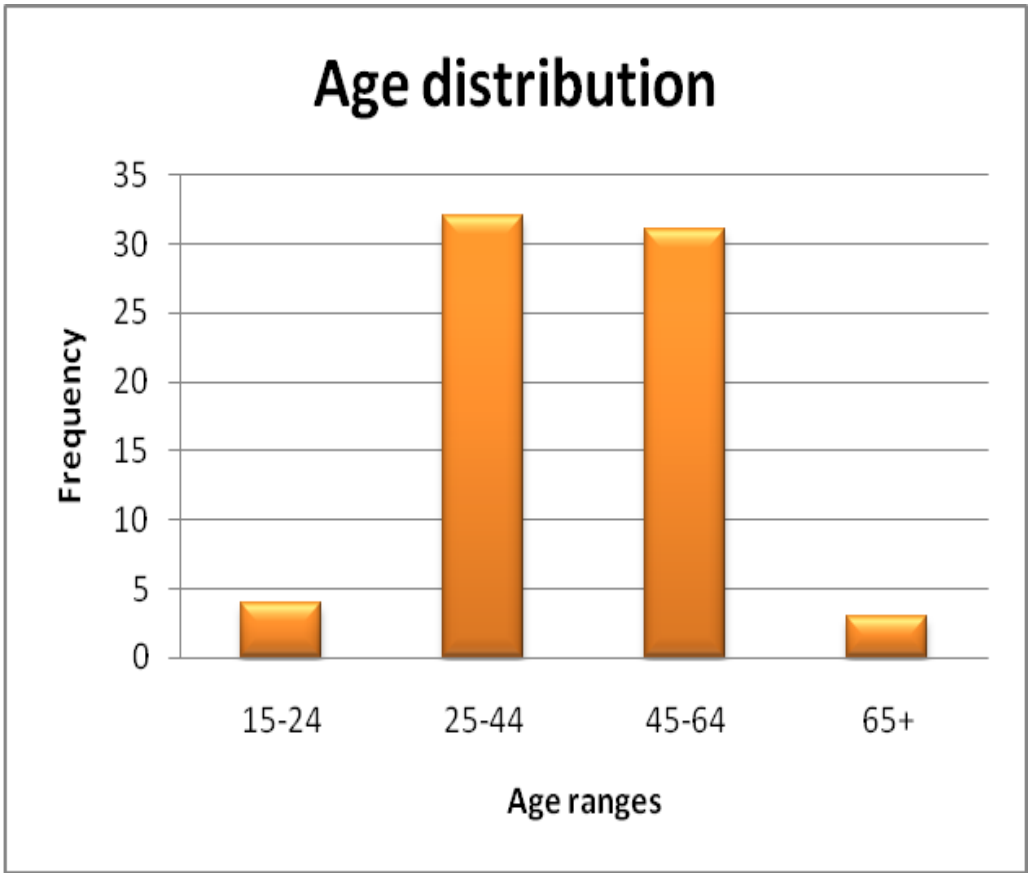
The gender split of my respondents was 90% male and 10% female. The bias in favour of males could be due to cultural reasons. In most traditions in Ghana, the oldest male family member usually assumes the head of a family or lineage role, thus is responsible for the day-to-day upkeep of the family as well as lead in any form of family discussions.

Age Distribution of Respondents

The majority of my respondents were between the ages of 25 and 64 years. The youngest households head was 20 years old and the oldest was 88 years old (Figure 10). The calculated dependence ratio[13] was 1:1.8 as against the national ratio of 1:1.2 (GSS 2008a).

[13] Ghana's working age is between 15 – 64 years (GSS 2008b)

Figure 10: ***Age distribution of household heads***



Household Economic and Income Activities

Out of the 70 households interviewed, 65 (93%) households had farming as their main economic activity with 60 (85.7%) of them producing pineapple on small-scale. Also, almost all the households (93%) with the exception of 5 (7%) engaged in other economic on-and-off-farm activities (e.g. trading, mechanics, driving, hairdressing, food retailing etc) beside the main cash generating crop, thus concurring with the popular observation that most household had diverse portfolio of economic activities (see Hussein and Nelson 1998; Ellis 1998 & 2000; and Chambers and Conway 1991).

The mean annual income of the households interviewed was ¢3,815[14] compared to the national average of ¢1,217 and the annual average per household member income was ¢706.48 compared to the national average of ¢400 (GSS 2008a). It is interesting to note that pineapple production is the main source of income for over 60% the households interviewed. About 50% (¢126,575 or US$84,805.25) of the households total annual income (¢267,050 or US$178,923) was income generated from pineapple production alone, thus showing how important pineapple production is in my study communities. These findings concur with Fold and Gough's (2008) study of Pokrom/Nsabaa, one of my study communities. In that study, it was reported that 83% of the households they interviewed were engaged in pineapple farming of some kind and it formed the main source of income for 70% of the households.

Income correlation

In the analysis of my household's income and income sources, I observed that certain characteristics of households had positive correlation with income.

Firstly, I realized that households with diversified income portfolios including both on-and-off farms, especially those who keep other jobs beside their main economic crop (pineapple) had high annual incomes. Ellis (2000) and other rural livelihood experts noted that rural household diversify their income sources for two main reasons i.e. either for the purpose of necessity or choice. This is sometimes posed as being a contrast between survival and Choice (Davis 1996) or between survival and accumulation (Hart 1994). In the case of the former, household involuntarily diversify because it is in distress. Examples include eviction of a tenant family from their access to land, land degradation leading to decline in crop yields and loss of the ability to continue producing pineapples due to structural problems and difficulties including lack of capital. Choice by contrast, is when a household voluntarily diversify for

[14] Exchange Rate: ¢1 ≈ US$0.67

proactive reasons, for example, seeking out seasonal wage employment with pineapple companies, educating children to improve prospects of obtaining non-farm jobs, and saving money to invest in other economic activities such as trading, the operation of commercial public transport systems and carpentry.

In the case of my respondents both reasons do apply, for instance most of them said they entered into pineapple production because they thought it was profitable and other said they start production because the lost of their cocoa farms in the 1980s necessitate their switch over to pineapple production.

Secondly, I also observed that households with many educated members especially above the basic level hard higher annual income. According to Ellis (2000), households also can improve their livelihood by educating its members, in that way, their chances of diversifying and accessing resources will be enhanced. I could not directly relate the high annual incomes to level of access to resources by households but what I noticed is that most of these households with educated member also had big farms and other economic activities usually of an apprentice sort such as carpentry and fitting.

Another observation was that households with many members and dependents had relatively higher income levels. Conventional wisdom, especially among rural people in Ghana is that a wealthy household is one that has many members in that the household can fall on its human resource to cultivate larger fields. Such large households can easily diversify their activities and allocate more labour to income generating activities than small household that will give priority to food production.

Additionally, my data shows that households with big pineapple farms have higher income. In microeconomics theories, it is argued that as businesses grow bigger they turn to enjoy certain cost advantages termed as economies of scale. These benefits include bulk purchase of material on long-term contracts, easy access to and low-interest charges on loans, specialization of managers, and low cost of advertisement (Dudley 1998).

These advantages did not stand out clearly in my findings. What I found was that most of the household with bigger farmers are out-growers to bigger companies and thus may be enjoying these benefits indirectly. Additionally, pineapple cultivation is said to have standard cultivation distance, therefore, a bigger farmer will mean many pineapples to plant, harvest and sell thus the possibility of making very good returns.

Out-grower and families with some sort of buying agreements with exporters or large-scale companies were also found to have high incomes. TechnoServe in 1998 reported that producing for the export market is more rewarding than producing for local market (see table 2), thus small-scale farmer always try to sell to exporters or companies. With the displacement of the smooth cayenne at the international market, selling of smooth cayenne to exporters is not an option for most small-scale farmers who produce only smooth cayenne. Most of my respondents sold their pineapples to local processing companies including Blue Skies who offer comparatively good prices.

Finally, households that began pineapples production in the 1980s were also found to be among the group with high incomes. According to the respondents, the most established small-scale pineapple farmers now, are those who started production in the in the early days of the industry. Their experiences, connections and savings they made during the boom days of the industry arguable is what has given them the flexibility and competitive urge over the other smallholders.

To conclude this discussion it is important to note that households with female heads were among the lowest income group. In popular parlance, it is usually claimed that some jobs are men only. One of such just as I noted on the field is pineapple production. According to the respondents, pineapple production is “a man’s job” in the sense that it is physically intensive and laborious and thus perceived as a very challenging and difficult venture for females. The few households with female heads are among the 28 households

that do not engage in pineapple cultivation as a main economic activity. Although I did not investigate this in my study, there might be some barriers for female participation in pineapple production. Such barriers can be for example linked to local perceptions of what constitutes a man's and a woman's job, the intra-household division of labor which makes it difficult for females to carry out activities outside the sphere of the family or formal barriers linked to access to credit or land ownership to be used as collateral if women do not own the land. Thus, if pineapple is the single most important and profitable economic activity in my study area then one can understand to this point why households with female heads will have very low income, future research on the specific topic of women's barriers for participation in pineapple cultivation is required to shed light on this issue.

5.2.2. Companies Characteristics

Data gathered about pineapple companies in my research area represents responses of 5 managers of the following companies: Blue Sky Products Ghana Ltd, Annhu Ntem Farms Ltd, Bomarts Farms Ltd, Koranco Farms Ltd and Combined Farmers Ltd (Table 8).

Table 8: ***Pineapple companies in my study area***

Name	Activity	Location	Size	Type of pineapple produced	Community projects	Ownership	Certifications	Daily wage (labourers)
Annhu Ntem Farms Ltd	Out-grower (to Blue skies)	Pokrom near Nsabaa	Medium 2,000t annually (650 acres)	MD2 & Smooth Cayenne	Educational scholarship to two pupils in Pokrom , donations to Pokrom community clinic, & construction of feeder roads	Local **(Established in 1990)**	GLOBALGAP	GH¢5.5 (US$3.6).
Blue Sky Products Ghana Ltd	Processing and exporting	Dobro near Nsawam	Large-scale (2,500t annually, exports 85% of its products)	MD2 Sugar loaf & Smooth Cayenne	construction of community Football Park, library, internet café and boreholes	Foreign (TNC) **(Established in 1998)**	GLOBALGAP, LEAF and Fairtrade	GH¢5.5 (US$3.6)

BOMART Farms Ltd	Producing and exporting	Dobro near Nsawam	Medium 6,000t in 2008 (1500 acres)	98 % MD2 & Smooth Cayenne	Construction of boreholes, schools, public toilet, and clinics; IT training for workers; and cash donation ($5,000) to Notre Dame Clinic, Adoagyire.	Foreign (15%) and Local (85%) **(Established in 1985)**	GLOBALGAP and Fairtrade	GH¢3.5 (US$2.35).
Koranco Farms Ltd	Producing and exporting	Abotweri near Fotobi	-	MD2		Local **(Established in the late 1970s)**	GLOBALGAP and Fairtrade	
Combined Farmers Ltd	Out-grower to Blue skies	Obodan near Fotobi	Medium (250 acres)	MD2	Donation of generator and 100 bags of cement to the Fotobi community	Local **(Established in 1977)**	GLOBALGAP	¢3-5 (US$1.34-3.35).

With the exception of Koranco Farms Ltd and Combined Farmers Ltd, the other three companies were established after the mid 1980s. Probably, the favourable macroeconomic and investment environment created by the implementation of the Structural Adjustments Programs and the enactment of the Land Title Registration Law (1986) by the government of Ghana influenced the establishment of these companies.

Also, with the exception of Blue Sky Products Ghana Limited and Bomarts Farms Ltd, all the others companies are owned entirely by local private investors. Both Blue Skies and Bomarts Farmers are owned in part by local and foreign investors. The two companies have foreign partners in the UK and Switzerland, respectively.

Further, with the exception of Blue Skies which is a processing company, all the other companies are producing companies and Koranco as the only independent producing and exporting company. Both Annhu Ntem Farms Ltd and Combined Farmers Ltd are out-growers of Blue Sky Product Ghana Ltd.

At their inception, smooth cayenne was the main variety of pineapple produced by the companies, however, after the fall in demand from Ghana's pineapples in the early 2000s due to changing EU consumers taste and the demand of supermarket chains, most of the companies were compelled to switch to MD2 production although they find it comparatively expensive to produce. From the cost quotations gathered from the companies, an estimated amount of between US$2,412 – 4,355 is required to produce an acre of MD2 as against US$1,400 – 2,345 needed to produce the same size of smooth cayenne. Even with the switch, Blue Skies has been able to maintain a niche market for fresh-cut smooth cayenne at the European market and thus, source its supplies from Annhu Ntem and some local farmers.

The companies cultivated between 250-1500 acres of land and their lands are acquired through long lease arrangements, usually for a period of 50 years. Even though they mentioned few instances of minor ligations, they generally noted that lands are readily available and easy to acquire.

The companies have a total working population of about 3,000 employees with Blue Skies alone accounting for 70% of the total. About two-thirds of the employees are casual wage labourers, employed from surrounding communities, and are paid daily wages of between US$1.34-2.60. Once again, Blue Skies has the highest minimum wage of US$2.60. As a result of this, most of the rural people prefer to work for Blue Skies which accordingly offers' free transport services for the workers and also subsidy's their daily meals in addition to their wages. It was not therefore surprising that, on all the occasions I visited Blue skies, there were long queues of people mainly young adults, prospecting for jobs with the company.

Although an out-grower to Blue skies, Combined Farmers Ltd also maintains informal arrangements with local small-scale producer so as to meet it supply requirements. Besides sourcing from Combined and Annhu Ntem, Blue Skies also takes supplies from local farmers under formal arrangement. Both

Combined Farmers Ltd and Blue Skies provide their out-growers with farming inputs, funds and sometimes lands. In the case of Combined Farmers Ltd, the out-growers are usually given 70% of the profits made after harvest. Although this scheme seems effective, the companies reported that sometimes their out-growers divert fruits to other buyers who offer them better prices. It must be noted that beside the out-growers, the companies do not buy from other small scale farmers. They claim their fruits are of very poor quality and do not meet the export standards. To ensure quality of supplies, the companies insist that out-growers obtained EUREGAP certification. As a result of this, only a few small-scale farmers qualified as out-growers, the majority of who are farmers with relatively stable capital.

On the field, the rural farmers did not stop speaking very highly of Annhu Ntem farms Ltd. According to them, they are inspired by the way the company began from nowhere, so to speak, to become what it is today, with a current farm area of about 650 acres.

Environmental commitments of the companies

In my interviews with managers of the large-scale companies, they list a number of programs as their environmental commitments.

Under the EUREPGAL/GLOBALGAP certification standards, agriculture producers who hope to access the EU market are required to undertake certain environmental projects. As a result of this, my selected companies which are all certified members of the EUREPGAP have different environmental programs ranging from tree planting to reserves conservation.

In the case of Combined Farms Ltd and contrary to conventional wisdom that pineapples yield's poorly under tree canopies, the company succeeded in inter-planting coconut trees on its pineapple plantation with no reported consequences (see figure 11a & b).

Figure 11a: ***A newly prepared pineapple farm belonging to Combined farmers Ltd***

Figure 11b: ***A Pineapple farm belonging to Combined Farmers Ltd***

Under its sustainability charter, Blue Skies also has a revolving weekly tree planting program instituted in cooperation with its foreign partners, Waitrose and Albert Heijn (http://www.bsholdings.com). Even though they could not point out specific projects, the other companies also claim to also have environmental programs.

Social responsibility of companies

All the five companies I interviewed listed many projects including the construction of schools, roads, football field, library, boreholes, public toilet, health posts, and clinics, dams etc as their social commitments to local communities.

What I realized was that most of the projects they mention were programs finances through premiums received from Fairtrade. As Fairtrade certified members, agriculture producers are assured of stable and competitive prices as well as access to EU markets. In return for this gesture, companies are required to protect and respect the rights, safety and welfare of workers and farmers. Additionally, companies are required to spend all the premiums they earn on socio-economic projects in communities for the purpose of delivering sustainable livelihoods for farmers, workers and their communities. Through this, Corporate Social Responsibilities (CSR) of businesses' is indirectly enforced even if the companies do not directly contribute to such projects.

5.2.3. Characteristics of key respondents

The selection of this group of key respondents was done so to include people who are directly or indirectly involved in pineapple activities in my study area. They constitute professionals from a range of backgrounds. Four (4) out of the 7 key respondents are directly involve in the pineapple industry as either workers of the Ministry of Food and Agriculture (MOFA) or workers of NGOs (agro-based). The respondents include a development economist (TechnoServe), a planning officer (Akuapim South Municipal Assembly – ASMA), an agriculturalist (ASMA crops officer of the Ministry of Food and Agriculture – MOFA), a botanist (lecturer at the University of Ghana), a pineapple consultant (TIPCEE), a horticulturalist (ASMA development officer of the Ministry of Food and Agriculture – MOFA) and a naturalist (Ahyiresu Naturalist Centre). The choice of the naturalist was informed by the fact that he is an old, experienced and popular farmer in my study area

PART II

5.3. WHAT OPPORTUNITIES AND BENEFITS ARE AVAILABLE TO RURAL PEOPLE WITH THE GROWTH OF THE PINEAPPLE INDUSTRY IN GHANA

> *"At least I know some few people who have developed out of the pineapple activities, able to build their small houses, able to educate their children and at times when there are functions in town, they are able to contribute" (Key respondent – Planning officer)*

As stated in the previous chapter, Ghana's pineapple industry was promoted in the wake of the structural adjustment programs (SAPs) in the 1980s for two main reasons: (1) to complement the country's export portfolio and (2) to create job opportunities for rural people towards poverty alleviation. Although facts and figures available show a dramatic growth of the industry, both in export revenues and in number of producers, the contention however is, whether the industry has succeeded in alleviating rural poverty as it was intended to. It is therefore for this reason that I decided to find out how the lives of small-scale farmers and rural people have been affected by the pineapple industry.

5.3.1. What benefits and opportunities are associated with pineapple production?

In my study I noticed that the experts and local people had different but sometimes overlapping understanding of the benefits and opportunities associated with pineapple production.

The experts' perspective

> *"Farming in my opinion is business and should not be practiced as a last resort" (Horticulturist)*

In my interviews, the experts were often quick to quoting export figures as indicator of how successful and beneficial the pineapple industry has being to the national economy, adding that the industry has also employed many rural people and in this way made their lives better which can be observed by the relative improvement in their ability to "buy and own things".

> *"These people [small-scale pineapple farmers] at a point in time are able to get some capital which to them, if you will recognize, look some people are now putting block buildings and others which hitherto were not possible. They own things which sometimes you find out that it was associated first with well-to-do people, even at the rural communities. So it tells you to some extent but I can't say or tell you the percentage of the population of how many have benefited and how many didn't but there are still frustrations anyway. Frustrations such as the unfaithfulness of some of the large-scale farmers"* (Botanist).

In addition to the above benefits, the experts also have a clear view of the superiority of large-scale over small-scale pineapple cultivation. This is an interesting finding because the view of the "expert" contradicts the history of the development of the industry in Ghana. Historically, the Ghanaian pineapple industry developed from small-scale contributions from rural farmers. As indicated in the previous chapter, until the introduction of the MD2, smallholders were the main suppliers of pineapples to the export market (Dixie and Sergeant 1998; Takane 2004).

The experts express views that are simplistic and ignore that small-scale farmers operate within a context that is to a large degree influenced by forces

outside their control. Notions of "efficiency and competitiveness" according to the experts are exclusively linked to large scale cultivation, which again contradicts the early Ghanaian success story of pineapple production and its inception in the international market.

> "*if I were to open opportunity, is just about moving as many of them [rural people] as possible from attachment to the land. It is only when the land is free then that we can implement agriculture more efficiently. The truth of the matter is, it is only large-scale agriculture or commercialization of agriculture which allows implementation of the right processes which will bring about efficiency and competitiveness. The fact that we have people attached to the land is not an end in itself. That is not what we should glorify. What we should glorify is the efficiency and revenues that comes out of it that allows people to progress. That is important" (Development economist).*

The views of the experts were somehow influenced by their own positions or background. This was particularly obvious in the responses of the development economist. He had very radical views about how the pineapple industry in Ghana can be improved, most of which were based on neo-liberal paradigms of developments. For most of the time, he argued for the commercialization of rural lands and also argued that rural people will be better off as urban dwellers or workers of commercial companies. What he fails to understand is that the measure of well-being is subjective. To many rural people, land is as an end itself. Additionally, he seems oblivion of the problems associated with rural-urban migration when he said rural-urban migration is the way to free rural lands for commercial agriculture.

In contrast to the above, the key respondents located in my study area were of the view that the small-scale producers are active and important player in the pineapple industry and thus need every support necessary if the industry is

expected to grow beyond its current level. According to the smallholders form the majority in the sector, hence will be unwise not recognized their importance. They therefore emphasized the need to create ready market for the produce of the smallholders. Additionally, they said adequate structures should be put in place by the government to help smallholders make easy transition from smooth cayenne to MD2 production.

As I anticipated, the scientists I interviewed expressed a need for breeding programs if Ghana is to become competitive in pineapple production. They attributed the success of the Costa Rican pineapple industry to the importance producers attached to research and the readiness of multinational companies and government to fund such researches.

The rural people's perspective

In comparison, the rural respondents were less technical and straight forward in the perceptions about the pineapple industry. Unlike the experts, they had little need for figures in their explanations but were much excited describing the material gains farmers have been able to make from pineapple production. None of them even attempted quoting the approximate tonnage of pineapples they produce each year. Perhaps they lack the expertise or are 'amateurs' as one of my key respondents' described, lacking the basic knowledge of production management.

> *"You know the smallholders they take the farming as amateur I will say but you will be surprised, the large scale will document everything his income expenditure but these small-scale they don't. At the end of the day he will not even know how much he has invested in the production so that at the end of the day whether he's loss or he have gain he wouldn't know but the large scale will know. They are cautious especially when it comes to employment he is cautions not to go above a certain ceil" (Planning officers).*

I must say however that, even though the rural farmers could not say much about their production including how much time, money and man hours they spent on their farms, they keep up-to-date with the incomes. This does not altogether sound surprising since to most of them all that mattered was the income generate rather than how much is spent in generating that income. To say they do not keep track of their activities will be unfair of observation in the sense that most of them could tell how much profits they made in previous production. Besides, most of them were able to list a number of economic activities and properties they owned when they started producing pineapple. Generally, most of them said incomes generated from pineapples have helped them take good care of their families, educate their children, build private houses, buy private car as well as invested in other economic activities such as the operation of commercial public transport systems (taxi cabs) and retail shops

> *"Now people own properties that in the past were associated with rich people. For instance, people now build block [concrete] houses, own private cars and are able to educate their children" (Interviewee 9).*

Indeed from the income figures I gathered, I noticed that most of the households involve in pineapple production had very high incomes, thus, stands to suggest their economic wellbeing.

Given these benefits and importance, one can only image how rural people are coping with life after their main source of livelihood was reportedly taken over by a few large-scale companies (Fold and Gough 2008). It is in the context of this that I challenged myself to explore the impact large-scale pineapple companies have had on rural lives after they supposedly took over the Ghanaian pineapple industry.

5.4. CHALLANGES IN PINEAPPLE PRODUCTION

Beside the benefits, my informants mentioned a number of challenges constraining the activities of pineapples producers especially the small-scale producers

5.4.1. Lack of Market

In terms of market, the companies in my study area seem to have good market arrangements. However, the small-scale farmers indicated that market for their pineapples have gone down since the introduction and inception of many large-scale companies in their localities. According to them, in the early 1990s they did not have much difficulty selling their fruit. During that time they claim their biggest challenge was how to expand and produce, but now they had to compete with the large-scale producer for a market that has been already choked by MD2. Additionally, the demise of Farmapine Ghana Ltd (FGL) is said to have made the market situation even more precarious. Fold and Gough (2008) reported that Farmapine alone had 300 smallholders whose supplies consisted 20% of total exports. This means that with the fall of Farmapine, the nation lost about 20% of its pineapple market thus explains why the rural people claim their market situation had worsened.

Although the experts shared the concern of lack of market, they said it is about time smallholders learnt to produce for a targeted market rather than producing because they feel that is all they know how to do. Even though I agree with the experts that production should be demand driven, I think the smallholders produce that way because it allows them to combine cash income with food production and in that way securing the survival of their families, in their logic capital accumulation might not be the most important goal, as it is for large scale companies.

5.4.2. High cost of producing MD2

> *"As for the smallholders, they just disappeared, because, no smallholders can access ¢8,000 [US$5,360] to grow an acre of*

> *MD2. So all the smallholders have disappeared from the export market"* (development Economist)

Directly related to lack of market is the inability of smallholders to switch to MD2 production. According to the rural people, their inability to switch to MD2 production due to high cost of production is what has limited their access to the export market.

> "*In fact, even though we want to challenge Costa Rica, the costs of MD2 plantlets are very expensive and hard to find. Only the few out-grower farmers in this community are able to produce MD2 because they receive support from the companies around. I wish that the government could come to our aid soon enough by supplying us with plantlets and loans"* (Interviewee 41).

The experts also concurred that, the introduction of MD2 by Costa Rica[15] has been a major setback to most Ghanaian producers especially the small-scale producer. They claim that the cost of producing and storing the MD2 is way too much for small-scale producers. The cost of producing an acres MD2 is estimated at (¢16,805.80 or US$17,478.03) as compared to (¢1,448.90 or US$1,506.86) for the same size of smooth cayenne (see Koomson 2007).

This observation was also made by Fold and Gough (2008) in their study of "the impact of changing consumer preferences in the EU on Ghana's pineapple sector". In that study they noted that smallholders can no longer sell to exporters since the demand switched to MD2. According to them, even if they could afford to switch to MD2, they would still be unlikely to supply exporters in the sense that they cannot guarantee that fruits will get to the cooling room soon after harvest. It is noted that for every hour delayed getting the pineapples into the cooling room, the shelf-life in Europe is shortened by a day.

[15] Resulting from a joint program of Del Monte and Dole

5.4.3. Poor prices and Distrust

Also related to lack of market is poor prices paid by buyers. Many of my respondents were disgruntled about what they call "unfair treatment" form buyers. They claim that not only do the buyers offer them poor prices they also sometimes default in payment. This is what one of the farmers said:

> *They [the companies and exporters] are cheats. At first, I and my entire household were very active and successful producers of pineapples but two years ago, one of these companies asked me to spray [degreening[16]] my fruits so that they will come and harvest but after spraying and waiting for the appointed date of harvest, I waited and waited but they did not show up. A week later when they finally came, the fruits were over ripe and they refused to buy. When I tried to sell it to the processing company in Nsawam, they offered me poor price and paid me installments. Now I have lost my capital" (Interviewee 16).*

According to the rural people, some pineapple producers lost their capital as a result of these poor terms of payments from buyers. This is what one of them said:

> *"At first pineapple production was a very lucrative business but now the business has spoiled. The companies and buyers from Accra are cheating us. They will not pay us good prices. Sometimes after buying our fruits on credit, they will go and come and say the export market is not good or our fruits got rotten in the ship and so they will only pay us part or will refuse to pay[17] us. Two years ago, I took a loan so that I can increase my pineapple farm but after i sold my fruits and paid off my*

[16] Degreening is done in order to improve the external skin color and export market acceptance of pineapples. Pineapples are treated with ethephon to breakdown the green chlorophyll pigment in the exterior part of the shell so as to allow the yellow pigments to be expressed. Fruits are required to be harvested as soon as they are degreened.

[17] Some farmers showed unpaid invoices they obtain from exporters to Fold and Gough as evidence of their claim that exporters are defaulting in payment (Fold and Gough 2008).

debt, I realized I had run into loss and so I stopped. Now even if I get financial support, I don't think I will go back into pineapple production because, I hear the MD2 introduced from Costa Rica has spoiled the market" (interviewee 48).

The experts especially those of them who live closer and worked closely with rural farmers also shared the views of the rural people about poor payment terms. They confirmed that small-scale-scale farmers are being exploited by buyers and as a result, many lost their capital and have given up completely on production.

*"Initially when the business was ok the farmers were benefiting. They were having ready market and good prices but lately these exporters they will do purchase from the farmers, they will do export then they will refuse to pay the farmers telling all kinds of stories that the export market has collapse, the thing have got lost and those things, so it has made the smallholders lose interest in the whole thing" (*Planning officer).

"*There is exploitation of those I will call the vulnerable groups [rural farmers] within the system. Like most farmers, they claim that people come and buy their fruits [pineapples] and they may not pay them or pay part or defer [payment] and for a long time you won't see them again. So you see that they are being violated in a way*" (Key respondent – Botanist).

"… when the smallholders produce, the buyers and the prices they offer is not good because most of the big-time farmers, they do the export. At times they disappoint them. They even come and spray, they won't come and harvest. They will tell you they've not got order, meanwhile they've come to spray" (Key respondent – ASMA crops officer).

This distrust and exploitation from buyers was also observed by Fold and Gough (2008). In their study, they claim to have send invoices amounting to several millions of cedis[18] as outstanding payments for pineapple bought from some rural farmers in Pokrom. According to them, most of the farmers who had agreements with these buyers have folded up because they were not able to afford the necessary inputs to continue farming.

With this common sentiments shared almost by all of the respondents, one of my key respondents who also agree with the injustice in the system stress that it is not enough to just look at the smaller picture. According to him, the exporters also have their own problems with their cash flow, explaining that they also have to wait for as period between five to six weeks before payments are transferred from Europe, thus if small-scale farmers cannot accommodate that, then don't belong to the systems.

> "*There is what they call the credit period in every industry. Typically in the pineapple industry … the credit period is about 6 weeks. Now, if you cannot wait for 6 weeks as a farmer … then you shouldn't be in that industry. … Anybody who expects money upfront is not a real farmer*" (Development economist).

When I tried to find out from some of the companies why they fail to pay the small-scale producers, all of them denied such an act, claiming it is unfortunate that this is happening to a group that supplies about 40% of the country's total export. While explaining that they have also heard that some buyers are cheating farmers, some were quick to add that some of the blame also goes to the farmers. They said some farmers are not loyal to their buyer in that they also divert fruits to buyers they feel have better terms of payments. This kind of blame game is what made Takane (2004) concluded that there is unequal power relations in the industry. Even though I agree with him, I think

[18] Approximately 10,000 cedis to a dollar at the time

the lack of an efficient price regulation in the industry is what has created all these problems for the vulnerable rural small-scale farmers.

5.4.4. Lack of capital and difficulty in accessing credit

Annhu Ntem Farms Ltd was the only company that complained about lack of capital and difficulty in accessing loans with less interest rate. Complains about lack of capital and access to loans mainly came from the rural farmers. According to them, they have been unsuccessful in securing loans from banks to support their farming activities, associating this to the reason why switching to MD2 is taking them a while. In their explanation, banks usually ask for specific collateral of which they are unable to afford.

What I realized among my rural respondents is that they lack the basic knowledge of how to apply for loans. They are ignorant of the fact that their lands or houses could serve as the collaterals that are required by banks.

5.4.5. Diseases

Disease infections were common problem expressed by both the large-scale and small-scale farmers. However, the small-scale farmers are those who are unable to control their farms of such infections. According to them, they lack the technical knowledge of detecting diseases at their early stages, even if they did, they are unable to afford the necessary agro-chemicals with the their limited resources.

5.4.6. Lack of farm lands

Interestingly, the group of farmers who complained about lack of farm lands was the rural farmers. According to them, landowners have sold out all their lands to large-scale farmers who pay relatively better rents. This concern express by my respondents is somehow not strange because most of them are settler farmers who depend on native landowners for the lands they cultivate.

5.5. IMPACT OF LARGE SCALE-SCALE COMPANIES ON RURAL LIVELIHOODS

5.5.1. Impact on Natural capital

According to Ellis (2000), the natural capital comprises of the land, water and biological resources that are utilized by people to generate the means of survival. This is sometimes referred to as environmental resources.

Land accessibility

> ***"****As many of the residents are strangers without formal rights to the land they farm which has… [been] leased out to large-scale pineapple exporters without any form of compensation. Not only are they losing their livelihoods, but in some cases are also losing their homes where small settlements located in the middle of new plantations are removed" (Fold and Gough 2008:1694).*

My interviews with the local people indicated that most of them are displeased about how all their lands have been taken over by large-scale farmers. Lands have become very expensive and inaccessible. On top of it, landowners do not feel motivate to lease out lands to rural farmers, claiming that their terms are not as good as the companies. This development I find very disturbing and likely to worsen the poverty situation in my study communities. Already about half of my respondents claim their livelihoods have been negatively affected by this development (see Table 9)

Table 9: ***Impact of large-scale pineapple companies on selected rural indexes (Rural households' responses)***

Index	Household responses			Total
	Positive	Negative	No answer/not applicable	
Export	46	21	3	70
Household livelihood	34	33	3	70
Profits	13	50	7	70
Credits	26	33	11	70
Technical support/training	35	24	11	70
Rainfall pattern	6	57	7	70

Temperature	6	57	7	70
Local vegetation	16	48	6	70
Farming practices	28	33	9	70
Infrastructure	25	18	27	70
Productivity	36	23	11	70
Migration	36	17	17	70
Local economic activities	30	24	16	70
Land accessibility	25	43	2	70
Social status	43	18	9	70

Fold and Gough (2008) also made similar observation that settler farmers in Pokrom have been disposed of their lands by companies without any form of compensation, thus affecting their livelihoods. My key respondents also concurred with this observation and this is what one of them said:

> *"… they are buying most of the land which the smallholders use, are you getting me? Some of the villages, they buy all the land and they even eject them. Where are they going? They buy and they don't even give them some to farm"* (ASMA crops officer).

Environment and climatic conditions

According to my respondents their life support system, the environment, is under threat due to certain unconventional activities in the communities. They claim that crop yields are decreasing due to declining soil fertility caused by activities of land users, mainly pineapple farmers (See table 10 and 11). Additionally, they said that since the introduction of pineapple, their communities have witnessed rapid changes in land cover. They claim that the most of the lands covered with grass and shrubs now were formerly covered with trees. These observations coincide with the satellite images I have about the area (see figure 13).

Table 10: ***Is your community under threat of environmental degradation?***

Indicators/criteria	Household responses			
	Yes	No	No answer/ Not applicable	total
Soil erosion	50 (71.4%)	11 (15.7%)	9 (12.9%)	70
Soil fertility is declining	51 (72.9%)	10 (14.2%)	9 (12.9%)	70
Loss of vegetation cover	28 (40%)	31 (44.3%)	11 (15.7%)	70
Declining crop yield	43 (61.4%)	12 (17.2%)	15 (21.4%)	70
Siltation and disappearance of water bodies	37 (52.9%)	23 (32.9%)	10 (14.2%)	70
Soils are hardening	14 (20%)	28 (40%)	28 (40%)	70
Biodiversity loss	46 (65.7%)	13 (18.6%)	11 (15.7%)	70
Soils are getting sand and or stony	21 (30%)	30 (42.9%)	19 (27.1%)	70
Appearance of Obnoxious plant species	47 (67.1	12 (17.2%)	11 (15.7%)	70

Table 11: ***Causes of land degradation in study area***

Causes	Household responses	
	Ranking	Number of votes
Large-scale pineapple production	1	62
Pressure from population growth	2	47
Over cultivation of crop land	3	47
Increased hill side farming	4	46
Use of heavy machinery for land clearing and preparation	5	46
Mono cropping	6	43
Small-scale pineapple production	7	42
Logging or harvest of wood for timber, charcoal and wood fuel	8	41
Adverse climatic conditions e.g. Decrease rainfall, drought	9	38
Loss of indigenous Knowledge in sustainable land management practices	10	20

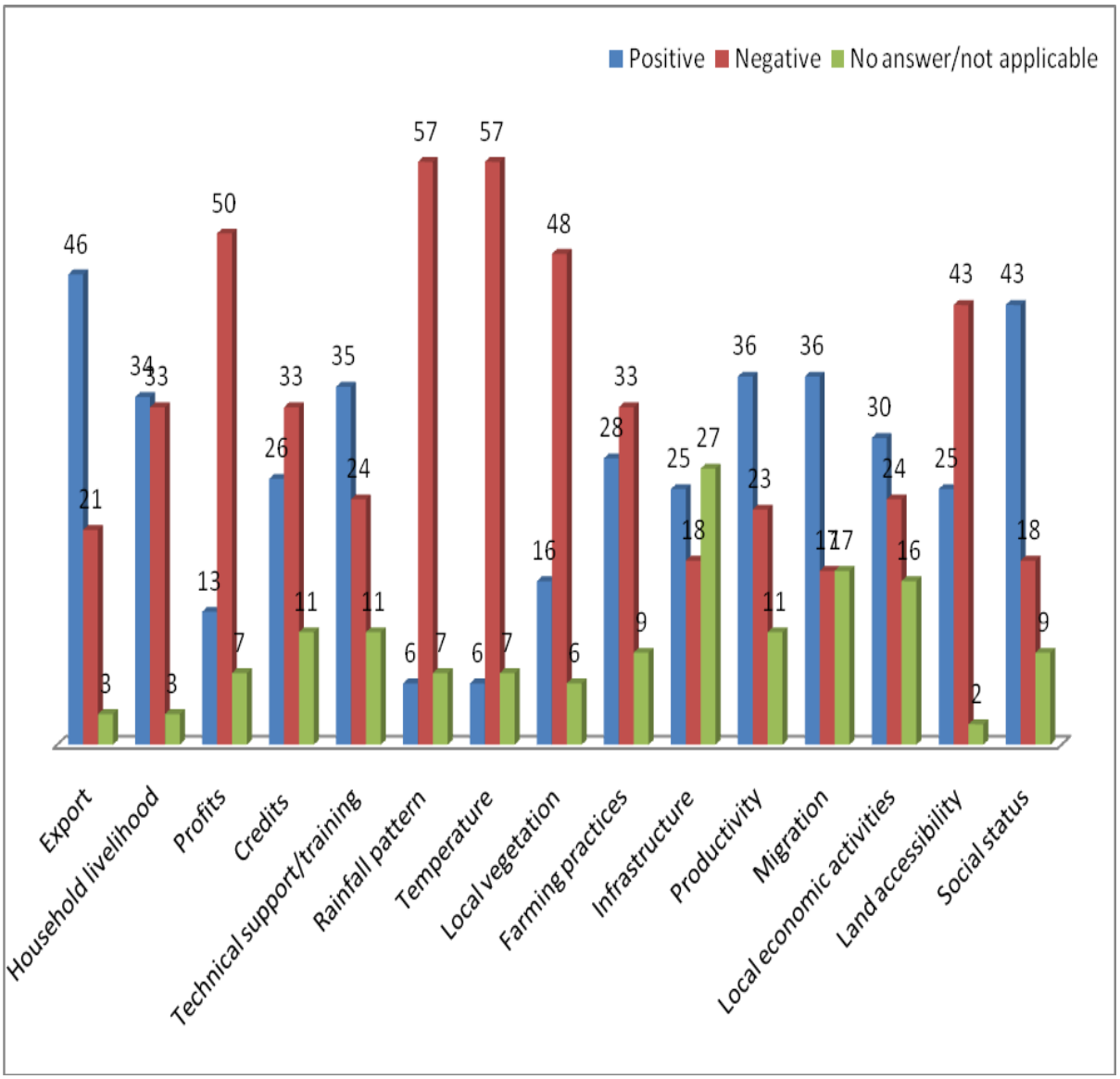
Form the two images in figure 13, all the areas depicted in deep green colours are the forest regions and the other colours show the scrublands, grasslands and settlement. By comparing the two images of my study area, it can be seen

that the region had lost 50% of its green cover just in a matter of a decade. According to my respondents, this alarming rate of land degradation and loss of vegetation is as a result of activities of large-scale farmers (see table 11). There is none other explanation to this than what has been given by the farmers especially when the obvious practice among pineapple farmers is the complete removal of all form of vegetation on their fields. The concern therefore about this trend is that rural food security is threatened. One of my key respondents noted that there are already insecurities the prices of foodstuffs.

> "*In fact they are not benefiting at all. Their basic food crops at the moment are not being cultivated only cassava. There are no cocoyams and even the cassava they don't produce it all that much. I hear prices [of foodstuffs] are high. As a farmer you should have a diverse farm and not a mono farm" (Naturalist).*

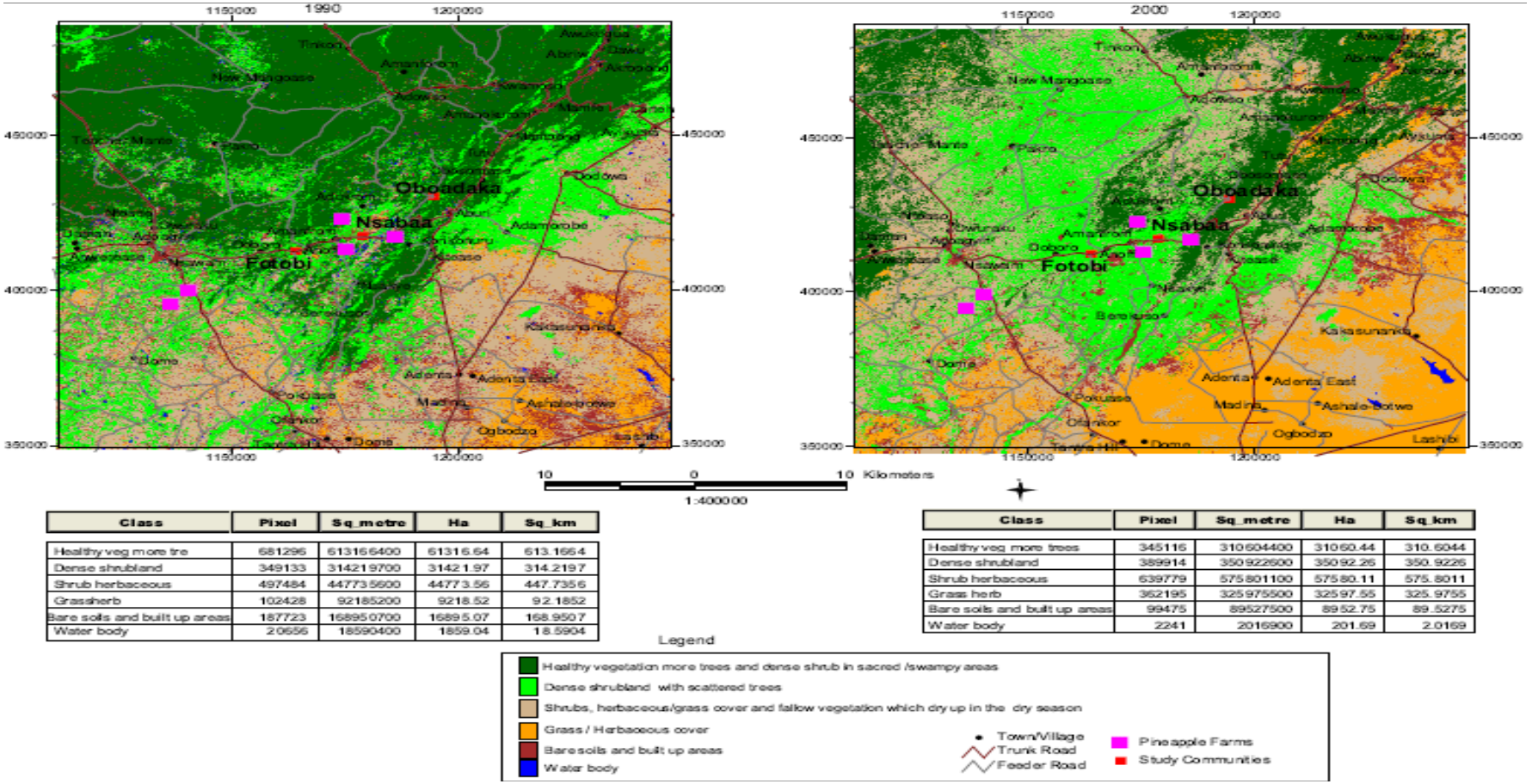
My respondents also said that their livelihoods have been negatively impacted upon by the loss in vegetation, explaining that crop yields have reduce, thus they are unable to support their families from the harvests of the farms as they used to. They claim they now keep other jobs including working for companies on partime basis in order to make earns met (see figure 12).

Figure 12: ***Impact of large-scale pineapple companies on selected rural indexes (Rural households' responses)***



Source: Field 2009

Figure 13: ***Land cover change of study area (1990 – 2000)***



Class	Pixel	Sq_metre	Ha	Sq_km
Healthy veg more tre	681296	613166400	61316.64	613.1664
Dense shrubland	349133	314219700	31421.97	314.2197
Shrub herbaceous	497484	447735600	44773.56	447.7356
Grassherb	102428	92185200	9218.52	92.1852
Bare soils and built up areas	187723	168950700	16895.07	168.9507
Water body	20656	18590400	1859.04	18.5904

Class	Pixel	Sq_metre	Ha	Sq_km
Healthy veg more trees	345116	310604400	31060.44	310.6044
Dense shrubland	389914	350922600	35092.26	350.9226
Shrub herbaceous	639779	575801100	57580.11	575.8011
Grass herb	362195	325975500	32597.55	325.9755
Bare soils and built up areas	99475	89527500	8952.75	89.5275
Water body	2241	2016900	201.69	2.0169

5.5.2. Impact on physical capital

Physical capitals are brought about by economic production processes. They include buildings, irrigation canals, electricity, roads, tools, and machines etc.

Infrastructure

Although 70% of the rural respondents claim infrastructure had improved significantly over the years they were however even not sure whether it was as a result of the growing numbers of companies in their communities.

The companies on the other had argued that before they came to the municipality, feeder road network were poorly developed and electricity was on limited to few big rural communities. But since their arrival, they have been able to improve upon the roads and even helped some communities to get electricity. Additionally, they said they have constructed schools, clinics and boreholes in some rural communities and thus have contributed to improve their rural lives.

> *Even though they employ most of the youth in this village, they do not care about helping this community. I can say that the potholes you saw on the road when you were coming were created by their vehicles"* (interviewee 15).

Tools and Technology

Even though the rural farmer do not all benefit directly from the companies, their constant interactions with out-growers helps them to learn new technologies in the industry. Some said they learnt about the MD2 from the out-growers.

5.5.3. Impact on social capital

According to Moser (1998), social capital is the reciprocity within communities and between households based on trust deriving from social ties.

Social status

The rural farmers said that the wealth they accumulated from pineapple production had helped them attain new position among the few rich and respected people in society. As a result of this, they are now able to mobilize many hands to work for them on their farms for reasonable fees, thus cutting down on their cost of production and increasing their levels of profit.

Migrations

According to my respondents, because their lands have been taken over from them by the big companies, many of the youth who could endure the pain of travelling to distant communities to continue with their farming activities decided to migrate to other places. As a result of this, households who depended on these people for their survival are now struggle to make earns meet.

Also, the rural respondents said their infrastructure is over stretched because of the increasing number of people who move to settle in their communities with the hope securing employments with the companies.

5.5.4. Impact on Human capital

Human capital is the total capability residing in households or individuals, based on their stock of knowledge, skills, health and nutrition. According to Ellis (2004), a household's human capital can be enhanced through education, health service support, and training. Following from this therefore, one is tempted to concluded that the construction of schools and hospitals by companies have contributed to improved the living standards of rural inhabitants. However, I was told by some rural people that activities of pineapple companies have rather affected educational standard in their communities. According to them, pupils are dropping out of school to work for companies. Some even claimed that some companies engage minors on the farms. However when I asked the companies why they employ minors, they denied, stating that EUREPGAP certification procedures forbids them to do that.

5.5.5. Impact on Financial capital

Financial capital is the financial resources available to household or individuals which provide them with different livelihood options. These include savings, grants, credit, insurance, welfare payments, remittances, and subsidies.

Market and Income

> *"You know the smallholder is not independent, because if large-scale business collapse it will affect the smallholder because they produce and sell to the large scale so when the large scale is growing then definitely the small-scale is also growing, yes, so it is a two way" (planning officer).*

Companies in my study area provide out-growers with financial and input support. In addition to that, they guarantee them of ready market. However, the other small scale farmers have lost their market relationship with exporters, this accordingly, have negatively affected their levels of income. Some of the affected farmers explained that their inability to produce MD2 is what has displaced them from the export market. The majority of the smallholders now produce only for the local market, which is not entirely promising.

6. CONCLUSION

In this study I set out to explore the impact of large-scale pineapple companies on rural livelihoods. I particularly focused on the opportunities they have created and more importantly the impact they have had on assets of rural people. I examined these in the context of Ellis's (2000) Sustainable livelihood Approach (SLA) i.e. how pineapple companies have affected the human, social, physical, financial and natural capitals of the rural people.

The development of Ghana's pineapple industry in the 1980s was meant to achieve two main objectives. First, to reduce the country's overdependence on its main export commodities, gold and cocoa, which were experiencing spiral price declines and second, to provide livelihood alternatives for rural farmers in the country particularly cocoa farmers who had lost their farms to the widespread bushfires that swept through the country in 1983. I found that, the government hopes to accomplish these goals was by linking small-scale production systems with NTAE. This strategy worked out well for the country and rural farmers. However, challenges in the 1990s including unparalleled competition from large-scale gradually eroded the competitiveness of small-scale farmers. The introduction of EUREPGAP and MD2 pineapples by Del Monte in 1997 and 1996 respectively made it almost impossible for Ghanaian small-scale farmers to keep their share of the export market. Consequently, production has shifted into the hands of the few large-scale farmers in the country.

In my study, I found that small-scale farmers are still active players in the pineapple industry in Ghana. However, all of them with the exception of a few out-growers are still producing the smooth cayenne pineapple variety, which was displaced in the EU market shelves by the Costa Rican MD2. As a result of this, their fruits are only sold to local buyers including Blue Skies Ghana Ltd which has been able to maintain niche markets for freshly-cut smooth

cayenne in certain EU countries. According to the farmers, this restriction has affected their profits and their ability to make meaningful livelihood from pineapple production.

The out-growers in my study communities also claim that exporters including certain large-scale pineapple companies are treating them unfairly. According to them, the prices the exporters offer are very low and on top of it, the payments terms are long. Some farmers reportedly stopped producing pineapples because non-payment by some exporters. Consequently, the livelihoods of the affected households are deteriorating.

Additionally, I noticed that rural lands are becoming expensive and inaccessible as reported by my interviewees. According to the rural people, the large-scale companies have bought all their farm lands restricting their farming activities to far away communities. This situation has caused some rural people mainly the youth to migrate to the big cities. Additionally, the prices of foodstuffs are increasing rapidly because most food crop producers are now either pineapple producers or workers of large-scale companies. Moreover, the soils of the area are said to have declined in fertility due to bad farming practices of pineapple producers hence affecting crop yields. Further, the rural people claim rainfalls are erratic and temperature usually very high. As a result, they are unable to maintain regular cultivation of food crops. Here again, they attributed the changing weather pattern to deforestation activities of pineapple producers in their communities.

In terms of general impact, about 70% of my rural respondents maintained that their lives have not improved in any way by the operation of large scale companies in their areas. To some, their lives have rather worsen, arguing that, their market, lands, and only economic activity have been taken away by the companies. Interesting however, most of the small-scale farmers admitted that they wouldn’t have been able to maintain the good relationship companies

have with the export market. Most of them admit that the companies pay much better than the local buyers and thus will be glad to be their out-growers.

My expert respondents argued that commercial pineapple production is the best way to operate optimally. They argued that, smallholders' production activities are more environmentally destructive than large scale producers. According to them, the smallholders are many and will be difficult to manage. Additionally, since they are not bind by any certification standards such as the EUREPGAP and LEAF, the production is done with no particular attention to the impact their activities have on the environment.

Following from the above discussion, it can be concluded that although pineapple production plays an important role in the lives of rural people, its impact on rural livelihood in general raises concerns of food security and sustainability.

6.1. RECOMMENDATION

Given the fact that pineapple is an important component Ghana's economy, I would like to emphasis Danielou & Ravry (2005) recommendation that production should not compete on prices alone but also on the reliability of supply and the assurance of quality.

Furthermore, if indeed the pineapple industry was supported in order to create livelihood opportunities for rural people, then there is a need for re-examination of the pineapple industry. Firstly, measures should be put in place by the government to help the rural people make an easy transition from smooth cayenne to MD2 production. Secondly, processing companies should be established to absorb the supplies of the small-scale famers as it is being done by Blue Skies. Finally, a regulatory body like COCOBOD should be established to manage and regulate the actives of pineapple producers in the country

The poor roads in the country restrict large-scale pineapple activities to areas with fairly good transportation networks thus putting pressure on the resources of those areas. In this regards, I recommend that communication network in the country should be improved by the government.

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www.gepcghana.com/news - Ghana Export Promotion website

www.usaid.gov/ - United States Agency for International Development Website

www.fao.org – Food and Agriculture Organization of the United Nations

www.gtz.de – Deutsche Gesellschaft für Technische Zusammenarbeit

http://www.bsholdings.com – Blue Skies

APPENDIXES

Appendix I: GLOBALGAP (EUREPGAP) Working Documents

General Regulations (PDF)

Smallholder GLOBALGAP Implementation Guidelines

1 Plant Protection Module (PDF)

2 Hygiene Module (PDF)

3 Soil and Water Module (PDF)

4 Environmental and Social Module(PDF)

5 EUREPGAP Option II: Training Guide for MD2 pineapples IMP and Pest handling (TIPCEE 2007) (PDF)

6 Pineapple post-harvest operations: (PDF)

Appendix II: List of household heads, key informants, and managers interviewed

Household heads

Fotobi

1 Interviewee
2 Interviewee
3 Interviewee
4 Interviewee
5 Interviewee
6 Interviewee
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30 Interviewee

Nsabaa/Pokrom

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37 Interviewee
38 Interviewee
39 Interviewee
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41 Interviewee
42 Interviewee
43 Interviewee
44 Interviewee
45 Interviewee
46 Interviewee
47 Interviewee
48 Interviewee
49 Interviewee
50 Interviewee

Oboadaka

51 Interviewee
52 Interviewee
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69 Interviewee
70 Interviewee

Key Informants

Name of Informant	Specialization/Occupation	Location
Dr. E. M. Attua	Botanist, Lecturer	University of Ghana
Mr. Charles Addo	Development Economist, Development Manager,	TechnoServe, Accra
Mr. Yeboah Danso	Naturalist, Director of Ahyiresu Naturalist Centre	Ahyiresu, Obodan
Mr. Daniel T. Nartey	Agriculturalist, Municipal Crops Officer	MOFA, Nsawam
Mr. Philip Kankam	Pineapple Consultant	TIPCEE, Accra
Ms. Perpetua Decker	Horticulturist, Municipal Development Officer	MOFA, Nsawam
Mr. A. K. Johnston	Municipal Planning Officer	ASMA, Nsawam

Managers of large-scale pineapple companies Interviewed

Name of respondents	Name of Company	Position	Location
Mr. Solomon Wiafe	Annhu Ntem Farms Ltd	General Manager	Pokrom
Ms. Linda A. Larbi and Diana Manasseh	Bomarts Farms Ltd	HR/Admin Manager (Asst) and Certification officer	Dobro
Mr. Yaw Afram	Combined Farmers Ltd	Farm Manage	Obodan
Mr. E. B. Koranteng	Koranco Farms Ltd	Managing Director	Abotweri
Mr. Ablor	Blue Sky Products Ghana Ltd	Chief Agronomist	Dobro

Appendix III: Interview Guide for Managers of Large-scale Pineapple companies in the Akuapim South Municipality

Topic: Impact of large-scale pineapple producing companies on rural livelihood in the Akuapim South Municipality of Ghana?

A. BACKGROUND INFORMATION

Company's name..... Location of Company…….....
Type of Company:..... Name of Company's Head:.....
Name of Respondent ……..... Position of Respondent ...…….....
Sex of Respondent:….. ……... Interviewer's name:.....

B) HISTORY OF COMPANY

1. When was the company established…….....

2. What are the company's objectives…….....

2. Is this where the company started…….....Yes / No

(If yes go to 5; if not: Go to 3)

3. Where did it start from ……..…….……..……...

4. Why did you move to this current location? …….….

5. What crops do you produce….……..……..

6. What are your main activities in the pineapple industry…….……..…

7. How many tonnes of pineapples do you produce annually? ……..……

8. How many tonnes of pineapples do you export annually?.....

9. Where are your export destinations…….…….……

10. How many tonnes are consumed locally? ……...…….

11. What is the cost of producing a tonne of pineapple…….....

12. What is your annual turnover in the year 2008? ……..….

13. What is the size of your farms……..……...……..……

14. How did you acquire your farm land…….……

15. What challenges do you face in the acquisition of lands……...

16. What is the size of your capital base……..

17. If into processing, what is your average daily production capacity…….

EMPLOYMENT STRUCTURE:

Categories		**Skilled Workers**	**Non Skilled Workers**	**Managerial Position**	**Seasonal worker**	**Permanent Workers**	**Wage worker**
Ghanaians	Males						
	Females						
Expatriates	Males						
	Female						
Local people	Males						
	Females						
	17yrs & below						
	18 - 45yr						
	45yrs +						

18. Do you have welfare package for your employees? Yes / No. If yes, what does it include ….…….

19. Do you support your locality in any way? ……..... Yes / No

(If yes go to14; if not: Go to 15)

20. How? .....……

21. Why not? .....……

22. Have you facilitated the development of any infrastructure in your locality or any part of the country? Yes / No. If yes how ……

23. Have you contributed to the improvement of some people's standard of living in this locality? If yes, how……...……

24. Do you have any Corporate Social Responsibilities (CSR)? If yes, what are they .

25. Do you have any link with rural farmers or farmer groups in this locality? Yes / No. If yes describe the relationship?……...

26. Are the small-scale rural pineapple farmers doing well? Yes / No. If no, why are they not doing well?.....

27. How can the small-scale rural producers develop? ……

28. What challenges do you think the rural farmers faces? ……

29. What problems are the rural people here faced with? ……..

30. Do you have any environmental Programmes/policies? What are they? …….

31. What problems are associated with large-scale pineapple production?.....

32. Have you made any significant impact on rural lives in this locality? Yes / No. If yes describe how?.....

Appendix IV: Questionnaire for household heads in the Akuapim South Municipality

Topic: Impact of large-scale pineapple producing companies on rural livelihood in the Akuapim South Municipality of Ghana?

B. BACKGROUND INFORMATION

Date……..…….. Community:.....
House no.: ……..... Type of dwelling:.....
Name of HHhead:..... Respondent's Name:.....
Age:..…….....Sex:…….…… Interviewer's name:.....

B) HOUSEHOLD HISTORY

1. How many people are in your household? .....

(This will be the research unit for the rest of this questionnaire)

2. When and how did you start your own household? .....

.....

3. Where was that? .....

(If in present village: Go to 6; if not: Go to 4)

4. What where your main economic activities in that place? .....

.....

5 When and why did you leave that place? .....

.....

6. Have you and your household also lived in any other place? ..... Yes / No

(If 'no': Go to section C)

7. Where was that? .....

8. What were your main economic activities in that place? .....

9. When did you move to that place? .....

10. When did you leave that place? .....

11. Why did you leave that place? .....

C) Household Characteristics

Ethnicity: ***Religion:***

No	Name	Relation to HH-head	Age	Education completed	Education uncompleted	Main (economic) activity	Other (economic) activities	Monthly Income
1								
2								
3								
4								
5								
6								

D) Farm Characteristics and Land Tenure

12. Do you own land? ..... Yes / No

13. Do you farm? ..... Yes / No

If 12 = 'yes' & 13 = 'yes': Go to 14 *If 12 = 'no' & 13 = 'yes': Go to 15*

If 12 = 'yes' &13 = 'no': Go to 17 *If 12 = 'no' & 13 = 'no': Go to section 24*

14. Do you also farm land that you do not own? ..... Yes / No *If 'no': Go to 16*

15. Under what arrangement do you use this land? .....

.....

16. Do you farm all the land you own? ..... Yes / No *If 'yes': Go to 20*

17. What do you do with lands you do not cultivate? …….....

18. Indicate the major ways of accessing land for farming in your locality.

a) Family land ☐ b) Outright purchase ☐ c) Leasing ☐

d) Share cropping (*Abunu, Abusa, Abunnan,* others) ☐ Specify…….. …….

e) Right to use land by being a native of the locality ☐ f) Renting or hiring ☐

g) Government acquisition ☐ h) Others *[Specify]*……..

19. To what extent does each of the tenurial arrangements cited above threaten the land or contribute to land degradation?

Tenure Type	A large extent	Moderately	A limited extent	None at all	Not sure or unable to answer
a) Family land					
b) Right to use land being citizens of the locality					
c) Share cropping (type)					
d) Outright purchase					
e) Renting or hiring					
f) Leasing					
g) Government acquisition					
h) Others *[specify]*					

20. Do you hope to increase the size of your farm land one day? .....Yes/No

21. Are there problems with acquisition of land? Yes/No. If yes, what are they ….....

22. Do you hope to enter into large-scale mechanized farming in the future? …. Yes/No

23. If yes to '32', why ……..……..

24. Is this locality/community under threat of land degradation .....Yes/No

(I*f 'No': Go to 27)*

25. Using the indicators/criteria suggested in the table below, to what extent would you say that your locality/community is under threat of land degradation?

Indicator/Criteria	Severely degraded	Moderately degraded	Slightly degraded	Not degraded at all	Not sure or unable to answer
a) Soil Erosion					
b) Soil fertility is declining					
c) Loss of vegetative cover					
d) Biodiversity loss					
e) Declining crop yield					
f) Siltation and disappearance of water bodies					
g) Soils are hardening					
h) Soils getting sandy/ and or stony					
i) Appearance of obnoxious plant species					
j) Others *(Specify)*					

26. If the land is threatened or degrading, indicate in the table below the causes and the magnitude of their role *[Tick as appropriate]*.

Cause	Major	Moderate	Minor	Does not feature	Not sure or unable to

					answer
Pressure on land due to land shortage associated with population growth					
In-migration of people and over exploiting of land					
Logging or harvesting of wood for timber, charcoal, woodfuel etc.					
Over-cultivation of crop land					
Increased hill-side farming					
Monocropping					
Adverse climatic conditions e.g. decreased rainfall, drought					
Sand winning					
Uncontrolled bush burning					
Over-exploitation of Non Timber Forest Products (NTFPS)					
k) Loss of Indigenous knowledge in sustainable land management practices					
Pollution and industrial causes					
Use of heavy machines for land clearing and preparation					
Others (Specify)					

27. To what extent do you consider the practices indicated in the table below good or even best for sustaining the quality of land?

Practice	**Good/Best**	**Bad**	**Indifferent**	**Not sure or unable to answer**
Bush fallow/land rotation				
Monocropping				
Intercropping/mixed cropping				
Mixed farming				
Cropping among trees/agroforestry				
Crop rotation				
Use of the hoe for weeding				
Use of the cutlass for weeding				
Use heavy machines (bulldozer) for land clearing				
Continuous use of tractor for ploughing and harrowing				
Fire for land clearing				
l) Mulching				
m) Manuring				
n) Composting				
o) Chemical fertilizer application				
p) Irrigation				
u) Others *(Specify)*				

28. Do you think that generally land is used or managed very well or on a sustainable basis in your locality? Yes/No ***if 'yes', go to E***

29. If no, to what extent does each of the factors listed in the table below contribute to the unsustainable land management?

Factor	**Major**	**Moderate**	**Minor**	**Does not feature or count at all**	**Not sure of unable to answer**
Lack of credit to purchase farm inputs (fertilizers, etc)					
Recommended land management/conservation practices too complex to adopt					
Recommended land management practices too labour intensive					
Ignorance: People simply lack the knowledge					
Erosion of traditional values/cultural practices of land conservation					
Lack of proper official policy guidance					
Lack of participatory approaches in land management					
Inadequate land for farming ('land hunger')					
Insecurity of land tenure					
Others (Specify)					

30. List, by order of importance 5 crops most commonly grown by household:

……..……

31. List by rank, which of the crops contributes the most to the depletion of fertility of land available to the household:……...

E) POVERTY INDICES/INDICATORS OF LIVING STANDARD

32. House type: i. Ordinary earth/mud thatched ii. Ordinary earth/mud roofed with Aluminum/asbestos sheets/tiles iii. Concrete or sandcrete iv. Other (Specify)

33. Main water sources for domestic use (Rank by 1, 2, 3 etc)

i. Stream/pond ii. Rain iii. Public borehole iv. Private borehole

v. Public well vi. Private well vii. Public standpipe viii. Private pipe borne ix. Other (Specify) ……..

34. Use Table below specify the income sources or activities that generate income to household

No.	**Income source/activity**	**Estimated physical output of activity per year (In bags, pans, basket, tubers, truckload etc)**	**Estimated financial proceeds from activity per year**

1.	Pineapple farming		
2.	Maize farming		
3.	Rice farming		
4.	Cassava farming		
5.	Cocoa farming		
6.	Oil palm farming		
7.	Plantain farming		
8.	Yam farming		
9.	Vegetable farming		
10	Poultry rearing		
11.	Goat & sheep rearing		
12.	Cattle rearing		
13.	Piggery		
14.	Other livestock rearing		
15.	Wood harvesting for timber, firewood, or charcoal		
16.	Teaching		
17.	Worker on large pineapple farm(-s)		
18.	Worker in a pineapple processing company		
19.	Evangelical/Preaching/Pastor/Imam		
20.	Preparation & selling of cooked food		
21.	Remittances from outside community		
22	Others (Specify)		

I) PERCEPTIONS OF PINEAPPLE INDUSTRY

35. Does any household member engage in any pineapple activities……Yes/No. If yes, how are they involved?

Name of house hold member	**How are they involved[19]**	**When did they start producing**	**Initial size of pineapple farm**	**Current size of pineapple farm**	**Initial Income**	**Current Income**

36. What difficulties do pineapple producers face? …….

37. Has any household member stopped producing pineapples……Yes/No

38. If yes to '37', why did they stop producing pineapples? …..…….……

39. What did they stop the pineapple production to do? ……..…

[19] Produce/farm pineapples ii. Work for a pineapple company iii. Retail pineapples iv. Trade in pineapple chemicals v. Export pineapples vi. Other (Specify)

40. What benefits are associated with pineapple production? ……

41. What problems are associated with pineapple production…….……

42. By comparing large-scale pineapple producing companies (LS) with small-scale pineapple farmers (SS), complete the table below

Question	Choice	Give Reason
Which is environmentally friendly?		
Which maximizes the utility of land?		
Which is more productive?		
Which is more likely to alleviate rural poverty?		
Which will you prefer to grow?		
Which is more likely to degrade land		

43. Have you benefited from the large-scale pineapple producing companies in this locality? ……..…… Yes/No

44. If yes to '43', how? .....

45. If no '43', why? .....

46. What expectations do you have from the large-scale pineapple producing companies? .....

47. Has the growth of the large-scale pineapple companies affected the following?

Indexes	Positively/ Negatively	Explain
Land accessibility		
Profits		
Access to Credits		
Technical/institutional support		
Method of production		
Vegetation		
Rainfall pattern		
Temperature		
Economic Status		
Social Status		
Local farming practices		
Local economic activities		
Infrastructure		

Migration		
Productivity		
Exports		

48. Has your household livelihood improved since the inception of the large-scale pineapple producing companies? Yes/No. If yes, how……
49. Should the large-scale pineapples producing companies be supported to grow? Yes/No. If yes, why…….
50. If no, why…….

Appendix V: Interview Guide for Key Informants

Topic: Impact of large-scale pineapple producing companies on rural livelihood in the Akuapim South Municipality of Ghana?

C. BACKGROUND INFORMATION

Name of respondent:..…….…….. Respondent's Occupation:.....
Respondent's Place of Work:…….. …Respondent's Position: …….....
Respondent's Age:…..... Respondent's sex:… Interviewer's name:.....

B. KNOWLEDGE OF SUBJECT-MATTER

1. List some Non-traditional crops produced in Ghana in the order of importance

CROPS	RANK	CRITERIA

2. What are the importance of the Non-traditional crop producing industries…….

3. Who are the major actors in the Industry and who are the dominant forces……..

4. Which of the power players will you prefer to dominate the industry, why……..

5. Who are the beneficiaries in the industry……..

6. Do you know how pineapple is cultivated…….

7. Which is preferred and why, large-scale crop producers or small-scale crop producers

8. Has rural livelihood been affected by the growth of large-scale pineapple producing companies? If yes how…….……

10. Are there environmental problems associated with pineapple production? If yes what are they…..……

11. By comparing large-scale crop production (LSCP) with small-scale crop production (SSCP), complete the table below

Question	Choice	Give Reason
Which is environmentally friendly?		
Which maximizes the utility of land?		
Which is more productive?		
Which is more likely to alleviate rural poverty?		
Which is more likely to degrade land		

12. What are the prospects of the pineapple industry in Ghana? ……..

13. How can we develop the industry…….

14 Any general remarks …….