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An Assessment of the Effectiveness of Local Institutions in the Production of Exportable Pineapple in Ghana

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Abstract

Pineapple is one of the important non-traditional agricultural export commodities that contributes immensely to the progress of Ghana. This study assesses the effectiveness of the local institutions in the production of pineapple for export. The study achieves this by investigating how well the Local Institutions perform their functions; both statutory and non-statutory functions based on how the institutions perceive each other's functional performance. Primary data on the functions were obtained from thirty (30) identified local institutions categorised into five (5) namely Local Administration, Local Government, Service Organisation, Membership Organisations and Private Businesses. The data obtained were analysed using the Chi-square method of analyses. Constraints in achieving high institutional performance of the Local Institutions were ranked and the Kendall concordance coefficient was used to test the extent of agreement between the constraints. The results of the study showed that about 63 percent of the selected Local Institutions were found to be effective in the performance of their functions. The linkage among the Local Institutions was fairly strong; only 33 percent of the institutions were found to relate strongly with others. Out of the strongly linked institutions, 50 percent were found to be among the institutions that were found to be effective in the performance of their functions. Inadequate finance and poor logistics were identified as the most pressing constraints that limited the achievement of high performance of the Local Institutions. In order to be effective in performance of functions, Local Institutions need to develop innovative ways of networking with others in the pineapple subsector, especially farmers. In this way, good agricultural practices would be assured and increased production for export will be sustained.

Keywords: pineapple, institutions, functions, effectiveness, export

1. Introduction

1.1 Background

Pineapple has contributed significantly to the export of non-traditional products. In the 1990s pineapple contributed about 10% to non–traditional agricultural export in Ghana and was considered the dominant subsector of the horticultural sector contributing significantly to the non-traditional agricultural export in

Ghana. The subsector is also said to have grown after the Structural Adjustment Programme of the government (Obeng, 1990).

The promotion of the exports of non-traditional agricultural commodities in Ghana has been encouraged during the Structural Adjustment Programme era (Kuffour, 2001). This indicates that the promotion of non-traditional commodity exports has been of major concern to the nation. This is because apart from serving as a source of foreign exchange to the economy the non-traditional export sector plays an important role in Ghana's Medium Term Agricultural Development Programme (MTADP). Thus, most of the projects under MTADP are expected to be financed with foreign exchange from non-traditional crop exports (MoFA, 1991). Non-traditional agricultural export is a potential source of higher foreign exchange for Ghana and government, institutions and exporters must work effectively to achieve this objective (Lawson, 2001).

Local institutional development for agriculture covers both production units and supporting institutions (Uphoff, 1986). The production unit usually takes one of three organisation forms:

(1) Private operations, usually household enterprises, though in more modern agriculture they may operate as corporation.

(2) Cooperative enterprises where individuals pool productive resources and share both risk and output, with decisions made on the basis of one- person one-vote rather than in proportion to resources contributed

(3) State–owned enterprise, operating according to public laws and with public resources (Uphoff, ibid.)

Cooperative enterprises that provide inputs for members' own production activities operate as supporting institution rather than as production units. Local Institutions are useful for adapting programs and activities to the variety of conditions encountered in the rural sector, so as to use scarce human and material resources to best advantage (Uphoff, 1986).

1.2 Problem Statement and Research Questions

The functions of local organisations in agriculture can go beyond self-help measures to engage in tasks of technological modernisation thus attracting the attention of scientist and administrators (Goodell, 1984). The pineapple export business is characterised by high capital investment and high risk due to the perishable nature of pineapple (Obeng, 1994). One of the greatest challenges facing the agricultural non-traditional export sector is financing of production and also most of the financial institutions shy away from long-term loans to farmers (Amoako, 2000). Since pineapple exports contribute immensely to the exportation of non-traditional agricultural products there is the need to emphasize on the improvement of its production by the Local Institutions that are supporting pineapple production and exports. Producers of pineapple especially for export are faced with the challenge of competing with other countries like Cote d'ivoire and Costa Rica in the international market and they are also faced with the challenge of producing to meet international standards. Farmers engaged in pineapple production are also faced with pest and disease problems which affect their total output and also affect the volume of pineapples that are exported.

The research seeks to address the following questions:

(1) Which Local Institutions support the pineapple subsector development and to what extent are the functions (statutory and non-statutory) of the Local Institutions performed effectively?

(2) How strongly are the Local Institutions linked to each other?

(3) What are the constraints that limit high performance of the Local Institutions?

1.3 Objectives

The major objective of this study is to assess the effectiveness of Local Institutions that support the production of exportable pineapple in Ghana. The specific objectives are to:

(1) Identify the Local Institutions in the pineapple subsector and assess the effectiveness of their functions.

(2) Determine the strength of linkages between the Local Institutions that support exports and production of pineapple.

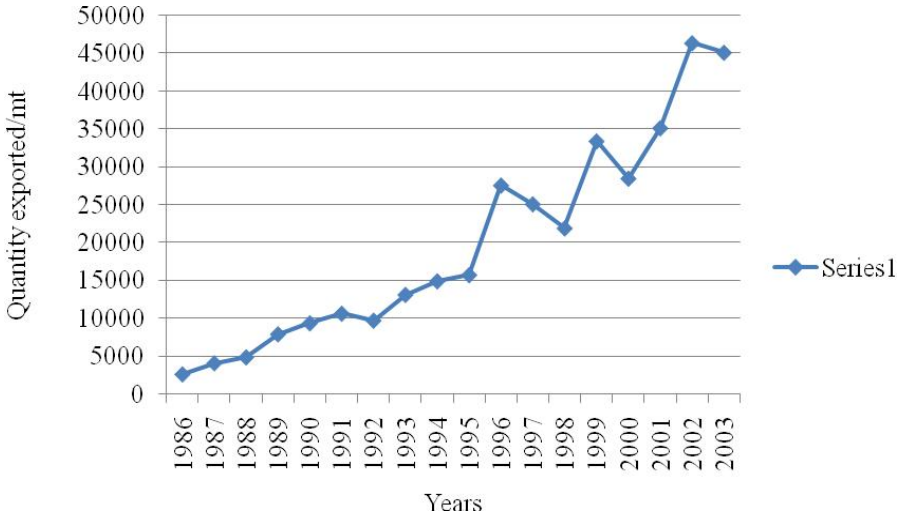
(3) Identify the constraints faced by the Local Institutions in achieving high institutional performance.

1.4 Justification of Study

Producers of exportable products need basic knowledge of foreign markets to consider diversification into exports of their produce and

this basic knowledge includes information on prices and preference of the international market. The Local Institutions who are promoting the production and export of pineapple are expected to facilitate the accessibility of issues related to foreign market by producers and exporters. Hence there is the need to assess the effectiveness of their work.

Each of the Local Institutions has its own functions and objectives to achieve and this research is meant to determine whether their functions are well performed and how adequate their functions have achieved results. The results of this study will determine whether the existence of the Local Institutions is meaningful to the nation as to whether they are performing their functions well or not. The trend in pineapple exports shows that even though the export of pineapple is increasing, the increment is not consistent as there is the rise and fall in the trends (Figure 1). The number of exporters has also increased from 39 in 1986 to 53 in 2006 showing the investor interest due to good investment climate for exportable pineapple. It suggests that the gaps in functions and linkages need to be identified and suggestions made for improvement. This study is thus not only an academic exercise but will contribute to stakeholder information needed for improved performance of functions.



Source: See Appendix 1 for raw data used

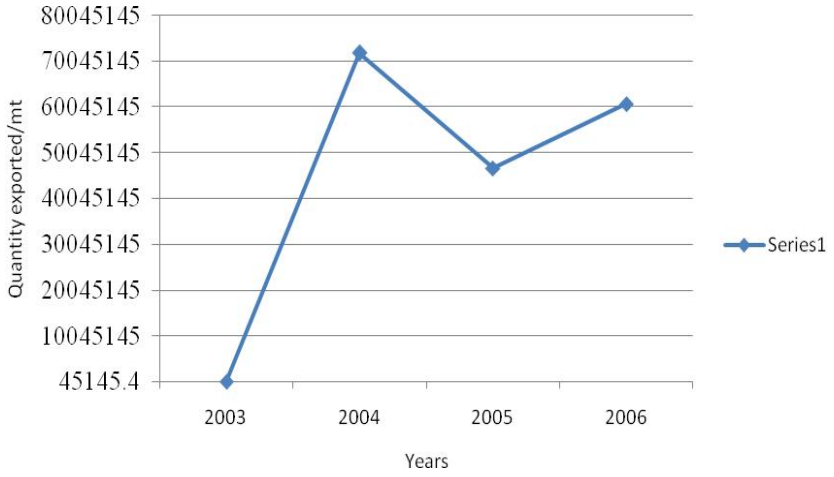


Figure 1. A graph showing quantity of pineapple exported against the years

Source: see Appendix 1 for raw data

2. Methodology

2.1 Introduction

This chapter provides information on the methods employed to achieve the specific objectives. The chapter reveals the Theoretical Framework which served as the basis for selecting the methods to achieve the specific objectives of the study, Method of Analysis and Method of Data Collection.

2.2 Theoretical Framework

1) The study measured effectiveness through performance of the functions by the Local Institutions and how the institutions perceive the performance of each other's functions. According to Adelman and Morris (1972), the effectiveness of financial institutions could be judged by the performance of key functions such as channeling of loans into productive investment. Effectiveness thus relates to the quality of the work, consistency and responsiveness (FAO, 2006).

The effectiveness of Local Institutions in the production of pineapple for export is assessed by finding the statutory functions which are the functions mandated by the government to be performed by the Local Institutions and non-statutory functions which are the supporting functions of the Local Institutions which are not mandated by the government in relation to the production of exportable pineapple. These functions are compared to theoretically defined functions (Table 1) which the Local Institutions are expected to perform.

Table 1. Expected functions of the Local Institutions

1. Provision of advice for target groups	12. Promoting agricultural development
2. Demonstration of new technology on production and export	13. Provision of infrastructures
3. Dissemination of research information	14. Forest management
4. Popularising the advantage of an innovation which is insufficiently known	15. Provision of input
5. The use of policy objectives to solve problems	16. Strengthening of other institutions
6. Market penetration assistance to Ghanaian exporters	17. Provision of credit
7. Capacity building of Ghanaian exporters	18. Processing of pineapple
8. Trade-related information delivery	19. Provide supporting activities
9. Provision of extension service	20. Development of national export awareness
10. Product development initiative	21. Subsidising inputs like seed and fertilizer
11. Cultivation of pineapple	

Source: Uphoff (1986)

According to Uphoff (1986) the Local Institutions are grouped into five namely:

(1) Local Administration: These are mostly government institutions or agencies working at the local level that play prominent role to encourage or accelerate agricultural development. The most common role for the Local Administrations is to provide advice and demonstration of new technologies to raise production. Other roles performed by the Local Administrations are the dissemination of information on innovative agricultural research and experimentation being done under government auspices, serve as channel for subsidising input such as seed or fertilizer which is thought to be productive and to benefit producers of exportable pineapple.

(2) Local Government: These institutions play a key role in promoting agricultural development, forest management and the provision of infrastructures. These are usually the district assemblies.

(3) Service Organisations: These are Local Institutions engaged in activities like education or health care and not necessarily playing a role in agricultural development. They may play an important indirect role if not a direct role in agricultural development by strengthening other kinds of Local Institutions.

(4) Membership Organisations: These are farmer-based organisations, export associations, producers associations and other corporative engaged in pineapple production and export.

Their roles include extension advice, production of inputs, provision of credit, processing, marketing, banking, productivity advancement and enhancing and protecting the private production of their members.

(5) Private Business: These Local Institutions provide specific supporting activities, provision of credits and other inputs.

Local Institutions can perform better when they are linked with each other (Uphoff, 1986). Due to this the linkages between the Local Institutions are critically examined and assessed in this study.

2) Identifying the Local Institutions in the Pineapple Subsector and assessing the effectiveness of their functions.

The Local Institutions were identified and selected based on purposive sampling and grouped into five (5) categories as Local Administrations, Local Government, Service Organisations, Membership Organisations and Private Businesses. There was a study of how well the Local Institutions perform their statutory and non-statutory functions based on best practice from literature (theory and empirical). As to whether the selected institutions are performing their functions well or not was determined using the chi-square goodness-of-fit test. The chi-square goodness-of-fit test is one of the most commonly used non-parametric tests developed by Karl Pearson in the early 1900s. It is appropriate for both nominal and ordinal levels of data. The purpose of this goodness of fit is to determine how well an observed set of data fits an expected set of data (Lind & Mason, 1997).

3) Ranking Constraints

The Kendall's Concordance Coefficient was used to rank the constraints facing producers of pineapple and its export. The Kendall's coefficient of concordance measures the strength of relation in a direct and easily understood way. The Kendall's coefficient has an intuitively simple interpretation and sampler than Spearman coefficient. It can even be computed from the actual observation without first converting them to ranks (Edward, 1964).

The Kendall's coefficient of concordance (W) is the measure of the degree of agreement among 'm' (number of rankers) of 'n' (number of constraints) ranks. W is an index that measures the ratio of the observed variance of the sum of ranks to the maximum possible variance of sum of ranks. The idea behind this index is to find the sum of the ranks for each constraint being ranked and then to examine the variability of this sum. If the rankings are in perfect agreement, the variability among these sums will be a maximum (Mattson, 1986). This analysis is a statistical procedure through which the degree of agreement/concordance between a given set of constraints/problems identified and ranked from the most pressing constraint/problem to least pressing one is measured. The identified constraints/problems are ranked according to the most pressing to the least pressing using numerals; 1,2,3,4, …… n, in that order. Computing the total rank score for each problem, the problem with the least score is ranked as the most pressing, whilst the one with the highest score is ranked as the least pressing problem. The rank scores computed are then used to calculate the coefficient of concordance (W), to obtain the degree of agreement in the rankings. The coefficient of concordance W ranges from zero (0) to one (1). It will be 1 when the ranks assigned by each Local Institution are exactly the same as those assigned by other Local Institutions and it will be 0 when there is a maximum disagreement among the Local Institutions.

2.3 Method of Data Analysis

2.3.1 Identifying the Local Institutions in the Pineapple Subsector and Assessing the Effectiveness of Their Functions

The functions (statutory and non-statutory) of thirty (30) Local Institutions in relation to the production of exportable pineapples were obtained from representatives of the following institutions:

- Local Administration (Ministries/Government agencies)
- Local Government (District Assemblies)
- Service Organisations (Agro-based NGOs)
- Membership Organisation (Pineapple farmers and exporters corporations)
- Private Businesses (Export companies, Input dealers, financial institutions)

The selection of the institutions was based on purposive sampling based on the nature of their service and their sector of operation. Local Institutions contacted were mainly those that operate in the agricultural sector and usually render service in relation to the production and

export of pineapple in Ghana (see Table 2).

The functions of the Local Institutions (Table 3) and how well they are performed were obtained based on the information acquired from each institution on the performance of their functions and what other related institutions perceive the performance of the functions of the institutions they relate. The Chi-square test was used to analyse the performance of the identified functions of the selected institutions. The indicators used for assessing the performance were 'very well done', 'well done', 'fairly well done' and 'not well done'. The expected (very well done or well done) was scored as '1' whilst the observed was scored as '1' if 'very well done or well done' and '0' if 'fairly well done or not well done'. The expected data takes a score of '1' whilst the observed takes a score of '1' if it meets expectation and '0' otherwise.

Statement of Hypothesis:

The null hypothesis

Ho: x=0 /Local Institutions are not effective in the performance of their functions.

The alternate hypothesis,

H_A: x=1 /Local Institutions are effective in the performance of their functions.

The chi – square was computed as:

$$X^2 = \sum \frac{(\text{Observed} - \text{Expected})^2}{\text{Expected}} \quad (1)$$

The decision rule is that: If the computed value of the chi-square is greater than the value observed from the chi-square table then the null hypothesis will be rejected and vice versa.

Table 2. The identified Local Institutions

Types of Institutions	**The identified Local Institutions**
Local Administration	Lands Commission
	Department of Cooperatives
	Directorate of Extension
	Ministry of Food and Agriculture (MoFA)
	Ministry of Trade and Industry (MoTI)
	Ghana Export Promotion Council (GEPC)
	Export Development and Investment Fund (EDIF)
	University of Ghana Crop Science Department
	University of Ghana Agric Economics Department
Local Government	Akuapem South District Assembly
	Akuapem North District Assembly
	Ga West District Assembly
	Ga East District Assembly
	Awutu-Afutu-Senya District Assembly
Membership Organisation	Sea-freight and Pineapple Exporters of Ghana (SPEG)
	Federation Association of Ghanaian Exporters (FAGE)
	Horticulturist Association of Ghana (HAG)
Service Organisation	Trade and Investment Programme for a Competitive Export Economy (TIPCEE)
	CARE INTERNATIONAL
	ACTIONAID GHANA
	GTZ
	ADB
	FAO

Private Business	Blue Sky Products (Gh) Ltd.
	Bomart
	Agrimat
	Gyan Farms
	Ali Farms
	Ofori Farms
	Young Shall Grow Farms

Source: Survey data, January 2008.

Table 3. The statutory and non-statutory functions of the Local Institutions

Type of Local Institution	Description of Local Institution	Functions	
		Statutory	**Non-statutory**
Local Administration	Lands Commission Department of Cooperatives GEPC MoFA MoTI Directorate of Extension EDIF University of Ghana Crop Science Department University of Ghana Agric Economics Department	Advisory service, Policy formulation and implementation, Forest management, Provision of credit, Trade-related information delivery, Strengthening of other institutions, Provision of infrastructure.	Capacity building (training) for members of cooperatives, Market penetration assistance to Ghanaian exporters, Development of national export awareness, Popularising the advantage of an innovation which is insufficiently known.
Local Government	Akuapem South District Assembly Akuapem North District Assembly Awutu-Afutu-Senya District Assembly Ga East District Assembly Ga West District Assembly	Dissemination of research information, Advisory service, Policy formulation and implementation, Input subsidy, Trade-related information delivery, Product development initiative.	Forest management, Provision of inputs, Provision of credit, Cultivation and processing of pineapple, Provision of credit.
Service Organisation	TIPCEE CARE INT. ACTIONAID GH. GTZ ADB FAO	Product development initiative, Provision of infrastructure, Credit provision.	Advisory service, Dissemination of research information, Trade-related information delivery, Capacity building of Ghanaian exporters, Strengthening of other institutions, Forest management.

Table 4. cont'd

Type of Local Institution	Description of Local Institution	Functions	
		Statutory	**Non-statutory**

Membership Organisation	SPEG HAG FAGE	Advisory service, Market penetration assistance to Ghanaian exporters, Capacity building of Ghanaian exporters, Trade-related information delivery.	Strengthening of other institutions, Extension service, Enhance and protect private production of members, Cultivation and processing of pineapple, Popularising the advantage of an innovation which is insufficiently known.
Private Business	Blue Sky Bomart Agrimat Gyan Farms Ali Farms Ofori Farms Young Shall Grow Farms		Processing and cultivation of pineapple, Advisory service, Dissemination of research information, Popularising the advantage of an innovation which is insufficiently known.

Source: Survey data

2.3.2 Assessing the Strength of the Institutional Linkage

Strength of the linkage among the institutions was determined by how respondents perceived relation and nature of relation with others on the basis of their collaboration. A strong relation is achieved when two institutions collaborate during the performance of functions. For example, when one organisation facilitates or gives credit to another it is perceived as a strong relation.

The indicators for the strength of linkage were measured as 'strongly relate', 'relate', and 'do not relate'.

The chi-square test was done. A score of '1' was allocated for 'strongly relate or relate' and '0' for 'do not relate'.

Statement of Hypothesis:

Null hypothesis:

Ho: x=0 /Local Institutions are not strongly related with each other.

Alternate hypothesis:

H_A: x=1 /Local Institutions are strongly related with each other.

The decision rule is that: If the computed value of the chi-square is greater than the value observed from the chi-square table then the null hypothesis will be rejected and vice versa.

2.3.3 Identifying the Constraints in Achieving High Institutional Performance

Constraints may be internal (that is related to institutions themselves) or external (that is related to factors outside the control of the Local Institutions). They are the human and non-human factors that hinder the performance of institutions. Hence the perception of selected institutions was sought with respect to internal problems such as low knowledge and funds capacity, poor logistics and external problems such as unfavorable government policies, ecological problems, social and economic problems, high tariffs.

Eleven constraints (table 5) were provided for the Local Institutions to rank from one (1) being the highest to the lowest.

Table 5. The identified Constraints

1. Financial constraints	7. Poor governmental support
2. Competition with other institutions	8. Less research on pineapple production/export
3. Lack of information on pineapple production and export	9. Poor marketing facilities
4. Inability to disseminate information on pineapple production /export	10. Transportation problem
5. Unable to relate to	11. Losses in pineapple

target groups	production	
6. Poor logistics		

Source: survey data

Rank analysis was employed using Kendall's coefficient concordance. The extents of agreement between the constraints are tested using Kendall's Concordance Co-efficient (W).

If T represents the sum of ranks for each constraint/problem being ranked, the variance of the sum of ranks is found by the formula;

$$Var_T = \frac{\sum T^2 - \left(\sum T\right)^2 / n}{n} \tag{2}$$

The maximum variance of T is then given by;

$$m^2\left(n^2 - 1\right)/12 \tag{3}$$

Where 'm' is the set of rankers (institutions), and 'n' is the number of constraints/ problems being ranked.

The formula for the coefficient of concordance (W) is then given by;

$$W = \frac{\left(\sum T^2 - \left(\sum T\right)^2 / n\right)/n}{m^2\left(n^2 - 1\right)/12} \tag{4}$$

This is simplified as;

$$\frac{12\left[\sum T^2 - \left(\sum T\right)^2 / n\right]}{nm^2\left(n^2 - 1\right)} \tag{5}$$

Where,

T= sum of ranks for each constraint.

m= number of rankers (institutions).

n= the number of constraints being ranked.

The extent of agreement between the constraints were tested using Kendall's Concordance Coefficient (W).

Statement of Hypothesis:

Ho: x=0 /There is no agreement among the rankings of the constraints ranked by the respondents.

H_A: x=1 /There is an agreement among the rankings of the constraints ranked by the respondents.

Where Ho and H_A denote null and alternate hypotheses respectively.

Decision Rule is that: If Zcal>Zcritical from the F table, reject the null hypothesis.

2.4 Method of Data Collection

Primary data was obtained using survey method. A semi-structured questionnaire was designed to obtain useful information from thirty (30) purposely selected Local Institutions in six areas namely Ga East District Assembly, Ga West District Assembly, Awutu-Afutu-Senya District Assembly, Akuapem South District Assembly, Akuapem North District Assembly and the Accra Metropolis.

Purposive sampling was adopted because only willing representatives of organisations were interviewed.

2.5 Geographical Area of Study

The geographical area of this study covers the Greater Accra Region, the Central Region and the Eastern Region. These areas were chosen as the geographical area of study since the production of pineapple mostly takes place in these areas. The Local Institutions are not concentrated in one place but found in different parts of the country. (See Appendix 2 for map of Ghana showing areas)

3. Summary, Conclusion and Recommendation

3.1 Introduction

This chapter elaborates on the summary, conclusion and recommendations of the study based on the results obtained.

3.2 Summary and Conclusions

The study provides information on the assessment of the effectiveness of the functions of thirty (30) selected Local Institutions based on the perception of the institutions about each other and the strength of their relationship with each other. The Local Institutions are located in the Greater Accra Region, Eastern Region and the Central Region. Analysis of the study was based on primary data collected through a structured questionnaire.

First, the Local Institutions and their functions were examined. Next the strength of the linkages among the various institutions were determined and described. Finally, the constraints facing the Local Institutions were ranked and discussed. Effectiveness was measured by how each Local Institution visited perceives how well their colleagues are performing their statutory and non-statutory

functions. Simple frequency and chi-square analysis were employed.

Institutions in Local Administration concerning pineapple are the government ministries instituted to formulate policies for specific sectors and strategies for subsectors. MoFA for instance has a policy named FASDEP for the agricultural sector. The Local Institutions which belong to the Local Administration were found to perform similar statutory functions such as the provision of advice for target groups, provision of extension service, dissemination of research information and the use of government policy objectives to enhance the production and export of pineapple in order to promote development in the agricultural sector. The Local Administration institutions are probably the channel of choice for the government when there is the need to effect changes in the agricultural system through subsidy or input supply.

Local Government institutions are known to perform broad functions which cuts across all the sectors and not specifically in the agricultural sector but in this study most of the Local Government institutions were found to support agricultural development by liaising with farmers and assisting them. These Local Government institutions were found to perform functions such as provision of extension services, demonstration of new technology on production and export of pineapple, dissemination of research information, the use of policy objectives to solve problems, product development initiative and subsidising inputs like seeds and fertilizer.

Membership Organisations such as SPEG, FAGE were also found to perform functions such as market penetration assistance to Ghanaian exporters, dissemination of research information, trade-related information delivery and the capacity building of Ghanaian exporters to promote export development in Ghana. HAG also enhances and protects the private production of members and also provides extension services to their members. The Service Organisations were also found to support the production and export of pineapple. A clear situation is the provision of financial assistance to pineapple by ADB. The major functions of the Private businesses are to cultivate, process and export pineapple. Thus, their activities are centred towards the production and processing for export or the local market. The chi-square test on the performance of the institutions proved significant for nineteen (19) Local Institutions (Table 6). This indicates that 63 percent of the Local Institutions perform their functions well based on the perceptions others have about their performance.

Table 6. Results of chi-square test on the performance of the institution

LOCAL INSTITUTIONS	VERY	WELL DONE	CHI-SQUARE VALUE	ASYM. SIG.	SCORE
Lands Commission	10	2	5.333**	0.021	1
Department of cooperatives	13	6	2.579	0.108	0
GEPC	14	4	5.556**	0.018	1
Directorate of extension	18	6	6.000**	0.014	1
EDIF	18	3	10.714**	0.01	1
MoFA	20	7	6.259**	0.012	1
MoTI	13	5	3.556***	0.059	1
Akuapem South District Aseembly	10	4	2.571	0.109	0
Akuapem North District Assembly	8	3	2.273	0.132	0
Awutu-Afutu-Senya District Assembly	9	4	1.923	0.166	0
Ga West District Assembly	9	3	3.000***	0.083	1
Ga East District Assembly	3	8	2.573	0.132	0
TIPCEE	11	3	4.571**	0.033	1

CARE INTERNATIONAL	6	3	1.000	0.317	0
ACTIONAID GH.	5	3	0.500	0.480	0

Table 7. cont'd

LOCAL INSTITUTIONS	VERY WELL DONE	WELL DONE	CHI-SQUARE VALUE	ASYM. SIG.	SCORE
GTZ	5	4	0.111	0.739	0
ADB	10	5	1.667	0.197	0
FAO	8	5	0.692	0.405	0
University of Ghana Crop Science Department	11	2	6.231**	0.013	1
University of Ghana Agric Economics Department	12	2	7.143*	0.008	1
SPEG	15	2	9.941**	0.02	1
HAG	13	3	6.250	0.12	0
FAGE	13	4	4.765**	0.029	1
Blue Sky Product (GH) Ltd.	23	1	20.167*	0.000	1
Bomart Farms	21	2	15.696*	0.000	1
Agrimat	19	2	13.762*	0.000	1
Gyan Farms	19	1	16.200*	0.000	1
Ali Farms	19	2	13.762*	0.000	1
Ofori Farms	21	2	15.696*	0.000	1
Young Shall Grow Farms	20	3	12.565*	0.000	1

* sig. at 1%, ** sig. at 5%, *** sig. at 10%

Source: Author's computation from survey data

Table 8. Chi-square results on functions

Score	Observed N	Expected N	Residual
Not well done	11	15.0	-4
Very well done	19	15.0	-4
Total	30		

Test statistics

Chi-square (a) 2.133

df 1

Asymp. Sig. 1.44

Source: Author's computation from survey data

Out of the nineteen (19) Local Institutions which were found to perform their functions well eight (8) of them indicating 42 percent were Local Administrations, seven (7) of them indicating 37 percent were Private Businesses, two (2) of them indicating 11 percent were Membership Organisations, one (1) indicating 5 percent is a Local Government institution and one (1) indicating 5 percent is a Service Organisation. All the institutions belonging to the Private

Business indicating 100 percent were found to be effective in the performance of their functions. This indicates that the Private Businesses which perform functions such as the cultivation, processing, and exporting of pineapple are doing well in the performance of their functions based on the perception of other institutions about their functions. This can be attributed to the fact that private institutions are more dedicated due to the commitment of their own funds or capital in the pineapple business and the support they receive from the other supporting institutions like the Local Administrations.

Most of the Membership Organisations were also found to perform their functions well since 67 percent of the Membership Organisations were found to be part of the nineteen (19) institutions which had their Chi-square test to be significant (Table 11). This is due to the fact that the Membership Organisations are mostly voluntary associations that can perform wide variety of functions to facilitate agricultural development by supporting their dedicated members in terms of finance and technical advice.

Table 9. Percentage and number of effective institutions

Type of Institutions	Total number	Number of effective institutions	Percentage (%) of effective institutions
Private Business	7	7	100
Local Administration	9	8	89
Membership Organisation	3	2	67
Service Organisation	6	1	17
Local Government	5	1	20
Total	30	19	

Source: Author's compilation from survey data

The Local Administration institutions were also found to be effective in the performance of their functions since 89 percent of them had their Chi-square test to be significant. The Service Organisations and the Local Government institutions were found not to be effective in the performance of their functions based on the perception of others about them. Even though the overall Chi-square test for the Local Institutions proved insignificant, 63 percent of the Local Institutions were found to be effective in the performance of their functions and this suggests that the Local Institutions are supporting the pineapple sector. No wonder the trend of pineapple production has increased from 1987 to 2006 (Figure 1). The institutions that were effective were nineteen (Table 9) and those that were strongly related were ten (Table 11)

Table 10. Institutions that were found to be effective in their function

Lands Commission	TIPCEE
GEPC	University of Ghana Crop Science Department
Directorate of Extension	University of Ghana Agric Economics Department
EDIF	SPEG
MoFA	FAGE
MoTI	Blue Sky
Ga West District Assembly	Bomart
Agrimat	Gyan Farms
Ali Farms	Ofori Farms

Young Shall Grow Farms

Source: Author's compilation from survey data

Table 11. Institutions that are strongly related

Directorate of Extension	ACTIONAID GHANA
MoFA	GTZ
Akuapem North District Assembly	University of Ghana Crop Science Department
Ga West District Assembly	FAO
CARE INTERNATIONAL	University of Ghana Agric Economics Department

Source: Author's compilation from survey data

The results of the study showed that nineteen (19) representing 63 percent of the Local Institutions perform their functions effectively. This indicates that these nineteen institutions are effective in the performance of their functions based on the institutions remarks of each other. All the Private Business institutions were part of these nineteen (19) institutions. This indicates that the Private Business institutions are doing well in the pineapple subsector and this may be attributed to the proper mobilisation of resources by the individuals in the private sector due to the commitment of their own funds or capital in the pineapple business, and also the support they obtain from the other institutions such as those in the Local Administrations since 89 percent of the Local Administrations were among the nineteen (19) institutions that were found to be effective in the performance of their functions. Out of the thirty institutions, ten of them were found to have strong linkage with the others and 50 percent of these ten institutions were found among the nineteen institutions that were found to be effective in the performance of their functions. The most pressing constraint that limits high institutional performance was found to be inadequate finance. It can therefore be concluded that majority of the institutions are effective in the performance of their functions. The linkage among the institutions was not all that strong since only 33 percent of the institutions were found to relate strongly with others. Weak linkage was also identified as a constraint in achieving high institutional performance in the production of exportable pineapple.

3.3 Recommendations

Even though most of the Local Institutions were found to be effective in the performance of their functions there is still room for more improvement and also the need to strengthen the relationship among them. The Local Institutions should revisit their functions and evolve ways of improving their performance. More sensitisation programmes that improve collaboration and networking among Local Institutions must be initiated by both government and stakeholders. Since 80 percent of the Local Government institutions indicated that one of their statutory functions is to strengthen other institutions then there is the need for the government and all stakeholders to assist them to achieve this statutory function in order to strengthen institutional linkage. This is due to the fact that effectiveness of the Local Institutions cannot be complete without strong institutional linkage. The constraints are all related to financial and infrastructure inadequacies, hence the Private Businesses need education in financial management and more governmental budget should be allocated to the pineapple industry.

The study also recommends that the government and other stakeholders with respect to finance should assist the private institutions especially farmers in terms of finance.

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List of Abbreviations

ADB: Agricultural Development Bank
ADRA: Adventist Relief Agency
CEPS: Customs Excise and Preventive Service
EFC: Export Finance Company
EUREPGAP: European Retailers and Producers group for Good Agricultural Practices
FAGE: Federation Association of Ghanaian Exporters
FAO: Food and Agricultural Organisation
FASDEP: Food and Agricultural Sector Development
GEPC: Ghana Export Promotion Council
GEXTRACO: Ghana Export Trade Company
GIPC: Ghana Investment Promotion Council
GSB: Ghana Standard Board
GTFA: Ghana Trade Fair Authority
GTZ: German Technical Cooperation
HAG: Horticulturist's Association of Ghana
MoFA: Ministry of Food and Agriculture
MoTI: Ministry of Trade and Industry
MTADP: Medium Term Agricultural Dwvelopment Programme
NARS: National Agricultural Research System
NGO's: Non-governmental Organisations
NTAE's: Non-traditional Agricultural Exports
SPEG: Sea-Freight Pineapple Exporters of Ghana
TIPCEE: Trade and Investment Programme for a Competitive Export Economy

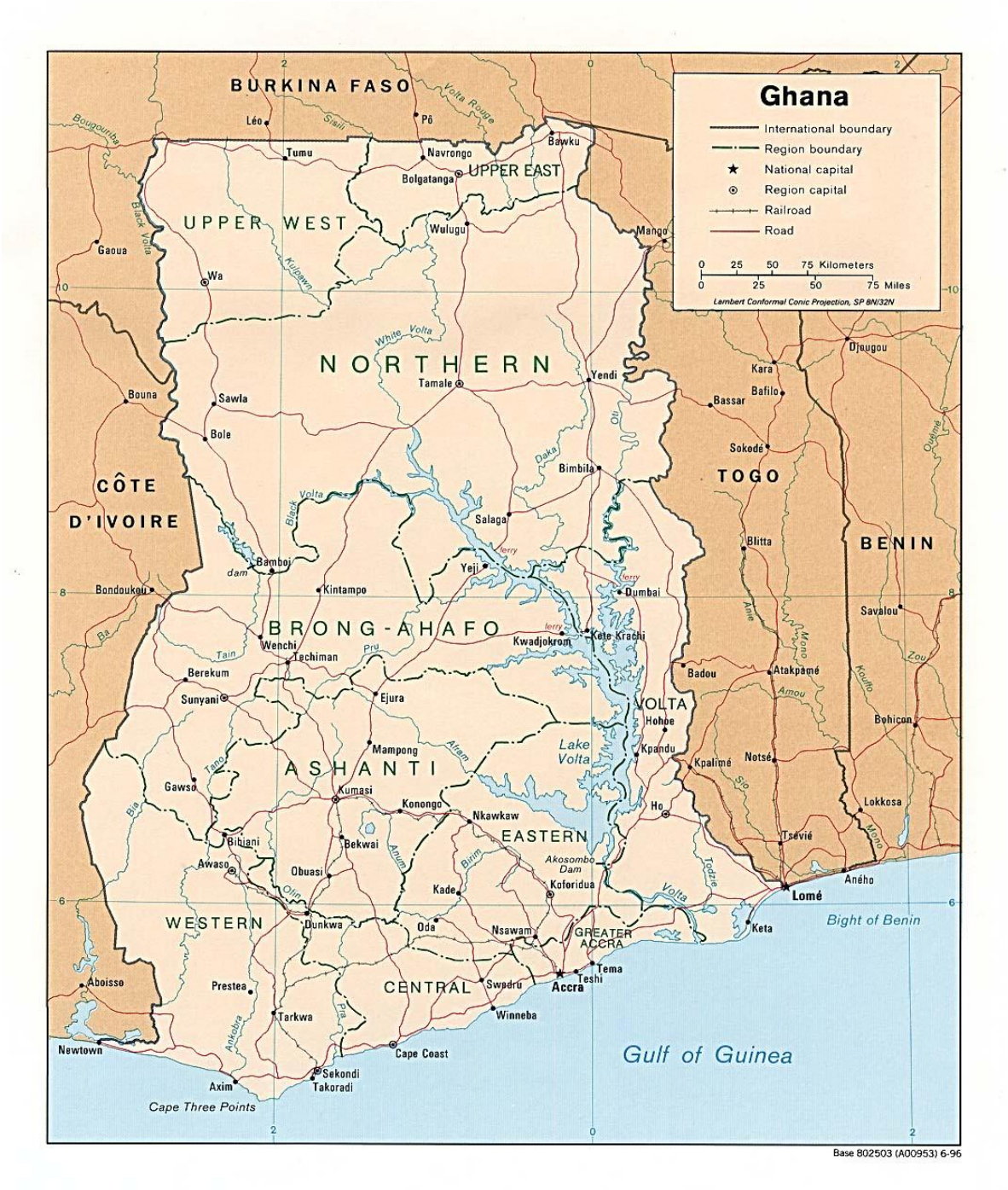
Appendix

Appendix 1. Volume of Pineapple Exports

Year	Volume of exports(mt)	Number of exporters	Value of exports US$
1986	2656.817	39	433429.67
1987	4125.469	37	899647.89
1988	4906.616	53	1408373.06
1989	7946.949	60	2096767.16
1990	9400.220	57	3829878.37
1991	10674.604	62	5065297.55
1992	9753.890	59	4387741.04
1993	13156.990	62	5177863.57
1994	14954.120	66	5261880.01
1995	15763.730	69	5629761.85
1996	27602.830	73	10986886.04
1997	25123.579	57	9631469.22
1998	21940.700	52	8769405.15
1999	33440.400	42	13055416.34
2000	28511.600	54	11853127.83
2001	35173.900	67	13316459.48
2002	46391.300	56	15519989.54
2003	45145.400	65	14378037.24
2004	71804617	68	22068649
2005	46694534	70	12784322
2006	60751084	53	19086134

Source: GEPC, 2007.

Appendix 2. Map of Ghana Showing Geographical Area of Study



Source: www.ghanaweb