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**An Operational Framework for Improving Decentralised
Agricultural Extension: A Ghanaian case study**

A thesis submitted in partial fulfilment
of the requirement for the degree of
Doctor of Philosophy (PhD)

in
Agricultural Extension



Massey University
Institute of Natural Resources
Agricultural/Horticultural Systems & Management

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2007

Abstract

The pressure on the public agricultural extension organisation in Ghana to improve its responsiveness to meet the needs of farmers has increased since the globalisation of trade in the early 1990s. To improve agricultural productivity and the livelihood security of farm households, the Ministry of Food and Agriculture in Ghana decentralised its extension service in 1997. Although this was a critical change in agricultural policy, the extension service has struggled to implement this policy effectively. Further improvement in the situation is hampered because there has been little research published in this area. To provide this understanding, a single-case study of a successful decentralised district level extension organisation in Ghana was used to identify the factors, processes and outcomes that contribute to its performance. The case organisation is an example of a district agricultural extension organisation that operates under a decentralisation system at the level of *deconcentration*, with a high farmer-to-extension agent ratio and limited and uncertain levels of Government funding.

The results of the study emphasised the importance of the effects of both external and internal (or organisational) factors on the performance of the case organisation. The external factors included: (1) the political will to decentralise, (2) the level of decentralisation of other government departments, (3) the provision of a clear legal framework for decentralisation and (4) the existence of established institutions that are willing to support the decentralisation process. New external factors that were identified in this study were (1) the type and drivers of decentralisation, (2) stakeholders' willingness and commitment to support the decentralisation process and (3) the community characteristics in terms of land tenure arrangements and gender roles. The results confirmed the importance of the organisational factors prescribed in the literature: (1) stakeholder participation, (2) managerial and technical capacity, (3) operational funding and (4) accountability. However, the study also identified five other interrelated organisational factors that influenced the success of the case organisation that had not been previously reported in the literature. These included the needs to: (1) develop a needs-based extension programme, (2) expand the extension service focus and roles, (3) foster a cross-sector pluralistic extension approach (4) use needs-based groups for service delivery, and (5) extension staff attitudinal change.

Multistakeholder (farmer and other organisations) participation was critical for the development of a needs-based extension programme. The case organisation had modified the traditional extension programme planning process to involve stakeholders at different levels of participation. Similarly, the case organisation involved stakeholders in its multilevel monitoring and evaluation processes. Stakeholder participation in planning and evaluation, although aimed ultimately at efficient and effective programme implementation and improvement, did enhance accountability. Because the case organisation had taken on a broader livelihood security focus to extension, the definition of *farmer needs* was extended to encompass *on-farm and off-farm needs that have impact on the contribution agriculture makes to the livelihood security of farm households in the district*.

This broader livelihood security focus to extension required the case organisation to take on additional roles from those it traditionally held. In the study, a typology of such roles was developed and a role selection process used by the case organisation during its programme planning process was described. Similarly, because of this broader focus, the case organisation had to work both across sectors and with other extension providers from within the sector to meet the needs of farmers. Again, the multistakeholder programme planning process was central to fostering coordination and collaboration amongst the various extension providers in the district.

Decentralisation has placed greater managerial responsibility on management staff of the case organisation. In addition, the livelihood security focus has required technical staff and attitudinal changes to develop and seek for a much broader range of skills and knowledge – meaning that the development of both managerial and technical capacity was important for the case organisation. Needs-based training, the development of a learning environment and the enhancement of staff motivation were critical for the development of staff capacity.

As with other extension organisations in developing countries, the funding for the case organisation was limited and uncertain. To overcome these constraints, the case organisation had in place mechanisms to ensure its resources were used efficiently and

that it could mobilise additional resources from outside the organisation. Resource efficiency was improved through an intensive monitoring system and the use of stable needs-based groups. Additional resources were mobilised by lobbying government and international donors for funds for projects that would meet the needs of farmers. Further resources were obtained through collaboration with other stakeholder organisations. Again, the multistakeholder planning process provided a platform for collaboration. Networking and special issue forums also provided mechanisms for enhancing collaboration within the district.

Decentralisation was introduced into Ghana in 1997 with the aim of eventually developing a demand-driven extension system. Although viewed as successful, the case organisation has yet to achieve the level of farmer participation (i.e. self-mobilisation) that is required for a demand-driven extension system. Currently, after six years of decentralisation, the level of farmer participation can be classified as somewhere between consultation and collaboration. Therefore, the results of this study suggest that the transition from a top-down to a demand-driven extension system will take considerable time and resources.

Acknowledgements

To God I give the glory for sustaining me through this PhD trail. I acknowledge the contributions made by my esteemed supervisors, David Gray and Janet Reid, without whose assistance this thesis would not have been completed. I have enjoyed your expertise and mentorship throughout my studies at Massey University. I particularly thank them for their valuable guidance, encouragement and patience in taking me through the research process. I would also like to thank Dr. Paschal Atengdam and Dr. Ian Valentine for their valuable suggestions which helped to shape my focus during the early stages of the research.

To the NZAID Commonwealth Scholarships, I am grateful to the scheme for the financial support, without which my PhD programme would not have started. I express my profound gratitude to Kiri Manuera, Susan Flynn and Sylvia Hooker who were the Scholarship's Managers during the period of my study. My family have very much enjoyed your constant support over the years. I also appreciate the support of the University of Cape Coast, Ghana, for granting me study leave for the period of this study.

I am most grateful for all the support I received from the staff and management of the Assin Agricultural Development Unit during the research data collection. The staff and management should take delight in the fact that their organisation has provided a learning opportunity to me personally, and the extension organisation in Ghana and beyond. I am very grateful to the other organisations including World Vision International, Oasis Foundations, Department of Co-operatives, Forestry Service Division, Social Welfare and Community Development, Assin District Assembly Coordinating Council, Regional Agricultural Development Unit, and all the farmers in the Assin District who provided information for this research.

I would like to express my indebtedness to the Institute of Natural Resources at Massey University which provided me with all the essential facilities for my academic exercise. I especially thank Denise Stewart and Ewen Cameron for the key role they played in ensuring that I had office space, and materials to work with. To the rest of the Institute, the Head, office staff and fellow students, I acknowledge that you provided me with a peaceful environment and friendly atmosphere to complete this work. I thank you for the

encouragement by words and the many smiles I receive as we met at the common room and during our usual Friday morning tea time.

It gives me pleasure to express my heartfelt gratitude to Ruth and Robert Thompson, Helen and Ken Bowskill, Denise Lupton and family, Shirley Cook, Moshi and family, James and Dorcas Mwendwa, members of my home fellowship, Palmerston North Christians Fellowship, and all other friends who made my stay in New Zealand a memorable one. Finally, I would like to honour my wife, Edna, and my children, Joseph and Priscilla, for their patience, sacrifice and support over the study period in New Zealand. I am glad I can now tell them that it is over. You can now have 'all' of your husband and father because I have no intention of taking you through this ordeal again, though I know you have developed the resilience to handle such a situation if it happens again. As a token of my appreciation, I dedicate this thesis to you Edna A. Okorley, Joseph A. Laryea and Priscilla Astwei Laryea.

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List of Acronyms and Abbreviations

The following acronyms and abbreviations are used in the text:

AAGDS	Accelerated Agricultural Growth and Development Strategy
AEA	Agricultural Extension Agent
AgSSIP	Agricultural Services Sub-Sector Investment Project
HIV/AIDS	Human Immuno-Deficiency Virus/Acquired Immune Deficiency Syndrome
DADU	District Agricultural Development Unit
DAES	Directorate of Agricultural Extension Services
DDA	District Director of Agriculture
DADO	District Agricultural Development Officer
DoC	Department of Co-operatives
EPA	Environmental Protection Agency
FASDEP	Food and Agricultural Sector Development Programme
FBO	Farmer Based Organisation
GoG	Government of Ghana
IMF	International Money Fund
MIS	Management Information Systems
MoFA	Ministry of Food and Agriculture
MTADP	Medium Term Agricultural Development Programme
NAEP	National Agricultural Extension Project
NGO	Non-Governmental Organisation
PPRSD	Plant Protection and Regulatory Services Directorate
RDA	Regional Director of Agriculture
RADO	Regional Agricultural Development Officer
RELC	Research Extension Linkage Committee
SMS	Subject Matter Specialist
T&V	Training and Visit
TOT	Transfer of Technology

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CHAPTER 1:**INTRODUCTION****1.1 Background**

Ghana lies between latitudes 4° 44' S and 11° 15' N and longitudes 3° 15' W and 1° 12' E in West Africa and covers an area of approximately 238,540 km² (Coche, 1998; Environmental Protection Agency (EPA), 2003). It has a population of approximately 18.9 million people of whom some 57% reside in rural communities (Ghana Statistical Service, 2002). Agriculture is the mainstay of the Ghanaian economy (MoFA, 2002a) contributing about 45% to the GDP and accounting for 55% of foreign exchange earnings (EPA, 2003). The sector provides livelihood for over 70% of the rural labour force and accounts for over 90 % of the food needs of the country (EPA, 2003).

The agricultural sector in Ghana is based on crops, fisheries, forestry and livestock (MoFA, 2002a). The distribution of the GDP of the agricultural sector covers five areas: crops other than cocoa (63% of GDP), cocoa (14%), forestry (11%), livestock and poultry (9%) and fisheries (5%) (EPA, 2003). Most farmers produce crops on small farm holdings using low-input technologies (MoFA, 2002a). About 31% of the farm holdings are less than 1 hectare, 55% are less than 1.6 hectares and 18% are more than 4 hectares (MoFA, 2002a). Poverty is pervasive in Ghana and highest among farmers, especially those in food crop farming (EPA, 2003). Poverty amongst food crop farmers was about 19% above the national average of 40% when it was last estimated in 1998/99 (Government of Ghana (GoG), 2003).

About 59% of farm households in Ghana are considered to be poor and face food security problems (GoG, 2003; IMF, 2003). For instance, it is reported that in Sub-Saharan Africa including Ghana, food production per person has declined over the past three decades (MoFA, 2002a; FAO, 2003a). Aggregate 2002 cereal production in Ghana was estimated at about 1.62 million tonnes, 5% below the average of the previous five years (FAO, 2003a). In the 2003 marketing year (January to December), Ghana recorded a shortfall of 60,000 tonnes of cereal to meet the national requirement (FAO, 2003a). Despite this, the Ministry of Food and Agriculture (MoFA) believes that Ghana has the potential to produce enough food for the population (MoFA, 2002a). MoFA's estimates suggest that

Ghana's agricultural sector is operating at only 20% of its potential with respect to available arable land, soil quality and its human resources (MoFA, 2002a).

Poverty reduction and rural livelihood security are major development issues in Ghana because of the important role farmers play in national development (IMF, 2003). Ghana has a poverty reduction strategy that is aimed at enhancing food production and security, and rural incomes and livelihoods by increasing crop and livestock production through improved soil and water management practices, crop and livestock husbandry and access to production inputs (EPA, 2003; IMF, 2003).

The agricultural sector is the backbone of the Ghanaian economy and a major target for reducing rural poverty, but the approach to rural development and poverty reduction through agriculture is generally changing and this is placing new and more complex demands on agricultural extension in Ghana (MoFA, 2002a; IMF, 2003). For a long time, the government has experimented with a range of approaches and policies to provide solutions to the problems faced by small-scale farmers who form the bulk of the rural population in Ghana (MoFA, 2003). Not surprisingly, these small-scale farmers have been the focus of government agricultural extension programmes since the 1970s, when extension reform started in Ghana (Amezah & Hesse, 2002).

1.2 Extension reforms in Ghana

Prior to independence from the British rule in 1957, Ghana was using an export-commodity development approach for agricultural development (MoFA, 2002a). Extension effort was geared towards supporting the production of cash crops such as cocoa, coffee and cotton for export (Donkor, 1989; Ntifo-Siaw & Agunga, 1994). Little attention was given to food crop production, which provides food and livelihoods to the greater proportion of the rural population (Donkor, 1989). After independence, food security concerns were raised in Ghana, especially during the 1970s (Donkor, 1989). The country responded and shifted its focus from the promotion of export crops to food crop production and adopted a Ministry-based *general extension approach* in 1978 (Donkor, 1989). The aim of this shift in focus was to modernise traditional farming practices by transferring improved agricultural technologies to develop all aspects of rural farm life (Donkor, 1989; Ntifo-Siaw & Agunga, 1994). Extension personnel were trained as

generalists so that they could address the extension needs of peasant farmers. The objective of the government was to increase agricultural productivity through the development and application of scientific knowledge (Ntifo-Siaw & Agunga, 1994; Amezah & Hesse, 2002).

Under the general extension approach, extension services were provided to farmers through various unilateral departments such as crop, livestock, fisheries, agricultural engineering and veterinary services, under the MoFA. This approach was concentrated on the development of agricultural programmes in specific regions in Ghana, for example, the Upper Region Agricultural Development Programme (1976-1984) and the Volta Region Agricultural Development Programme (1982-1988). It targeted and supported a limited number of 'progressive' farmers with inputs and technology. The aim was to entice other farmers to learn from these progressive farmers (Amezah & Hesse, 2002, 2004). That is, other farmers were expected to emulate the progressive farmers. The government also used the extension agents to carry out other national assignments including input distribution and human vaccination programmes, since they were the only government workers residing in the villages (Ntifo-Siaw & Agunga, 1994).

At the beginning of the 1990s, the general extension approach in Ghana was criticised as being deficient and ineffective (Ntifo-Siaw & Agunga, 1994). The approach was viewed as top-down and pro-urban, and was believed to favour progressive farmers, whilst neglecting poorer farmers and women (Hailu, 1990; Amezah & Hesse, 2002). There was also a lack of well-trained extension workers (Hailu, 1990; Amezah & Hesse, 2002). Inadequate infrastructure and poor extension-research linkages also hindered the extension service (Ntifo-Siaw & Agunga, 1994; Amezah & Hesse, 2002). Finally, the general extension approach was poorly managed because different departments within the MoFA developed separate extension programmes that lacked coordination at the district level (Ntifo-Siaw & Agunga, 1994; Amezah & Hesse, 2002; MoFA, 2002a).

Similar criticisms were reported in many developing countries that adopted the general extension approach (Collion, 2004). For instance, countries including Togo, Burkina Faso, La Cote D'Ivoire and India which adopted a Ministry-based general extension approach were reported to have faced similar problems to those in Ghana (Rivera & Alex,

2004a). As a result of these failings, the World Bank exerted pressure for extension reforms in developing countries in the early 1990s (Ntifo-Siaw & Agunga, 1994).

In 1992, Ghana responded to this pressure and reformed the general extension system to improve its effectiveness (Amezah & Hesse, 2002; MoFA, 2002a). A new nationwide agricultural extension approach called the Unified Extension System (UES), which came together with the training and visit (T&V) extension management approach, was adopted (Amezah & Hesse, 2002; MoFA, 2002a). The T&V approach was developed by the World Bank and promoted in many developing countries that were practising the general extension approach at the time (Benor et al., 1984). In Ghana, the UES-T&V approach was promoted and financed by the World Bank through a National Agricultural Extension Project (NAEP) for the period 1992 – 2000. The project was put under a government policy framework called the Medium Term Agricultural Development Programme (MTADP¹). The MTADP was initiated in 1988 as a joint Government of Ghana/World Bank project and put in place in 1992 to provide a framework for the more efficient allocation of public and private sector resources in response to global trade liberalisation. As such, the NAEP was the financial instrument for the implementation of the MTADP (Amezah & Hesse, 2002; MoFA, 2002a).

Unlike the general extension approach where departments under the MoFA had their own extension agents, under the UES-T&V approach the MoFA was reorganised and unified extension work was put under one department (this explains the “UES” part of the approach). All extension agents (then called Frontline Staff – FLS) were put under the Department of Agricultural Extension Services (DAES) at the national level. Unlike the general extension approach which targets all aspects of agriculture (e.g. crops, livestock, nutrition), the DAES targeted only specific agricultural commodities believed to be of importance to rural and national development (Ntifo-Siaw & Agunga, 1994). The

¹ The key elements of Ghana’s MTADP (MoFA, 2001) are:

- i. pursuing a demand-driven national agricultural strategy whose goals are development oriented, productivity enhancing and competitiveness promoting;
- ii. achieving an agricultural growth rate of 4% per annum within the period of the project through the promotion of fertiliser use by 10% per annum, use of improved planting materials and the expansion of the area in arable crops.

objective of the UES-T&V approach was to establish strong linkages between researchers, extension agents and farmers, an aspect that had been lacking in the general extension approach (Ntifo-Siaw & Agunga, 1994; Amezah & Hesse, 2002). This was to facilitate the transfer and widespread use of proven and relevant agricultural technologies to meet the local needs of farmers. To this end, in 1993, the Research Extension Liaison Committee (RELC) was established in Ghana (Bekure & Annor-Frempong, 1998; Amezah & Hesse, 2002).

A RELC was established in each of Ghana's four major agroecological zones (Northern, Middle, South-Western, and Southern) (Bekure & Annor-Frempong, 1998). It comprises agricultural research directors and co-ordinators, subject matter specialists (SMSs) and Regional Agricultural Extension Officers. Representatives of NGOs, input suppliers and farmers were also members of the RELC (Bekure & Annor-Frempong, 1998). The function of the RELC was to review the research and extension programmes to ensure that they were relevant to the zones (Bekure & Annor-Frempong, 1998). Thus extension agents and SMSs worked closely with the RELC to identify farmer needs and conduct adaptive trials of new technologies (Bekure & Annor-Frempong, 1998). The RELC however, faced a major problem because the DAES and research institutions were under separate ministries which made co-ordination - and consequently the linkage process between research, extension and farmers - less effective (Bekure & Annor-Frempong, 1998).

In contrast to the general extension approach, the UES-T&V approach emphasised frequent and regular (e.g. bi-weekly, monthly) staff training and extension visits to farmers (Ntifo-Siaw & Agunga, 1994; Coche, 1998). Agricultural Extension Agents (AEAs) had to visit contact groups of farmers (8-10 individuals) and provide agricultural technologies or extension messages with support from SMSs (Coche, 1998). The contact groups were formed based on farm location. That is, farmers within a particular farm location (geographical area) were brought together as points of contact to meet with extension agents. An AEA would visit between 16 and 24 contact groups within each farming season (major and minor seasons). However, like the general extension approach, the focus of the UES-T&V approach was on increasing farm output through

technology transfer based on the assumption of farmer-to-farmer extension message diffusion (Ntifo-Siaw & Agunga, 1994).

The T&V approach in Ghana focused on farmer group activities instead of individual farmers (MoFA, 1998). The training of extension agents was restricted to once a month or, in certain cases, once every two months (MoFA, 1998). Emphasis was placed on staff capacity building to enable them to transfer more agricultural technologies to farmers (Hailu, 1990, MoFA, 2001). Little attention was given to farmers in terms of what their farming needs were or what they required from the extension organisation to meet those needs (Hailu, 1990, MoFA, 2001). A review of the approach showed that although most farmers became aware of technologies that could improve their farming practices and productivity, the adoption rate was low, particularly for those technologies requiring external inputs (MoFA, 2001).

With regard to extension performance under the T&V approach, an evaluation of the pilot regions where it was practised showed that the approach did not improve extension effectiveness (Ntifo-Siaw & Agunga, 1994). According to the report, the T&V approach did not show any significant improvement over the general extension approach with regard to linkage between DAES and research institutions and the participation of farmers in technology generation and the planning of extension programmes (Ntifo-Siaw & Agunga, 1994). In part, the poor performance of the T&V approach was attributed to poor organisational management and implementation of the approach (Hailu, 1990; Ntifo-Siaw & Agunga, 1994; MoFA, 2001).

The UES-T&V extension approach in Ghana was criticised as being rigid and non-responsive to the needs of farmers nationally (MoFA, 2001). Evaluation of the T&V approach under NAEP (MoFA, 2001) from 1992 to 1996 indicated that there were some gains in farmer empowerment and their standard of living as a result of the approach. However, the gains were not widespread (MoFA, 2001). Thus, in 1996 it was concluded that although the MTADP had improved economic growth, many rural dwellers in Ghana remained poor because the rate of agricultural growth was too low (MoFA, 2002a). It was therefore recommended that for extension to achieve greater improvement in the livelihoods of the rural population in Ghana, the organisation should focus broadly on

farm production and income, farmer household livelihoods, and the nutrition of the rural population (MoFA, 2001). These recommendations resulted in the MoFA's undertaking further extension reforms in Ghana.

1.3 Decentralisation of extension in Ghana

By the end of 1996, the Ministry of Food and Agriculture (MoFA) in Ghana had nine technical departments operating unilaterally and designing different extension programmes for farmers in each of the country's 110 districts (MoFA, 2002a). These comprised the Departments of Crops, Livestock, Policy Planning, Monitoring and Evaluation, Plant Protection and Regulatory Services, Fisheries, Agricultural engineering, Extension, Women in Agricultural Development, and Veterinary Services. These Departments were under the control of MoFA at the national level. All extension professionals were under the umbrella of the Directorate of Agricultural Extension Services (DAES) which was controlled from the MoFA at the national level. Extension programmes were planned based on targets and standards set by the MoFA at the national level (Amezah & Hesse, 2002). However, this system of governance, which came out of the earlier approaches (general extension and UES-T&V), was criticised because it was inefficient and unable to respond to the problems facing the country (MoFA, 2002a).

To improve this situation, a decentralisation approach to extension was adopted by the MoFA and implemented in 1997 (MoFA, 2002a). The objective of this policy was to create an environment that would encourage self-help, local responsibilities and ownership of development programmes so that people could participate in their own development (Kostas, 2001; MoFA, 2002a). As a result, the MoFA devolved power to the district level offices so that they could plan and implement their agricultural extension activities and manage their resources within the framework of national policy. This move was based on the premise that farmers' problems can be better understood and solved at the level where they actually occur (MoFA, 2002a). In terms of the decentralisation approach, responsibilities - including service provision and administration - were transferred to the agricultural unit of the District Assemblies (lowest level of government administration), while the regional and the national level administrations focused on policy planning, co-ordination, technical support, monitoring and evaluation (MoFA, 1997; World Bank, 2000a; MoFA, 2002a).

As a result of decentralisation, the departments of crops, livestock, policy planning, monitoring and evaluation, plant protection and regulatory services, fisheries, agricultural engineering, women in agricultural development, extension and veterinary services were reconstituted at the district level into a single directorate called the District Agricultural Development Unit (DADU) under a District Director of Agriculture (MoFA, 1997; World Bank, 2000a). At the district level, the DADU was expected to work alongside other government departments such as Education, Youth and Sports, Social Welfare and Community Development, Works, Physical Planning, Finance, Natural Resource Conservation, Central Administration, Trade and Industry, Disaster Prevention, and Health (MoFA, 2002a).

The district level extension organisation is now central to agriculture and rural development in Ghana (MoFA, 2002a). Röling and Pretty (1997, p181) commented in their review of the role of extension in sustainable agricultural development that *most successes are still localized* and are best encouraged or facilitated at the local level. The local level provides the best opportunity for extension organisations to effectively involve stakeholders to promote pluralism, transparent negotiations, representational participation, and accountability - all of which are critical to development (Anderson et al., 1998; Ramirez, 1998).

1.3.1 Major features of the decentralised approach to extension in Ghana

At the onset of the decentralisation of the MoFA in 1996, the government revised the MTADP into a new national agricultural development policy strategy. It was called the Accelerated Agricultural Growth and Development Strategy (AAGDS²) and it was designed to facilitate the process of attaining a target of 6% growth in agriculture (instead of the 4% in the MTADP) for the period 2001 to 2010 (MoFA, 2002a). The strategy was

²The key elements of Ghana's AAGDS (MoFA, 2002a) are:

- iii. Promotion of selected products through improved access to markets
- iv. Development of, and improved access to, technology for sustainable natural resource management
- v. Improvement of access to agricultural financial services
- vi. Improvement of rural infrastructure
- vii. Enhancement of human resource and institutional capacity

designed to be demand-driven and to enhance agricultural productivity and promote competition in the domestic, regional and global markets. It was believed that this strategy would help reduce rural poverty and conserve the environment for sustainable and equitable economic growth (World Bank, 2000b, MoFA, 2002a). Just as the MTADP was supported by the World Bank through NAEP, the AAGDS was supported by the World Bank through a new programme called the Agriculture Services Sector Investment Programme (AgSSIP) (World Bank, 2000b; IMF, 2003). So in a similar way to the NAEP, the AgSSIP was the financial instrument for the implementation of the AAGDS under the decentralisation extension approach.

The aim of the AAGDS was to improve rural livelihoods by supporting farmers with improved technologies in crop, livestock, fisheries, agroforestry production and agro-processing (MoFA, 2002a). The decentralised extension approach has an expanded focus from that of the T&V approach. The decentralised approach goes beyond promoting agricultural technologies for production, as in the T&V, because it also works to improve access to markets (World Bank, 2000b). Further, it provides technologies for natural resource management, and offers financial services to farmers (World Bank, 2000b). A major aim of the decentralised approach is to enhance the capacity of the district extension organisation with human resources, materials and rural infrastructure to facilitate extension work (World Bank, 2000b).

In contrast to the UES-T&V approach, in which contact farmer groups were used solely to transfer technologies, an important aim of the decentralised approach was to strengthen the capacity of grassroots organisations (e.g. farmer organisations) to build social capital that will enable such organisations to negotiate with actors and institutions that regulate access to services (including extension), markets and processing (IMF, 2003). The policy makers believe that by empowering grassroots organisations, whose members are largely farmers, this will enable them to improve their livelihoods (IMF, 2003). The fundamental assumption behind this belief is that farmers, when nurtured into strong groups, will have greater market power to acquire production inputs and skills and sell their produce (IMF, 2003). This will reduce their input costs and improve their market returns (IMF, 2003). Thus, in contrast to earlier approaches (general extension and UES-T&V) which focused on food security and agricultural productivity, the decentralised approach to extension

was to contribute to livelihood security and broad-based poverty reduction - especially among the rural people in Ghana (IMF, 2003).

In 2001, the AAGDS policy was criticised because it did not show a step-by-step approach (pathway) for achieving poverty reduction in Ghana (MoFA, 2003). The policy was further criticised because it did not emphasise participatory decision making and the need to involve development actors from both the public and private sectors in programme planning (MoFA, 2003). These weaknesses were also identified in the earlier approaches (Ntifo-Siaw & Agunga, 1994; MoFA, 2001).

In response to this criticism, the government of Ghana has advocated stakeholder participation in extension service provision (MoFA, 2002b). This is in line with the emerging view that extension is no longer a unified public sector service, but a multi-institutional network of knowledge and information support for rural people within the context of a wide rural development agenda (Rivera & Alex, 2004a). Roling (1991) commented that rain-fed and small-scale farming systems in developing countries are complex in terms of markets, and social and environmental setting and may require a wide range of knowledge. Rivera and Alex (2004a) argued that such complex systems required sophisticated and differentiated extension services. Such services could best be performed by a range of extension service providers working in collaboration with a public extension organisation (Rivera & Alex, 2004a). Such an approach has been referred to as a *pluralistic extension approach* in the literature (Hanyani-Mlambo, 2002; Rivera & Qamar, 2003; Rivera & Alex, 2004a).

The government revised the AAGDS and put in its place the Food and Agricultural Sector Development Programmes (FASDEP) in 2001 (MoFA, 2002b). The FASDEP provided a framework which explains how poverty reduction can be achieved in Ghana (Figure 1:1). The government of Ghana hoped to reduce poverty mainly through sustained agricultural development and growth (MoFA, 2002b). The aim was to achieve agricultural development and growth through a broad agenda of merging food security issues with government strategic goals of revenue generation and industrialisation (MoFA, 2002b). To achieve this, the government would enhance the capacity of the extension organisation

to provide effective extension support to farmers throughout the production chain as illustrated in Figure 1:1.

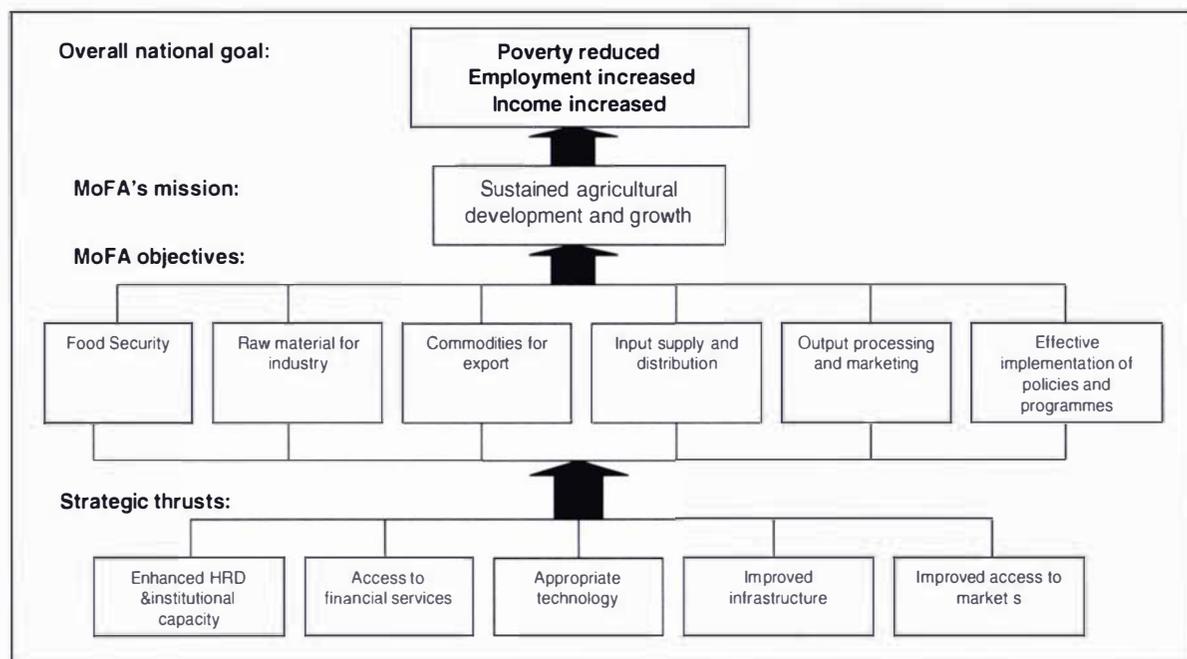


Figure 1:1. Conceptual framework for poverty reduction and food security (Source: MoFA, 2002b)

Similarly to the AAGDS, the FASDEP's policy under the decentralised extension system provides the extension organisation with a mandate to respond to poverty reduction and rural development by performing roles and activities which: ensure equity in the distribution of benefits from development; improve rural livelihoods; and reduce poverty - especially among rural women, the youth and the physically challenged (MoFA, 2002a).

The aim of the Ghanaian extension service is to improve the productivity of farmers by enhancing their technical proficiency and promoting access to improved technology and financial services, especially to the poor (IMF, 2003). It is also to provide a training system to support off-farm business activities and the development of farmers' entrepreneurial skills with particular emphasis being placed on poor farmers (MoFA, 2002a, IMF, 2003).

The decentralisation approach to extension by the MoFA has had a number of problems since it was initiated in 1997 (World Bank, 2000a; MoFA, 2002a; Rivera & Alex, 2004a).

Firstly, resourcing in terms of finance and staff numbers were inadequate; secondly, the roles and responsibilities of staff were not clearly defined; thirdly, training of staff (especially staff from other Departments that became part of the Extension Service at the local level) in extension skills was inadequate; fourthly, the relationship between regional and district staff and between the DADU and the District Assemblies in programme planning and implementation was not clear. Fifthly, there was a lack of political will to transfer extension management, policy decision making and financial control completely to the districts (World Bank, 2000a; MoFA, 2002a; Rivera & Alex, 2004a).

The latest review (MoFA, 2003) of the decentralised extension system in Ghana indicated that the training of field staff was inadequate for their new roles in the districts. Inadequate staffing was still identified as a problem despite the increase in the field staff: farmer ratio from 1: 2500 to 1: 1500 as a result of the merger of departments (MoFA, 2003). The extension service directors lacked the management skills needed for the efficient execution of district programmes and administration (MoFA, 2003). Additionally, inadequate funding was identified as a major constraint to the smooth functioning of decentralised extension units at the district level (MoFA, 2003). Consequently, the results of this relatively new decentralised approach have been described by the World Bank as generally poor (World Bank, 2000a). There is, therefore, a pressure on the government to find practical measures to effectively operationalise the approach to assist farmers in rural areas in the districts to meet their needs (MoFA, 2002a; MoFA, 2003; Ackah-Nyamike, 2005). However, recent case studies by the World Bank of the extension reforms of a number of countries (Rivera & Alex, 2004a), showed that although many of the countries - including Ghana - have adopted a decentralised extension approach with an expanded livelihood security focus, none of the countries studied could show how this can best be implemented. As commented by some authors in extension (Gustafson, 2004; Sulaiman & Hall, 2005), adopting an extension policy is not a sufficient condition to guide change; implementation strategy (methods) supported by sound organisational principles is equally important for the change process.

1.4 Problem statement

Ghana has gone through a number of reforms in endeavouring to make its extension services more responsive to the needs of farm households. In recent times it has adopted a

decentralised extension approach with a focus on livelihood security and poverty reduction, especially among rural people, by promoting grassroots farmer participation, demand-driven services and equity. However, this approach has been criticised and a number of important weaknesses have been identified. More recently the government has acknowledged that an important area that needs to improve is the operationalisation of the decentralisation policy at the district level. In particular, they want to know what changes need to be made at the district level to improve the performance of the DADU. However, limited empirical research has been undertaken in either Ghana or other developing countries into the operation of decentralised extension services at the district level. The district level has become pivotal in this problem because it is the level where the decentralisation extension approach is operationalised or implemented. Anecdotal evidence suggests that some district extension organisations in Ghana are performing better than others in the decentralised extension environment. Therefore, if a successful district extension organisation could be identified and studied, it would then be possible to identify the factors that are important for the successful operation of a district extension organisation in a decentralised extension environment.

The overall aim in this thesis, therefore, is to understand what factors determine the success of a district level decentralised extension organisation with livelihood security focus in Ghana. This understanding will be used to develop a theoretical framework that could help other district extension organisations to perform better in a decentralised extension environment. This framework will answer the following questions: *what factors contribute to the success of a decentralised extension organisation, how do such factors influence that organisation's success and why do those factors have that influence?*

1.5 Objectives of the study

In order to achieve the overall aim of the study, the following objectives were formulated:

- I. to develop a theoretical framework to provide an understanding of how a decentralised government agricultural extension organisations with a livelihood security focus in developing countries can operate successfully in a decentralised policy context,

2. to identify and describe the key factors that influence the performance of a decentralised extension organisation at the district level,
3. to identify and describe the critical outcomes and processes that influence the performance of a decentralised extension organisation at the district level.

1.6 Organisation of the study

In this chapter the general background to the research problem is provided, and the aims and objectives for the investigation are described. In Chapter Two, developments in extension over the past four decade are reviewed. In this chapter, definitions of the term *extension* and the historical development of extension from the 1960s to the present are discussed. The third chapter contains a review of the literature on the decentralisation of extension and the factors that can influence the success of decentralised extension organisation with a livelihood security focus in developing countries. In Chapter Four, the methods used to investigate the problem are described. This chapter includes a description of the choice of the research strategy, the study design and the techniques used in the collection and analysis of the research data. In the fifth chapter the case organisation and the general context in which it operates are described. In chapter six, the results are presented and these describe key factors that influence the performance of a district level decentralised extension organisation with a livelihood security focus. In Chapter Seven, the findings from the study are compared and contrasted with the literature. In Chapter Eight, the conclusions drawn from the study, implications from the research, evaluation of the method and areas for future research are presented.

CHAPTER 2: DEVELOPMENTS IN AGRICULTURAL EXTENSION

2.1 Introduction

Agricultural extension over the years has been used as a tool for facilitating agricultural and rural development (Chambers, 1997; Alex & Byerlee, 2002). Extension organisations therefore, play an important role in rural development in developing countries (Shackleton et al., 2000; Mwabu & Thorbecke, 2001). However, in the past two decades, agricultural extension services in developing countries have been under increasing pressure from globalisation, liberalisation of agricultural markets, environmental changes, HIV/AIDS and food insecurity, to reform and respond to the needs of their clients (World Bank, 2000a; Richardson, 2003). In response to these changes, extension organisations are shifting their principal focus from agricultural productivity towards sustainable development, where participatory processes, action learning - that is, the human dimension of agricultural and natural resource management - are given importance (Röling, 1994; Scoones & Thompson 1994; van Crowder 1996b). Moreover, this shift in focus has created a more diverse and complex context in which extension organisations operate to assist farmers to meet their needs (Röling, 1992; Scoones & Thompson 1994; van Crowder, 1996b). The purpose in this Chapter is to review the development of extension in developing countries since the 1960s to provide a context that explains why extension organisations in developing countries are acting in the way that they do in the current environment. This will be undertaken by first defining the concept of extension. Second, a review of the key extension approaches that have influenced the development of extension in developing countries since the 1960s is provided. In this part the transfer of technology model, community participation model, adult learning model and sustainable livelihood approach to extension will be highlighted.

2.2 Definition of extension

The concept of *extension* has a wide variety of meanings. Saville (1965) described extension as *a system of out-of-school education for rural people*. More specifically, Maunder (1973) described the concept as *a service which assists farm people, through educational procedures, in improving farming methods and techniques, increasing production efficiency and income and bettering their levels of living*. Extension was also defined by Adams (1982, p. ix) as *an assistance to farmers to help them to identify and*

analyse their production problems and to become aware of the opportunities for improvement. In contrast, Rölöing (1988, p. 49) defined extension as *a professional communication intervention deployed by an institution to induce change in voluntary behaviours with a presumed public or collective utility.* Rölöing (1988) construes the concept to mean *a specialist management institution that uses communication as its instrument to induce learning and change in the behaviour of farmers.* According to Rölöing (1988) the intervention may take four different approaches: 1). informative extension; that is, where the emphasis of the institution is to provide information to their clients to help them make good decisions to achieve their goals; 2). emancipatory extension; that is, where extension is used as an instrument of emancipation of the poor; 3). human resource extension; that is, where the emphasis is placed on the development of extension clients to enhance their capabilities to learn and fend for themselves; and 4). persuasive extension; that is, where an organisation uses extension as a policy instrument to achieve societal (or government) objectives. The term *extension* has also been interpreted to mean: *the transfer of technical information to farmers; the provision of market information; management and consultancy service; and collection of information on producers' needs and concerns* (Scrimgeour et al., 1991).

A frequently cited definition of extension is that of van den Ban and Hawkins (1996, p.9) which refers to extension as *'the conscious use of communication of information to help people form sound opinions and make good decisions'*. The conceptualisation of extension as is highlighted above, has been somewhat paternalistic in nature; that is, where the relationship between an extension agent and his/her client was essentially viewed as being similar to a teacher/student or parent/child relationship (Leeuwis & van den Ban, 2004). However, there is growing realisation that successful extension requires input from farmers, extension experts and scientists (Leeuwis & van den Ban, 2004). In more recent times, extension has become partially or fully privatised in a range of countries such as Costa Rica, Israel and England (Qamar, 2002), and as such, the term can no longer be viewed entirely from a paternalistic perspective, because as privatised institutions, their services are demanded by farmers themselves. Even in less developed countries where persuasive extension is pervasive, past experience has shown that the notion of *transfer* (teacher to student) of technologies has often not worked - rather, technologies have been imposed on clients (Leeuwis & van den Ban, 2004). Thus, the

term *extension* as used in the extension literature is ambiguous and falls short of the present reality.

The most elaborate and recent definition which is more relevant to this research is that of Leeuwis and van den Ban (2004, p. 27). They defined extension as:

‘ a series of professional communication interventions amid related interactions that is meant, among others, to develop and/or induce novel patterns of co-ordination and adjustment between people, technical service and natural phenomena, in a direction that supposedly helps to resolve problematic situations, which may be defined by different actors involved’.

In this definition, extension is seen as a professional activity and an intervention which draws on communication between extension agents and the stakeholders/actors (farmers, researchers and organisations) for whom they work for mutual benefits. In the following sections, an overview of the approaches of extension since the 1960s is provided.

2.3 Transfer of technology model

The *transfer of technology* (TOT) extension model was used as an approach to rural development during the 1960s and 1970s (Borlaug, 1995; Pretty, 1995a; Chambers, 1997). The TOT model was used as a communication process involving *senders* (sources of information) and *receivers* of ideas, where information and materials move from senders to receivers in a one-way fashion (Katz & Levin, 1963). Under this model, technical knowledge is perceived to be generated by research organisations only, transferred by extension organisations and utilised by farmers (Katz & Levin).

The assumption underlying this model was derived from Roger’s (1962) ‘diffusion of innovation theory’. Innovations originate from scientists; extension agents transfer innovations; and farmers apply the innovations they receive from extension agents (Russell et al., 1989). As such, extension under this model is viewed as a linear ‘top-down’ approach (Figure 2:1). The TOT approach therefore, is driven by the philosophy of ‘positivism’ (Pretty, 1995b) in which researchers identify the problems of farmers (with

or without the farmers' consent) and design technologies for farmers to adopt to solve the identified problems. The assumption behind this approach is that once the information is transferred by the extension organisation, it will begin to spread (diffuse) among farmers as they interact among themselves. In situations where farmers modified or rejected a technology promoted by an extension organisation, they were viewed as 'conservative', 'backward' or laggards who lacked the right attitude to change (Rogers, 1962; Hyden, 1986).



Figure 2:1. Transfer of technology model (Source: Russell et al., 1989)

In practice, the TOT approach has been reported to have given mixed outcomes, especially during the *Green Revolution*, when agricultural technologies from the developed countries were promoted in developing countries to increase their production capacity (Borlaug, 1995; Busch, 1996; Evenson & Gollin, 2003). But whereas it was successful in increasing agricultural yields during the Green Revolution in Latin America and some parts of Asia, it was a total failure in India and many other developing countries (Borlaug, 1995; Busch, 1996; Evenson & Gollin, 2003). For instance, Busch reported that the success of the Green Revolution in Latin America and some parts of Asia was possible because the farmers involved in the process were resource-rich and farmed irrigated fields similar to those found on research stations where the technologies were developed.

In Sub-Saharan Africa, the TOT was applied through a training-and-visit (T&V) extension strategy, where extension agents were provided with regular fortnightly in-service training by subject-matter specialists to develop the technical skills that they would transfer to farmers (Benor et al., 1984). However, the TOT approach was not successful in Sub-Saharan Africa because the farming systems were quite different (i.e. complex, mainly rain-fed, resource poor small-scale farmers, and risk-prone) from those under which the technologies (e.g. crop varieties) were developed and therefore the majority of farmers could not practice the more expensive and 'foreign' technology packages (Carr, 1989; Marfo et al., 1994; Borlaug, 1995; Frempong-Asante, 1995).

The experience gained from the TOT approach during the Green Revolution showed that agricultural technologies developed by scientists alone may not be adopted by farmers (Horton, 1991; Chambers, 1997). Farmers, especially small-scale farmers, modify or adapt their production practices to conform to the changing times, their particular environments and their needs (Horton, 1991; Chambers, 1997). Several authors (Horton, 1991; Röling, 1991; Chambers, 1997) argued that scientists or extension agents may not know the exact needs and problems of farmers, especially at times when situations and agroecological contexts are changing at a fast rate. Therefore, to gain more accurate and up-to-date knowledge about the needs and problems of farmers, the process would have to be ongoing and involve farmers and other stakeholders, including scientists (Horton, 1991; Röling, 1991; Chambers, 1997).

In the early 1990s a strong case was made in the literature (Horton, 1991; Russell & Ison, 1991; van Beek & Coutts, 1992; Pretty, 1995b) for the need to explore other extension approaches. For instance, Pretty (1995b), argued that one cannot separate technology from the culture and traditions of the people who are to adopt it. That is, agricultural technologies cannot be developed independently of farmers whose practices are the target for improvement. Thus, the aim was to involve farmers in the identification of constraints to their existing production systems and the development of new or improved technology packages that suited their farming systems (Okali & Sumberg, 1988). Hence, farmer empowerment, bottom-up development, and the integration of farmers' indigenous knowledge assumed importance, evolving into what became the *farmer first* idea in the extension literature towards the end of the 1980s and early 1990s (Chambers 1983, 1997; Richards, 1985; Chambers et al., 1989; Horton, 1991; Russell & Ison, 1991; van Beek & Coutts, 1992). These ideas precipitated the concept of community participatory approaches in extension and rural development.

2.4 Community participation models

The reported failures (Chambers, 1989; Chambers, 1993; Fisher, 1993) of the transfer of technology model in the 1980s brought about a change in the worldview of those involved in research and rural development. The TOT approach had problems because scientists and extension agents developed the technologies and extension programmes in isolation from farmers - often resulting in a mismatch (Chambers, 1989; Pretty &

Chambers, 1993; Scoones & Thompson, 1994). This led to participatory approaches where farmers were actively involved in technology and extension programme planning processes (Pretty & Chambers, 1993; Scoones & Thompson, 1994) - the assumption being that if farmers are involved in the process, they are more likely to adopt the extension messages. Thus, the focus of extension was shifted to put the farmer 'first' (Chambers et al., 1989). The extension organisation was therefore expected to promote community participation so that farmers could share their knowledge among themselves and with the extension organisation to shape extension programmes (van Beek & Coutts, 1992). The aim of the community participation process was to shift the power balance from working *for* farmers to working *with* farmers for them to solve their own problems (van Beek & Coutts, 1992; Chambers, 1997).

During the 1980s and 1990s a range of community participatory models emerged in response to the reported limitations of the TOT approach (Black, 2000). Typical among such models are: Farming Systems Research and Extension (Shaner et al., 1982); Agroecosystems Analysis (Conway, 1985); Agricultural Knowledge and Information System (Röling, 1986); Rapid Rural Appraisal (Chambers, 1987; Beebe, 1995); Farmer-first and beyond farmer-first (Chambers, 1987; Scoones & Thompson, 1994; Chambers, 1997); Farmer Participatory Research (Bunch, 1989); Participatory Rural Appraisal (Chambers, 1994a, 1994b); and Participatory Technology Development (Hagmann et al., 1998). Discussion of each of these models is beyond the scope of this study. However, the general argument made by a range of authors about community participation models was that they had important advantages for rural development when compared with the TOT approach. These arguments are discussed below.

It was argued by Cornwall et al. (1993) that participatory approaches make it possible to draw on local knowledge and experience from the community in identifying problems and developing appropriate solutions. This claim was supported by Carr (1997) who pointed out that participatory approaches acknowledge the value of farmers sharing ideas and information among themselves rather than relying simply on 'expert' advice. The community participation approaches are believed to give participants a greater sense of ownership and commitment to their problems and solutions (Marsh & Pannell, 2000; Garforth, 2004). Also, this approach is said to enhance the development of local

capabilities which are essential for ensuring sustainable development (Pretty & Chambers, 1993). Finally, participatory approaches had been reported to have enhanced the sustainability of development programmes (Sara & Katz, 1997), improved the implementation efficiency and effectiveness of community projects (Tang, 1992; Lam, 1998), and reduced the management costs of such projects (Adato et al., 1999).

Despite the reported advantages of community participation models, these approaches have been criticised. Critics still maintain that there is a lack of substantive proof that participatory analyses and planning processes are cost-effective (Sustainable Livelihoods, 2004). Campbell (1997, p.2) believes that 'widespread use of participatory approaches, without a shared recognition of their limitations, can result in high levels of frustration'. A criticism of some participatory approaches is the way in which communities are treated as homogenous entities (Black, 2000). According to Black most participatory approaches tend to ignore and underestimate the significance of differences (e.g. age, status, caste) that might exist between members in the participatory encounter. In real life situations such differences divide communities (Chambers, 1997). In addition, Frost and Metcalfe (1999) explain that consensus arrived at from participatory processes does not always mean that the needs of all participants have been taken into consideration.

Participation often entails higher costs and time due to the need for frequent consultations and lengthy decision-making processes in reaching a consensus for action (DESA, 1999; Toner, 2003). It is reported that in certain instances, absolute participation may be difficult to achieve, especially when there are time and budget constraints or a lack of commitment from participants (DESA, 1999). Under these circumstances, participation may be nominal and will not empower people. Moreover, Toner (2003) argued that all too often, extension personnel set unrealistic targets and underestimate the need for feedback and follow-up in participatory processes.

In the 1990s, the focus on farmer participation started to take on a new dimension when it became apparent that farmers make their own decisions about their farming ventures based on their experiences of what works and what does not (Röling & Pretty, 1997). Fisher (1993) argued that farmers are innovators who are able to learn and improve their own situations and that they should be given the opportunity to do so. Similarly,

Coldevin (2001) argued that even in participatory approaches, the people who are involved in the process require a level of knowledge and skills to participate effectively (Coldevin, 2001). Long (2001) described participants in any participatory process as social actors. He argued that these social actors (individual persons, informal groups or interpersonal networks, organisations, collective groupings) should possess the knowledge and capability to assess problematic situations and organise appropriate responses. The ideas outlined above contributed to a shift in emphasis from simply 'involving people' in extension programmes to the use of adult learning principles in extension in facilitating rural development in the 1990s.

2.5 Adult learning model

The use of the adult learning model in agricultural extension was based on the theories of Knowles (1984), Mezirow (1981) and Kolb (1984) of adults as active learners (Röling & Pretty, 1997). These theories assume adults to be in a continuous process of learning to improve their conditions and practices (Mezirow, 1981; Knowles, 1984). Adults are responsible for their own learning and decision making (Röling & Pretty, 1997). This understanding is consistent with Kolb's (1984) experiential adult learning style. Kolb (1984) argued that adults can not be 'forced' to learn, they need to be given the opportunity to reflect upon their experiences and test new situations/ideas to solve their own problems. As such, Ramirez and Stuart (1994, p. 4) made the point that 'farmers are the ones who must control the learning process and be able to access information according to their specific needs, times and means'. Similarly, Röling and Pretty (1997, p. 183) maintained that *it is important to recognize that local people are always involved in active learning, in (re)inventing technologies, in adapting their farming systems and livelihood strategies.*

The adult learning model in extension is considered relevant and important in facilitating more sustainable rural development (Ramirez & Stuart, 1994; Coutts et al., 1995; Pretty, 1997; Coldevin, 2001). In this approach, rural development was viewed as an adult educational process where the extension specialist's roles were those of a facilitator and partner in a learning process with farmers (Coutts et al., 1995; Coldevin, 2001). This adult learning notion was the main driver behind the Farmer Field School (FFS) concept in the 1990s (Pontius et al., 2002). A FFS is a form of nonformal training where extension

agents, as facilitators, meet periodically with groups of farmers during a crop or animal production cycle to build their expertise through experiential learning (Pontius et al., 2002). In this kind of collaborative learning, extension organisations provide farmers with nonformal education with the assumption that it will assist them to understand their situation and make better choices that can improve it (van Beek & Coutts, 1992).

According to Knowles (1984) adults must be motivated to feel the need to acquire information, new knowledge and new techniques in response to particular problems that they want to solve. As such, in agricultural extension, it had been argued that the role of extension organisation staff should be more as facilitators of adult learning rather than as 'conduits' for the transfer of technology from 'experts' to farmers (Röling & Pretty, 1997). Servaes and Arnst (1992) argued that it is wrong to believe that 'experts' have more knowledge than local people unless the "experts", through cooperation and learning with local people, can apply their knowledge in the local context to the benefit of the people.

The adult learning approach has its drawbacks. Questions with regard to the commitment of participants to go through a designed programme of training have been raised by Prain (2001). The adult learning approach to extension requires a high degree of dedication from participants because it requires time and commitment to learn (Prain, 2001). But, according to Prain it is difficult to get this kind of dedication and commitment from the poor. A similar point was made by Chambers (1995, 1997), when he stated that it is difficult to involve the poor in rural development programmes because they are most often: dispersed, anxious and have limited time to spend out of their work. Not surprisingly, in the mid-1990s, Chambers (1995) advocated the need for a poverty reduction and livelihood security focus to extension in his book *Whose Reality Counts?* Chambers (1995) argued that the poor must be placed at the centre of rural development, and that sustainable poverty reduction must be an objective in rural development interventions. The literature suggests that this objective should be one that promotes a broad base opportunity for income earning, access to education, healthcare, and other social services for rural people, especially, the poor (Scoones & Thompson, 1994; Chambers, 1995; Chambers, 1997; Sutherland et al., 1999). These latter views

contributed to a shift in the focus of extension personnel from the earlier approaches to a pro-poor sustainable livelihood approach, also in the 1990s.

2.6 Sustainable livelihoods approach

The extension and rural development literature from the mid-1990s into the 2000s (Scoones & Thompson, 1994; Chambers, 1995; Chambers, 1997; Sutherland et al., 1999; Ingram et al., 2002; Molua, 2005) suggests that extension can no longer focus only on food production and income from agriculture and expect to achieve sustainable rural development. The literature also proposes that extension should focus on livelihood improvement in order to realise rural people's full potential and be responsive to their changing needs. The notion is that household food security is not simply a function of household food production and income, which has been the traditional focus of agricultural extension (Sutherland et al., 1999). *Food security* is defined as *the access to sufficient food to meet the dietary needs of a group of people for a productive and healthy life* (USAID, 1992, p.2). However, it is argued that household food security issues are interwoven with the overall livelihood strategies of households, and thus, focusing on agricultural productivity alone may not necessarily lead to the achievement of livelihood security (Sutherland et al., 1999). This is because there is a wide range of factors outside agricultural issues that place people at risk of becoming food insecure. Christoplos (2004) called these factors *livelihood vulnerability factors*, and described them as *livelihood shocks or risks to which households are exposed*. The factors may include low-income, insecure land tenure, a deteriorating natural resource base, poor health and civil conflict (Rivera & Qamar, 2003).

The sustainable livelihoods approach (SLA) requires agricultural extension to expand its agenda from focusing solely on food production to a more holistic sustainable livelihood and development orientation (Scoones & Thompson, 1994; Sutherland et al., 1999; Ingram et al., 2002; Molua, 2005). In this approach, there is a broader view of agricultural extension that encompasses: (1) the development of people rather than resources, structures, or physical areas; (2) learning, rather than information transfer; and (3) the human dimension of agricultural and natural resource management rather than the provision of production technologies alone (Chambers 1987; van Beek & Coutts, 1992; Pretty & Chambers, 1993; Scoones & Thompson, 1994). But, taking such a broad view

of agricultural extension would mean agricultural extension organisations would need to integrate all the extension approaches (TOT, etc.) in their service delivery for specific needs and situations (Alex et al., 2002; Ingram et al., 2002; Molua, 2005).

The TOT approach is useful in situations where farmers lack technologies to solve some problems (e.g. disease outbreak) and improved practices (technological innovations) must come from outside (Alex et al., 2002). This is more important, especially, when the initiative comes from farmers, who both realise and indicate that they need specific technologies to improve their situation – a shift from ‘supply-driven’ technology transfer to demand-driven technology transfer (Alex et al., 2002; Ingram et al., 2002; Molua, 2005). Similarly, adult education principles and community participation approaches are relevant for facilitating social learning and negotiation among farmers and actors to stimulate favourable change. This is particularly important where there are actors (farmers, scientists, extension agents and others) who are willing to cooperate and coordinate their efforts in rural development (Alex et al., 2002; Leeuwis & van den Ban, 2004).

Scoones and Thompson (1994) were among the first authors to bring the concept of the sustainable livelihoods security of household approach into agricultural extension thinking. The view was that, given the growing recognition that farming systems in developing countries are complex, diverse and risk-prone, the SLA has an advantage over the other approaches in ensuring sustainable rural development because it draws on the advantages of other approaches (Scoones & Thompson, 1994; Chambers, 1995, 1997; Sutherland et al., 1999; Leeuwis & van den Ban, 2004). Sutherland et al. (1999, p. 366) stated that ‘a broad perspective is required in the design of extension interventions to address household food-security issues, one that moves away from a specific focus on nutrition and food production towards a more embracing perspective of food systems and sustainable livelihoods’. The claim is that food production is part of an agricultural production system – it is related to other issues such as food processing, natural resources and the health of people in the rural community as a whole (Sutherland et al., 1999).

Case studies of extension organisations drawn from different developing countries (Bangladesh, India, Indonesia, Philippines and Zimbabwe) suggest that government

extension organisations in developing countries need a broader view of agricultural extension to be able to address the wide-ranging needs of poor people (Pasteur, 2001; Richardson, 2003; Garforth, 2004). That is, instead of providing only agricultural technologies, extension organisations would have to broaden their focus to encompass other needs that are relevant to farmers, particularly those of the poor and the vulnerable (Pasteur, 2001). Similarly, Lightfoot (2004) argues that the scope of extension should not be concerned only with technologies, but it should also deal with other issues such as HIV/AIDS, gender equity, sustainable natural resource management, and poverty which tend to affect household livelihood security. This expanded focus is seen as having the potential to provide the flexibility required to address the wide-ranging needs of farmers (World Bank, 2000a).

The new Sustainable Livelihood Approach to rural poverty reduction is so recent that a coherent critique is yet to emerge (Carney, 1999). However, questions have been raised about this poverty reduction strategy, particularly for low-income countries, regarding lack of managerial/administrative capacity and tools for assessing the impact of the strategy on beneficiaries (G-24 Secretariat, 2003). The SLA has been described as over-ambitious and as offering insufficient practical guidance for rural development (Carney, 1999; Toner, 2003). Toner believed that the principles and assumptions underlining the approach are simplistic for the complexity of rural development issues it is meant to address. It is believed that capacity building of staff in extension, especially in government organisations for poverty reduction will require considerable time and money (GTZ, 2004). Furthermore, the scope and complexity of the SLA make it difficult to accurately implement it from analysis of needs to action, and to measure its contribution to rural household livelihood security (Carney, 1999; GTZ, 2004). Carney raised a concern about the practicality of involving other sectors in extension provision, given that countries and donor organisations are still organised along sector lines. Finally, the approach presents a practical challenge of targeting the poor and still meeting the needs of the rich in ensuring sustainable rural development (Carney, 1999).

2.7 Conclusion

There have been significant changes in the approaches adopted by extension organisations in developing countries in the past four decades. Extension in developing

countries, including Ghana, has become complex because there is increasing acknowledgment that the farming system and farmer needs are diverse, complex, unpredictable, context specific and need broad-based support. In response to this acknowledgment, there is a shift in view of extension from top-down to bottom-up participatory decision making. There is also a shift in focus from agricultural production to livelihood security which, in consequence, has brought about a shift in extension delivery approach from the Transfer of Technology approach to an *integrated approach* that draws on the best approaches from all those available given the problem. Finally, the review shows that there is a shift in focus from farmers in general to the poor. These shifts in focus have a major implication for extension management. Focusing on livelihood security, an integrated approach and the poor, implies that the operational responsibilities of extension organisations would need to be devolved away from central governments towards local governments and communities where the majority of the poor in developing countries reside and earn their livelihoods –a case for decentralisation of agricultural extension management in developing countries. In the next section, a review of the theoretical underpinnings of ‘decentralisation’ and its implications for improving agricultural extension at the local level is provided.

promote and counterbalance independent movements of states and deepen further decentralisation. Third, *populist localism* where emphasis is placed on the decision making power of local elites, empowerment of communities and freedom for expression of popular will. Fourth, *participatory democracy* which emphasises collaborative decision making by stakeholder institutions with little control from outside. The liberal political ideology has been actively promoted as a development strategy by organizations such as the World Bank to assist governments to reduce state activity in the economy and to maximise opportunities for market agents at the local level (World Bank, 2000a, 2000c; Azfar et al., 2001).

Lauglo (1995) also described four quality management rationales behind decentralisation. First, *professionalism*, where autonomy is given to members of specific professional categories (e.g. extension) in terms of decision making power. Second, a *management by objectives* rationale which aims to promote efficiency and goal oriented activities. Third, the *market mechanism* which emphasises market competition. Fourth and finally, *deconcentration* where political authority and management tasks are transferred to local officials to improve participatory decision making and ensure government authorities are closer to local demand and needs. These quality management ideologies had formed the basis for most developing countries in pursuing decentralisation to cope with economic inefficiencies, macroeconomic instability, and ineffective governance (Azfar et al., 2001). However, it is believed (Lauglo, 1995; Pellini, 2000) that these ideologies do overlap and that political rationales can be combined with quality management rationales to support public and private service provision.

Apart from varying rationales, the literature provides different definitions for decentralisation and identifies different forms of decentralisation (Carney & Farrington, 1998). The term *decentralisation*, as used in the extension literature is borrowed from political science (Smith, 1985; Shah, 1994, 1998; Lauglo, 1995). The concept, *decentralisation* has been defined as *the transfer of power from central government to actors and institutions at lower levels in a political-administrative and territorial hierarchy* (Larson & Ribot, 2005, p. 3). To Smith (1985, p. 1), decentralisation is about *reversing the concentration of administration at a single centre and conferring powers on local government*. The World Bank (2000, p.2), defines it as the *transfer of authority and*

responsibility for government functions from central government to intermediate and local governments, and often to communities and the private sector’.

The various definitions of decentralisation (Smith, 1985; Carney & Farrington, 1998; World Bank, 2000; Larson & Ribot, 2005) tend to agree that decentralisation is a shift of power (political, administrative) from a higher level of governance to a lower level. A more embracing definition of the term is provided by Rondinelli (1981). He defines decentralisation as *the transfer of authority to plan, make decisions and manage public functions from a higher level of government to any individual, organisation or agency at a lower level* (Rondinelli, 1981, p. 137).

3.2.1 Forms of decentralisation

Four forms of decentralisation are widely discussed in the literature (Rondinelli, 1981; Smith, 1985), and from these, many types of decentralisation are differentiated. The forms of decentralisation are: 1. political decentralisation; 2. administrative decentralisation; 3. fiscal decentralisation; and 4. market decentralisation. It is important to note that the definitions of the different forms of decentralisation overlap and sometimes are used inconsistently. Nevertheless, the most commonly given explanations of these forms of decentralisation are from Rondinelli (1981), Smith (1985), Parker (1995), Carney and Farrington (1998), the World Bank (2000a), Ribot (2002); Lai and Cistulli (2005) and Larson and Ribot (2005) and are explained below.

Political decentralisation: This is where central government transfers law-making powers to local citizens and their representatives at different levels of government. This form of decentralisation is based on the assumption that decisions made with greater participation of representatives from the different levels of government will be better informed and more relevant to the diverse interests in society, than if such decisions were made only by national level authorities. Thus, political decentralisation is generally concerned with increasing public participation through the active engagement of local people in public institutions for policy formulation (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a; Ribot, 2002; Lai & Cistulli, 2005; Larson & Ribot, 2005).

Administrative decentralisation: This is where central government transfers some authority and responsibility to different levels of government to administer (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a; Ribot, 2002; Lai & Cistulli, 2005; Larson & Ribot, 2005). In terms of the level of transfer of the authority and responsibilities, Rondinelli's (1981) typology identified three main types of administrative decentralisation. These are deconcentration, delegation and devolution. The lowest form of administrative decentralisation is *deconcentration*. This refers to the transfer of administrative or operational responsibilities from central agencies and ministries to local level offices. Here local organisations are created as local representatives of the central government with decision-making authority and financial and management responsibilities under the supervision of central government ministries. With regard to *delegation*, the central government assigns a restricted number of responsibilities and/or tasks to semi-autonomous organisations or semi-public government agencies not entirely controlled by the central government, but ultimately accountable to it. *Devolution* represents a situation where authority for programme planning, management, funds, revenue generating and co-financing are transferred from the central government to autonomous local units. Devolution is considered the most extensive form of decentralisation, whereby local governments have discretionary authority to exercise their responsibilities within national policy guidelines (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a; Ribot, 2002; Lai & Cistulli, 2005; Larson & Ribot, 2005).

Fiscal decentralisation: This is where a central government delegates funds and revenue-generating powers to a local level office. Under this form of decentralisation, the local organisation is given the power to impose tax or generate revenues, or access to raise and retain or transfer financial resources to fulfil its responsibilities. It is often seen as a way a central government uses to minimise government spending on services it feels it can no longer finance (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a; Ribot, 2002; Lai & Cistulli, 2005; Larson & Ribot, 2005).

Market decentralisation: This is where there is a shift in power and responsibility from governments to private organisations or firms (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a; Ribot, 2002; Lai & Cistulli, 2005; Larson & Ribot, 2005).

Here, the government privatises or deregulates its public functions with the ultimate aim of transferring substantive control over resource allocation to non-state actors or private organisations. Market decentralisation is also called *privatisation* (Rondinelli, 1981). The central government transfers public functions - entirely or in a large part - to private entities, while retaining normal regulatory authority. Here, the private sector is seen as an alternative to direct government provision of goods and services. Depending upon the level of transfer of functions, privatisation could be described as either “deregulation” or “contracting out”. Deregulation has to do with the transfer of functions which, in the past, have been provided - primarily or exclusively - by the government to private organisations or individuals, by reducing legal constraints on private participation. In contracting out, there is a transfer from government ownership and delivery of services to government purchase of services from the private sector. Here, the central government enters into a contractual agreement with private organisations to deliver specific services that are paid for by the government.

3.2.2 Assumed benefits of decentralisation

For developing countries, decentralisation is considered to have a number of potential benefits (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a). The decentralisation process is said to ensure: (1) greater participation of people in development activities including planning and administration; (2) more equitable distribution of the benefits of development to improve local economic development and poverty reduction; (3) efficiency in programme implementation; (4) the responsiveness of programmes; and (5) better accountability (Rondinelli, 1981; Smith, 1985; Parker, 1995; the World Bank, 2000a). Smith (1985) argued that decentralised governments are closer to the people, have good access to local information, an understanding of the local context, and local representatives who are more accessible to the people.

Although decentralisation is assumed to provide a number of benefits, several authors (Griffin, 1981; Smith, 1985; Nzouankeu, 1994; Prud'homme, 1995) have suggested that it should be cautiously adopted because it is not without limitations. These authors (Griffin, 1981; Smith, 1985; Nzouankeu, 1994; Prud'homme, 1995) have identified the major limitations to include: (1) promotion of separatist tendencies and unequal distribution of worth which can lead to some districts becoming poorer; (2) increased waste and

misappropriation of public funds, especially where the local people lack management expertise; and (3) an increase in the cost of development because of the need for corruption-avoiding strategies which tend to increase the cost burden and waste time. Given that there are limitations to decentralisation, Griffin (1981) asserted that decentralisation does not automatically lead to improved performance of government administrations, and that much effort is needed to ensure that it succeeds.

3.3 Decentralisation of agricultural extension in developing countries

The principles of decentralisation as discussed by Smith (1985) and Shah (1994, 1998) have been applied to government agricultural extension organisations in a wide range of developing countries (Rivera & Alex, 2004a). The main form of extension decentralisation undertaken by governments in developing countries has been administrative, as defined by Rondinelli (1981). For instance, Qamar (2006, p.13) defined extension decentralisation in developing countries as *placing agricultural extension responsibility (planning, management and decision making) in the hands of the ministry of local government*. Similarly, Smith (2001) referred to decentralisation of extension as *the transfer of responsibility for planning, management, and resource mobilisation and allocation from the central government to field units of central government ministries or agencies*.

Smith (1997) pointed out that the decentralisation of agricultural extension in developing countries was inspired by three key factors. First, the desire to reduce the role of government in agricultural extension because of reported failings of the national system and acceptance that local development issues are complex. For example, government extension systems in developing countries have been described as moribund and failing, and have been urged to acknowledge and deal with their complex development problems at the local level (FAO, 2001; Anderson & Feder, 2004). In a similar vein, the World Bank (2000a) criticised agricultural extension services in developing countries for being inefficient, irrelevant, ineffective, and poorly targeted. Second, governments in developing countries are unable to continue funding a range of extension services (Alex et al., 2002). The budgetary support for government extension systems in developing countries is declining because governments are facing increasing pressure to develop

other sectors (Alex et al., 2002). This is leading to problems of financial sustainability for extension organisations in those countries.

The third factor which Smith (1997) identified as being behind the decentralisation of extension in developing countries is the major assumption that decentralisation will bring about greater participation of local people, especially farmers, in development activities. It is assumed that democracy is best served through devolved functions and widespread participation (Smith). A major weakness of government extension systems in developing countries has been the lack of farmer participation in extension activities (Alex et al., 2002). Also, there is lack of accountability to farmers and responsiveness of extension services (Alex et al.). However, with planning and management delegated to the local level, it is believed that the decentralisation approach will lead to greater farmer participation, greater accountability and improved responsiveness of extension services to farmers (FAO, 1988; van Crowder, 1996a; Smith, 1997; Swanson & Samy, 2004). This is because farmers at the local level know the exact nature of local needs and how they can be met in a cost-effective way, and therefore will respond to opportunities to make decisions in that regard, and to ask for accountability (FAO, 1988; van Crowder, 1996a; Smith, 1997; Swanson & Samy, 2004).

Several authors (van Crowder, 1996a; Smith, 1997; the World Bank, 2000a; Swanson & Samy, 2004; Rivera & Qamar, 2006) in extension believe that although the decentralisation of extension has benefits, it is not without limitations. Swanson and Samy argued that there is a tendency for the local organisation to follow the rigid management legacy of the national administration that used to control them. There is also the difficulty of harmonising locally planned extension activities, quality control, supervision, and oversight by the national administration for national planning, as was the case in Latin America (World Bank, 2000a; Rivera & Qamar, 2006). Furthermore, Rivera and Qamar (2003) were of the view that services such as strategy formulation, training, monitoring and evaluation, research and specialized technical support for extension staff can best be provided by a centralised extension system. Finally, it is believed that a shift to decentralisation could result in a loss in economies of scale because the local level organisation will not operate at a scale that can give it least-cost delivery as compared to a centralised extension organisation (van Crowder, 1996a; Smith, 1997).

Given the foregoing information, decentralisation of extension services is viewed by some authors (van Crowder, 1996a; Swanson & Samy, 2004) as a complicated process that requires strong commitments and careful planning to succeed. As such, major questions are being asked as to what factors contribute to the successful decentralisation of rural development organisations (Parker, 1995), and more specifically agricultural extension organisations (van Crowder, 1996a).

3.4 Factors that contribute to successful operation of a decentralised agricultural extension organisation

Few authors (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005) have made the attempt to provide a framework for understanding the factors that can influence the success of decentralised rural development organisations in developing countries. These authors tend to agree on the key factors that could affect organisations involved in extension and rural development in a decentralised extension environment. The factors include: (1) an appropriate legal framework that defines the relationships between different organisations, (2) an active civil society that can assist in the implementation of decentralised programmes, (3) organisational capacity to carry out the responsibilities devolved to them to improve service delivery, (4) a proper system of accountability of decentralised organisations to their stakeholders, and (5) active participation of community groups and NGOs. In their view, irrespective of the type of decentralisation practised by a development organisation, four interrelated factors – enhanced participation, more institutional capacity building, greater resource mobilisation and increased accountability - are critical for ensuring the effectiveness, responsiveness and sustainability of development programmes (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005). Parker (1995, p. 42) defined (i) effectiveness, as *providing minimum standards of service delivery cost effectively, and targeted toward disadvantaged groups*, (ii) responsiveness, as *meeting the demands of local communities, (and) at the same time, meeting the aims of broader public policy*, and (iii) sustainability, as *political stability, fiscal adequacy and institutional flexibility*.

Given that local level agricultural extension organisations with an expanded livelihood security focus are having problems in operationalising the decentralisation approach (Garforth, 2004), the review of the literature draws on the existing frameworks that are

used to analyse decentralised systems developed by Parker (1995), Smith (2001), Swanson and Samy (2004) and Lai and Cistulli (2005). The review of the literature also draws on other relevant factors pertaining to sustainable rural livelihood security as it has been discussed in the literature (Scoones & Thompson, 1994; Chambers, 1995; Chambers, 1997; Sutherland et al., 1999; Ingram et al., 2002; Molua, 2005) to provide a broader and more detailed framework for dealing with the research problem. The factors that can influence a decentralised extension organisation can be classified into political and organisational factors (Lai & Cistulli, 2005). According to Lai and Cistulli an understanding of political and organisational factors is vital to determining whether or not decentralisation is likely to be politically acceptable and institutionally feasible. Lai and Cistulli define *political factors* as those *factors that are outside the control of the organisation in terms of political will for power devolution and responsibility, and the roles of politicians and government systems*. Lai and Cistulli (2005) used the term *organisational factors* in terms of organisational culture which they described as *the behaviour of organizations* – their activities and human relationship which shows the way tasks are performed within organisations. The two factors are reviewed in detail in the following sections.

3.5 Political factors

Drawing from Parker (1995), Swanson and Samy (2004), and Lai and Cistulli (2005), the following factors can be categorised as political factors: (1) the level of decentralisation, (2) the presence of well developed institutions at the local level and (3) the presence of a clear legal framework. These factors are external and beyond the control of a decentralised extension organisation at the local level. These factors are discussed in more detail in the following sections.

3.5.1 Level of decentralisation

It is believed that a key factor necessary for successful extension decentralisation in developing countries is the giving to local people of a substantial influence over their local political systems and developmental activities (World Bank, 2000a; Swanson & Samy, 2004). According to Feder et al. (2001), a major factor that can influence the effectiveness of extension decentralisation reforms is the existence of a well established

local government, and a central government that is willing to actually decentralise. The World Bank (2000a) claimed that if decentralised political institutions are well established and strongly supported by local and central government, decentralisation of agricultural extension programmes for farmers can proceed with confidence. This is because there will be institutional capacity and organisational structures at the local level to support extension service provision (World Bank, 2000a; Swanson & Samy, 2004). For instance, the Asian Productivity Organisation (2003) pointed out that a critical problem which hampered decentralised extension systems in developing countries, especially in Asia, was the weak commitment of local governments to supporting the decentralised extension systems in their planning and implementation of extension programmes at the local level.

Using lessons from Ghana's extension decentralisation, the World Bank (2000a) pointed out that lack of political will and commitment on the part of the central government delayed the implementation of the extension decentralisation policy from 1992 until 1997. In contrast, the Colombian extension decentralisation reform was more successful because both the local and central governments supported the process at the beginning (World Bank, 2000a). The implications from these studies are that the extension decentralisation reforms in developing countries are more likely to succeed when there is a willingness by central government to decentralise, and there is a local government that supports decentralisation. Crook and Sverrisson (2001) argued that decentralised systems need sustained government support to succeed, because most decentralisation reforms need a reasonable length of time to become established. In their view it takes between ten and fifteen years in the context of financial and political stability for a decentralised system to show results that can be fairly judged. The World Bank (2000a) therefore argued that extension organisations can pursue decentralisation - if there is already an established political decentralisation - where there are autonomous local level government agencies that are willing to support the reform. Otherwise, they should proceed cautiously with decentralisation, because there is comparative advantage in terms of institutional capacity and support from these other agencies at the local level.

3.5.2 Presence of well-developed institutions at the local level

It is believed that the decentralisation of extension initiatives must conform to local needs and potentials (World Bank, 2000a; Swanson & Samy, 2004). According to the World Bank) each country has its own legal framework, political system, traditions, administrative structure, and social and agroecological setting and it is essential to adapt strategies to these local institutional environments to achieve successful decentralisation. It is important to consider the state of local institutions and organisations when decentralising the government extension service because when these are well organised, they can potentially provide the needed institutional capacity for participatory decision-making (World Bank, 2000a). Lai and Cistulli (2005) argued that power relationships between different social groupings around an organisation affect the outcome of decentralisation. For example, in Ghana, the impact of decentralisation was reported as high in terms of participation in local extension activities because the local communities have well-developed political institutions for a variety of purposes (Crook, 2003; Rivera & Alex, 2004a; Swanson & Samy, 2004). In effect, for the decentralisation of extension to succeed in developing countries, well-developed local institutions are needed for effective participatory decision making. This calls for governments in developing countries to invest in building the capacities of local institutions (local governments, executing agencies, and community or farmer groups) so that they have the capacity to assume responsibility for local programmes (World Bank, 2000a). For the decentralised agencies to coordinate properly, a legal framework may be necessary as is reviewed in the following section.

3.5.3 Presence of a clear legal framework

For the decentralisation of extension to succeed, some authors (Smith, 1997; World Bank, 2000a; Swanson & Samy, 2004) have argued that it requires an institutional setting with an established legal framework. They describe a *legal framework* as *a legal document that provides a clear division of responsibilities between the different levels of government and other participants in the decentralised extension environment* (World Bank, 2000a; Swanson & Samy, 2004). In other words, this framework provides the workable laws that effectively support community-based management. Smith (1997) argued that a detailed set of roles and tasks, limits to authority (rules), and coordination relationship between management levels, between the local extension organisation and

the local Assemblies, and between the local extension organisation and the sector ministry are crucial for the decentralisation process. A recent case study has supported Smith's (1997) views wherein the authors (Nie et al., 2002) reported that one of the important factors that ensured the success of China's decentralised extension service was the clear legal guidelines provided by the central government. Similarly, lessons from Ghana's experience of the extension decentralisation reform indicated that the Ministry of Food and Agriculture was able to stabilise its agricultural extension reform process when a conducive legal and policy framework was put in place (World Bank, 2000a). Thus, it is argued that decentralised extension systems in developing countries require a clearly defined legal framework for the coordination of roles to ensure their successful operation (World Bank, 2000a; Swanson & Samy, 2004). Although the external political factors are important, there are organisational factors which also affect the successful operation of decentralised extension organisations in developing countries.

3.6 Organisational factors

Organisational factors can have a significant effect on the way that decentralised extension organisations operate to achieve success (Lai & Cistulli, 2005). Drawing from the literature (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005) four key organisational factors were identified that influence the success of decentralised extension organisations in developing countries: (1) stakeholder participation; (2) institutional capacity building; (3) resource mobilisation; and (4) accountability. These factors are reviewed in the following sections.

3.6.1 Stakeholder Participation

There is wide agreement that stakeholder participation is an essential element in decentralising an agricultural extension system (Parker 1995; World Bank, 2000a; Rivera & Qamar, 2003; Richardson, 2003; Rivera & Alex, 2004a Swanson & Samy, 2004; Lai & Cistulli, 2005). Stakeholder participation is *a process through which those who are affected by a programme or its outcome, influence or share control over setting priorities, making policies, allocating resources and ensuring access to public goods and services* (Alonge, 2006, p. 13). Stakeholders who participate in extension are essentially farmers and other public or private sector organisations, groups or individuals (Garforth, 1985).

As such, the review of stakeholder participation in this chapter is categorised into participation of farmers, and participation of other stakeholders in the following sections.

3.6.1.1 Participation of farmers

Farmer participation in extension will require putting farmers first or giving them real ownership and accountability of public extension management (Chambers et al., 1989; Chambers, 1997). It is advocated that to function successfully, decentralised extension organisations must give farmers control over programme activities (World Bank, 2000a; Rivera & Qamar, 2003; Richardson, 2003; Rivera & Alex, 2004a). Richardson discussed this in the context of participative extension, where farmers are involved in all extension programme activities. Rivera and Qamar (2003) argued that the involvement of farmers in the programme planning process is essential because it gives them the opportunity to accurately express their needs and how they can be addressed.

Drawing from the general extension literature (Pretty, 1995b; van den Ban & Hawkins, 1996; Leeuwis & van den Ban, 2004) on farmer participation in extension, it can be seen that there are different ways in which farmers can be involved in extension programmes. Leeuwis and van den Ban (2004) described five ways farmers participate in extension programmes (Table 3:1). These ranged along a continuum between receiving information from other farmers to self-mobilisation where farmers independently initiate and design their own projects and the extension organisation plays a supportive role (Table 3:1). Van den Ban and Hawkins (1996) also described a similar continuum of participation. At one end of the continuum farmers are co-opted by extension workers to attend extension meetings and field demonstrations. At the other end of the continuum, farmer organisations employ and supervise extension agents in their own projects – this however, requires farmer organisations to assume more responsibility to determine (and pay for) extension services and projects.

Table 3:1. A typology of farmer participation

Typology	Characteristics of each type
a) Receiving information	Participants are informed or told what a project will do after it has been decided by others.
b) Passive information giving	Participants can respond to questions and issues that interventionists deem relevant for making decisions about projects.
c) Consultation	Participants are asked about their views and opinions openly and without restrictions, but the interventionists unilaterally decide what they will do with the information.
d) Collaboration	Participants are partners in a project and jointly decide about issues with project staff
e) Self-mobilisation	Participants initiate, work on and decide on the project independently, with interventionists in a supportive role only

Source: Leeuwis and van den Ban (2004)

Pretty (1995b) argued that in instances where people are lured into taking part in predetermined development programmes of no interest to them in the name of *participation/involvement* there is bound to be failure because the programme will not receive the full commitment of farmers. Similarly, van den Ban and Hawkins (1996) cautioned that there is a higher danger of programme failure when farmers are lured into participating in development activities that have motives (e.g. political) other than the interests of the farmers.

Between *receiving information* and *self-mobilisation* form of farmer participation, Leeuwis and van den Ban (2004) indicated that farmers participate in extension programmes in other ways (Table 3:1). The first is termed *passive information giving* by Leeuwis and van den Ban (2004), and is where *farmers are simply asked for their views and opinions to inform the decisions made by the extension organisation*. One step up from this is “consultation” where *most of the key decisions are made by the extension organisation, but emphasis is placed on interaction and discussion with farmers to gather information*. The next step is “collaboration” where *farmers and extension organisations jointly initiate and work on extension projects* (Table 3:1). As indicated in the earlier chapter, community participatory approaches may not necessarily provide the empowerment farmers need because they all have their inherent problems. To this end, van den Ban and Hawkins (1996) argue that to achieve a desired outcome of farmer empowerment through participation, the people to involve should be those who are directly affected (or would be affected) by the programme, or their representatives.

Several authors in extension and rural development (Röling, 1991; Pretty & Chamber, 1993; Pretty, 1995b; van den Ban & Hawkins, 1996; Chambers, 1997; Garforth, 2004; Leeuwis & van den Ban, 2004) have argued that farmer involvement in extension activities is critical in developing countries. It is believed that farmers have important information that is crucial for extension programme planning (van den Ban & Hawkins, 1996). Pretty (1995b), explained that the participation of farmers in extension activities also promotes farmers' ownership of policies and projects and ensures greater cohesion between farmers and between farmers and the extension organisation. It also improves the cost-effectiveness of services, transparency and accountability between farmers and the extension organisation. Pretty (1995b) added that when farmers are involved in extension activities they are more likely to agree and support decisions and programmes to ensure efficiency and success and, importantly also, it is the right of farmers to participate in issues that affect them. These views of Pretty (1995b) are similar to those expressed by the World Bank (2000a).

According to Röling (1991), Chambers (1997) and Garforth (2004), when farmers are involved alongside other stakeholders in extension activities, the needs that are identified reflect the realities of farmers. Similarly, van Crowder (1996a) and Swanson and Samy (2004) made the point that if farmers are given a voice in setting agendas for extension interventions, the outcomes of decentralising extension in developing countries will be positive and meet farmers' needs. As such, farmer participation in extension programme planning makes extension programmes more relevant to local needs (Scarborough et al., 1997). Nahdy (2002) reinforces this assumption with empirical evidence of Uganda's experience which showed that the performance of the extension organisation in meeting the needs of farmers was improved when farmers were given the opportunity to participate in planning extension programmes.

Uhegbu (2001) believed that farmers' involvement in extension activities not only serves as a management tool for effective and efficient execution of extension programmes, but it also empowers farmers to take charge of their own development. Advocates of participation as an empowerment tool maintain that encouraging local participation can lead to local people's managing their own projects, and forging positive change in their existing social structures and processes (Chambers, 1997; Toner, 2003; Garforth, 2004).

Using a case study of farmer groups in a publicly-funded contract system of extension in Uganda, Obaa et al. (2005) also concluded that an effective way to empower and meet the needs of a broader range of farmers at the community level is to decentralise extension programme planning to village and group levels where farmers can participate.

From a general perspective, Cristóvão et al. (1997) argued that a major means of improving participation of farmers in extension is the involvement of different categories of farmer groups in the programme planning process at the decision-making level. In their view, this is important because in any small rural community, the existing needs, interests, and aspirations of the people are not homogeneous, and it is critical to understand the varying views from the different categories of farmers. As such, Cristóvão et al. (1997) highlight the importance of identifying relevant farmer groups and sub-groups who need to participate in extension programmes. Cristóvão et al. also believe that participation of farmers in extension programmes can be promoted through other means. They consider that if extension programmes are kept simple, participation will improve. This is because small and simple programmes will require relatively simple skills and provide direct benefits which can motivate farmers to participate in extension programmes (Cristóvão et al.).

Cristóvão et al. (1997) believe that the participation of farmers can also be improved if the extension organisation takes advantage of both formal and informal group discussions. This can occur through meetings at the village level, community surveys, contacting specific groups, deliberately contacting hard-to-reach farmer groups and others who are normally not involved in extension work, and the use of interactive radio and/or television programmes. Finally, it is believed that extension organisations can improve farmers' capacity to participate through education and training. This will allow farmer representatives to gain confidence and assume more responsibility in ensuring that their members' interests are taken into account at higher levels (Cristóvão et al., 1997).

Despite the importance placed on farmer participation in decentralised extension systems in the literature (van Crowder, 1996a; World Bank, 2000a; Uhegbu, 2001; Toner, 2003; Swanson & Samy, 2004), little is written on how this can be achieved at the local level in developing countries. Also, many of the earlier studies that have been conducted on

farmer participation (Farrington & Martin, 1988; Bebbington, 1989; Biggs, 1989; Bentley, 1994) had focused mainly on the research dimension of agricultural technology development and dissemination approaches. Concrete examples of how farmer participation can be achieved by extension organisations for effective operation are limited (Killough, 2005). The participation of stakeholders other than farmers in extension programmes is also believed to be critical to the decentralisation of extension provision as is reviewed in the following section.

3.6.1.2 Participation of other stakeholders

It is believed that for decentralised extension organisations to succeed in developing countries, they must actively involve other stakeholders besides farmers in their activities (World Bank, 2000a; Madukwe, 2003; Pretty, 2003; Garforth, 2004; Swanson & Samy, 2004). A *stakeholder* can be defined as *any individual or group of organised people, who share a common interest or stake in a particular issue or system* (Ananda & Herath, 2003). Nagel (1997) identified the relevant stakeholder organisations within an extension system to include: research institutions, commercial organisations (e.g. agricultural and food companies such as processors, input distributors, retailers), public service organisations and support organisations (e.g. NGOs or donor organisations). Similarly, Oakley and Garforth (1985) identified potential local stakeholders, other than farmers, who can participate in extension programmes to include researchers, relevant national representatives of organisations and sponsors of extension.

The need for the participation of other stakeholders in extension programme activities to ensure successful extension decentralisation reforms is consistent with Röling's (1991) assertion that agricultural knowledge generation for effective extension programmes is a multi-functional process that requires participation by all major stakeholders. Sulaiman (2003) argued that in the planning of extension programmes, it is crucial to include stakeholders from both the public and private sectors of the community to solicit diverse views, skills and resources for programme implementation. Chambers (1997) argued that the inclusion of stakeholders in extension management processes in general generates (1) knowledge that reflects the values and realities of participating stakeholders, and (2) the motivation and support necessary to implement outcomes from the management process. Furthermore, the participation of stakeholder organisations in extension programme

activity is considered as a contributing factor to extension operational sustainability and development (Pretty, 2003). Similarly, Rivera and Qamar (2003) argued that involving stakeholder organisations not only takes advantage of collective ideas and increases the likelihood of acceptance of decisions, but also strengthens networks for extension service provision.

Although the literature on extension decentralisation in developing countries supports the need to involve stakeholder organisations in extension management (World Bank, 2000a; Garforth, 2004; Swanson & Samy, 2004), little has been written about how this can be achieved in this relatively new environment. However, there is some useful information in the general extension literature that represents attempts to explain how stakeholders can be involved in the extension process. This literature, however, is relatively sparse.

Cristóvão et al. (1997) and Leeuwis and van den Ban (2004) argued that a successful means of ensuring the participation of stakeholder organisations in extension is to foster open dialogue and ensure that frequent interactions occur between the extension organisation and the stakeholder organisations. They advocated the need to involve a wide variety of organisations in the programme planning process to increase the chances of having a wider spectrum of people to represent diverse interests and objectives of the farmers and organisations with which they work. To achieve this, Leeuwis and van den Ban suggested that extension organisations must establish contact with relevant organisations through public workshops, seminars and other forums as a means of gaining stakeholder input into extension planning decisions. Finally, Leeuwis and van den Ban suggested the need to establish communication networks with stakeholder organisations by means such as newsletters and direct contact. Direct contact will assist extension organisations to gather other critical information that they would not normally obtain from workshops and group discussions. Participation is one of the critical factors that can improve the accountability of an extension organisation to stakeholders. In the next section accountability, another factor thought to be critical to the success of a decentralised extension organisation, is reviewed.

3.6.2 Accountability

Several authors (World Bank, 2000a; Rivera & Alex, 2004a; Swanson & Samy, 2004) have argued that if extension decentralization is to succeed, extension organisations must be accountable to those who fund their programmes and activities, and those who benefit from them. Therefore, a decentralised extension organisation must have a proper system of accountability for each of the different stakeholders with whom they work (World Bank, 2000a; Rivera & Alex, 2004a; Swanson & Samy, 2004). *Accountability is the obligation for an organisation to report programme worth and answer for the execution of the programme to stakeholders* (Gray & Jenkins, 1986). As such, it has two aspects: (1) was the programme implemented as planned? and (2) what benefits did it provide?

Several reasons have been provided in the literature as to why decentralised extension organisations must have accountability mechanisms (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005). It is believed that a strong accountability mechanism will support the decision making of decentralised extension organisations at the local level because it provides stakeholders with a good knowledge of the extension programme (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005). An accountability mechanism provides stakeholders with the information necessary to identify new needs, understand who is benefiting from an extension programme and the real impact of the programme (World Bank, 2000a). These advantages help to make an extension programme more responsive to local needs, and provide a means of ensuring equity by policy makers to people who are benefiting from a programme (World Bank, 2000a).

Based on the views of Parker (1995), Swanson and Samy (2004) three key means of how accountability can be ensured in decentralised extension organisations have been identified. These are political and legal oversight, institutional competition, and administrative mechanisms. In relation to *political and legal oversight*, Swanson and Samy (2004) argued that the establishment of an external oversight authority with committed leadership and well-defined legislative and regulatory frameworks can ensure a high level of accountability in decentralised extension organisations. For example, the establishment of Governing Boards and block level farmer advisory committees in all

project districts was believed to have increased the accountability of the decentralised extension organisation in India (Swanson & Samy, 2004).

The second means of answering accountability is through *institutional competition*. Swanson and Samy (2004) argued that if *other extension organisations such as private firms and NGOs are given the opportunity to provide extension services unilaterally or through contracts*. This can eliminate the government monopoly over extension services and creates institutional competition. In their view, this competition can improve the accountability and efficiency of extension systems. However, there is no empirical work that has substantiated this claim.

The third means of ensuring accountability is through *administrative mechanisms*. Swanson and Samy (2004) indicated that a key administrative mechanism for ensuring accountability in decentralised extension organisations is the establishment of reliable monitoring and evaluation systems. Feder et al. (2001) have also suggested that good monitoring and evaluation systems are critical for successful decentralisation reform in developing countries. Good monitoring and evaluation systems take accountability into consideration because it ensures that programme effectiveness is communicated to stakeholders and the public (Dart, 2000). With regard to how to ensure good monitoring and evaluation systems in a decentralised extension context, there is little information in the literature. The World Bank (2000a), however, has indicated that monitoring systems should be made an integral part of the decentralised extension organisation at all levels to provide their information needs.

It is believed that the participation of farmers and other stakeholders in the evaluation of extension staff and programmes is a powerful means of enforcing accountability in extension systems (Dart, 2000; World Bank, 2000a). The assumption is that because missions and goals vary among different farmers and other stakeholders, they may have different perspectives. As such, their participation and contribution in evaluation from the different perspectives can provide a much better interpretation and understanding of evaluation data (Dart, 2000). Moreover, Deshler (1997) believed that farmers are the best judges of agricultural extension impacts, that is, whether benefits have been produced or

not. He also believed that as participants in the evaluation process, farmers are provided with the opportunity to demand good performance from the extension organisation.

Swanson and Samy (2004) also argued that other key administrative mechanisms for ensuring accountability in decentralised extension organisations include the establishment of an effective scheme of incentives and encouraging professionalism among extension staff. However, they did not explain how these mechanisms help to ensure accountability. Apart from stakeholder participation and accountability, the next major factor believed to influence the success of a decentralised extension organisation is institutional capacity building. In the following sections institutional capacity building is reviewed.

3.6.3 Institutional capacity building

Institutional capacity is identified as critical for ensuring the success of extension decentralisation reforms in developing countries (Smith, 1997; World Bank, 2000a) and there is reasonable agreement that current capacity in these areas in developing countries is lacking (Vijayaragavan & Singh, 1997; Zinnah et al., 1998; United Nations, 2005). It is believed that in most developing countries extension services suffer from a serious shortage of trained managerial and technical staff to carry out decentralised responsibilities, and the staff that are employed lack professional competency and motivation due to poorly defined human resource development and management systems (Vijayaragavan & Singh, 1997; Zinnah et al., 1998; United Nations, 2005). Competent leadership that provides support to staff and facilitates change to initiate and maintain innovation and organizational effectiveness is highlighted as important for any developing country extension organisation (Pasteur, 2002). The emphasis for a decentralised extension organisation is on ensuring governance and leadership ability at the local level (World Bank, 2000a). In fact the World Bank (2000a) highlights the fact that the lack of managerial ability at the local level is a major limitation to extension decentralization in developing countries in general, and in Africa specifically.

A similar issue is highlighted in relation to the technical capacity of extension field staff (Smith, 1997; the Asian Productivity Organisation, 2003; Swanson & Samy, 2004; Tossou & Zinnah, 2005). It is widely acknowledged that to work closely with farmers at the local level requires new competencies and a change in attitude by extension personnel

(van den Ban & Hawkins, 1996; Smith, 1997; Swanson & Samy, 2004). Not only is it argued that field staff require the ability to listen to, and work with, farmers (Smith 1997; Swanson & Samy, 2003), but it is also argued that they need to be able to recognise the importance of issues other than agriculture (e.g. HIV/AIDS) that impact on the livelihood security of farm households (Smith, 1997).

Investing in staff development is seen as essential to strengthen the capacity of extension staff to ensure the effective implementation of decentralised extension in developing countries (World Bank, 2000a). Although not specifically reported in the decentralisation literature, the development of extension staff is recognised as a means of improving staff skills and knowledge, and enhancing their personal growth and potential as well as enhancing their job satisfaction and overall commitment to the job and organisation (van den Ban & Hawkins, 1996; Leeuwis & van den Ban, 2004). Parker (1995), argued that failure to improve institutional capacity by decentralised systems may lead to inadequate funding to meet minimum standards of service and provision, inability to mobilise fully all available resources, failure to deliver goods and services cost-effectively and an inappropriate mix of services in relation to local preferences.

In order to build the managerial and technical capacity of extension staff for successful decentralisation reforms in developing countries, the literature (Malvicini, 1996; Smith, 1997; World Bank, 2000a; Garforth, 2004; Swanson & Samy, 2004; Tossou & Zinnah, 2005) suggests that training, informal learning, information and communication technology and extension research linkages are critical. These four elements are reviewed in the following sections.

3.6.3.1 Staff training

Bernardin and Russell (1998) defined *staff training* as *any attempt to improve staff performance on a currently held job or one related to it with the aim of changing specific knowledge, skills, attitudes or behaviour*. That is, to narrow the gap between the staff knowledge, attitudes, and/or appropriate practice and what is recommended or what is working well (Adhikarya, 1996). The training of extension staff will improve the competencies of staff and promote the attitudinal change required for decentralisation reforms (World Bank, 2000a). Training will improve staff performance and the overall

effectiveness and efficiency of the extension programmes of decentralised extension organisations (Garforth, 2004; United Nations, 2005). This training must be ongoing and should be initiated before decentralisation reforms are undertaken (World Bank, 2000a).

To provide training that can meet the needs of extension staff in this new environment, the literature (Sulaiman, 2003; Garforth, 2004; Tossou & Zinnah, 2005; United Nations, 2005) suggest that the training should focus on a wide range of topics. The literature tends (Sulaiman, 2003; Garforth, 2004; Tossou & Zinnah, 2005; United Nations, 2005) to agree that technical knowledge is still important because it will enable the staff to present options based on science and good agricultural practices to assist farmers to deal with their farming problems (e.g. pests and diseases, loss of soil fertility, poor yields). However, several authors (Sulaiman, 2003; Garforth, 2004; Tossou & Zinnah, 2005; United Nations, 2005) also suggest that extension staff will need other knowledge to do with communication and facilitation, networking, critical thinking, problem solving and human relations in the new environment, because these are important for interacting with farmers and farmer groups, for listening, learning, and for assisting farmers to diagnose their farming problems, resolve conflicts and negotiate extension interventions. This knowledge is also important for collaborative activities with stakeholders and for promoting pluralistic extension service provision, both of which are crucial for successful extension decentralisation reform (Tossou & Zinnah, 2005; United Nations, 2005). Using evidence from a case study of the Bangladesh Department of Agricultural Extension, Pasteur (2002b) also showed that this knowledge can improve motivation, build confidence, promote reflection and stimulate new ideas, and change the values and attitudes of extension staff in a decentralised extension system. Furthermore, a case study of the public extension in India showed that competence in resource mobilisation and management is essential for extension staff operating in a decentralised context in developing countries (United Nations, 2005).

The literature (Sulaiman, 2003; Garforth, 2004; Tossou & Zinnah, 2005; United Nations, 2005) stresses the importance of training in ensuring successful extension decentralisation reforms. Much of the information on how this can be achieved is focused on the kind of competencies that should be provided to extension staff to make them effective in the new environment. Little information is provided on how the training of extension staff can be

organised effectively in this new policy environment. However, some authors (Pasteur, 2002a; Stone & Coppernoll, 2004) believe that for any extension training to be effective, it should be competency-based (Pasteur, 2002a; Stone & Coppernoll, 2004). That is, it must shift away from providing general in-service training to target staff with specific training or development areas where they lack competence, so that the impact can be measured (Stone & Coppernoll, 2004). In-service training is a process of staff development for the purpose of improving the performance of a staff member holding a position with assigned job responsibilities (Halim & Ali, 1997) or simply a training programme designed to improve the competencies of extension workers while they are on the job (Malone, 1984).

Pasteur (2002a) and Stone and Coppernoll (2004) suggested that for training to be effective it should be based on the training needs of staff. This allows the organisation to target the training to the specific areas where their staff lack competence (Stone & Coppernoll, 2004). The training needs of extension staff can be determined effectively through an analysis of their individual training needs or by staff self-assessment (Pasteur, 2002a; Stone & Coppernoll, 2004). The list of training needs from the staff self-assessment is then discussed and negotiated through participatory processes between the staff and their supervisors, to ensure that the working through the list help achieve the goals of the organisation (Pasteur, 2002a; Stone & Coppernoll, 2004).

The literature (Jaya & Reddy, 2004; Leeuwis & van den Ban, 2004) also suggests that the training of extension staff can be undertaken in a group learning situation. Group training allows extension personnel to meet together and share diverging views (experiential learning experiences) on context-specific issues and the needs of the organisation (Jaya & Reddy, 2004; Leeuwis & van den Ban, 2004). Leeuwis and van den Ban, however, cautioned that some individuals may have learning styles such that they are less inclined to involve others, and this must not be ignored. Carney (1998) argued that not only is it important to ensure that extension staff are provided with training in new skills (e.g. social mobilisation and participatory rural appraisal), but also extension organisations must strive to improve their immediate working environment to support learning. Although formal training has been the traditional method of improving institutional capacity in extension organisations, informal methods of learning are being recognised as

equally essential. In the following section informal learning as a means of improving institutional capacity in extension organisations is discussed.

3.6.3.2 Informal learning

Kilpatrick et al. (1999) distinguished between *training* and *informal learning* and stressed the importance of the two in gaining knowledge. They defined *informal learning* as *individual learning that is gained from experience, observation, other people and the media*; and *training* as *organised or formal learning activities*. Leeuwis and van den Ban (2004) claimed that a critical factor that can improve the success of extension organisations in developing countries is a culture of informal learning amongst extension agents in the workplace. Some authors (Echeverria, 2003; Leeuwis & van den Ban, 2004; Sulaiman & Hall, 2005) explained that with the present changing situation in agriculture and the rural environment, extension organisations in developing countries would need to have an informal learning culture in the workplace in order to respond effectively to the needs of local people when they change. Pasteur (2001) argued that a learning culture in the workplace provides staff with space and opportunities for reflection and the sharing of information. A *learning culture* is defined as *a set of attitudes, values and practices within an organisation which support and encourage a continuing process of learning for the organisation and/or its members* (Johnston & Hawke, 2002, p. 9). According to Alex et al. (2002), this requires extension organisations to develop measures that will engage staff in continuous learning and problem solving.

Workplace learning culture has been discussed in the organisational literature mainly in terms of learning organisations (LO) or organisational learning (OL). The terms are fundamentally the same and are often used interchangeably in the organisation development literature (Senge, 1990; Pedler, Boydell & Burgoyne, 1991; Sun & Scott, 2003). The term *LO/OL* describes *a state where an organisation becomes endlessly capable of responding to changes in the work environment to achieve its goals*. According to Pedler, Boydell and Burgoyne (1991), a learning organisation facilitates the learning of all its members and continuously transforms itself to meet current challenges. The argument for OL has been based on the assumption that the environment is changing rapidly and that for an organisation to survive and compete, it must create an internal

environment which encourages its staff to learn on a continuous basis (Senge, 1990; Pedler, Boydell & Burgoyne, 1991; Sun & Scott, 2003).

Several authors (Cristóvão et al., 1997; Pasteur, 2001; Leeuwis & van den Ban, 2004; Sulaiman & Hall, 2004) have commented on the importance of promoting learning culture in decentralised extension organisations in developing countries. For example, Pasteur (2001), drawing on case studies of some decentralised public extension organisations in Bangladesh, India, Philippines, Indonesia and Zimbabwe, argued that learning - especially through organisational self-analysis and problem diagnosis - is vital at all stages of a change or reform process, because it helps to change the attitudes of staff and keep the change process on track. In addition, workplace learning makes organisations more responsive to new challenges in the work environment (Pasteur, 2001). Similarly, based on a case study in India, Sulaiman and Hall (2004) found that an organisational culture that allows for learning is critical for success in decentralised extension systems.

There is limited empirical research on how an informal learning culture can be created in decentralised extension organisations in developing countries. However, there are some suggestions on how an informal learning culture in the workplace can be promoted. Leeuwis and van den Ban (2004) argued that this learning can be enhanced in extension organisations by involving staff in decision making and through delegation. The belief is that extension staff can build internal commitment to duty when they are involved in the analysis, planning and implementation of change (Pasteur, 2001). Delegation allows staff to experiment and pilot new ideas, and to learn from their successes and failures (Cristóvão et al., 1997; Leeuwis & van den Ban, 2004). Staff with delegated authority do have more interaction with colleagues within an organisation and with stakeholders from outside - which also provides an opportunity for learning. In addition, participatory decision making creates opportunities for dialogue and encourages experiential learning (Cristóvão et al., 1997; Leeuwis & van den Ban, 2004). Thompson and Kahnweiler (2002) advocated that in any employment situation, to ensure a diversity of ideas and widespread learning in an organisation, staff should be involved at all levels of decision making.

Feedback has the potential to trigger a learning process (Leeuwis & van den Ban, 2004). *Feedback is the information that staff receive about what they set out to do, evidence of what they have achieved and some understanding of how they can improve the situation* (Black & William, 1998; Leeuwis & van den Ban, 2004). Leeuwis and van den Ban claimed that feedback can provide staff with direct and clear information about their performance effectiveness and opportunities for continuous improvement. They therefore suggest that extension organisations require feedback systems such as online forums, interviews, surveys or suggestion boxes from which staff can receive information about their activities. Job rotation and transfers of extension staff to new locations are believed to also provide extension staff with opportunities for learning through new experiences in their new responsibilities or locations. Leeuwis and van den Ban, however, indicated that job rotation must be undertaken with caution, because extension agents also need some time in specific roles and locations to understand their new roles and context-specific issues in order to be able to operate effectively.

A system that allows the extension agents or the organisation to try new ideas or to compare them with existing practices (experimentation) provides staff with the opportunity to learn (Pasteur, 2001; Leeuwis & van den Ban, 2004). As such, it is believed that if extension staff are provided with challenging projects and the opportunity for experimentation, this will improve their analytical capacities as they evaluate past and current experiences, develop forward-looking scenarios and create knowledge to improve performance (Pasteur, 2001; Leeuwis & van den Ban, 2004; United Nations, 2006). Some empirical evidence exists to support these views. For example, Pasteur (2001) found, in a case study of a Bangladesh extension organisation, that experimentation (e.g. piloting new ideas) not only created a learning environment but also improved the overall effectiveness of extension operations.

Extension organisations tend to be characterised by rigid reporting processes and formats which emphasise quantitative data (Leeuwis & van den Ban, 2004). Although this kind of reporting has the advantage of simplifying information, it tends to overlook important value-laden and attitudinal information that may be important to extension staff (Leeuwis & van den Ban). According to Leeuwis and van den Ban, a more flexible reporting system that also includes qualitative data (e.g. rich description of context) can encourage

creativity and provide an opportunity for extension staff to learn. It is also recommended that extension workers be given some room for flexibility in their activities so that they can explore, learn and innovate (Sulaiman, 2003).

Leeuwis and van den Ban (2004) posit that teamwork provides an opportunity for extension staff to have frequent contact to learn from each other. They also believe that a team environment stimulates the members to higher levels of performance. In a team, the staff can also access a wider range of both technical and social competencies. Pasteur (2002b), in a case study of the public extension service in Bangladesh, reported that teamwork facilitated interaction among staff and was important for creating a learning environment in the organisation. He added that besides teamwork, extension staff can also learn through mentoring or “shadowing” an expert. Mentoring facilitates the transfer of tacit knowledge from senior staff to younger colleagues in the organisation (Pasteur, 2002b; United Nations, 2006). *Tacit knowledge is informal knowledge which is personal and usually difficult to express or share through traditional means* (e.g. written report, spoken words) (Nonaka & Takeuchi, 1995). They added that tacit knowledge is difficult for others to access without having direct and personal interaction with those having such knowledge.

The extension literature on informal learning is drawn from the organisational learning literature (Senge, 1990; Argyris; 1992; Argyris & Schon, 1996; Johnston & Hawke, 2002). It includes: opportunities for staff and stakeholder participation in the organisation’s decision making; support for team work, dialogue and more interaction; the formation of networks with other organisation; emphasis on feedback both internally and externally; and a culture that promotes experimentation among staff. Other characteristics are: use of information and communication technology (ICT) to facilitate rapid acquisition, processing and sharing of information; support for individual learning through appraisal and reward systems that encourages learning; and leadership that encourages openness, risk taking and reflection.

Given that many of the proposed factors for fostering informal learning in the workplace provided in the review are prescriptive, these need to be verified as there is little empirical research reported in the literature on this topic for extension organisations in developing

countries. A major factor believed to be critical to staff learning and overall institutional capacity building in decentralised extension organisations is the use of information and communication technology (ICT). In the following section, the use of ICT in decentralised extension organisations is discussed.

3.6.3.3 Information and communication technology

In many developing countries, a major factor that limits the change of agricultural extension from a process of technology transfer to a process of facilitating a wide range of communication, information, and advocacy services in a decentralised extension system is lack of information and communication technology (ICT) (Richardson, 2003; World Bank, 2004). Agricultural extension depends to a large extent on information exchange between extension staff, their clients and collaborators (Richardson, 2003; World Bank, 2004). Therefore the ICT has been identified as one area that can have a particularly significant impact in a decentralised extension context (Richardson, 2003; World Bank, 2004). ICT in extension includes any communication device or application such as radio, television, telephone, computer and network hardware and software as well as the various services and applications associated with video and audio that can be used to facilitate information management and communication (Richardson, 2003). The adoption of ICT by extension services is believed to be a key contributing factor in strengthening extension staff capacity for successful extension decentralisation (Richardson, 2003; Swanson & Samy, 2004). Extension staff can use ICT (e.g. internet) to access expert knowledge or other types of information for their work (World Bank, 2004).

ICT is believed to improve the capacity of extension staff in reaching out to a larger number of farmers and for carrying out other functions effectively and efficiently within extension systems (World Bank, 2004). Using a case study of the Venezuelan decentralised extension, Swanson and Samy (2004) reported that when information technology tools for gathering and managing information (e.g. computers) were introduced, staff and organisational performance were improved. Similarly, it was reported that management capacity was improved when electronic information technology (e.g. computers) was introduced into India and Nepal extension services (Swanson & Samy). The Asian Productivity Organisation (2003) claimed that it is only

ICT (e.g. radio, television, telephone and internet) that can assist extension organisations to keep pace with information about changing markets, new products and inputs and the weather. Thus, ICT (e.g. internet, video and audio) according to Stone and Coppernoll (2004) is critical in facilitating workplace training and self-directed learning.

For decentralisation to work, the use of ICT would have to be adopted by extension organisations to improve their capacity to communicate and collaborate more effectively with the stakeholders with whom they work (Richardson, 2003). According to Richardson, the adoption and integration of ICTs (e.g. mass media, telephone, internet and email) in extension organisations process is critical for effective coordination of stakeholder activities. In the view of Leeuwis and van den Ban (2004) ICT is needed to improve the institutional capacity of extension organisations for collection and analysis of research data, editorial activities, and storage of such information. This is important to ensure that extension workers benefit from other workers' or collaborators' experiences, and for efficient internal communication. Another factor indicated as being critical to institutional capacity building of decentralised extension systems is an effective linkage with research. This is reviewed in the following section.

3.6.3.4 Research-extension linkage

Several authors (Malvicini, 1996; World Bank, 2000a; Rivera & Alex, 2004a; Swanson & Samy, 2004) have argued that effective research-extension linkage is required for institutional capacity building of decentralised extension systems. In the authors' view, agricultural extension cannot properly function without a continuous flow of appropriate innovations from a variety of sources including research institutions. In the literature (World Bank, 2000a; the Asian Productivity Organisation (2003) it has been indicated that there is a lack of mechanisms for regular communication between research institutions and local level extension organisations in decentralised extension systems in developing countries. This is because research organisations in most developing countries are autonomous, operate under different ministries, and are often functional at the national and/or regional - rather than district - levels (World Bank, 2000a).

Some reasons have been given in the literature for the need for effective research-extension linkages in a decentralised extension environment. Swanson and Samy (2004)

argued that effective linkages between research and extension organisations will improve extension staff's technical capacity in terms of knowledge and skills. Similarly, the World Bank (2000a) indicated that poor extension-research linkage can lead to poor access to knowledge by local extension organisations in a decentralised context, given that research organisations in developing countries are not decentralised and operate only at national or regional levels. Limited empirical research exists to support these views. For example, Malvicini (1996), using the Philippines' extension service as a case study, reported that effective linkage with research institutions was critical to the success of the country's decentralised extension service at the local level in terms of information support from research institutions.

Given that decentralisation is relatively new in many developing countries, research and extension organisations need to invest in ongoing collaboration to improve extension effectiveness at the local level (Asian Productivity Organisation, 2003). According to the Asian Productivity Organisation, extension organisations in developing countries can use interpersonal contacts, group mechanisms and ICT to forge effective linkages between research and extension. This is covered in more detail in Section 3.6.2.2. The final factor that is believed to influence the institutional capacity of extension services is staff motivation. This is reviewed in the following section.

3.6.3.5 Staff motivation and commitment

Lack of staff motivation due to the lack of a well-defined system of institutional capacity building has been cited as one of the major problems of decentralisation reforms in developing countries (Vijayaragavan & Singh, 1997; Zinnah et al., 1998; United Nations, 2005). The extension agents in these countries work under difficult conditions that foster low morale (Nagel, 1997; Vijayaragavan & Singh, 1997). Motivation is the psychological process that gives purpose, direction and intensity to behaviour (Mwangi & McCaslin, 1995). It is the internal drive or external force (by others), which makes people behave in the way they do (Leeuwis & van den Ban, 2004). Staff motivation is believed to be the most important determinant of effective job performance (Mwangi & McCaslin, 1995), and in the view of the United Nations (2005), it is essential for achieving decentralisation reforms in developing countries.

In general, the staff motivation literature in extension is influenced by the earlier motivation theories of Maslow (1943), Adams and Rosenbaum (1962), Vroom (1964), Skinner (1969) and Herzberg (1996). Maslow's view of motivation is based on five progressing categories of needs: physiological or survival needs, safety needs, social or love needs, self-esteem or ego needs, and self-actualisation needs. He argued that all people have these kinds of needs, and that higher-level needs emerge only after lower-level needs have been met. Adams and Rosenbaum tended to indicate that people become motivated when they are treated equitably for doing similar jobs or an equal amount of work. Vroom proposed that people become motivated when they can perceive desirable outcomes or success from their efforts. To build on this, Skinner had postulated that when desirable behaviours are rewarded, individuals are motivated to repeat such behaviour. Herzberg (1996) believed that motivation is influenced by conditions in the work environment. In his view, a favourable work environment that presents challenging tasks and provides opportunities for individual achievement, recognition, responsibility, advancement and personal growth motivates people rather than pay, supervision and dull and routine jobs. While it is likely that the theories of these key authors on motivation may be broadly applicable to extension organisations in the new decentralised context in developing countries, there are limited empirical examples of this in the extension literature.

Some authors in extension (van den Ban & Hawkins, 1996; Vijayaragavan & Singh, 1997; Leeuwis & van den Ban, 2004) believe that staff motivation is one of the key elements for improving the performance of any extension organisation. Leeuwis and van den Ban argued that if extension agents are motivated by their organisations, they will learn more, which will enable them to do their work better. A study of the Philippines' decentralisation process showed that the quality of services was poor because the extension staff were demoralised due to the lack of career development opportunities and low salaries (Malvicini, 1996). However, extension staff motivation is believed to change with time and conditions, and depends on incentives that the staff value and believe to be attainable with increased individual performance (Mwangi & McCaslin, 1995).

Some of the literature on extension staff motivation (van den Ban & Hawkins, 1996; Vijayaragavan & Singh, 1997; Leeuwis & van den Ban, 2004; United Nations, 2005)

suggests that to motivate extension staff, they must be provided with career development opportunities. It is believed that this promotes individual excellence and creates incentives for the staff to acquire new skills and competencies needed for their jobs (van den Ban & Hawkins, 1996; Vijayaragavan & Singh, 1997; Leeuwis & van den Ban, 2004; United Nations, 2005). Moreover, van den Ban and Hawkins have argued that good organisational policy, supervision, salary, and working conditions also have the potential to reduce dissatisfaction among extension staff, and can be an incentive to staff motivation in developing countries. This latter suggestion is critical in developing countries, where extension staff are said to have low motivation for work due to the restrictive bureaucratic structure of the extension administration, lack of rewards and incentives, poor facilities, poor promotion avenues, and the low esteem given to extension work in general (Mwangi & McCaslin, 1995; Vijayaragavan & Singh, 1997). Mwangi and McCaslin (1995) indicated that the key incentives affecting extension workers' motivation in Africa - and specifically in Kenya - included housing, transportation, pay, health insurance and subsistence allowances while on official duty. They also noted that supervisors lacked the personnel management skills to motivate their field staff. Of these factors, Mwangi and McCaslin found that those that counted most in explaining the extension agents' motivation included dependable supervisors (i.e. supervisors worthy of being trusted to provide motivational and work-related support), pay, job security, evaluation, administrative backing, and quality of supervision.

Stone and Coppernoll (2004) and Leeuwis and van den Ban (2004) believe that one major means to motivate extension staff is through staff promotion. Stone and Coppernoll argued that timely promotion is essential, and that it can be achieved if extension organisations develop systems for tracking human resource development records and the professional development activities of staff from year to year. Vijayaragavan and Singh (1997) pointed out that timely promotion is an important purpose of performance appraisal with the aim of counselling and guiding employees towards greater job effectiveness. Performance appraisal is the process of evaluating extension staff performance in order to guide and develop the employee's potential (Vijayaragavan & Singh). The common techniques used for appraisal in the extension organisation are self-appraisals, peer rating and the management by objectives approach (Vijayaragavan & Singh). These techniques or exercises become more beneficial to the organisation when

they are designed with the staff's interests in mind, undertaken in a climate of openness and based on established performance standards with which the staff agree, and to which they are committed (Vijayaragavan & Singh).

Leeuwis and van den Ban (2004) also argued that frequent opportunities for extension personnel to meet and discuss their work (what they have done well and what they could have done better) are a source of motivation for them to learn from both their successes and their failures. In the view of Leeuwis and van den Ban, frequent staff meetings are crucial because it is difficult for extension organisations to compare (measure) the quantity and quality of their work with other organisations, and it is more beneficial for staff to meet, discuss and compare their work with that of their colleagues to appreciate their progress. In addition, Leeuwis and van den Ban (2004) indicated that it is possible to motivate extension staff to learn and innovate through a host of other actions including: simple expressions of appreciation to personnel; measurement and knowledge of the organisation's contributions to development; and the giving of awards in the form of recognition, financial incentives and promotions to best performing staff.

Vijayaragavan and Singh (1997) claimed that extension organisations in developing countries need the development of a reward system that will attract, retain, and motivate extension personnel. In their view, this can be achieved by developing a system for rewarding superior performance where wages and incentives can be used as effective tools to promote staff motivation and commitment. *Extension staff commitment* is defined as *the belief and acceptance by staff of the extension organisation's values and goals, willingness to exert considerable efforts on the organisation's behalf as well as a definite and relatively strong desire to maintain membership in the job, the organisation, or the profession* (De los Santos & Not-land, 1995, p. 57). Similarly to motivation, De los Santos and Not-land found that the commitment of extension staff in the Dominican Republic could be improved when the staff felt that they were being valued and they could perceive desirable outcomes or rewards such as salary, promotion, security and support, and satisfaction. As indicated in Section 3.6., the final organisational factor that can influence the performance of a decentralised extension organisation is resource mobilisation. The following section provides a review on resource mobilisation in the context of extension decentralisation in developing countries.

3.6.4 Resource mobilisation

Much of the recent interest in decentralisation is based on the assumption that it can facilitate local resource mobilisation – although the fact that decentralisation also imposes on extension organisations several costs for staff training and building the capacity of local organisations is often forgotten (Manor, 1997; World Bank, 2000a). Parker (1995) pointed out that it is difficult to mobilise sufficient resources in rural areas to finance rural development in developing countries. A major problem of the decentralisation reforms in developing countries is therefore inadequate resources, including funds and qualified extension staff to deliver extension services (Parker, 1995; Feder et al., 2001, Hanson & Just, 2001; Anderson & Feder, 2004). Government budgetary support for agricultural extension in these countries therefore remains inadequate (Feder et al., 2001).

It is claimed that if local governments are reasonably funded many of the problems of extension in developing countries can be eliminated (Cristóvão et al., 1997; Misra, 1997; Feder et al., 2001). This is because adequate resources are needed by extension organisations to ensure the successful implementation of decentralisation reforms (Manor, 1997). Adequate funding will also help to ensure sustainability and the expansion of activities in terms of outreach programmes, training for staff, and extension visits to farmers (Cristóvão et al., 1997; Misra, 1997). Consequently, it will enhance the performance of extension organisations (Fleischer et al., 2004). For example, a case study of the Colombian extension decentralisation reform showed that when funding for the extension programme was doubled, the performance of the organisation was significantly improved (World Bank, 2000a). Swanson and Samy (2004) and Anderson and Feder (2004) argued that inadequate funding at the local level is still the single most important factor undermining the performance of decentralised extension services in developing countries. As such, they believed that there is pressure for extension organisations to mobilise additional resources from external sources to ensure adequate organisational performance.

Tossou and Zinnah (2005, p. 48) stated that *the promotion of local development in the decentralised entities needs the mobilisation of local resources and state subsidies to perform their local duties*. Regrettably, the capacity of decentralised entities to mobilise

local resources in many developing countries is low (Tossou & Zinnah, 2005), and government funds for extension in developing countries are dwindling (Alex et al., 2002). Therefore, it is critical to access additional resources from donors to ensure successful operation of decentralised extension organisations at the local level (Anderson & Feder, 2004; Tossou & Zinnah, 2005).

Some authors (Beynon, 1996; Anderson & Feder, 2004) have suggested some innovative ways by which local level extension organisations can access additional resources. It is believed that a major way to acquire financial resources for extension work is for extension organisations to diversify their sources of funding (Beynon, 1996; Anderson & Feder, 2004). As such, extension organisations are being encouraged to adopt selective privatisation, ask for user contributions and levy fees on private goods, and concentrate government funds on services that provide public goods (Beynon, 1996; Paarlberg, 2002; Anderson & Feder, 2004). The World Bank (2000a) believes that a decentralised extension system offers important opportunities for the introduction of fee-for service and cost-sharing arrangements where farmers pay all, or part, of the cost of the services they receive from public extension organisations. Rivera and Alex (2004a) and Hanson and Just (2001) also supported the notion of cost sharing and fee-for service extension. However, they argued that total privatisation may not be feasible in developing countries, even for commercial agriculture, because not all farmers can pay in the current context (Hanson & Just, 2001; Rivera & Alex, 2004a). In the view of these authors, privatisation may lead to underinvestment in agricultural extension and research that will serve public interest or the resource-poor, because privatisation tends to favour the resources-rich who can afford to pay for the services they receive.

According to Sulaiman (2003), to diversify the sources of funding, extension organisations will need to adopt a group approach to extension delivery and focus on developing farmer groups into viable economic organisations. He claimed that if farmer groups are well organised and empowered, they can fund and support extension work at the local level. This has been quite successful in some countries like Colombia, where attempts have been made to direct cost-sharing and fee-based extension services to farmer groups who can afford to pay (van Crowder, 1996a). In many developing countries, the level of extension cost-sharing or fee-based extension is generally much lower compared

to developed countries (Garforth, 2004). But, it is believed that this can be improved if extension organisations guide established farmer groups to develop projects with a cost-sharing component (Gustafson, 2004).

Extension organisations can also acquire resources for extension activities by involving stakeholders in their activities (Cristóvão et al., 1997). For example, Sulaiman (2003) argued that involving the public and private sector in extension programme planning provides an opportunity to acquire resources through partnerships and collaboration. Similarly, Deshler (1997) argued that when stakeholders, including farmers, are involved in the evaluation of extension programmes, it allows for better discussion and sharing of information on the efficient allocation of scarce resources. It also allows for the early identification of ineffective or wasteful use of resources. The claim is that participatory planning and evaluation create a forum for identifying common interests among stakeholders (Cristóvão et al., 1997; Deshler, 1997; Rivera & Alex, 2004a). They also provide the opportunity for collaboration, combining resources, avoiding duplication of effort and providing more cost-effective services (Cristóvão et al., 1997; Deshler, 1997; Rivera & Alex, 2004a). Furthermore, it is consistent with Tossou and Zinnah's (2005) assertion that participation of stakeholders in extension programme activities is crucial to the achievement of the development objectives of local entities with limited financial and human resources.

From another viewpoint Feder et al. (2001) argued that cost-effectiveness and efficiency of extension activities can be achieved by using relevant measures and programmes that focus on expressed farmer needs, and by allowing local people to take over many of the extension roles. It is also argued that funding from the central government will still be required in developing countries to finance decentralised extension services at the local level because the private sector is not yet well enough developed to play a major role in funding extension (World Bank, 2000a; Alex & Byerlee, 2002). As such, the decentralised unit at the local level must look for opportunities to access government support to finance their extension services (World Bank, 2000a). Moreover, if extension pluralism is promoted and farmer groups are empowered to contract the most relevant and cost-effective service providers, extension organisations in developing countries can direct their scarce resources into effective and efficient use (World Bank, 2000a). Given

that the aim in this study is to understand what factors determine the success of a district level extension organisation with a livelihood security focus, the following section contains a discussion of the factors that influence success for decentralised extension systems in the context of livelihood security-focused extension.

3.6.5 Implications of decentralisation for livelihood security-focused extension

Some researchers (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005) suggest that decentralisation - if well implemented - can ensure the effectiveness, responsiveness and sustainability of development programmes. The literature (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005) has provided a framework for analyzing decentralised systems. The framework is based on the suggestion that - irrespective of the form of decentralisation - with good stakeholder participation, proper accountability, good institutional capability and a good system of resource mobilisation, extension organisations would provide better services to farmers, which would, in turn, increase farmers' willingness to pay for such services. With farmers paying for extension services, decentralised extension organisations can recover the cost of their services, and the cost to governments of providing extension services in developing countries will reduce (Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005).

Although the literature, (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005) provides a framework for analysing decentralised systems, there is no clear link between this framework and the sustainable livelihoods approach towards which extension in developing countries tends to be moving (see Section 2.6). None of the authors (Parker, 1995; Smith, 2001; Swanson & Samy, 2004; Lai & Cistulli, 2005) explicitly provide a practical means of operationalising the factors for the day-to-day operation of a decentralised local level extension organisation. But, if decentralisation is to bring improvements in farm household livelihood security, then there are implications for extension operation. The extension literature (World Bank, 2000a; Richardson, 2003; Garforth, 2004; Lai & Cistulli, 2005) in general tends to suggest that there are key intermediate outcomes that the personnel of decentralised extension systems with a livelihood security focus would have to consider. This literature is, however, diverse and fragmented. Despite this, four key intermediate outcome factors can be distinguished: the

development of needs-based programmes; the expansion of the extension focus in service delivery as means of reducing the vulnerability of farmers' livelihoods; the adoption of a pluralistic extension system; and ensuring equity in service provision. These factors are reviewed in the following sections.

3.6.6 The development of a needs-based programme

There is an increasing acknowledgement in the extension literature (World Bank, 2000a; Richardson, 2003; Garforth, 2004; Lai & Cistulli, 2005) that decentralised extension programmes should be needs-based – that is, the programmes should reflect the real needs of farmers at the local level. The World Bank (2000a) argued that extension decentralisation initiatives and programmes must conform to the needs and potentials of rural communities and farm households. Similarly, Garforth (2004) adds that the initiatives and programmes, apart from being needs-based, must also be those expressed or demanded by the farmers themselves if extension is to make a greater impact in the current decentralised context. This also means that extension organisations would have to shift from supply-side extension (where extension farmer groups contract services from private sector providers who ply farmers with services that they have not requested) to demand-driven extension where farmers request and pay for the extension services they need (van Crowder, 1996a). This latter is often referred to as a *client-focused* or a *needs-based* extension (Richardson, 2003).

Garforth (2004) pointed out that in most developing countries where extension clients are unable to voluntarily request and pay for the full cost of the services they receive, extension programmes can never be entirely needs-based or demand-driven because the governments will always bear some cost, and as such, will have an agenda for the extension programme. The challenge for developing countries, therefore, is to determine how they can put in place institutional arrangements that can ensure that extension programmes are not only based on local needs but also meet government policy needs at the same time (Garforth, 2004).

Some key reasons have been given as to why decentralised extension organisations in developing countries should adopt a needs-based extension programme planning approach. According to Rivera and Qamar (2003) not only is there a moral and social

obligation, but it is also in the economic self-interest of developing countries if public sector agricultural extension services are based on the needs of local people - especially those of the poor and those in marginal areas. It is claimed that needs-based extension programmes increase people's confidence and trust in the extension organisation (Garforth, 2004). It also empowers the local people to deal with their real problems and needs (Korten & Klauss, 1984; Cristóvão et al., 1997). According to Baruch and Folger (1994) people are empowered when they gain new awareness and understanding of their: goals (including underlying values, norms and fears); options; skills; resources; and decision making, and are able to utilise new insights in mediation and negotiation to deal with their problems and needs.

It is suggested in the literature (Cristóvão et al., 1997; Garforth, 2004; Swanson & Samy, 2004; Vannasou, 2006) that needs-based extension programme planning is possible through grassroots farmer participation. The view is that the grassroots participation of farmers in planning (bottom-up planning) is a major step towards developing needs-based extension programmes in a decentralised extension system (Garforth, 2004; Swanson & Samy, 2004; Vannasou, 2006). Bottom-up planning is known to create room for farmer participation at the grassroots level for needs identification (Cristóvão et al., 1997; Hiremath et al., 2007). Swanson and Samy (2004) believed that bottom-up programme planning helps ensure that extension systems are responsive at all times to the needs of farmers. However, because it is a development process, it requires a long-term effort, commitment and collective responsibility from farmers (Korten & Klauss, 1984; Cristóvão et al., 1997). Also, Scholl (1989) had argued that even with the bottom-up approach, farmer needs could more accurately be identified if extension agents used multiple sources of data. He listed these sources to include: advisory committee recommendations; requests; questions from individual farmers; results of other formal needs assessments; and evaluation reports from previous programmes. Similarly, Oakley and Garforth (1985) pointed out that sources of data include public meetings, group discussions and direct contact with individual farmers. Scholl (1989) believed that the use of multiple data sources could reduce the weaknesses of any single source and build on the diverse strengths of other sources.

Bottom-up programme planning increases the degree of relevance and acceptability of extension messages or recommendations among intended beneficiaries who have participated in the planning process (Adhikarya, 1996). Adhikarya claimed that bottom-up planning allows farmers to express their indigenous knowledge, values and belief systems in farming. Also, because of the active involvement of farmers, the needs-based approach to extension programme planning promotes learning among local farmers and extension agents (Lightfoot, 2004). As such, some authors (Coutts et al., 1995; Cristóvão et al., 1997; Coldevin, 2001; Garforth, 2004, Lightfoot, 2004) were of the opinion that the role of representatives of extension organisations in the planning process should be that of partners and facilitators rather than that of experts. The presence of farmers in the process also brings about face-to-face accountability between farmers and extension agents for past actions and future decisions (Lightfoot, 2004). Although the importance of participatory rural appraisal (PRA) in extension programme planning and farmer empowerment has been emphasised in the literature (Chambers et al., 1989; Chambers, 1994a, 1994b; Chambers, 1997; Gill, 1998) there is little useful information provided about how the personnel of a local level extension organisation with a livelihood security focus can develop or plan a realistic extension programme in a decentralised extension context in developing countries

In general, extension programme planning is seen as a process and a social practice (Cristóvão et al., 1997). As a process, Cristóvão et al. described it as a dynamic effort of identifying farmers' problems and the taking of decisions and actions to achieve them as goals. From a social practice view, extension programme planning is seen as a negotiation process and a working platform involving different stakeholders, including researchers, subject-matter specialists, opinion leaders, representatives of farmers' organisations and groups, and other stakeholders (Cristóvão et al., 1997). Programme planning is considered an essential process of an extension organisation's operation – this is because it provides direction for the organisation, contributes to learning and development among planning participants, allows for selection of relevant extension activities and management of programmes, and ultimately facilitates the social and economic progress of rural communities and families (Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997).

Extension programme planning involves specific activities and steps which happen concurrently (Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997). These include: identification of the basis for programming – philosophies, policies, and procedures; situation analysis of community and clientele; identification of desired outcomes; identification of resources and support; design of an instructional plan; design of programme of action – calendar of events and activities; and evaluation –accountability of resources (Oakley & Garforth, 1985; Cristóvão et al., 1997). Bennett and Kay (1995) put the programme planning process into three major steps: selecting needs, delivery methods and targets for programme accomplishments. The different steps of the programme planning are interrelated and the process does not always proceed neatly from one step to another, therefore objectives set during the needs selection stage may later be altered as new insight and fuller understanding of the situation are gained in the process (Oakley & Garforth, 1985).

Although the literature on extension decentralisation reforms supports the need for the refinement of programme development processes in terms of stakeholder participation to ensure successful implementation (World Bank, 2000a; Richardson, 2003; Garforth, 2004; Lai & Cistulli, 2005), there is little prescriptive and empirical information on how this can be achieved. A major information gap yet to be filled adequately is how a decentralised extension organisation in developing countries can develop extension plans that take into consideration the current realities of extension in a developing country. Although the development of a needs-based programme is important to ensure livelihood security, this must be done with a wider focus by extension to reduce farmers' vulnerability. The following section contains a discussion of the expansion of the extension focus for the reduction of the vulnerability of farmers' livelihoods in a decentralised extension system.

3.6.7 The expansion of the extension focus for reducing the vulnerability of farmers' livelihoods

The information needs of farmers are diverse and there are a wide range of factors outside agricultural issues that place farmers at risk of becoming food insecure (Barrett et al., 2001a, b; Lanjouw & Lanjouw, 2001; Reardon et al., 2001; Ingram et al., 2002; Rivera & Qamar, 2003; Christoplos, 2004; Molua, 2005). Given this, extension organisations in

developing countries need to expand their focus to capture those other factors. It is currently being acknowledged that those other factors are equally important because they affect the overall livelihood of rural people (Carney, 1999). Carney referred to these factors as *vulnerability factors*. Ellis (1998 p.14) defined *vulnerability* as *the degree of exposure to risks, shocks, and stress, and proneness to food insecurity*. These risks, shocks, and stress may come from external factors such as climate, markets, sudden disasters, and social unrest (Ellis, 1998). A critical means of assisting households to sustain their livelihoods is to reduce vulnerability (Carswell, 1997; Solesbury, 2003). This implies that extension would have to provide the means of assisting households to cope with - and recover from - risks, shocks and stress, and support households to address their present and future needs without undermining the natural resource base (Carswell, 1997).

Strategies for sustainable livelihoods which involve coping strategies for vulnerabilities, in developing countries, especially in Africa and South Asia have been possible through migration, remittances from relatives and livelihood diversification (McDowell, 1997). Rural people migrate to other communities or locations to escape famine and to look for other livelihood options for their sustenance, or depend on remittances they receive from their relatives from urban centres (McDowell, 1997).

Livelihood diversification is increasingly being recognised and discussed as a key strategy for ensuring sustainable livelihoods, and it is a major area where extension can capitalise to assist farm households to improve their livelihoods (Carswell, 1997; Reardon, 1997, 2001; Ellis, 1998; 2000; Barrett et al., 2001a, b; Lanjouw & Lanjouw, 2001; Reardon et al., 2001; Rivera & Qamar, 2003). *Livelihood diversification* is defined 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* (Ellis, 2000, p. 15). In rural areas in developing countries, household income comes from both on-farm and non-farm sources (Ellis, 1998; 2000). Thus, to improve their livelihoods, the farmers diversify through farming and non-farm employment (Reardon, 1997, 2001; Barrett et al., 2001a, 2001b; Reardon et al., 2001; Dorward et al., 2004). This means that to improve the household incomes of rural farmers in developing countries, farmers

should have opportunities for both on-farm and non-farm employment (Lanjouw & Lanjouw, 2001).

The rural non-farm sector embraces a range of sectors of rural areas (e.g. manufacturing, trade, construction, transportation, communications, and services) apart from agriculture, fishing and hunting (Oakley & Garforth, 1985; Lanjouw & Lanjouw, 2001). Rivera and Qamar (2003) argued that, apart from agricultural issues, extension organisations can support rural people in other areas such as micro-enterprises development, health and nutrition. There is growing recognition that on-farm and non-farm sectors complement and reinforce each other in raising the incomes of rural people (Reardon, 1997, 2001; Barrett et al., 2001a, 2001b; Reardon et al., 2001; Lanjouw & Lanjouw, 2001; Rivera & Qamar, 2003). It is proposed that the non-farm sector can be assisted to grow through programmes and projects which provide credit and technical services to the rural community (Gordon, 1999). Gordon suggested that to get the best results from the non-farm sector, the technical services should be targeted at, and tailored to, the needs of enterprises in clusters that are producing identical goods and services to ensure cost effective and easy management. Further, Gordon stressed the need for working with small producers in groups to facilitate and broaden the provision of technical assistance in the rural community.

There is also a growing acknowledgement in the literature (Pasteur, 2001; Rivera & Qamar, 2003; Sulaiman, 2003) that the acceptance of a broader focus for extension in developing countries will also mean that extension organisations would have to adopt other roles (multiple roles) to meet the needs of farmers. Rivera and Qamar (2003) believed that the adoption of multiple roles is a major way forward for extension organisations in developing countries if they are to operate effectively in the current development context. Using a case study of the Indian public extension organisation, Sulaiman (2003) pointed out that local extension organisations in India achieved considerable success when they adopted other roles beside general agriculture technology information providers to assist farmers in areas regarding quality inputs, reliable access to output markets, and non-exploitative and timely credit. Although these authors have commented on the importance of multiple roles in decentralised extension organisations, they have not defined these various roles. Although the widening of the extension focus

to reduce farmers' vulnerability of livelihood security is important, this will require that the extension organisations work with other stakeholder organisations in extension provision. In the following section, the provision of extension alongside, or in collaboration with, other stakeholder organisations is reviewed under the term *pluralistic extension system*.

3.6.8 The pluralistic extension system

The adoption, by a decentralised extension organisation, of a sustainable livelihood approach requires these organisations to address a much wider range of farmer needs than they have in the past (Sutherland et al., 1999; Ingram, 2002; Rivera & Qamar, 2003; Molua, 2005). To achieve this, extension organisations would have to foster a pluralistic extension system. A *pluralistic extension system* is one in which *there is more than one extension service provider involved in the provision of extension services in a community* (Hanyani-Mlambo, 2002; Rivera & Qamar, 2003; Rivera & Alex, 2004ab). Smith (1997) and Rivera and Alex argued that public extension organisations can not do everything for farmers, and that there are areas of agricultural extension services (e.g. agricultural machinery, chemicals, hybrid seeds and livestock, veterinary supplies and pharmaceuticals) which are best suited to private sector provision. This point was also made by Rivera and Qamar (2003). Not surprisingly, other authors (World Bank, 2000a; Minoiu, 2003; Richardson, 2003; Swanson & Samy, 2004; Vannasou, 2006) have argued that as the focus of extension widens, decentralised extension organisations in developing countries will need to recognise the role other extension providers play in their local extension system.

Minoiu (2003) and Rivera and Alex (2004a) argued that in developing countries, especially in Africa, extension services cannot use a single-sector approach, but rather, should operate as part of an integrated rural economy that incorporates agriculture and other sectors (e.g. education, health, finance, forestry, environment). The extension organisation would have to view extension activities as an integrated part of a larger extension programme which is linked with other relevant organisations dealing with research, inputs, training, marketing and other social services (Adhikarya, 1996). This is because the quality of extension programmes depends fundamentally on good linkages with the programmes of other development organisations (e.g. micro-credit programmes,

input supply) in a particular local system (World Bank, 2000a). As such, extension can now be seen as a multi-sector network of knowledge and information support for rural people within the context of a wide rural development agenda where different organisations from the public and the private sectors provide differentiated services to meet the complex and wide-ranging needs of farmers (Röling, 1991; Rivera & Alex, 2004a).

Pluralistic extension systems allow farmers to choose among alternatives because the various extension providers offer the same services (Hanyani-Mlambo, 2002; Rivera & Qamar, 2003; Rivera & Alex, 2004ab). However, these authors have raised the concern that a pluralistic extension system presents a major challenge in coordination and collaboration among both public and private extension providers for unifying services, and avoiding duplication and wastage of scarce resources. The following provides a review of the coordination and collaboration mechanisms of decentralised extension organisations.

3.6.8.1 Coordination

Even though the pluralistic extension system is not covered extensively in the extension literature, some authors (Röling, 1991; Qamar, 2000; World Bank, 2000a; Rivera & Alex, 2004a) have suggested the need to have a mechanism for coordinating stakeholder activities for an effective pluralistic extension system involving NGOs, professionals and private institutions in extension provision. Qamar (2000) made the point that the key challenge in adopting a pluralistic extension system is the coordination of the various organisations. In Qamar's view, the absence of such coordination can lead to conflicting technical recommendations which can create confusion for farmers.

According to Rivera and Qamar (2003) and Rivera and Alex (2004a), coordination mechanisms can promote the formation of strong collaborative relationships and networks among stakeholders for an efficient pluralistic extension system. Coordination can also provide a collective insight and a better understanding of farmer needs (Rivera & Qamar, 2003; Rivera & Alex, 2004a). It can also lead to the development of a common framework which can guide stakeholders in contributing their quota to rural development (Rivera & Alex, 2004a).

The literature on agricultural extension and rural development has little information on how decentralised extension organisations in developing countries can coordinate their activities to improve decentralisation reforms. Nevertheless, Cristóvão et al. (1997), in a more general sense, argued that public extension organisations in developing countries can use their influence as government organisations to open dialogue and channels of communication among rural development organisations at the local level. They believed that this can help to coordinate the local extension system to promote extension pluralism and improve effectiveness in extension delivery.

According to Rivera and Qamar (2003) and Rivera and Alex (2004b) the way in which an extension organisation in this new environment can ensure coordination is to create a communication platform that will bring together the various sectors (public sector agencies, NGOs, producer organisations, private sector representatives and commodity groups, as well as donors) that are engaged in extension service provision. Through this mechanism, they can share their experiences and forge linkages. Moreover, there are numerous interrelated development organisations involved in rural development at the local level in developing countries (Rivera & Qamar, 2003). In the view of Rivera and Qamar there are many development organisations already operating in development countries, and this pluralistic system should be recognised and harnessed by public extension organisations for effective rural development.

Given that development organisations may have different orientations or interests in the various sectors, Rivera and Qamar (2003) have argued that to ensure effective coordination, government extension organisations would have to widen their vision for agricultural extension to capture the interests of other stakeholders. Such a vision would view agriculture as the major means of ensuring food security, but this vision would also take into account other factors (e.g. marketing and micro-enterprise) that have immediate and potential impacts on rural household livelihoods (Rivera & Qamar, 2003). This vision would create opportunities for extension organisations to establish and maintain strong networks with other stakeholders based on common interests (locally, nationally and globally) (Rivera & Qamar, 2003). These networks are critical because mutual understanding by stakeholders is central to social change (Korten, 1980).

It is believed that there is a lack of awareness among development organisations about opportunities for working together in mutually beneficial extension programmes that have a strong focus on the poor and opportunities for sponsorship for such programmes (Rivera & Alex, 2004a). Awareness creation is thus very important if extension organisations want to coordinate extension and rural development systems for sustainable development (Rivera & Alex, 2004a). In view of this, if extension organisations in developing countries are to operate effectively with a broader view of extension, it makes sense for them not only to coordinate activities but also to collaborate with stakeholders to complement their efforts. As argued by Rivera and Alex (2004a) expanding collaborative relationships with stakeholders is important for efficient pluralistic systems in which all stakeholders can operate to provide extension services.

3.6.8.2 Collaboration

Because the knowledge and information needs of farmers are diverse, there are benefits from having a range of stakeholders collaborating in the delivery of extension services in a decentralised extension environment (Rivera & Alex, 2004a). The Asian Productivity Organisation (2003), using Asian countries as examples, indicated that a major problem of decentralised extension systems in developing countries is their weak collaboration with farmer organisations, NGOs and the private sector in service delivery. To succeed, it is suggested that decentralised extension organisations in developing countries would need to establish and maintain ongoing collaboration with farmers and other stakeholders (World Bank, 2000a; Madukwe, 2003; Rivera & Qamar, 2003; Garforth, 2004; Rivera & Alex, 2004a; Swanson & Samy, 2004).

Key reasons have been given for the need to maintain ongoing collaboration with farmer organisations for successful service delivery. Swanson and Samy (2004) argued that the decentralisation of agricultural extension is a complex process that requires strong commitment and careful planning by extension organisations. In their view, this requires the involvement, understanding and coordination of farmer organisations and other stakeholders in order to succeed. Rivera and Qamar (2003), for their part, claimed that maintaining ongoing collaboration with stakeholders (farmers and other organisations) is an essential tool for ensuring an effective pluralistic extension system and for strengthening networks for extension service provision. From the agricultural extension

and rural development literature (Röling, 1991; Chambers, 1997), maintaining ongoing relationships with farmer groups and organisations allows the extension organisation to gain support from stakeholders for programme implementation. This support is critical because extension organisations alone do not have the resources needed to promote broad-based sustainable development (Röling, 1991; Chambers, 1997; Pretty, 2003). Pretty argued that this support from different sectors, agencies and organisations is vital for the operational sustainability and effectiveness of extension services.

Although the importance of stakeholder collaboration has been stressed by numerous authors (World Bank, 2000a; Madukwe, 2003; Pretty, 2003; Rivera & Qamar, 2003; Garforth, 2004; Rivera & Alex, 2004a; Swanson & Samy, 2004) there is little information in the literature about how this can be achieved or what forms this collaborations can take in this new decentralised extension environment. Torres et al. (2004), however, reported - on the basis of a case study in Colombia - that the ability to maintain successful collaboration among stakeholders in extension is based on the principles of mutual respect, shared risks, experiential learning and adequate training of members in the collaborative encounter. Torres et al. (2004) added that ongoing collaboration with stakeholders also requires regular contact, accountability, and shared decision making among stakeholders. Similarly, Schmitz (2004), in a case study of problems and possibilities in building partnerships among farmers, researchers, and extension experts in Brazil, acknowledged the importance of trust and transparency in maintaining successful inter-organisational collaboration, but emphasised the need for non-exploitative power relations among actors. According to Rivera and Alex (2004a), capacity building for collaborative processes for stakeholders is necessary for effective collaboration.

Leeuwis and van den Ban (2004) also emphasised the need to establish personal contact and channels of communication with farmers and organisations through workshops, seminars, formal visits, social meetings and newsletters, as practical ways of achieving the unity needed for ongoing collaborative action in extension provision. Drawing other useful information from the general public organisation management literature, Jackson and Stainsby (2000) made the point that if all collaborators can be fair to each other, demonstrate trust, openly discuss each others' responsibilities and benefits in a participatory manner, then they will get results that will be satisfactory to all

collaborators. In their analysis of public sector organisations, Jackson and Stainsby indicated that besides mutual trust, opening channels of communication and the provision of information to all stakeholders, it is important for the stakeholders to have missions that are linked, and that there are incentives to reward those who co-operate in the collaboration. In the view of Jackson and Stainsby (2000), these factors are essential for inter-organisational unity and maintaining collaborative actions. The final major intermediate outcome of decentralisation which is focussed on farm household livelihood security is ensuring equity in extension provision. In the following section, the means of ensuring equity in extension provision will be discussed.

3.6.9 Ensuring equity in extension provision

Equity in extension provision refers to a situation where all sections of a social system have equal access to extension services (Chambers, 1997). It is concerned with the distribution of social and economic resources and improvements for all members in the social system (Chambers, 1997). Oxfam (1997) argued that equity is good for sustained economic growth in all communities. Jurie (2000) made the point that community development processes should not favour certain groups of farmers over others. According to Oxfam (1997), where there is a high level of inequality in income and access to opportunities for health, education and production, there are barriers to human and community development.

With a focus on rural poverty reduction and household livelihood security, the emerging extension approach requires extension organisations to ensure that all farmers, especially the poor, are included in development programmes (Solesbury, 2003). There is a growing recognition in the literature (Pasteur, 2001; World Bank, 2002a), that a major step toward achieving sustainable rural livelihoods in developing countries is to focus on poverty reduction by targeting development activities at poor farmers. This is because development activities that have been directed at farmers in general in the past have benefited mainly 'resource-rich' farmers because extension agents prefer to work with large-scale, better established and wealthier farmers who can afford to risk implementing extension recommendations (Pasteur, 2001; World Bank, 2002a). This leaves the poorest section of the population in developing countries unable to benefit from government extension interventions. The poor in developing countries are found mainly in rural

areas, and among these, the majority depend largely on agriculture, fishing and forestry (Christoplos et al., 2001). They are often located in the more difficult areas characterised by a combinations of low and erratic rainfall, hilly topography, poor soils and weak infrastructure (Christoplos et al., 2001).

Targeting the poor requires that implementation and use of appropriate methods to ensure that resources are allocated to activities that are likely to decrease the level of deprivation and vulnerability and yield the greatest impact on the poor (World Bank, 2001). Pasteur (2001) argued that focusing on poor households in extension interventions is essential for sustainable rural livelihoods, not only because wealthy elites are more successful at capturing funds, but also because the poorest groups at the local level are often the hardest to identify and target. Given that in developing countries, rural farmers are the worst affected with poverty (Christoplos et al., 2001), it makes sense if extension organisations make rural farmers, especially the poor, the focus of their development interventions.

To ensure equity, a wider range of farmers must be given access to extension services, particularly those in hard-to-reach areas (Cristóvão et al., 1997). To do this, several authors (van Crowder, 1996a; United Nations, 2000; Rivera & Qamar, 2003) have argued that extension organisations would have to assist farmers to form local organisations or groups or strengthen existing ones, especially, those that represent the interests of poor farmers as extension discussion groups. This method of extension delivery has been described by Oakley and Garforth (1985) as a group-based extension approach. Several reasons have been given as to why decentralised extension organisations should use group-based approaches. First, it is believed that the “voice” of farmers, especially the poor, would be heard more if they were to be organised into a group (van Crowder, 1996a; United Nations, 2000; Rivera & Qamar, 2003). The assumption is that when farmers are organised into groups with dedicated leaders, this empowers them for community participation, self-reliance and self-help (van Crowder, 1996a; United Nations, 2000; Rivera & Qamar, 2003). Second, there is a growing recognition that organizing local people into viable groups provides an effective institutional mechanism for pursuing community development activities at the local level (Smith, 2000; United Nations, 2000). Third, it is claimed that farmer groups provide the opportunity for

establishing and maintaining communication networks with farming communities for development programmes (Rivera & Qamar, 2003).

A case study of the Ugandan extension decentralisation reforms showed that the involvement and contribution of farmer groups at the sub-county and district council levels improved decision making for extension service provision (Nahdy, 2002). Similarly, in Tanzania, Bolivia, Burkina Faso, Indonesia and Bangladesh, group extension methods are known to have improved the performance of the extension organisations and also the conditions of the local people in terms of household income, adoption rate, loan recovery rate and social capital (Grootaert, 2001). Furthermore, Adhikarya (1994, 1996) argued that where there is a shortage of field staff, a large number of farmers who are widely spread geographically and inadequate transportation facilities - a situation found in many developing countries - it is best to use group-based extension methods by working with existing groups and utilising existing gathering places. In their view, these methods provide a means of reducing the costs of face-to-face extension, thus improving efficiency.

It has been pointed out by Smith (2001) and the United Nations (2000) that ensuring the self-reliance of farmer groups is essential for the sustainability of farmer organisations for effective extension work in the new decentralised extension environment, because this has the potential for empowering farmers and improving extension delivery. Based on the experiences of the FAO, Rouse (1996) described sustainable and successful farmer organizations as those farmer groups that are: small (8-15 farmers), informal, and similar in terms of background, interests and resource bases - as this tends to reduce internal conflicts and enables them to function better than those with a more heterogeneous membership. They need to be focused on solving common problems of members; and formed with the extension organisation playing a facilitating role rather than those of teaching and imposition. Smith (2001) described self-reliant farmer organisations as those farmer groups that are able to elect their own leaders and manage their own activities - including meetings, record-keeping, savings and credit operations, conflict resolution and community property management. To achieve self-reliance the groups must have an effective and dedicated leader (Smith, 2001; United Nations, 2000).

Effective leadership is critical for transparent and efficient management of these groups (Tossou & Zinnah, 2005).

To achieve self-reliance, farmer-based groups need wide-ranging training from extension organisations, especially at the initial stages of group formation, for both the leaders and the group members to build their capacity to function in a decentralised system (Smith, 2001; Tossou & Zinnah, 2005). Extension organisations need to invest in the development of the local capacity of farmer groups to ensure that: (1) individuals share goals; (2) the group works on explicit problems and solutions; (3) there is a co-ordinating person to keep members together; and (4) individuals are rewarded for their co-operation in assisting the group to achieve its goals (World Bank, 2000a). To further improve the capacity of farmer groups, extension organisations would also need to support the groups to gain access to capital through either savings or credit, and assist them to forge networks and linkages with other support organisation to gain access to opportunities and resources (Rivera & Qamar, 2003). Despite the comments made in the literature (Chambers, 1997; Pasteur, 2001; World Bank, 2002a; Solesbury, 2003) on the importance of targeting the poor in extension and rural development programmes and the use of group-based methods, there is little practical information on how this can be achieved in the relatively new decentralised extension environment in developing countries.

3.7 Conclusion

Over the last four decades a number of approaches and strategies for agricultural extension reform have been implemented, of which the latest is the sustainable livelihood approach (SLA). The characteristics of the sustainable livelihood approach suggest that there is no single theory or blueprint for extension reform in developing countries. However, it appears that grassroots participation, pluralistic partnerships and a focus on rural poverty alleviation and farm household livelihood security are potentially the way forward. Moreover, it is believed that these principles are attainable if developing nations properly decentralise their agricultural extension organisations.

Decentralisation is a multi-dimensional process of transferring power from central government to institutions or participatory systems at lower levels to ensure that public services meet the preferences and demands of local people. The aim in decentralisation is to increase community participation and ownership of programmes, ensure more efficient and equitable allocation of government resources, promote accountability to stakeholders, build local capacity, and respond more effectively to local needs to promote rural development. However, the decentralisation reforms in developing countries over the past decade have encountered problems. Given the purpose of this Chapter, the review has provided a framework for understanding how a decentralised extension organisation in a developing country can achieve success.

The literature suggests that - irrespective of the type of decentralisation - the effectiveness, responsiveness and sustainability of a decentralised extension system can be influenced by a number of factors that can be classified into two types: political and organisational (Figure 3.1). The decentralization of extension must be accompanied by a real political will by the central administration to transfer legislative powers, and clear definition of authority and responsibility to the local level administration to avoid interference and overlap of roles. These policy factors must then be supported by local institutions. The review shows that in order for decentralization extension systems to be effective and sustainable, the right combination of organisational factors must be present (Figure 3.1). There must be actual empowerment of farmers and other stakeholders through participation. In addition, there must be an effective mechanism for accountability to stakeholders and sponsors, by improving transparency and stakeholder participation in extension programme activities. Finally, decentralised extension systems must also have adequate capacities in terms of skills and knowledge, and sufficient resources in terms of finance, material resources and staff numbers to ensure delivery of the appropriate services and accomplishment of the tasks at the local level.

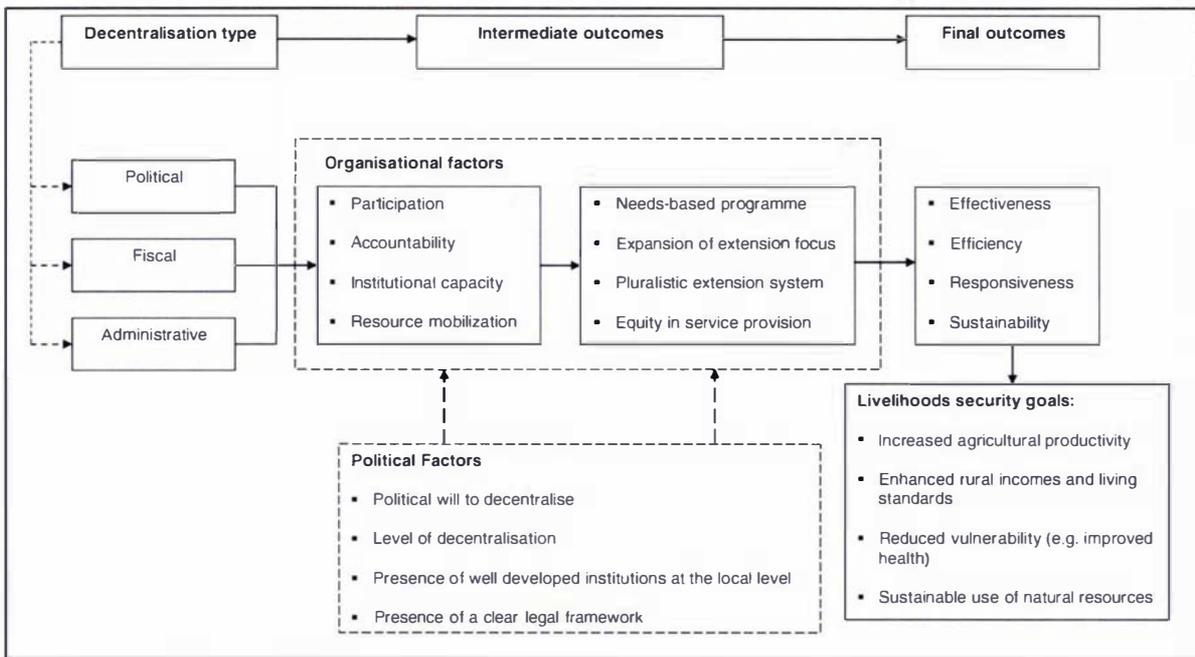


Figure 3:1. Conceptual model of decentralised extension systems with livelihood security focus outcomes and goals (adapted from Parker, 1995; Lai & Cistulli, 2005)

For decentralised extension systems to contribute more to improving livelihood security of farmers through good participation, accountability, institutional capacity building and resource mobilisation, they should be able to develop a needs-based programme, expand their extension focus to reduce the vulnerabilities of farmers, work with other organisations to draw on the resources of other sectors (public and private) where they lack the capability, and ensure equity through targeting the poor and working through farmer groups in service provision. These bring about the effectiveness, efficiency, responsiveness and sustainability conditions to achieve the livelihood goals of farmers – which include production increases, enhanced income and living standards, reduced vulnerability and sustainable use of natural resources.

In this review important issues have been raised regarding extension decentralisation, and an expanded conceptual framework has been provided for contributing to an understanding of how a decentralised extension organisation with a livelihood security focus may achieve success. As indicated earlier, most of the factors discussed above are prescriptive, fragmented and provide little detail about “how” in practice, decentralised extension organisations can operate successfully at the local level. Moreover, there is limited empirical evidence that supports the key factors identified and discussed in this review. It is this theoretical gap that the researcher set out to explore in this study. In the next chapter, the research methods adopted for the case study will be described.

CHAPTER 4:**METHODS****4.1 Introduction**

Research into the operation of public organisations such as extension services in developing countries is limited (Horton & Mackay, 2003). The goal in this research is to understand what factors determine the success of a district level extension organisation in Ghana and to develop a theoretical framework that could inform district extension service operation in a decentralised extension environment. The qualitative research approach is a useful starting point for studying organisational operation where there is limited research and information (Horton & Mackay, 2003). The approach is flexible and allows researchers to formulate a wide range of general questions and methods to fit organisational studies where there is limited prior information (Horton & Mackay, 2003). Given that there has been limited empirical research into this topic, a qualitative research approach was adopted for this study. In this chapter the qualitative research approach used in this study is described. First, the choice of research strategy is discussed, then the reason for choosing a single-case study is given and the case study is defined. This is followed by a description of the case study design, which specifies the methods of data collection and analysis. Finally, the means by which the quality of the research was ensured are described.

4.2 Choice of research strategy

Yin (2003) identified five research strategies that could be used to undertake research: experiment; survey; archival analysis; history; and case study (Table 4.1). He suggested that a researcher should consider three criteria when deciding upon which research strategy to adopt: (a) the type of research question posed; (b) the extent of control an investigator has over events; and (c) whether or not the focus is on a contemporary phenomenon within some real-life context (Table 4.1). A careful consideration of the criteria showed that the case study strategy was the one which was best suited for this study. Yin (2003, p. 13) defined a *case study* in general as '*an empirical inquiry that investigates a contemporary phenomenon within its real life-context, especially when the boundaries between the phenomenon and the context are not clearly evident*'. A case study research strategy was chosen for this study. How this study meets the criteria for a case study is discussed further below.

The criteria under which Yin (2003) would recommend a case study research strategy is where a researcher: a) wants to answer how and why questions; b) does not require control over the behavioural event, and c) wants to focus on contemporary events. For the purposes of this research, the case study was found to be suitable because the aim in the study was to answer *how* and *why* questions. The researcher did not seek to have control over the behaviour of the case organisation, and the focus of the research was on contemporary events. The use of case studies in organisational research is widely acknowledged (Fox-Wolfgramm et al., 1998; Hartley, 2004). Hartley argued that a major way to understand organisational behaviour and/or processes is through case studies, although he acknowledged that there are other ways such as surveys. From the perspective of organisational studies, Hartley (2004, p. 323) defined *case study research* as *an investigation of a phenomenon, within a context with an aim of providing an analysis of the context and process to illuminate the theoretical issue being studied.*

Table 4.1. Conditions for selecting appropriate research strategies

Strategy	Form of Research Question	Requires control over behavioural events	Focuses on contemporary events
Experiment	How, why	Yes	Yes
Survey	Who, what where, how many, how much	No	Yes
Archival Analysis	Who, what where, how many, how much	No	Yes/No
History	How, why	No	No
Case Study	How, why	No	Yes

(Source: Yin, 2003)

The case study research strategy is particularly useful for studying organisational behaviour for two major reasons: 1) it provides a better opportunity for understanding the context surrounding the phenomenon of interest; and 2) it is essential for research questions that require a detailed understanding of the social and organisational processes of an organisation (Hartley, 2004). The organisational context in case studies describes the larger environmental issues of interest which support, facilitate, sustain or constrain an organisation (Fox-Wolfgramm et al., 1998). Hartley (2004) argued that organisations'

actions should be viewed within the context in which they occur. It is argued by Rousseau and Fried (2001) and Hartley (2004) that an understanding of context is critical to explaining organisational behaviour. Organisations are systems with several components and complex processes and relationships that are best understood through in-depth case studies (Stoecker, 1991; Hartley, 2004). Finally, when the aim in a study is to explore new or emerging processes of an organisation, the case study approach is considered very useful (Hartley, 2004; Cepeda & Martin, 2005). The need for an in-depth study of the complex processes of a contemporary extension organisation in a decentralised extension context also buttressed the choice of the case study approach for this research topic. The case study approach is highly recommended if the aim is to understand the nature and complexity of processes in an organisation (Cepeda & Martin, 2005).

4.3 Case study design

Having decided to use the case study strategy in this research, the next important step was to select an appropriate research design. The research design describes how research questions are translated into a practical coherent plan for data collection, analysis and the drawing of conclusions (Brewerton & Millward, 2001; Rowley, 2002). Yin (2003) identifies four types of case study designs: (a) single case (holistic) design, (b) single case (embedded) design, (c) multiple-case (holistic) design, and (d) multiple-case (embedded) design.

In case study research, there is always the question of whether one should adopt a single- or multiple-case design (Yin, 2003). A single-case study design was adopted for this study because of the complexity of the case (Shadish et al., 1991) – an organisation that comprises over 40 staff working in collaboration with over 20 stakeholder organisations and numerous farmer groups. Although Yin (2003) stresses that the multiple-case study design has the advantage of robustness over a single-case design, this can sometimes result in a trade-off with depth, particularly where resources and time are limited. The topic area is less investigated than related topics, and as such, a detailed understanding of the phenomenon, which is possible through a single-case design, is important. Once a researcher has decided whether to adopt single- or multiple-case study, he or she then needs to determine if the design should be a holistic or embedded design (Yin, 2003). In the holistic design, there is one unit of analysis, whereas an embedded design involves

more than one unit of analysis (Yin, 2003). The unit of analysis defines what the case is – it could be groups, organisations, a process, a programme, or simply an object/event (Tellis, 1997; Yin, 2003; Cepeda & Martin, 2005). Yin, suggested that it is important to identify the units of analysis at the initial stage of a case study because selecting a particular case in preference to others must be done based on the unit of analysis. According to Patton (2002), the key consideration in selecting the units of analysis is to decide what you want to say about the case at the onset of the study to be able to say something about it at the end. In this study an embedded design was adopted because the literature review (Chapter Three) has highlighted that there are several key units of analysis important to this research. These include stakeholder participation, accountability, institutional capacity building and resource mobilisation. In this particular research, where the aim is to provide an insight into a wide array of development and organisational management issues, Shadish et al. (1991) argued that an embedded single-case study is more appropriate.

4.3.1 Overview of the research process

A systematic overview of the embedded single-case study design is shown in Figure 4:1. The research process has three distinct phases – (1) planning, (2) data collection and analysis and (3) reflection. The planning phase started with the development of a theoretical framework from the literature. The literature review was ongoing throughout the period of data collection and analysis so that the theoretical framework could be updated as new elements were highlighted by the data (Patton, 2002). Secondly, an appropriate case was carefully selected and a data collection protocol was designed to mark the end of the research planning phase. In the next phase, field work was conducted and research data were collected. The data were then analysed and a case report was written. In the final phase, the report was reflected upon in the light of the theoretical framework and theoretical implications were drawn. The following sections provide a detailed description of the process.

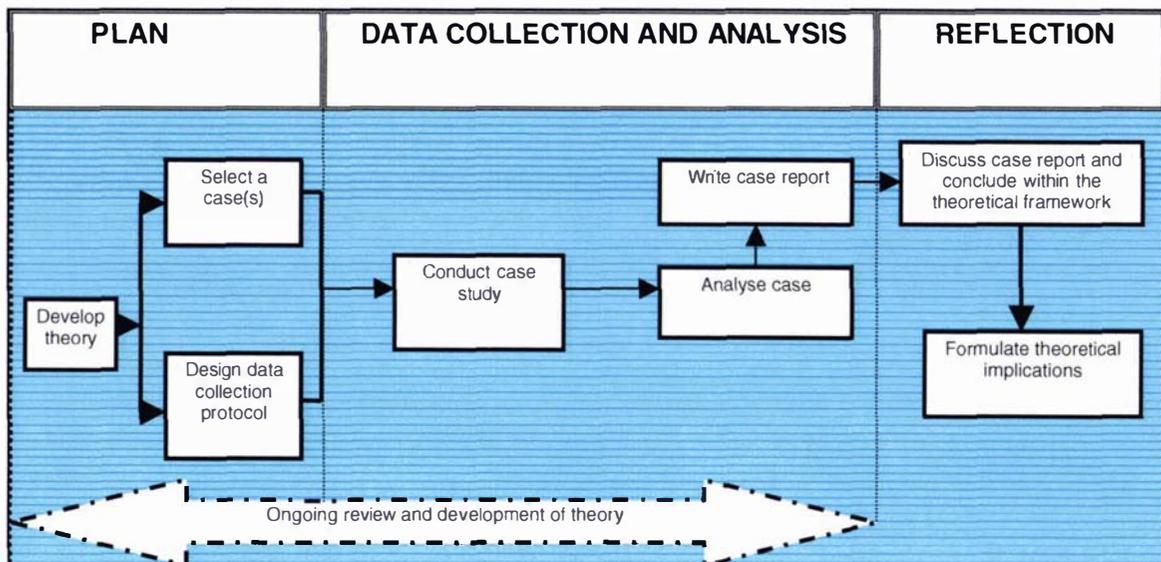


Figure 4:1. The research process (Adapted from Cepeda & Martin, 2005)

4.3.2 Case selection

Case selection is a critical step in the research process because the type of case that is selected influences the conclusions that are reached and the level of confidence one has about such conclusions (Miles & Huberman, 1994). It is therefore, important for the researcher to identify an appropriate case to maximise the opportunity to engage the problem, address it and draw conclusions that can be relied upon (Miles & Huberman, 1994; Yin, 2003). Marshall and Rossman (1999) argued that an ideal case should be accessible; offer the researcher the opportunity to encounter many of the processes, people, programmes, interactions, and/or structures that are relevant to the research question; and provide credible data for the analysis of the phenomenon. Yin (2003) suggested that it is better to get a case which is more convenient, close and easy to access so that the researcher can have more time and a close relationship with the interviewees in order to gather the information needed. As such, the key question here is *What criteria are used to select a case?* Answers to this question are important for the purpose of replicability and generalisability of the study beyond the specific case (Vaughan, 1992). It is also important to distinctly describe the case so that it can be compared with other cases (Ragin, 1992).

The sampling logic used in the selection of the case organisation was purposive or theoretical as opposed to statistical (Glaser & Strauss, 1967; Patton 2002). The purpose was to select a case that is judged to be successful in extension provision in Ghana. The sampling strategy adopted for this study was *intensity sampling* (Miles & Huberman, 1994). With this sampling strategy a case is selected that manifests the phenomenon intensely, but not necessarily extremely (Miles & Huberman, 1994, Shakir, 2002). This strategy was selected because the Ministry of Food and Agriculture did not believe that an outstanding case (or extreme) existed within the Central Region, which was to be the area of study. The Ministry of Agriculture did, however, believe that there were cases that were more successful than others in implementing their decentralised policies. As such, a case was selected for the study because it was superior to other district extension organisations in the area of interest.

The first criterion the researcher specified for case selection was location. The researcher wanted to select a case from the Central Region of Ghana (Figure 4:2) because of ease of access (Yin, 2003) and because he speaks the local language used in this area. After explaining the purpose of the research and obtaining permission to undertake the study from the Ministry of Agriculture in the Central Region, the researcher contacted the director in the Central Region of Ghana in May 2004. The purpose of the study was then outlined, rapport was developed with key staff (the Regional Agricultural Development Officers) and these staff members agreed to help the researcher undertake the study. The staff at the regional office were then asked to help the researcher select a suitable case for the study. The criteria given to the Ministry staff for the identification of a suitable case were that: (1) the extension organisation had to be successful and thus should be seen to have improved participation of stakeholders in its extension programmes and enhanced the contribution agriculture makes to the livelihood security of farm households in the district; (2) the staff within the organisation had to be able to articulate why the organisation was successful; (3) the majority of the staff, particularly senior staff, had to have worked for the organisation from the date when the organisation was decentralised, and (4) the organisation had to have good archival records of its decision making for the period from the inception of the decentralisation reforms to the present day.

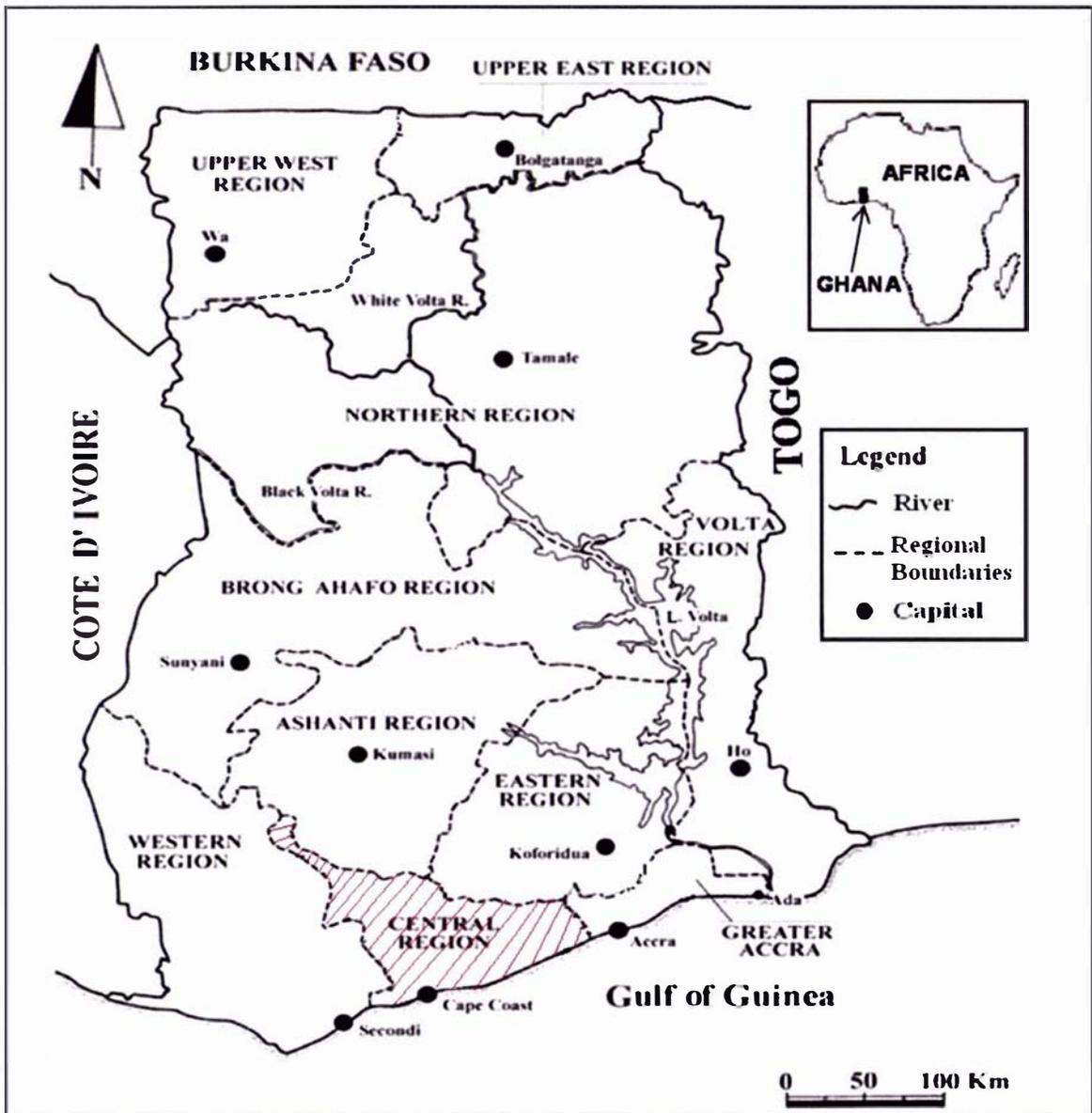


Figure 4:2. Map of Ghana showing the regions, capitals and the study area

The Ministry staff were asked to use these criteria to rank the four most successful district extension organisations within its region that comprised some 13 district extension organisations. The Ministry of Agriculture in the Central Region then gave the researcher permission to contact these four district extension organisations. The researcher explained the purpose of the research to each district organisation and obtained permission to conduct a preliminary investigation to assess their suitability for the study. One case was selected because it was the most successful and accessible, the staff were receptive and two of the staff members were known to the researcher, which was an added advantage for rapport building.

In mid May 2004, the case organisation was contacted to confirm that it was to be the focus of the research. The researcher presented the director of the case organisation with a formal consent letter from the Central Regional MoFA Head Office. The director of the case organisation was presented with documents that outlined the purpose of the study and the research method the researcher planned to use. The director was then asked for formal consent to use the organisation and to obtain access to the staff who would be interviewed to provide information for the study. Once the director had agreed to participate in the study, the researcher requested to be introduced to the staff at the next general staff meeting. During this meeting the researcher began building rapport with the staff of the case organisation and briefed them on the study. As stressed by Fontana and Frey (2000) it was important that the researcher gained the trust of, and established rapport with, the informants at the beginning of the study.

4.3.3 Data collection

Yin (2003) recommended the use of a protocol in case study research to guide data collection. The protocol covers the field procedures, case study questions and data sources by which these questions can be answered. It is treated as a design issue because it enhances reliability so that other researchers can repeat the process (Yin, 2003). The aim in the study was to identify what factors contribute to the success of a decentralised extension organisation, how such factors influence that organisation's success and why those factors have that influence. To achieve this aim, a data collection protocol was developed from the literature review (Chapters Two and Three). The data collection protocol consisted of a set of broad topic areas that were set out as questions (Yin, 2003) and these were developed from the literature review (King, 2004) (Table 4:2). The broad topic areas covered stakeholder participation, accountability, institutional capacity building and resource mobilisation. However, because a goal of this research was to determine how an extension organisation operates at the local level, the broad topic areas were incorporated into the operational process of the organisation: programme planning, implementation and evaluation (Table 4:2). This set of broad questions guided the data collection process (Yin, 2003), but the researcher also used probing and clarification questions to obtain further detail about the various topic areas (Legard et al., 2003; King, 2004).

Table 4:2. Broad question areas covered for the unit of analysis in the study**1. Programme planning**

- a. How is the extension programme planned?
- b. How is stakeholder participation in the programme planning ensured?
- c. Why is the extension programme planned in this way?

2. Programme implementation

- a. What key measures are taken to implement extension programmes?
- b. How is institutional capacity built to ensure effective extension programme implementation?
- c. How are resources mobilised to ensure effective extension programme implementation?
- d. How is stakeholder participation in extension programme implementation ensured?
- e. Why is the extension programme implemented in this way?

3. Programme evaluation

- a. How does the case organisation evaluate its extension programme?
- b. How is stakeholder participation in extension programme evaluation ensured?
- c. How does it ensure accountability or report to government, farmers and other stakeholders?
- d. Why is the extension programme evaluated in this way?

Case studies allow the use of several data-gathering techniques and multiple sources of evidence (Stake, 1995; Rowley, 2002; Yin, 2003; Hartley, 2004). The sources of data that can be gathered for a case study include: documents, archival records, interviews, direct observation, participant-observation and physical artefacts (Stake, 1995; Yin 2003). No one data source has a complete advantage over the others, rather they complement each other and several sources can be used in tandem (Tellis, 1997). In this study, the main source of data was interviews. Secondary data were obtained from documents and field observations (Wolcott, 1992; Miles & Huberman, 1994). The data collection was undertaken over a five-month period between May and September 2004.

4.3.3.1 Interviews

Interviews are considered an important source of information in qualitative research and are highly recommended for case studies (Scott et al., 1991; Tellis, 1997; Patton, 2002). Interviews can be structured, unstructured or semi-structured (Brewerton & Millward, 2001; King, 2004). Structured interviews have fixed questions with restricted options for informants to choose from. Unstructured interviews have no fixed questions and the researcher uses flexible means to elicit as much information as possible to address one or a number of topics of interest to the researcher (Brewerton & Millward, 2001; King,

2004). In semi-structured interviews, fixed questions are used but these are open ended so that interviewees can provide answers that they consider important without restriction (Bryman, 2001; Patton, 2002; King, 2004). Semi-structured interviews were therefore adopted for this case study to ensure flexibility and to reduce the possibility of influencing the interviewees. Although respondents were directed by question(s), a measure of flexibility was ensured through the use of open-ended and probing questions to permit follow-up to unanticipated answers (Legard et al., 2003; King, 2004). The aim in this research was to gather information on what the case organisation does, and how and why it operates that way, from people who have had life experiences with the case in order to give a detailed description and interpretation of the phenomenon.

4.3.3.1.1 Selection of key-informants

A key issue with a study such as this is how to obtain a “true” perspective of what is happening – given that some 40+ people work in the case organisation and it services over 100,000 farmers in collaboration with 20+ stakeholder organisations and 40 farmer-based organisations. Miles and Huberman (1994) indicated that an important source of information in qualitative research is a good cross-section of key informants. The answers to the questions as to whom and how many informants to recruit depend on the aim of the researcher and the amount of time and resources available to undertake the research (King, 2004). However, King cautioned that qualitative research involving interviews often requires a considerable amount of time and resources for travelling, interviewing, transcribing, and data analysis. He, therefore, argued that time and resources are critical factors for consideration when deciding on the number of informants to use in a case study. There is also a strong argument for recruiting as many informants as possible to ensure data are collected from a wide range of perspectives (King, 2004). Given the time and the resource constraints, the researcher realised that it was possible to undertake between 30-40 interviews for the study.

Influenced by the constraints mentioned above, the researcher used an informant selection team made up of the director, a supervisor and a field agent to select key informants. The team members were selected by the director of the case organisation at the request of the researcher. Drawing on their rich understanding of the organisation and the district, this team was asked to prepare a list of staff, stakeholder organisation personnel and farmers

who had in-depth knowledge of the organisation (Altheide, 1996). The criteria the team was asked to use when drawing up the list were: (1) the people had in-depth knowledge of the case organisation from the inception of the decentralisation extension approach in 1996, (2) they would be willing to participate in the research, and (3) they would provide a cross-section of views on the organisation. The team was used to select a cross-section of suitable informants from three main groups –the case organisation, farmers and stakeholder organisations. The selection process is described in more detail in the following paragraphs.

The first informant selection dilemma was to determine who - within the case organisation that comprised some 40 individuals - would be interviewed. Fox-Wolfgramm et al. (1998) and Volberda and Lewin (2003) identified informant selection as a critical decision in any organisational case study. Other authors (Hanyani-Mlambo, 2002; Hassanullah, 2002) that have used the case study approach to investigate public extension organisations have interviewed a sub-sample of organisational staff from a cross-section of the management hierarchy. Their approach was adopted in this study and staff from the field level, supervisory level and top management level were selected after consultation with the informant selection team. This sampling strategy is referred to by Patton (2002) as *stratified sampling*. It is used to unearth important information that may have been embedded at the different levels of management (Fox-Wolfgramm et al., 1998). Jankowicz (2000) argued that staff at different levels in an organisation undertake different roles and as such, a cross-section of staff at the different organisational levels should be interviewed to obtain a more accurate picture of what is happening within an organisation. After consultation with the informant selection team (IST), it was decided that eight staff from the three levels of the organisation would provide a good cross-section of information about the operation of the organisation (Table.4:3).

Table 4:3. Key informants used in the case study

Organisation/groups	Key-informant	Number	Interviews
1. Case organisation			
- Top level management	Directors (current and former)	2	4
- Middle level management	DADOs (field supervisors)	2	3
- Field staff	Field staff	4	5
2. Stakeholders			
<i>Farmers</i>			
- Crops	Representatives of crop farming groups (agroforestry, cassava, oil palm, vegetables and cocoa)	5	5
- Livestock and poultry	Representatives of livestock and poultry producing group	1	1
- Inland fish farming	Representatives of aquaculture groups	1	1
- Agro-processing	Representatives of a cassava and oil palm processing groups	2	2
<i>Stakeholder organisations</i>			
- NGOs	District managers of World Vision International and Oasis Foundation	2	4
- Government Department at the district level	District Directors of Departments of: Co-operatives, Forest, Community Health and Social welfare	4	4
- District Assembly	Director of district co-ordinating council	1	1
- MoFA (regional and national)	Regional Director, 3 Regional Development Officers (MIS, training and extension), National Director and Deputy of the Directorate of Agricultural Extension Services	6	6
- Research Institutes	Past and present RELC co-ordinator in the Central Region	2	2
Total		32	38

The second selection dilemma was to select key informants from the farmers within the district which comprised some 100,000 individuals. Consultation with the IST suggested that the best means of obtaining a useful cross-section of farmers' views was to select farmers from the major agro-based enterprise groups in the district (Table.4:3). Based on this suggestion, nine farmer groups were selected for the study. The groups included those farmers involved in: agroforestry, cassava, oil palm, vegetables, cocoa, livestock and poultry, aquaculture, cassava processing and oil palm processing. With permission from the director of the case organisation, each farmer group was contacted by the researcher. Each group was requested to nominate a representative who, they believed, had in-depth knowledge of the case organisation's operations and could represent the

views of the group. In all, nine farmer representatives were nominated by their groups for the interviews.

The final selection dilemma was the selection of key informants from the stakeholder organisations with which the case organisation interacted. The first step in the process was to draw up a list of the relevant stakeholders with the IST. There were twenty stakeholder organisations on the list, which fell into five groupings: the District Assembly, the MoFA, other government departments (district level), NGOs and research organisations. Consultation with the IST suggested that the best means of obtaining a useful cross-section of views from stakeholder organisations was to select representatives from these five groupings (Table.4:3). A total of nine organisations (World Vision International, Oasis Foundation, Department of Co-operatives, Forest service Division, Department of Community Health, Department of Social welfare, District Assembly, MoFA (regional and national) and RELC) were selected from the five groupings for the study. These were people who, the IST believed, had a good knowledge of the operation of the case organisation because they had consistently worked with it since the inception of the extension decentralisation policy in 1997. Each organisation was contacted by the researcher and asked to nominate a representative who, they believed, had in-depth knowledge of the case organisation's operation and could represent the views of his/her own organisation (Table 4.3). Fifteen stakeholder representatives were nominated by various stakeholder organisations for the interviews. By the end of the study, a total of 32 key informants had been selected for the study (Table 4.3).

4.3.3.1.2 Conducting the interviews

Interviewing began on 20th May 2004 once the list of key informants had been finalised. Prior to each interview, the selected informants were contacted by the researcher. A meeting was then arranged to brief them on the purpose of the study, arrange a time for each interview and to build rapport (Fontana & Frey, 2000). Each informant was then provided with a copy of the broad questions in the data collection protocol and permission was obtained to tape the interview (Patton, 2002). The logic of the questioning was tailored to meet specific groups and individual situations (King, 2004). Interview questions for key informant who were not members of the case organisation were made

general (Table 4:4) to allow the informants to feel comfortable about expressing their opinions on the operation of the case organisation. Patton (2002) emphasised the need to frame interview questions in ways that will ensure that informants are relaxed throughout an interview.

Table 4:4. Broad interview questions for key informants who were not members of the case organisation

-
1. What do you know about how the case organisation operates with reference to:
 - a. Stakeholder participation in extension programme planning, implementation and evaluation?
 - b. Accountability to government, farmers and other stakeholder?
 - c. Institutional capacity building for effective extension programme implementation?
 - d. Resource mobilisation for effective extension programme implementation?
 2. What factors do you believe are important in the way the case organisation operates
 3. Why do you think this way?
-

At the start of each interview, the key informant was given a brief overview of the research objectives and an assurance that his/her responses to the interview questions would remain confidential. This is important to prevent respondents from withholding information that may be important to the research (Foddy, 1996; Patton, 2002). An audio tape was placed at a suitable distance from the key informant to ensure that the interview was recorded. No informant refused the use of the tape recorder in the interview. Moreover, some notes were taken as back-up to the recorder in case of any recording problems. Informants were asked to verbally describe their experiences of the phenomenon. Interviewees were allowed to talk at length (long answers) so that the researcher could gain an understanding of what the informants said, and the context from which they were speaking. Active listening was used by the researcher in the interview process (Gottlieb, 1998; Legard et al., 2003).

Probing questions (Legard et al., 2003; King, 2004) were used to investigate the broad topic areas in more depth. As the researcher listened to the informants, notes were made on key points that needed further investigation. These were then asked about and explored as the interview progressed. Clarifying or confirmatory questions (Legard et al., 2003; King, 2004) were important for ensuring that the researcher understood the meaning of the information the key informant was conveying. At the end of each

interview, the researcher thanked the informant for the time given and the information provided. An interview took between 1-2 hours within the time constraints of each key-informant. After each interview, the results were summarised. These summaries were sent back to the key informants for verification and correction.

Some of the key informants were interviewed twice because there was a need for further information. Those who were interviewed twice include: the past and present directors, a field staff member and a supervisor of the case organisation, and the two NGOs' representatives (Table 4:3). For these informants, summaries of their transcribed interviews were sent to them along with a list of follow-up questions that the researcher wanted to cover. The informants were asked to verify that the summaries of the previous interviews were correct, and that the researcher had not misinterpreted what they had said. Where data had been misinterpreted, these errors were corrected. The informants were then interviewed for a second time. In all, 38 interviews were conducted during the study (Table 4:3).

4.3.3.2 Documents

King (2004) pointed out that interviews alone may not be enough to ensure accuracy in explaining organisational processes. Documents can provide useful additional information to interviews in identifying aspects of the phenomenon under investigation (Forster, 1994; Yin, 2003). Documents provide a rich source of insight into organisational behaviour because they represent one of the major by-products of how organisations operate (Forster, 1994). In line with this understanding, secondary data (Yin, 2003) in the form of documents were collected from the case organisation as a means of triangulating the data from the interviews. With permission from the management of the organisation, informants were requested to supply documents to provide the researcher with a greater understanding of the organisation's operation. The documents supplied by informants were analysed for evidence that would support (or refute) what was being said in the interviews. Information from the documents was also useful for providing information about the context and for providing additional data about topics covered in the interviews. The documents collected by the researcher included annual reports, the district profile on agriculture, staff records, relevant letters, memoranda, district plans and project reports.

4.3.3.3 Observations

In order to attain first-hand knowledge of how the case organisation operates, the researcher made a number of field observations (Forster, 1994; Tellis, 1997). Field observations were also important because information from interviews and documents can be misinterpreted (Forster, 1994; Tellis, 1997), and as such, they provide another form of triangulation. Yin (2003) argued that observations form a useful supplement to other data collection techniques in case study research. The observations were made to capture important activities, behaviours and organisational characteristics that informants may not deem important or may not wish to discuss (Patton, 2002). Within the data collection period, and as circumstances and time allowed, some key observations were made on the following activities:

- two general staff meetings - to obtain evidence of the case organisation's decision-making processes and level of staff interaction;
- one staff training session - to obtain evidence of training processes and conditions;
- one multi-stakeholder evaluation workshop (farmers and DADU) on root and tuber crop improvement - to obtain evidence of the evaluation processes and level of interaction with stakeholders;
- two farmer-DADU extension demonstration plots - to obtain evidence of farmer participation in extension delivery through demonstrations;
- two farmer-extension group meetings - to obtain evidence of the level of farmer participation in extension activities;
- one week at the information centre - to obtain evidence of the level of extension delivery through the centre.

No structured data collection protocol was used to record the researcher's field observations but instead, detailed field notes were taken about the relevant activities that were being observed. The five-month long stay with the case organisation and the low-key approach used to observe various activities reduced any influence that the researcher might have had on the activities observed (Hoepfl, 1997).

4.3.4 Data analysis

Qualitative data analysis is defined as *working with data, organising them, breaking them into manageable units, synthesising them, searching for patterns, discovering what is important and what is to be learned, and deciding what you will tell others* (Bogdan & Biklen, 1998, p. 157). For the data analysis, information was drawn from all the interviews and the supporting documents and observations to present a view of the factors that are relevant to the success of the case organisation rather than separating the data by group of informants (case organisation, farmers, and other stakeholders).

After a field visit, or interview, the field notes were typed up and/or the interviews were transcribed verbatim as suggested in the literature (Miles and Huberman, 1994; McLellan et al., 2003). The researcher transcribed 80% of the interviews and the other 20% were completed by a research assistant, with the latter being checked for accuracy, and any errors corrected. McLellan et al. (2003) has emphasised the need for re-checking transcripts, especially for punctuation, so as not to change the intent or emphasis of an interviewee's response or comment in a qualitative data analysis.

As is suggested in the literature (Hartley (2004), data processing and analysis started straight after the field work has been completed. The typed field notes and transcripts were read through carefully to check for consistency. Some few inconsistencies were identified, and as is suggested by Hartley (2004) the draft reports were sent to the respective key-informants for review and correction. This was to ensure that all information relevant to the description of the phenomenon under investigation was captured and/or corrected to represent the views of the informants correctly. For in-depth data analysis, the researcher used a data analysis process similar to that advocated by Carney (1990) (Figure 4.3) with some modifications. This is described in the following paragraphs.

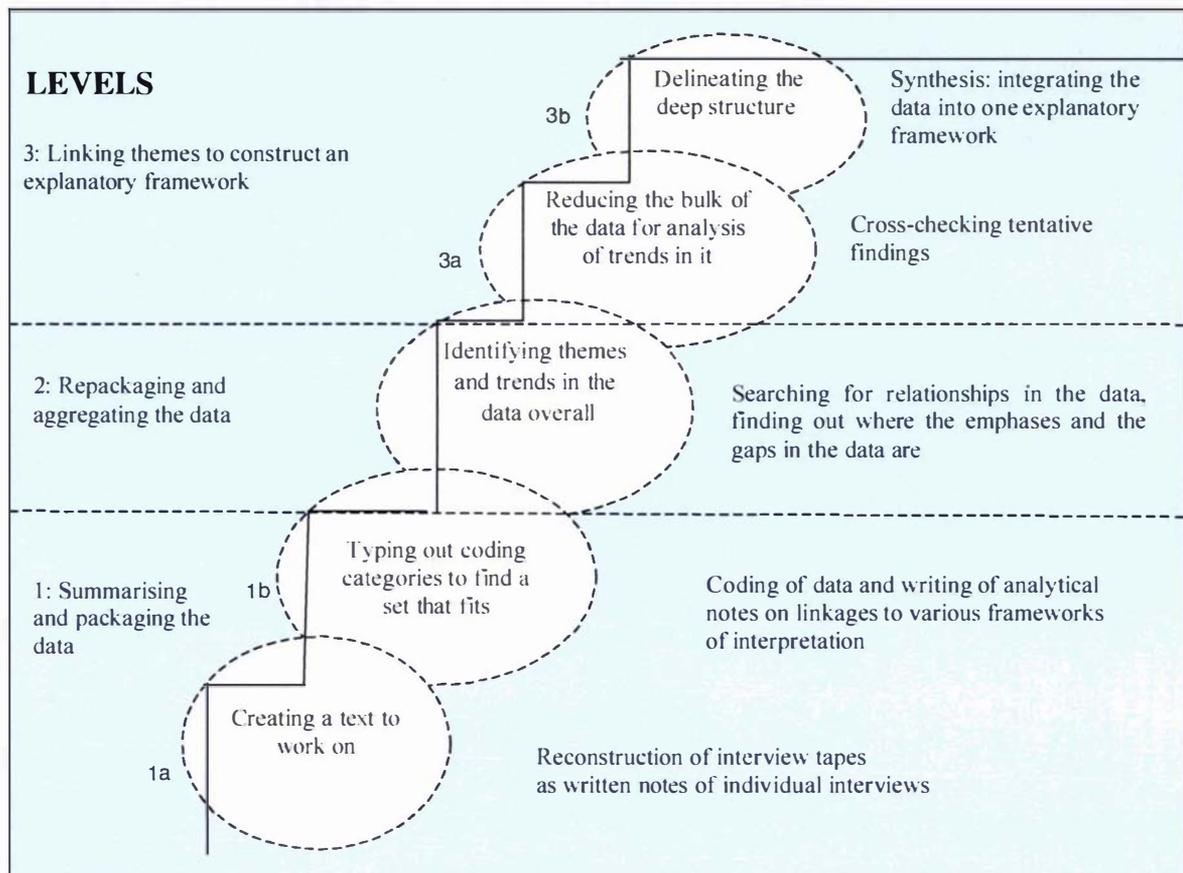


Figure 4.3. Ladder of analytical abstraction (Adapted from Carney, 1990)

After the corrections to the transcripts had been made, the researcher read through each transcript to obtain an overview of the data, a recommendation given by Strauss and Corbin (1994). Once this was completed, a description of the content of the transcript was written in text form as suggested by Carney (1990). This process allowed the researcher to identify the main concepts and themes relevant to the research from within each transcript. The researcher used his understanding of the literature to help identify the relevant concepts and themes. This first step in the data analysis process has been described by Carney (1990) as summarising and packaging the data.

After the first step, each transcript was entered into the qualitative data analysis software package NVivo (Qualitative Solutions & Research Pty. Ltd., 1999) so that the data could be coded. The researcher started a coding process with one transcript. This was read through and analysed line-by-line to identify the themes (codes) and link them to the data. Dey (1193) described this process as the *classification* of the data. The researcher did several iterations of this classification process by re-reading the text and developing more detailed codes within codes while highlighting the quotes and keeping track of line

numbers that were relevant to the codes. To ensure the researcher was sensitised to the data, the literature review was read at regular intervals throughout the analysis phase. After this process, initial useful major themes (categories) were generated by further re-examining and linking the codes to each other. Carney (1990) called this latter process *summarising and packaging the data or typing out coding categories to find a set that fits*. Marshall and Rossman (1999) referred to these categories as *analyst-constructed typologies or concepts* created by the researcher.

The NVivo software enabled the researcher to organise all the transcripts (data) into one interconnected database. This facilitated the data analysis process by allowing the researcher to aggregate data on common themes, compare data from different sources, and link data to sources and codes simultaneously – without having to go through the drudgery of a manual process of analysing and linking individual transcripts. However, the NVivo software was used in this study only to organise the research data for analysis. Thus, the researcher had to define the themes (codes) using definitions from the literature. Where definitions were not available in the literature, the researcher developed his own definitions. The definitions that were developed from the first transcript were used for subsequent coding from other transcripts, a view supported in the literature (Dey, 1993; Miles & Huberman, 1994).

After the initial summarising and packaging of the data, the researcher re-analysed the transcripts to re-define and refine categories and sub-categories within the data, a process Carney (1990) described as *repackaging and aggregating the data*. Dey (1993: 129) calls this process *splitting and splicing*, that is, subdividing some categories and merging others. The researcher then followed this by searching for relationships, preciseness and gaps in the various categories of data. To achieve this, he used his understanding of the literature, the context of the case organisation and views from experts (the thesis supervisors) to conduct a thematic analysis of a cross-section of the transcripts through several discussions and iterations. From this, common categories to those identified earlier by the researcher were confirmed, others were renamed and new ones were identified.

The categories that were identified were further re-examined, synthesised and linked into a single explanatory framework by the researcher – a recommendation made by Carney

(1990). Here, the researcher reflected on the themes (categories) based on the theoretical framework that was developed in Chapter 3 to ascertain whether or not there was agreement or conflict. Carney describes this latter process as *delineating the deep structure*, to synthesise the data into one final explanatory framework. Based upon this reflection the researcher was able to formulate relevant theoretical recommendations. However, in case study research, the usefulness of theoretical recommendations depends on the quality of the methods used (Yin, 2003). The quality concern in this case study is highlighted in the following section.

4.4 Quality of case study research

A major theoretical concern in qualitative case study research is ensuring the overall quality of the research (Yin, 2003; Cepeda & Martin, 2005). As in all research, to ensure the quality of this research, consideration was given to construct validity, internal validity, external validity, and reliability (Yin). The study followed the suggestions provided by Yin for ensuring the quality of research. Construct validity is the need to establish the correct operational measures for the concepts being studied (Yin). To improve construct validity in this research, multiple sources of evidence (data triangulation) were used as described in Section 4.4.2. When performing data triangulation the researcher used multiple data sources (interviews, documents, observations and different stakeholders) in the study (Johnson, 1997). Key informants were provided with summaries of the interviews to improve the accuracy of case study data. Lincoln and Guba (1985) called this *member checking* – a process through which informants verify data and the interpretations. Also to improve construct validity, the data collection procedures were documented, and the data (tapes, notes, transcripts, summaries and documents) were kept to establish a chain of evidence (Yin, 2003). Finally, constructs were derived from the literature as much as possible, and were clearly defined.

Internal validity is concerned with whether or not empirical data in a case study provide information about the theoretical concept and for explaining relationships between the sub-concepts (Yin, 2003). To control internal validity an explanation-building analytic strategy (Tellis, 1997) was used – the analysis of the case study was carried out by building an explanation of the case by first providing a case description. This is followed

by an iterative process of formulating a theoretical statement (Tellis) to explain the how and why associated with the operations of the case organisation. The use of different types of data collection methods (e.g. interviews, documents and observations) also helped in improving internal validity in this research (Johnson, 1997). Johnson argued that when you combine two or more data collection methods you will have better evidence for explaining relationships in qualitative research data.

External validity is concerned with the generalisability of case study findings – establishing the basis on which case study findings can be transferred to other populations, settings and measurement variables (Yin, 2003). In this study external validity is important, but the generalisation is to theory rather than to populations (Winter, 2000; Yin, 2003). However, to ensure that theories generated from the study can provide lessons to others, important tactics were adopted: an attempt was made to understand the research setting; a detailed case and context description were provided; and a review of existing literature was conducted and compared with the findings. Yin argued that external validity could be achieved from theoretical relationships, and from these generalisations could be made with consideration to context, because there is no point in developing knowledge that cannot be applied to other situations. Transferability of theory can be improved if the context and link between the findings and the literature is known to others who show interest (Winter, 2000; Yin, 2003).

Reliability is concerned with the stability and consistency of the study over time – it is concerned with whether the data collection procedures can be repeated for the same or similar results by the researcher or others (Yin 2003; Cepeda & Martin, 2005). To improve reliability, a detailed case study protocol was developed for data collection (Yin). In addition, the data that were collected were put into a database (Yin) with the NVivo qualitative data analysis software and could be made available on request by others who may be interested. In Table 4:5, the tactics used by the researcher to ensure both validity and reliability of this study are summarised.

Table 4:5. Key tactics used in the study to minimise threat to validity and reliability**Construct validity**

- Used data triangulation (multiple sources of evidence)
- Had summaries of interviews, reviewed by some key informants
- Established chain of evidence
- Used construct from literature
- Defined constructs clearly

Internal validity

- Used explanation-building analytic strategy
- Used data triangulation (multiple sources of evidence)

External validity

- Had a five-month prolonged exposure with the case organisation to understand the research setting
- Provided a detailed description of the case and the context for better understanding the phenomenon
- Reviewed literature to give a theoretical framework

Reliability

- Developed and used case study protocol
- Developed a detailed database
- Described in detail the data collection and analysis procedures

4.5 Summary

In order to understand what factors determine the success of a district level extension organisation with a livelihood security focus, an embedded single-case study method was adopted. This was considered appropriate for an in-depth study of complex organisational processes. The units of analysis covered the broad area of extension of the organisation's operation in terms of participation, accountability, institutional capacity building and resource mobilisation. To select a case for this study, the determining criteria were that it was seen as: successful in terms of increased stakeholder participation and enhanced contribution to farmer household livelihood security; having staff that could articulate why the organisation was successful; having the majority of the staff - particularly senior staff - who had worked for the organisation from the date when the organisation was decentralised; and having good archival records of its extension activities.

The literature review was used to help develop a data collection protocol. Multiple sources of data collection were used – interviews (primary source), documents and observations. Participants for the study were selected from a broad area – within the case

organisation and outside - using a stratified sampling technique. The aim in the stratification process was to obtain information from both key informants at different levels of the organisation and different stakeholders.

The data analysis process involved coding data, searching for relationships, cross-checking for major themes and integrating the data into a common coherent explanatory model to answer the research questions. The computer programme NVivo was used to undertake the qualitative data analysis. The explanatory model (results) was then compared to the literature to identify differences and similarities. To ensure a high quality case study, several tactics were used to reduce threats to reliability and validity throughout the study. In the next chapter, the results from the study are described.

CHAPTER 5:**CASE DESCRIPTION AND CONTEXT****5.1 Introduction**

In the preceding chapter, it was argued that an important practice in case study research is the description of the case and the context so that the case study can be compared to other studies (Rousseau & Fried, 2001; Hartley, 2004). This chapter will begin with a detailed description of the case organisation. The context within which an organisation operates is important because it can support, facilitate, sustain or constrain the organisation (Fox-Wolfgramm et al., 1998). The context within which the case organisation operates will be described using the framework suggested by Peterson (1997). He identified five elements of the environment that could influence how an agricultural extension organisation in a developing country operates. These elements were the agroecological, political-economic, sociocultural, infrastructure and institutional. Therefore the environment in which the case organisation operates is described under these headings after the case description.

5.2 Description of the case organisation

In case study research, it is important to describe the case distinctly and in detail so that it can be compared to other cases, which may or may not have those characteristics of interest (Ragin, 1992). In this section, the relation of the case organisation to MoFA/DAES and the District Assembly is described. This is followed by a description of factors relating to resourcing. Finally, the relevant factors relating to the organisation's client base and extension delivery are described.

5.2.1 The organisational structure within which the case organisation operates

Extension services are directly influenced by government rural and agricultural development policies under which they operate (Peterson, 1997). The case organisation is a decentralised agricultural extension unit representing the Ministry of Food and Agricultural (MoFA) at the district level in Ghana (Figure 5:1). These extension units were decentralised in 1997. The case organisation functions under the umbrella of the Ministry of Food and Agriculture (MoFA) in Ghana (Figure 5:1). Its mission is to promote sustainable agriculture and agribusiness through research and technology

development, effective extension and other support services to farmers, fishermen, processors and traders for improved human livelihood (MoFA, 2002b).

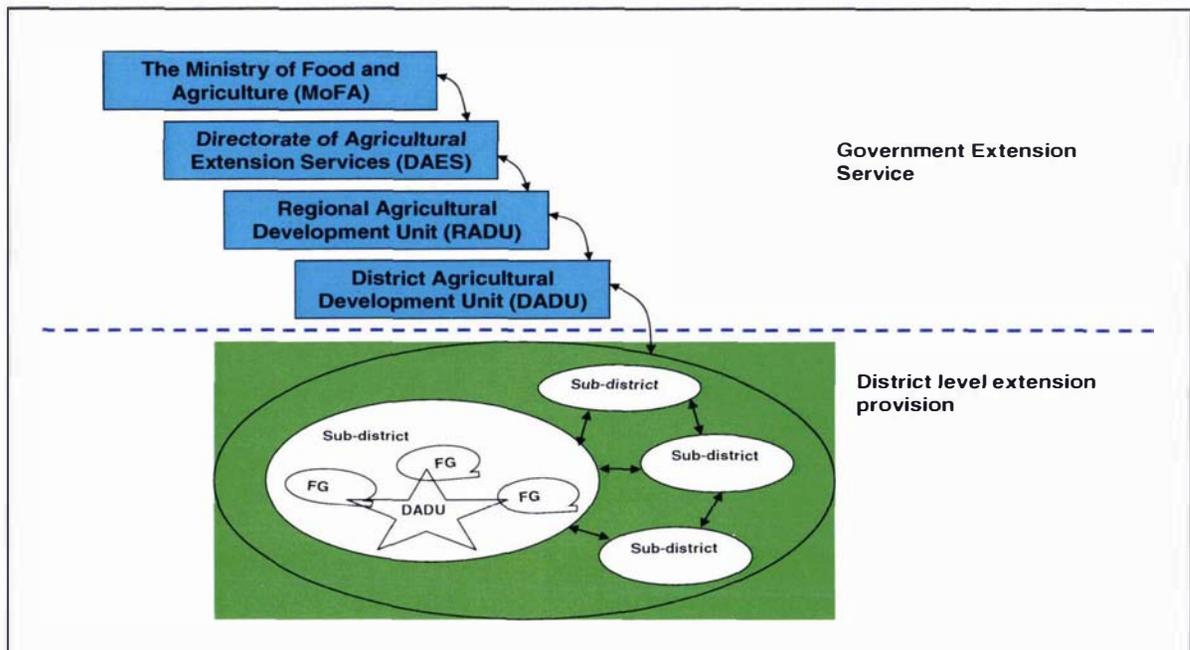


Figure 5:1 The case organisation as a government extension organisation working with farmers' groups (FG) at the district level

The MoFA is a nationwide organisation with 4,378 professional and technical staff (MoFA, 2004b). The Directorate of Agricultural Extension Services (DAES) is one of 13 national directorates of MoFA, and it is directly responsible for extension policy formulation and regulation in Ghana. It coordinates all extension policy issues from other directorates and works through the regional directors of agriculture to support extension at the district level. Its mission is to (1) address the specific needs of farmers, especially the rural poor, (2) reduce poverty, (3) ensure that farmers adopt environmentally sustainable methods, (4) increase agricultural productivity and (5) create an enabling environment for private sector participation in extension provision (MoFA 2002a). The directorate has 63 staff made up of 28 technical staff and 35 support staff (MoFA, 2002a) and is managed by a national director who reports directly to a national Chief Director of Agriculture, who in turn reports to a national Minister of Agriculture.

Under the DAES, there are 10 Regional Agricultural Development Units (RADU) (MoFA, 2002b). The Central Regional RADU has a staff strength of 44, comprising 23

technical staff and 21 support staff (MoFA, 2002a). The technical personnel are called “Regional Agricultural Development Officers” (RADOs), and they have specialities in extension, plant protection, crop production, animal production, fisheries, management information systems (MIS), monitoring and evaluation, women in agricultural development, agricultural engineering and human resource management. Each RADU is under the control of a Regional Director of Agriculture who reports directly to the DAES. The role of the RADU is to exercise regional oversight over District Agriculture Development Units (DADUs) in the region, and provide technical support to ensure that they have adequate human resource capacity. It also coordinates all agricultural programmes to ensure that they fall within national regulatory policies and standards for the maintenance of productivity and a sustainable agricultural environment (MoFA, 2002b).

Whereas MoFA at the national (i.e. DAES) and regional (i.e. RADU) levels focuses on policy planning, co-ordination, technical support, and monitoring and evaluation of general agricultural development in Ghana (MoFA, 1997, 2004a), the District Agricultural Development Units (DADUs), which operate at the district level, are responsible for administration and provision of extension services to the District Assemblies (MoFA, 2002a, 2004a). As such, the DADUs represent the MoFA under the District Assembly. The District Assembly in Ghana consists of the District Chief Executive and the Members of Parliament representing constituencies within the district - and two-thirds of the remaining members are directly elected by universal adult suffrage on a non-partisan basis, and the other third of the members are appointed by the President in consultation with chiefs and interest groups in the district (Republic of Ghana, 1992). There are 110 DADUs within the Ghanaian extension services (MoFA, 2002a, 2004a)

The District Assembly is responsible for the overall development of the District. The DADUs are considered to be part of the District Assembly, and members of the District’s development planning committee. They take leadership roles in the formulation and implementation of the districts’ agricultural development plans. They therefore work directly under the Regional Director of Agriculture, and also under the District Coordinating Director. Thus a DADU reports directly to both the Regional Director of Agriculture and the District Coordinating Director (Appendix 4).

The case organisation is under the Central Regional RADU which is located at Cape Coast, the regional capital of the Central Region. It is a District Agricultural Development Unit (DADU) which is located in the Assin District of the Central Region (Figure 5:2). The case organisation is responsible for the development and implementation of the district's agricultural programmes. It takes a leading role in planning and organising local development activities with farmer organisations in the sub-districts.

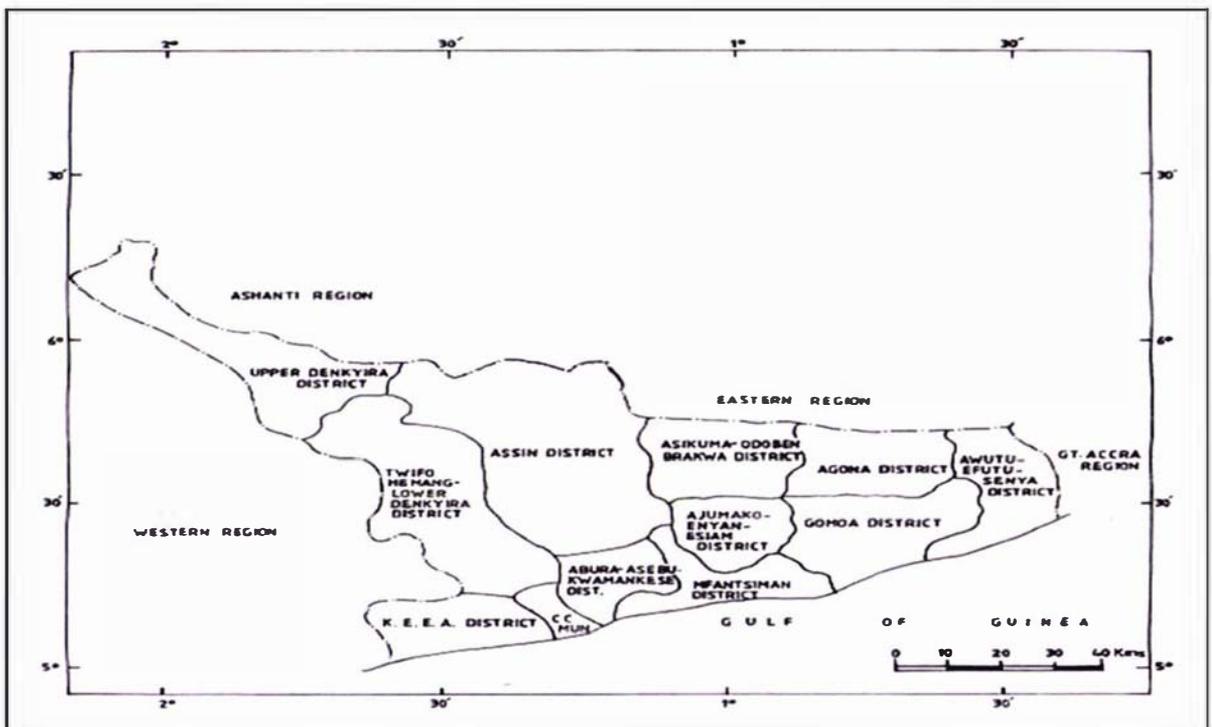


Figure 5:2. Map of the Central Region of Ghana Showing the Assin District

The farmer groups (FGs) are made up of farmers with a common interest, who undertake learning projects with the objective of addressing a particular need/problem and/or learning about particular techniques or technology. The case organisation has a broad mission that explicitly emphasises food security, agricultural raw material production, effective stakeholder collaboration, efficient extension delivery, and a sustainable natural environment (Assin DADU, 2003a). Also, the case organisation has stated objectives by which they seek to: provide improved technologies to farmers; provide access to reliable and relevant information for stakeholders; target their clients with advice and

technologies more efficiently; facilitate acquisition of inputs and other advisory services to enhance production and minimise postharvest losses; and network and collaborate with stakeholders to ensure efficient use of resources and sharing of information (Assin DADU, 2003a). The case organisation has a three-level chain of command of its technical staff – District Director of Agriculture (DDA) and assistant (highest level), District Agricultural Development Officers (DADOs) (supervisors), and Agricultural Extension Agents (AEAs) (field staff).

5.2.1.1 Factors relating to resourcing

Resource availability is considered as one of the critical issues that can influence the implementation process of decentralisation in developing countries because the decentralisation reform requires adequate resources - human, financial and physical - to succeed (Smith, 1997; World Bank, 2000a). In the following section the human resources, physical resources and funding situation for the case organisation will be described.

5.2.1.1.1 Human resource

The case organisation has 42 personnel comprising 31 technical and 11 support staff. At the time of data collection (2004) the number of technical staff at the post was 29. The other two staff were on long-term study leave. The support staff included clerks, an accountant, a driver, security personnel and a market enumerator. All the technical personnel were male and only three female staff were employed, in clerical and market enumeration positions.

There are three administrative levels – District Director of Agriculture (DDA) and assistant, District Agricultural Development Officers (DADOs) and Agricultural Extension Agents (AEAs) in the case organisation. For each group of personnel there are clearly defined roles, responsibilities and coordination mechanism spelt out in the *Handbook on Roles and Responsibilities of MoFA Staff under Decentralisation* (MoFA, 2004a).

The District Director of Agriculture

The District Director of Agriculture (DDA) is the manager of both the technical and support staff of the case organisation. He manages and co-ordinates agricultural extension activities within the District Assembly system, and is accountable to the District Assembly through the District Co-ordinating Director, and to the MoFA through the Regional Director of Agriculture. The DDA is supported by a Deputy DDA and a management team. Under the leadership of the DDA, they have the prerogative to initiate, plan and implement agricultural programmes that can meet the development goals of farmers and the district within the national agricultural policy guidelines. The responsibility of the DDA is thus broad (Appendix 1). He oversees the preparation of the district extension plan and ensures its implementation to support farm households in the district. The DDA in the case organisation is 48 years of age and has working experience of 19 years in MoFA, with the last 6 years as a District Director of Agriculture. He has a Bachelor of Science degree in Agriculture and a Diploma in Management.

The Deputy Director of Agriculture

The deputy DDA assists the DDA in the day-to-day administration of agricultural programmes in the district. He is responsible for field operations and provides technical support to field officers and supervisors. The deputy DDA is responsible for co-ordination and monitoring (Appendix 1) and other assignments that may be delegated by the director. The Deputy DDA in the case organisation is 33 years old and has worked with MoFA for the past 6 years as Deputy District Director of Agriculture. He is a holder of a Doctor of Veterinary Medicine (D.V.M.) degree.

The District Agriculture Development Officers

The District Agriculture Development Officers (DADOs) are the core management staff whose role is to ensure effective and efficient delivery of agricultural services to farmers. The DADOs are responsible for supervising and monitoring the work of field officers (Appendix 1). They assist field officers to conduct farmer needs assessments and to develop mini-plans. Also, as part of a management team, they assist the DDA in planning and reporting. The DADOs are the subject matter specialists in specific areas of agriculture and extension. There are eight DADOs in the case organisation and they are specialists in extension, fisheries, crops, information management systems, and livestock (Appendix 1). The DADOs in the Assin District are all males with age range between 41 and 57 years (average age of 48 years), and all of them have worked with the MoFA for 16 years or more. They have also all worked for at least three years in the position of

District Agricultural Development Officer. Six of the DADOs have Bachelor of Science degrees, and the other two have diplomas in their respective areas of speciality.

Agricultural Extension Agents

The Agricultural Extension Agents (AEAs) are field officers who are in direct contact with farmers on a day-to-day basis. They translate district extension plans into action at the field level in collaboration with farmers and other stakeholders. They assist farmers in the diagnosis of farm and farming-related problems and advise on solutions to such problems. Each AEA is designated to work with a cluster of villages within a certain geographical area called an *operational area*³. In terms of the policy of the MoFA they are expected to have a number of responsibilities (Appendix 1). There were 21 AEAs in the case organisation at the time of data collection (2004). Two of them were on study leave. All the AEAs are certificate holders with most (68%) of them having more than 10 years' field experience. Seventeen of them have college certificates in general agriculture and four have certificate in animal health. The four AEAs with certificates in animal health undertake specialised veterinary duties including clinical, surgical and meat inspection. The AEAs are all males with ages ranging from 25-50 years with an average age of 43 years.

5.2.1.1.2 Physical resources

The office of the case organisation is located at Assin Foso, the District capital (Figure 5:3). The office building, which comprises five offices and a large store room, is provided by the District Assembly. The District Assembly has also provided a one-room concrete building at the Assin Foso town which is used as an agricultural information centre for farmers in the district. The organisation has three good modern computers for information management and word processing, but lacks internet facilities and other relevant ICT systems (e.g. video, audio and public address systems). The organisation also has two four-wheel drive Nissan pickups that are in good working condition. The vehicles are used mainly by senior level management for supervisory and other official duties. All AEAs in the District have motor bikes for field work. Staff within the case

³An operational area in Ghana is an aggregation of a number of enumeration areas as defined by the Ghana Statistical Service

organisation reported that building space and computer facilities are limited, and the number of four-wheel drive vehicles is inadequate for their requirements (Appendix 2).

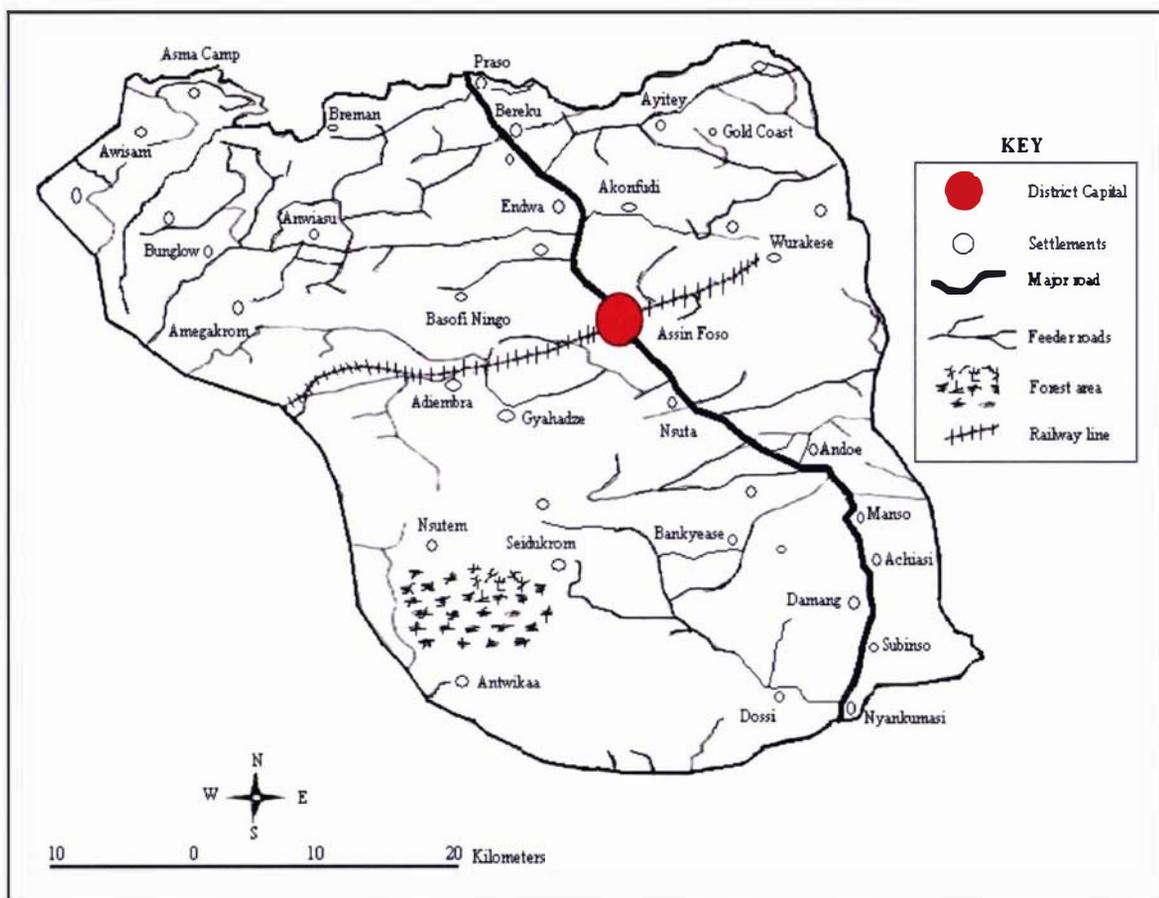


Figure 5:3. Map of Assin District showing the district capital and other major settlements

Funding

As a public-sector organisation, the case organisation is funded by central government. It receives budgetary support from the government through the MoFA. For example, the government of Ghana, through MoFA, provided a total amount of ₵197,383,182.00 (21,809.75 USD)⁴ in four instalments to support the case organisation's budget for 2003 (Assin DADU, 2003b). In addition, it generates extra funds from the for-fee specialised services they provide to farmers. For instance, in 2003 they were able to generate an amount of ₵9,502,000.00 (1049.92 USD) from the sale of vaccines, meat inspection, and other service charges.

⁴ Government cash inflow in the 2003. 1 USD = 9,050.23 GHC as of 30th April, 2006

5.2.1.2 Factors relating to the organisation's client base and extension delivery

The case organisation has estimated that there are 123,375 farmers in the Assin District, so each field staff member is expected to provide extension services to over 5,000 farmers (IAEA: 5,364 farmers) far above the national estimated figure of 1,500 (i.e. 1:1,500). This low extension agent to farmer ratio was identified as a major obstacle in terms of extension information dissemination in the district, according to a key informant:

...I think I always mention one main factor, that is, the staffing. In fact right now, it is Assin which forms ¼ (area) of the whole region, but it is lacking in staff. The staff is not enough. We are having about 23 AEAs (field staff) and 5 are in school so it's left with 18 on the ground. ...Most areas are not covered (DDA, personal communication May 21, 2004 para 263).

The low field staff to farmer ratio, a resourcing issue, limits the impact the case can make in the district. This situation is often also compounded by delays in the release of its mandatory funds from central government or, in some instances, the inability of the central government to provide funds for the full amount specified in the budget. This invariably limits the extension delivery of the case organisation in terms of the number of farmers to whom they are able to provide services, and the extension activities they are able to implement in their annual plan. In some instances they are unable to deliver on some of the activities in their annual plan and have to re-prioritise. The DDA stated that:

...We are in the middle of the year and when I look at the funds available, I can see that we cannot achieve our target 100 per cent. I am always working and trying to see if we can achieve between 60 to 65 per cent. In fact, we could have done better if our budget is met by MoFA, but always the budget is 'cut' and always the executives tell us to prioritise again (DDA, personal communication May 21, 2004 para 30).

In the following section, the external environment in which the case organisation operates is described.

5.3 The environment in which the case organisation operates

Peterson (1997) argued that for extension organisations to better manage their services, it is important for them to examine and understand the factors in the external environment that can influence their actions. Peterson classified these factors as agroecological, sociocultural, political-economic, infrastructural and institutional factors. In the following sections those factors that are relevant to the case organisation are described.

5.3.1 Agroecological factors

Climate, soil and vegetation

The agroecological conditions (e.g. temperature, rainfall, and soil types) of any location strongly influence extension operation, especially those decisions about the type of agricultural technologies and delivery approaches required to meet the needs of that particular agroecological environment (Peterson, 1997). The case organisation is in the Assin District of Ghana. The Assin District is located in the northern part of the Central Region of Ghana in West Africa (see Figure 5:2). It lies within longitudes 1° 05 East and 1° 25 West and latitudes 6° 05 North and 6° 40 South (Assin District profile, undated). The district provides a strategic road link between the Ashanti and Central Regions. The district capital, Assin Foso, is located 195kms from Accra, the national capital, and 75 kms from Cape Coast, the regional capital. The Assin District occupies an area of 2,375 km², which is about a quarter of the total area of the Central Region (Assin District profile, undated). Out of this area 148 km² is forest and 2,227 km² is arable land.

On average, the Assin District is 200m above sea level although there are higher and undulating areas such as Bosomadwe where the altitude is about 611m above sea level (Assin District profile, undated). Most areas in Ghana lie between 153 and 244 metres above sea level (EPA, 2003). The district is located within the moist tropical forest zone with annual temperatures varying from 26 °C in August to about 30 °C in March, and a relative humidity range of 60% - 70% annually (Assin District profile, undated). It has an annual rainfall range of 1,500 – 2,000mm. The rainfall pattern is bimodal and described as major (April – July) and minor (September – November) rainy seasons as is illustrated for the years 2000-2003 (Figure 5:4). The major rainy season usually starts from March, peaks in May-June and ends in July-August.

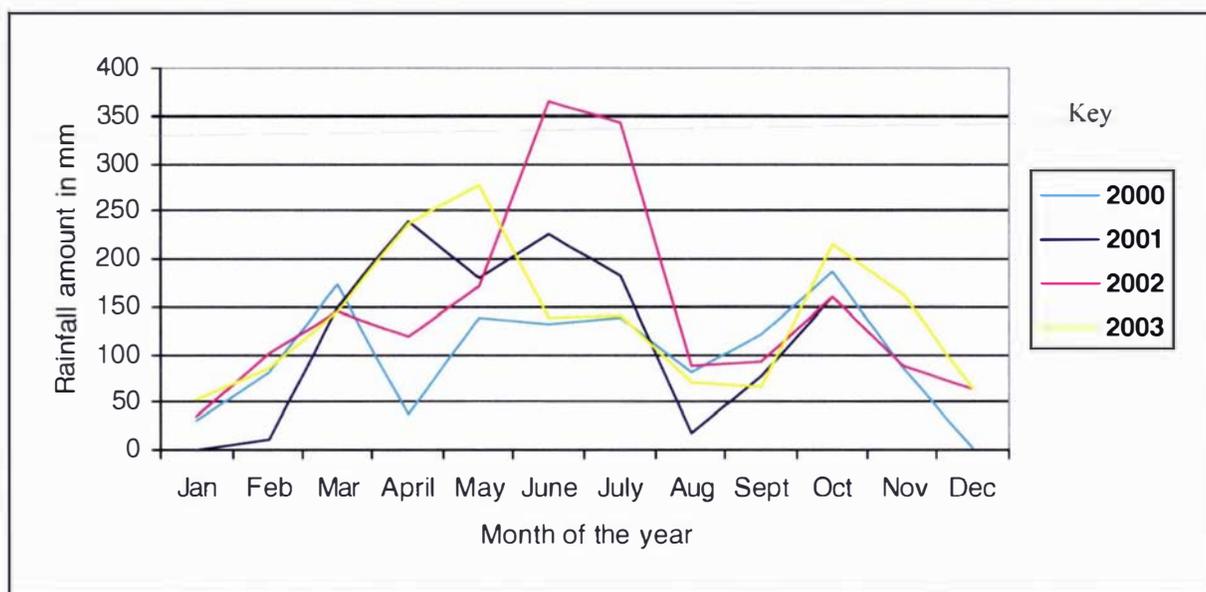


Figure 5:4. Rainfall distribution pattern in the Assin District (2000-2003)

The major rainy season is also the main farming season in the district during which farmers spend most of their time on cash crop (oil palm, cocoa citrus and plantain) production (DADU Annual Reports, 2000-2003, District profile, undated). The minor season is quite short, usually about two months. During this period, short duration crops such as maize and cowpeas are grown. From October to February there is a dry period. This is when dry North Easterly winds, the Harmattan, coming from the Sahara desert blow across the district (Dickson & Benneh, 1980). During this period, little farming activity occurs. The dissipating effects of the Harmattan, however, are greatly reduced due to the large expanse of forest in the district. Notwithstanding that, the forest area of Assin is being depleted due to bush fires which are rampant in the dry season, and also through indiscriminate tree felling for fuel or timber (Assin District profile, undated).

The soils in the district are derived from granites, grandiosities and schistose (Assin District profile, undated). About 60% of the area has land underlain by Birrimian Phyllites with muscovite and biotite as the major mica minerals, which is typical of nearly all the forest zones in Ghana (EPA, 2003). The soil in the district supports the cultivation of varying tree and arable crops of economic value. However, the organic matter content, buffering capacity and cation exchange capacity of soils in Ghana have generally been described as low, and consequently of low inherent fertility in terms of nitrogen and phosphorus (EPA, 2003). Concern is being expressed by the MoFA that soil degradation

and fertility decline are widespread issues in Ghana. This is as a result of the inability of farmers to adequately replace nutrients removed through crop harvest and lost through erosion (MOFA, 1998). The Environmental Protection Agency (EPA) of Ghana expressed major concern on the issue in a countrywide context that:

...Meeting the future food needs of Ghana, while reducing poverty and protecting the environment, would require halting and reversing soil degradation through restorative measures of soil, water, nutrient and crop management (EPA, 2003, p. 9).

The climatic environment in the Assin District allows for the growth of many deciduous forest and timber trees including *Odum*, *Wawa*, *Mahogany*, and bamboos. Therefore the district has important forest areas such as the Kakum and Assin Atandanso nature reserves (350 km²) which are major tourist sites in Ghana (Wildlife Division, 1996). It also has many small rivers, streams and swamps that support plant growth and farming in the area. The major rivers are Pra, Offin, Amissa and Ochi (Assin District profile, undated). Although agroecological factors could have great impacts on the operational performance of the case organisation, there are sociocultural factors that may also produce similar impacts. The sociocultural factors that could affect the operation of the case organisation are described in the following section.

5.3.2 The sociocultural factors

Sociocultural factors - which may include language differences, illiteracy, settlement patterns (dispersed or dense) - and other cultural elements - such as cultural diversity, land-use arrangements, type of farming (subsistence/commercial, sedentary/shifting cultivation) and division of labour - can all adversely affect the effectiveness of extension with respect to communication, type of improved technology/service and methods of reaching farmers (Peterson, 1997). As a social group, the Assin people believe that they are part of the Asante Kingdom in Ghana. But, like the Asantes, they are traditionally governed by chiefs and queen mothers usually from a specific family or royal clans dictated by tradition. Inheritance among the Assin people is matrilineal. That is, people born within the Assin tradition are considered to belong to the larger family of their

mothers. The children follow the lineage of their mothers and matrilineal uncles (District Co-ordinating Director, personal communication July 7, 2004).

The people of the Assin District generally speak the Assin/Akan language, but because of the large percentage of migrant farmers (49.1%), there is great cultural diversity and some settlements speak other languages. For example, the people in 'Ayitey' and 'Amegakrom' villages in the District (see Figure 5:3), are mainly migrants from Accra and the Volta Region, and they speak mainly the 'Ga' and 'Ewe' languages respectively. The district has 874 human settlements which are all rural except for two, Assin Foso and Assin Bereku which are major centres. The rural settlements are scattered over a wide area and Assin Foso is the administrative capital (Figure 5:3).

About 83% of the population live in villages with about 500 or fewer inhabitants (Ghana Statistical Services, 2002). The people of Assin are therefore generally rural dwellers, operating small-scale farms (1-4 ha) and these individuals tend to have a high illiteracy rate which is similar to most other parts of rural Ghana. The rural illiteracy rate in Ghana is estimated at 60.1 per cent (Oduro, 2003). About 80% of the people live in compound houses with an average household size of 4.3 people (Ghana Statistical Services, 2002). About half of the population depends on fuel wood and charcoal from the forest for their energy supply. The drinkable water supply in the district is considered a problem because some rural communities continue to use streams and rivers as both their main sources of drinking water and for domestic purposes. This makes them prone to water-borne diseases such as *Onchocerciasis* (river blindness), an insidious nonfatal filarial disease that can cause blindness in people (District profile document, undated). Other health problems in the area include HIV/AIDS and child malnutrition. HIV/AIDS is believed to be spreading at a rate of 3.4% per annum in Ghana (Baku, 2004) and is considered a major issue in the district, therefore HIV/AIDS awareness and prevention programmes are a feature of the district.

Farming in the Assin District is mainly crop-based because the forest environment which is characterised by high rainfall and limited rangeland for grass growth favours crops more than livestock production. The major farming enterprises in the Assin District are cocoa, oil palm, maize, cassava, citrus and rice. Vegetables of all kinds and yams are the

other crops that are grown in the district, but to a lesser extent. The Assin District is not noted for animal production, but there are some farmers who are involved in livestock (sheep and goats) and poultry production. Farming in the district is mainly at a subsistence level, although there are a few large-scale farmers who grow commercial plantation crops (cocoa, oil palm and citrus).

Mono-cropping is used in the district for plantation crops such as cocoa, oil palm and citrus. With food crop producers, many have evolved a complex and dynamic mixed-cropping techniques in response to the socioeconomic and ecological uncertainties of their environment, especially in response to rainfall failure and the incidence of diseases. Land preparation in the district is mainly by slash and burn and bush burning. In the district, there are no specific tasks in agriculture explicitly designated for men, women or children, as the normal pattern of division of labour. Members of the household seem to be executing all the tasks associated with farming, although the women and children tend to be more involved in the marketing and processing of farm produce. Other major factors in the external environment besides sociocultural factors, which can influence the actions of the case organisation, are political factors. In the following section, the relevant political factors that could affect extension provision in the Assin District are highlighted.

5.3.3 Political-economic factors

The economic conditions of farmers – the level of poverty, the proportions of resource-poor/rich or scale of farm holdings - determine the type of technologies to be transferred to farmers, and the extent (scale) of the extension services - especially in a policy environment where the target is to ensure equitable coverage of all categories of farmers (Peterson, 1997). The district economy in the Assin District is based on agriculture. Agriculture is the major occupation for the people of Assin, and the basis of their livelihood. The district now has 196,457 people and is growing at the rate of 2.9% per annum with migrants constituting about 49.1% of the population (District profile document, undated). In the district, about 63% of the labour force is employed full-time, with 51% of them being females. With the remaining labour force (37%), about half (52%) are farming part-time or as a secondary source of income.

There are clear distinctions between gender roles in a typical farm household or village in the Assin district. This is particularly reflected in the division of labour and the production systems farmed by the farm family. In the district, cash crops (e.g. cocoa, oil palm) are farmed predominantly by men whereas women are engaged with child rearing, household maintenance (including food preparation, gathering water and fuel), food crops production (mainly vegetables), agro-processing (e.g. cassava into gari, palm fruit into palm oil) and trading. The men usually clear land and the women and children plant, weed, process and store agricultural products with or without assistance from the men. Where the husband and wife operate separate farm plots, each is responsible for his or her own inputs and has control over outputs.

In the Assin district, rights to resources such as land, labour, technical information and credit is less determined by gender than by social norms and power relationships. Land is owned mainly by chiefs and clans. Most of the land cultivated by farmers in the Assin district is under the ultimate control of a paramount chief (known as the stool) and is allocated locally through a matrilineal line (abusua). However, an individual access to land resources is also dependant upon their political influence in the local society and perceived need. As such, individuals have rights to the use of farm land by virtue of membership in an abusua. However, an individual's ability to exercise a claim on such land is not as straight forward in practice. Such claims are often subject to dispute because the process requires negotiations which tend to be dependent upon the claimant's social networks and level of participation in both formal and informal political processes.

In the Assin district, farming is influenced by those who hold an office of social or political power in their village or abusua. Typical offices include lineage head (abusuapanyin), chief's spokesman (okyeame), lineage elder or subchief. These are not formal government positions but they have considerable influence on who uses land for farming purposes and the number and type of development interventions that occur in the community. The political structure has created some problems for immigrants who do not have matrilineal links to the local population. Farm families that have migrated into the district, and these comprise almost half of the population in the Assin district, have to negotiate with lineage heads, subchiefs and sometimes the paramount chief for access to farm land.

The land tenure arrangements for migrant farmers (or tenant farmers), are mostly on a share-cropping basis, although there are some leasehold arrangements. There are two types of share-cropping tenancy arrangements in the Assin District, the *Abonu* and the *Abosa* arrangement. Under the *Abonu* arrangement, the land is rented to the tenant and at the end of the harvest, the produce is shared equally amongst the landlord and the tenant. In the *Abosa*, the produce is divided into three parts and the landlord takes one part. The *Abonu* is practised more in areas where land is relatively scarce. These land tenure systems were described as a disincentive to people who need land to farm because they distort the incomes of tenant farmers.

The reason why it (land tenure) is a problem is that when you sit down to check about the input the producer has put into it before getting his product - and then let's say one third of the whole thing is going to the land owner, you will realise that he will not have much profit (AEA 2, personal communication May 17, 2004 para 116).

The large area of arable land (94% of the total land area), fertile soil and favourable environmental conditions in the Assin District, have led to an influx of migrant farmers into the Assin District. The high immigrant population in the district has implications for land acquisition and the scale of farming. Tenancy costs are high, especially for migrant farmers who want to rent land and invest in large-scale production and land improvement. Farming is therefore generally on a small scale and undertaken by resource-poor farmers on farms of between 1.0 and 4.0 hectares. Farmers are scattered across the whole district with several portions of their farmland located at different geographic locations. These two conditions have been attributed to unfavourable land ownership arrangements, especially for migrants, and the need to reduce risk or to make use of the special characteristics of certain land types.

Farm family cash incomes are generally low in the district because the major source of income to households is limited to seasonal crop farming, which accounts for about 52% of all income for the district. An income-expenditure analysis (District profile document, undated) of the area shows that the people have diverse needs (e.g. agricultural, non-farm

business, health) and spend all their income each month (¢73,983: \$8.14)⁵ with food taking a greater proportion (63.4%) of the expenditure. The annual per capita income of the people (\approx \$117) is far below the national figure of \$480. Analysis of the income distribution of the district indicates that almost half (47.6%) of the population earns less than 12% of the total per capita income (District profile document, undated). Thus, financial mobilisation from the people for development and business expansion is a major problem because people are unable to save for investment in new initiatives (District profile document, undated).

Assessing the poverty situation in the district using the World Bank poverty line to represent those earning two-thirds ($\frac{2}{3}$) or less, of the district's average annual income of ¢2,500,000 (\$275.10) (less than \$1 a day) the district is said to have a poverty level of 32% (Assin District profile, undated), similar to the national figure of 31% (World Bank, 2001; UNDP, 2001; FAO, 2003b). To this extent, the characteristics of the Assin District as described above are similar to those of other rural districts in Ghana, and those in other developing countries (FAO, 2003b). According to the FAO (2003b), conditions in least developed countries include persistently high levels of poverty, largely rural-based populations, heavy dependence on agriculture and significant numbers of people who remain undernourished, all of which reflects the situation in the Assin District. However, evidence from key informants including farmers, staff from the case organisation, and stakeholder organisations in the Assin District indicated that living conditions in the district are improving, due not only to agricultural productivity as illustrated in Figures 5:4 and 5:5, but also to increases in incomes and the quality of life of the people. A key informant stated that:

...I set myself as an example, I have never farmed to get one million cedis (\$110) at a time before, but because of their (DADU) teachings, today, I can see one million. ...if you had been to our village about five years ago, and then you come there today –you will see a lot of changes in our behaviour, health...our interactions and even in our “pockets”. Any time you come

⁵ USA dollars at exchange rate of 0.0001100 to 1 Ghanaian Cedi calculated on 12 August, 2005

there now, you will see there is strength in us. We are now better off
(Farmer 6, personal communication May 14, 2004 paras 203, 223).

For the past 4 years (2000-2003), the Assin District has witnessed a gradual increase in production of the major staple crops in terms of acreage and yields (Figures 5:5 and 5:6), except in the yields of cassava, which decreased between 2001 and 2003 due to a lack of markets for the produce in 2001.

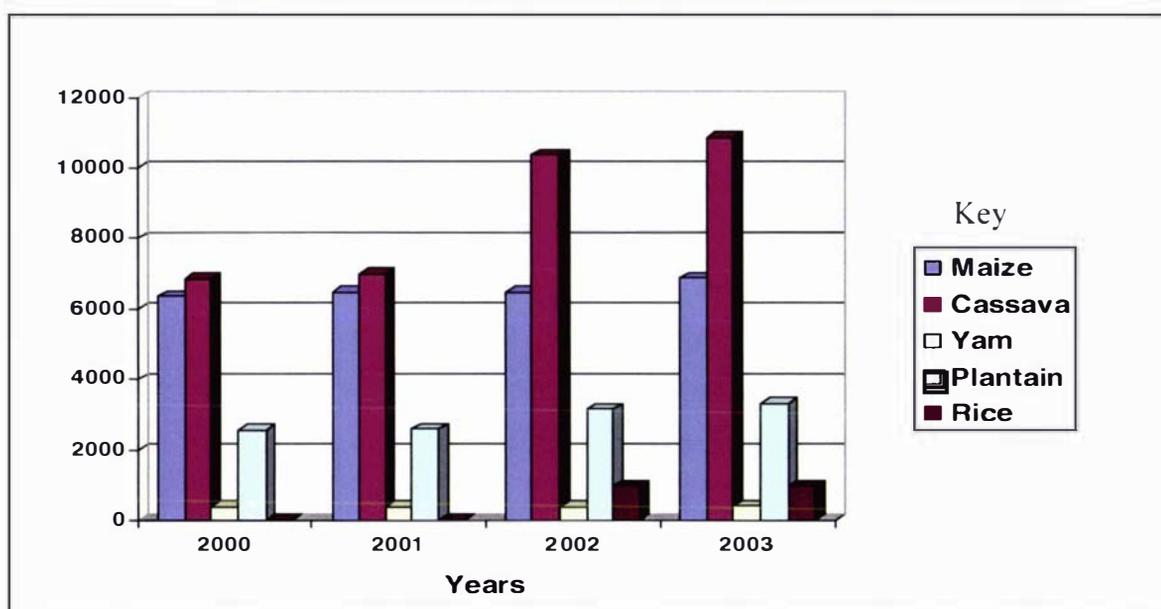


Figure 5:5. Cropped area of major food crops in the Assin District (in Ha)

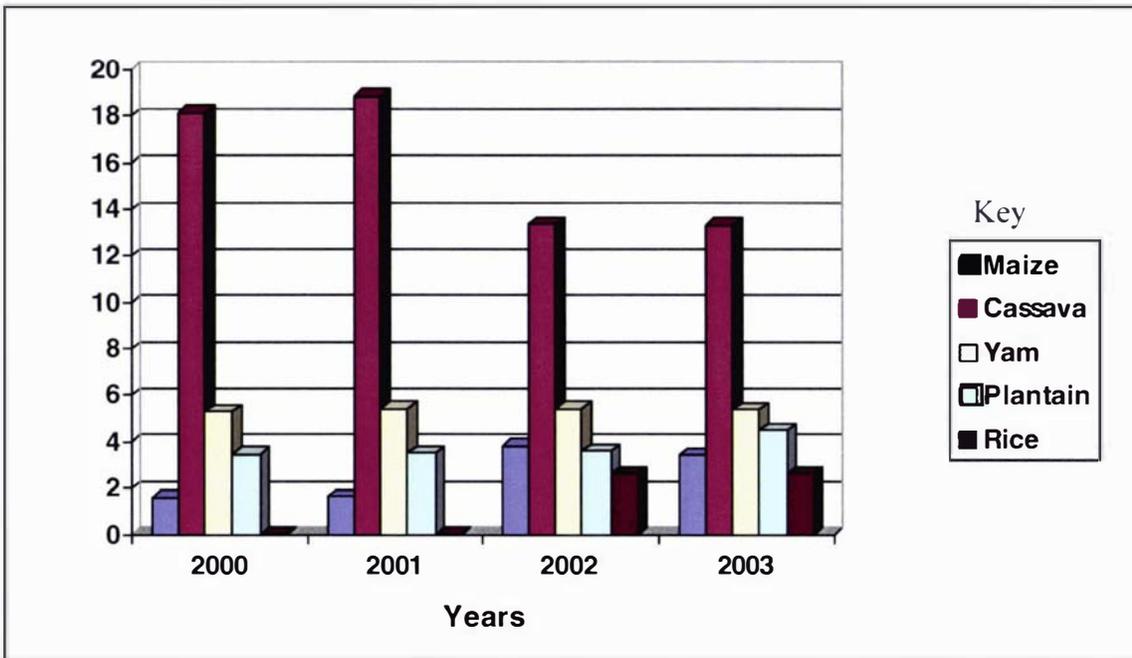


Figure 5:6. Yields of major food crops in the Assin District (in metric tonnes /ha)

Major observations made by the researcher indicated that farmers in the district are being provided with a wide range of agricultural technologies (e.g. improved crop varieties, soil and water conservation techniques, improved livestock housing and nutrition practices, in-land fish farming techniques, integrated agricultural pest control measures, agro-processing) and other extension information (e.g. HIV/AIDS awareness and prevention measures, child nutrition improvement measures, provision of market information). Farmers have tried and adopted these technologies to varying degrees. There are also a growing number of co-operative farmer-based organisations with improved institutional capacity, and a business orientation and bargaining power for services such as production inputs, market and extension. Additionally, collaboration and support from NGOs and other support institutions (e.g. District Assembly, banks) for extension in the district are growing. The farmers interviewed believe that these factors have contributed to improving their socioeconomic conditions in the district. Apart from political-economic factors, infrastructural factors could also have major impacts on how the case organisation operates. In the following section, the relevant infrastructural factors that could affect extension provision in the Assin District are highlighted.

5.3.4 Infrastructural factors

Infrastructure, particularly the conditions of transport, market and communication facilities, affects both farmers and extension. The capacity to move people, inputs, and produce and to send and receive information influences extension activities and capacity (Peterson, 1997). The district has one major tarred road that runs the full length to link the Central Region (Cape Coast) to the Ashanti Region (Kumasi). Another 239.5km of feeder roads link the main road to towns and villages in the district (District profile, undated). Most of these feeder roads need constant maintenance because they are not tarred and become muddy and impassable to motorists, especially during the rainy seasons. Consequently, it is difficult to transport people and agricultural goods particularly during the wet season. In addition, transport conditions vary substantially from the very low to infrequent services to the villages. Commercial vehicles, which are mostly based in settlements along the highway linking the cities of Cape Coast and Kumasi, visit the villages only on market days. The district has three major daily markets located at the Foso, Nsuta and Damang and five-weekly open-markets at Foso, Nyankumasi, Praso, Bunglow and Andoe (see Figure 5:3). A railway line which links the cities of Accra and Takoradi also passes through some major towns in the district.

The district has some community infrastructure including electricity, fire fighting services, healthcare, a postal service, telecommunication services, educational facilities and a potable water supply (Ghana Statistical Services, 2002). The district is connected to the national electricity and water lines, but this is accessible only at the district capital and major towns along the major road that links the Central Region and the Ashanti Region. Telecommunication services in the district are poor, only the district capital, Assin Foso, has limited access to telecommunication infrastructure. However, all settlements in the district can receive FM radio and television signals from other parts of the country. The local infrastructure is inadequate vis-à-vis the population (District profile document, undated). The final external environment factors that can influence the operation of an extension organisation are institutional factors. In the following section, the relevant institutional factors that can affect the operation of the case organisation are described.

5.3.5 Institutional factors

Peterson (1997) described institutional factors affecting the operation of extension services as including institutional arrangements or the presence of organisations, both private and public, that support agriculture and thus facilitate the role of the extension organisation. The important elements in the institutional context for extension include agricultural research organisations that are involved in technology generation and transfer, educational organisations that train extension agents and organisations or systems that support farmers (e.g. input suppliers, money lenders/banks, processors and buyers).

Access to services in the district is poor. At the district level, there are no agricultural research and training organisations. The case organisation, however, organises its own in-service training for field staff and liaises with the regional RADOs and the Human Resource Development and Management Directorate of MoFA for the training of their subject matter specialists (i.e. DADOs) and manager (DDA). The organisation also depends on the Research-Extension-Liaison-Committee (RELC) through the RADO for their research information. However, the Assin Foso is close to Cape Coast (75km) and Kumasi (180km) where there are agricultural research and educational institutions (Crop Research Institute, Kwame Nkrumah University of Science and Technology and University of Cape Coast).

The banking sector is an important service sector that contributes to agricultural development in the Assin District. The district branches of the Ghana Commercial Bank, Agricultural Development Banks and four community banks, the Assinman Rural Bank, Akoti Rural Bank, Nyankumasi Ahenkro and Ahenkro Rural Bank are located at different parts of the district (District profile, undated). The banks offer financial advice and credit facilities to farmers and small-scale entrepreneurs. However, access to credit for farmers is considered a major constraint in the district, because of farmers' lack of collateral, failure to repay loans and inability to articulate their credit needs. The administrative difficulty of working with large numbers of farmers in a geographically dispersed area has also limited the banks' willingness to finance farming in the district.

There are several farmer-based organisations, NGOs and input supply shops in the district. Moreover, there are decentralised departments of the District Assembly who work in conjunction with the case organisation in district development planning, and in different areas. The departments include the District Administration, Education, Youth and Sports, Social Welfare and Community Development, Health, Roads and Transport, Works, Trade and Industry, Disaster Prevention, Health, Finance, Physical Planning and National Resource Conservation.

The industrial sector is the least developed in the district. It is 31% agro-based and employs around 4.6% of the labour force in the district (District profile, undated). Post-harvest processing in the district is limited, except for the wood processing industry which operates on a large scale. The limited opportunity for further processing is considered as a major issue in the district. The majority of agricultural products in Ghana are highly perishable and enhancing the storage life of these products through processing serves as a means of securing food for the lean season as well as supporting household incomes (EPA, 2003). In the Assin District, as in any rural community in Ghana, agro-processing is constrained by inadequate agro-processing industries (EPA, 2003). Apart from the agro-based industries, the other industries in the district are small to medium scale, employing between 4-50 people (District profile, undated).

5.4 Summary

The agricultural extension organisation operates in a context or an environment that influences its organisation, form, and content and how it operates. The organisational and environmental context of the case organisation exhibits a wide range of factors that may have consequences for the way in which the organisation operates. It is part of a national extension organisation in a developing country, Ghana, and is a district extension organisation which has been decentralised for nine years. The case is administratively decentralised, but this can be described as deconcentration because it has only operational responsibilities to design and implement extension programmes together with the local people, under supervision by the MoFA at the regional and national levels.

The organisation has highly qualified, mature (mostly 30-45 years old), and experienced management and field staff. However, the organisation has limited physical

infrastructure, and funding from government is inadequate and uncertain. Also, according to policy, the organisation is expected to provide extension services to address the needs of farmers - especially the poor - to increase agricultural raw material production and to ensure food security and a sustainable natural environment. The aim is to increase food security, reduce poverty and improve the livelihoods of farmers in the district. Thus, the organisation must service a large number of farmers over a large geographical area where the road network is poor. The agroecological environment is diverse, therefore there is a diversity of farming systems. Farmers in the district tend to be poor, illiterate, and farm small plots (≤ 4.0 ha). They practise mainly subsistence agriculture that is crop-based, and mixed-cropping systems.

Immigrant farmers are moving into the area because of relatively good agroecological conditions, and this has resulted in a dispersed settlement pattern and cultural diversity in the area. The extended family structure, combined with the cultural diversity and land tenure systems, presents a complex sociocultural system for the extension organisation to serve. The land tenure system limits large-scale agricultural production due to high tenancy costs. Moreover, the district has health problems including HIV/AIDS, child malnutrition and water-borne diseases. There is also limited infrastructure in terms of road network and transportation, telecommunication, electricity, potable water, credit facilities, input suppliers, markets and processing facilities. The district has farmer organisations, NGOs, some support organisations (e.g. banks, agro-industries, input shops) and several decentralised departments under the District Assembly (e.g. health, education). In the light of the contextual factors surrounding the case organisation, the next step is to describe the key operational factors contributing to the success of the organisation in this environment.

CHAPTER 6: FACTORS CONTRIBUTING TO THE SUCCESS OF DADU

6.1 Introduction

The focus of this chapter is on the identification and description of the factors that influence the performance of a successful district level agricultural extension provider that is operating in a relatively new decentralised context of agricultural extension and rural development in Ghana. The case organisation (DADU) is one that has been assessed by those in Ghana as being an example of a public extension organisation at the district level that has attained a level of success (relative to other DADUs in Ghana) in moving towards achieving the government mandate of improving the contribution that agriculture makes to farm household livelihood security. In this chapter the critical outcomes and processes that have contributed most significantly to the success of this district extension organisation are described.

In this chapter the critical outcomes and processes of this case organisation are presented in a logical sequence of *what* are important, and *why* and *how* they are achieved, rather than being driven by themes as presented in the literature review. It starts with a description of the agricultural extension approach that DADU adopted for service provision in the district. This is followed by a description of how the organisation has been able to operationalise its extension approach. First, the needs-based approach that has been adopted in extension provision in the case is described. Second, the means that the organisation uses to ensure effective management of its extension service delivery are also described. Finally, the methods used by the case personnel to coordinate the district extension system are described. In this chapter, the findings are presented mainly by hierarchy diagrams and flowcharts to show the linkages between the identified operational factors of the organisation. Tables and quotations are used to emphasise some important aspects of the findings.

6.2 Key factors of DADU's operation

DADU's success as a district level extension organisation is a function of its fundamental shift in focus from increasing on-farm agricultural production and productivity to improving the contribution agriculture makes to the livelihood security of farm households. This shift in focus is reflected in not only the outcomes it seeks to achieve

but also in the processes and manner in which the staff interact with farmers, the farming community and organisations in the district, and within DADU itself. In this results chapter those aspects of DADU that have emerged as being most significant in terms of explaining its success are described. The factors identified are very much interrelated and some have multiple purposes and roles in the operation of the organisation.

Prior to 1997, the focus of agricultural extension for DADU was on improving on-farm agricultural production and productivity in the district. The aim was to ensure the food security of farm households and improvement of cash crop production for industry and export. As a result of the adoption of the decentralisation policy by the Ministry of Food and Agriculture in Ghana, the focus of DADU is now on how it can improve the livelihood security of farm households through agriculture.

On-farm agricultural production is recognised as being but one of many interrelated elements that contribute to, and impact on, the livelihood security of farm households. The emphasis is on the farm-household and how agriculture's contribution to their livelihood security can be improved. DADU continues to work primarily with farmers involved in on-farm agricultural production systems. The difference, however, is that it also recognises that there are factors outside agricultural production systems and beyond the farm that impact on the contribution agriculture can make to the livelihood security of the farm household. Such factors include health, and nutrition, access to markets, infrastructure, and the further processing of agricultural produce. As such, DADU - as required by government policy - is operating with a more holistic livelihood focus in its provision of agricultural extension in the district. Three key means by which DADU has operationalised this approach have been identified in this study. (Figure 6:1). First, DADU adopts a needs-based approach to agricultural extension provision. Second, it ensures the effectiveness of its extension service delivery, and finally the organisation works to facilitate coordination of the district agricultural extension and rural development (AgE&RD) system of which it is a part (Figure 6:1). These three key means of operation by DADU are the focus of this chapter.

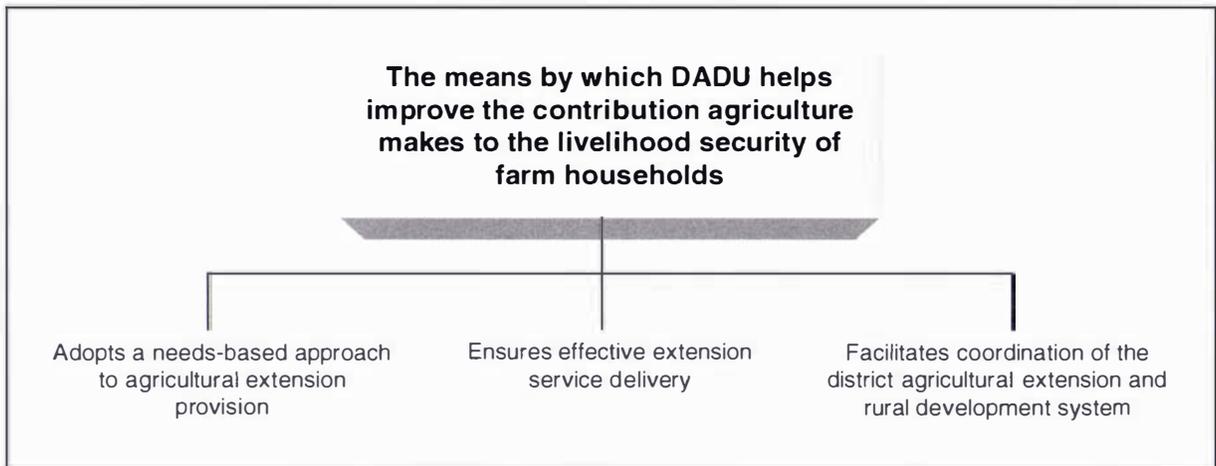


Figure 6:1. The means by which DADU helps improve the contribution agriculture makes to the livelihood security of farm households

6.3 Needs-based approach

DADU's needs-based approach to agricultural extension is an outcome of two inter-related aspects of its extension programme. DADU's extension programme is informed and shaped in response to an understanding of the factors that affect farm household livelihood security in the district. In addition, the extension programme is driven by key agricultural needs of farm households (Figure 6:2). These two aspects of DADU's extension programme are described in the following sections.

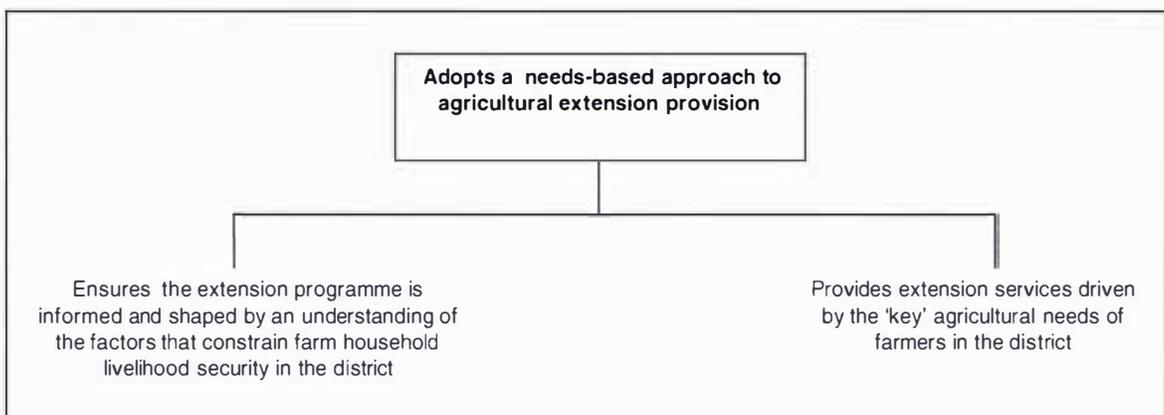


Figure 6:2. The means by which DADU adopts a needs-based approach to agricultural extension provision

6.3.1 Ensures that the extension programme is informed by other factors that affect farm household livelihood security

DADU has 23 field staff working with farming communities throughout the district and the organisation has links at different levels with other organisations in the AgE&RD system. This level of contact ensures that DADU has a good working knowledge of the factors that constrain the livelihood security of the farm households with which it works in the district. This understanding includes the broader context (e.g. agroecological, political, economical, sociocultural, infrastructural and institutional) within which the farm households exist.

By shifting their extension focus from agricultural production to livelihood security, the case organisation has expanded the boundary around the components of the farm system that it must focus on. Prior to 1997, the focus was on the agricultural production system. Now, with the focus on the contribution agriculture makes to livelihood security, the organisation considers other factors outside the agricultural production system that might influence the contribution that system makes to livelihood security. These may be on-farm factors or off-farm factors. On-farm factors might include the health of the labour force (HIV/AIDS and malnutrition). Off-farm factors might include the lack of infrastructure (market, finance, road network etc.), lack of input suppliers, and a lack of processing facilities. As such, rather than as it did in the past, focusing on the identification of factors that limit or enhance agricultural production, the case organisation is now also focusing on other factors outside the agricultural production system, both on-farm and off-farm, that influence the contribution agriculture makes to livelihood security. In other words, the case organisation has taken a more “holistic” approach to its extension provision.

To gain a more accurate and “holistic” understanding of the factors that influence the contribution agriculture makes to the livelihood security of farm households, DADU now obtains input from a broad cross-section of farmers and other stakeholders from within and outside the district. Not only does DADU obtain input from farmers and stakeholders within the agricultural sector, but it also seeks input from stakeholders in other sectors (e.g. health, forestry, community development and social welfare, education). The introduction of a livelihood security-focused extension approach thus requires cross-sector stakeholder participation. Figure 6:3 shows the stakeholder organisations with which the case organisation participates in order to improve the contribution agriculture makes to the livelihood security of farm households.

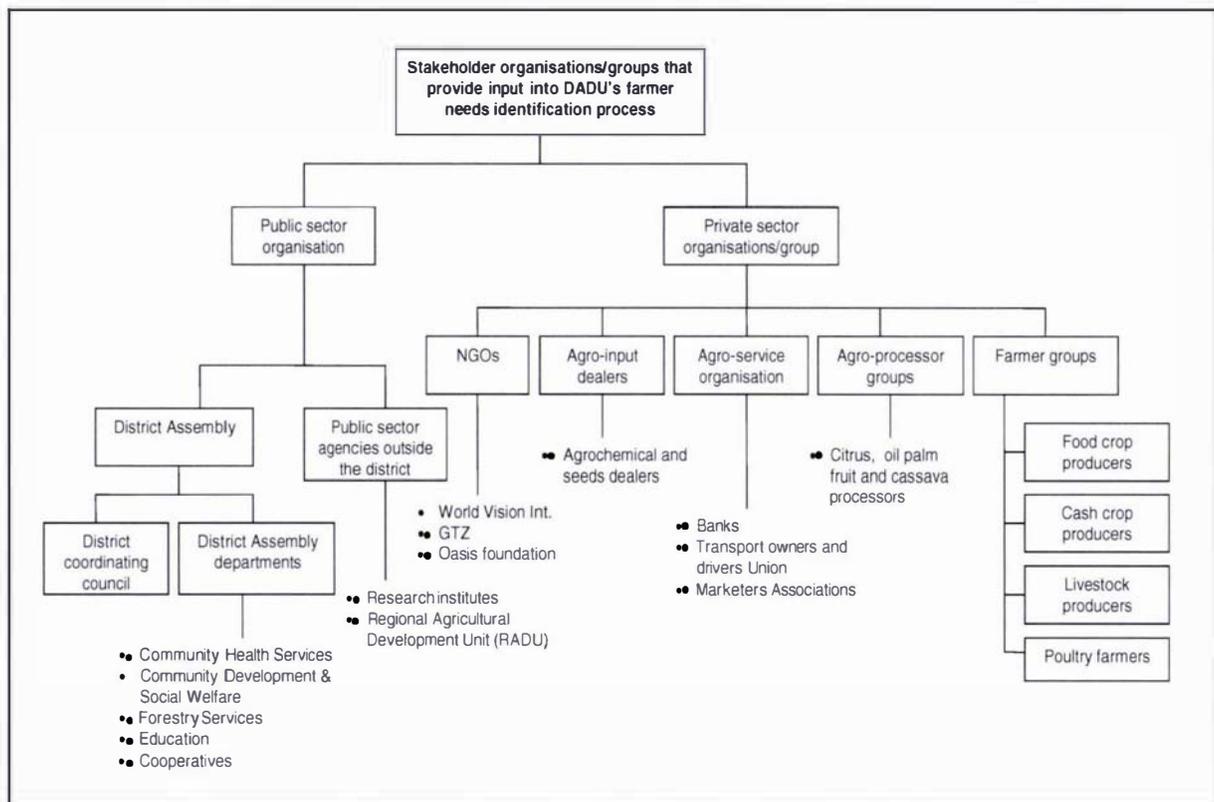


Figure 6.3. The major stakeholders DADU consults in the identification of farmer needs

The stakeholder organisations that DADU works with can be usefully separated into public and private sector organisations. The public sector organisations can likewise be separated into those from within the district that fall under the umbrella of the District Assembly and those that fall outside the district. The organisations outside the district with which the case organisation participates are the regional research institutes represented by the RELC, and the regional agricultural development unit which is responsible for monitoring the operation of DADUs. Within the District Assembly, there are the district coordinating council and the various district assembly departments (e.g. Forestry, Education and Community Health Services). The coordinating council is a unit of the District Assembly that facilitates the sharing of information and encourages cooperation among the departments in the district. The private sector organisations include: non-government organisations, agro-input dealers, agro-service organisations, agro-processor groups and farmer groups. The latter are enterprise-based groups (e.g. food crop producers, cash crops producers, livestock farmers and poultry farmers) which may be formal cooperatives or less formal discussion groups.

DADU has recognised that the richness of understanding needed to provide agricultural extension with a holistic livelihood focus requires the input of not only a broad cross-section of farmers throughout the district but also the input of those organisations working with farm households in the district AgE&RD system. The input of farmers and organisations in the AgE&RD system is gained by DADU on an ongoing basis through the networks that it fosters with the rural community and the district AgE&RD system. Regular discussion forums and the contact that DADU field staff have with farmers and the rural community as a result of their work and by living in the rural communities all contribute to these networks. Likewise, DADU fosters networks with the AgE&RD system through regular meetings and forums and through personal contact between staff. To help ensure the involvement of multiple stakeholders in its needs identification process, DADU compiles a database of the organisations that are either run by farmers or work with farmers in the district. DADU requires its field staff to maintain and update the database and this process is referred to by DADU as “listing”. The database contains the name of the organisation, what it does and key representatives. The understanding of farmer needs and circumstances that is drawn from all relevant stakeholders is what informs and shapes DADU’s activities in the field.

Significantly also, DADU annually organises a multi-sector stakeholder workshop in which DADU staff, along with farmer representatives and organisations from other sectors (Figure 6:3) in the AgE&RD system, come together to develop a general understanding of the livelihood security needs and circumstances of the district’s farm households. The multi-sector stakeholder workshop provides a means of drawing views from a wide range of individuals, organisations and sectors in the district’s AgE&RD system. DADU aims to gain these multiple perspectives so that its staff can better understand farm households’ circumstances and needs in the district. DADU has realised that its field staff can provide a wealth of information about farmer needs and as such, these staff need to be actively involved in the needs identification process. Essentially, DADU has recognised the importance of farmers’ and stakeholder organisations’ input into defining its extension focus.

6.3.2 Provides agricultural extension services driven by the needs of farm households

A critical element of DADU's significant shift in focus is their desire to help address the needs of farm households as they relate to the households' ability to improve the contribution agriculture makes to their own livelihood security. As such, their activities are directed not only towards improving and increasing on-farm productivity and production per se but also towards improving other factors (e.g. health) that tend to constrain agriculture, which is the major source of livelihood to farm households in the district.

DADU's extension programme is driven by an understanding of the key agricultural needs of farm households with which it works in the district. However, this does not mean that it does not include in its programme, extension projects developed at the regional or national level. It undertakes some projects promoted by the national and/or regional administration that reflect the needs of farm households in the district. The organisation believes that farmers can benefit most when extension programmes are driven by farmer needs - because farmers are most likely to address the key needs that matter most to their livelihoods. DADU defines these *key agricultural needs* as *those that directly or indirectly impact on the contribution that agriculture makes to the livelihood security of farm households*. These needs either impact on a high proportion of farm households throughout the district, (e.g. HIV/AIDS) or have a significant impact on a sub-district or particular sector of farm households with which DADU works (e.g. soil erosion, plantain diseases). Importantly, DADU attempts to understand these key agricultural needs in relation to the livelihood security of farm households. That is, DADU uses networks with the rural community and the organisations in the AgE&RD system to improve its understanding of the important agricultural needs impacting on farm household livelihoods. The multi-stakeholder workshops that DADU organise provide an important forum in which key agricultural needs are jointly identified, confirmed and understood.

Although DADU has adopted a livelihood security focus, its main capabilities and mandate are still in the area of agricultural production and productivity. As such, it continues to fulfil many of the traditional roles of an agricultural extension organisation.

Field staff work with groups of farmers, run demonstration farms, and transfer information and new technologies relevant to farmers' needs. Typical examples of technologies being promoted by DADU in the district include new varieties of maize, cassava, banana and plantain; integrated pest management techniques, soil and water conservation techniques using compost, fertilisers, mulching, cover cropping and ridging; simple machines for processing cassava, palm fruits and palm kernel; improved storage cribs for maize; improved livestock housing and feeding management techniques that use animal pens, bedding, salt licks, and simple livestock water supply systems. Significantly, however, DADU now ensures that the work of field staff is tailored specifically to the requirements of the farmers with whom it works, or in the sub-districts. At this level, field staff, along with their supervisors, negotiate a specific extension action plan (mini-plan) with farmer groups. At the beginning of each year, the field staff develop mini-plans with the farmer groups in line with DADU's priorities and the needs of these farmers. These mini-plans are regularly reviewed to check whether or not they are meeting the needs of farm households in the operational areas. As a result of these reviews, the mini-plans are adjusted at regular intervals to ensure that they are meeting the needs of the farm households.

It is DADU's willingness to adopt other, different roles in addition to their traditional role that has helped to differentiate it from other district extension organisations in terms of performance. Given the broader livelihood focus adopted by DADU, the response required to enable the organisation to operate effectively in assisting farm households meet their key agricultural needs, demands different roles of the staff within DADU. These new roles often require the staff to develop new capabilities. Besides their traditional role in agricultural technology transfer, DADU now play several other roles (Figure 6:4). These include an advocacy role for farmers' needs, linking farmers to relevant organisations, contracting out extension services, collaborating with other extension providers, and providing inputs and services for a fee.

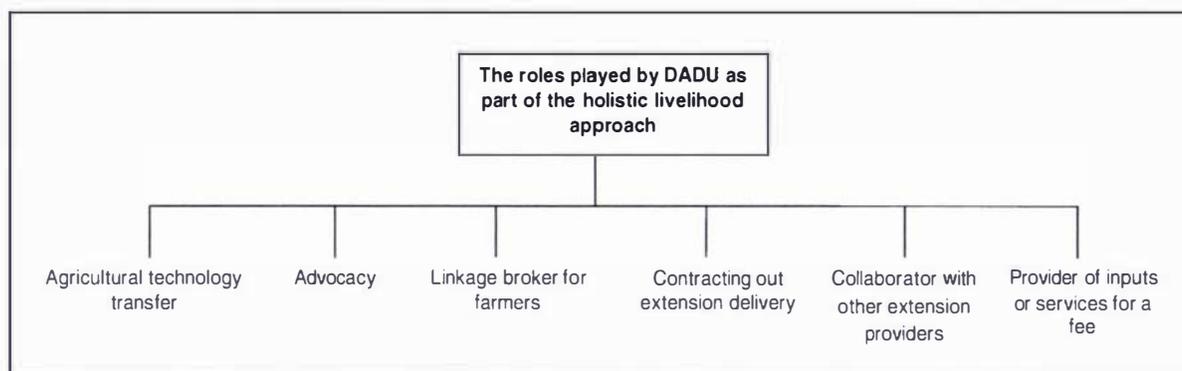


Figure 6:4. Typology of roles played by DADU in using its holistic livelihood approach to extension provision

Besides the traditional role of transferring agricultural technologies, DADU plays an advocacy role for the needs of farmers where it can influence changes that will result in improvements to the livelihood security of farm households. DADU has the opportunity to influence district level policy through its role in the District Assembly and through its networks within the district AgE&RD system. However, it can advocate only on issues that impact on the contribution agriculture makes to the livelihood security of farmers. For example, DADU has been instrumental - through its membership in the District Assembly - in influencing the Department of Feeder Roads to repair and construct feeder roads. The ability of farmers to access markets is limited by the undeveloped road infrastructure, and as such, this limits the contribution agriculture makes to the livelihood security of farmers. Similarly, as a member of the District Assembly, DADU has been working with local chiefs and district leaders to reform the land tenure system in the district. The predominant share-cropping land tenure system in the district, the *Abonu* system, is highly restrictive to tenant farmers. Landlords are entitled to claim half of all cash crops grown on the land by tenant farmers. DADU, through the District Assembly, is endeavouring to replace the traditional *Abonu* system with one that provides a more equitable return to tenant farmers.

A critical role DADU now plays is as a linkage broker. It links farmers with relevant organisations principally to facilitate the acquisition of farming inputs, extension services and markets for their produce. The field staff do this by directing individual farmers or groups to input dealers, other extension service providers and potential buyers. In addition, the field extension staff collect market information, which is then disseminated

to farmers in the district and potential buyers. The market information provided by DADU includes the farm locations where specific agricultural commodities are available for sale, farm gate prices for commodities, markets where there is high demand for specific agricultural commodities and the market prices of those commodities. DADU displays this information on notice-boards in all the major market centres in the district on a weekly basis. The market information is further communicated to the regional capital where it is broadcast nationwide through the Central Region local FM radio station.

Another important role that DADU plays is in contracting out work to other extension service providers. It will contract out to purchase expertise from other service providers such as NGOs. A typical example is demonstrated by the relationship DADU has with Rural Friends, an NGO, and the Department of Co-operatives whereby it is hiring the services of both organisations to build capacity in farmer-based organisations in the district. This contractual arrangement with other organisations is further explained in Section 6.4.3.2.

Apart from contracting other organisations, DADU is also collaborating with other support organisations within the district to support farmers. This is important because some farmer needs are better met by organisations other than DADU. The organisations it collaborates with are organisations that play an important role in supporting the activities that affect farmers' livelihood security. They include banks, NGOs, marketers, input dealers and government agencies such as community health and cooperatives. This collaboration is facilitated through stakeholder forums that DADU organises in the district. Important aspects of these forums are that they not only help DADU and the support organisations to gain a mutual understanding of the needs and circumstances of farm households, but they also assist them to forge relationships that can assist them to improve the situation in the district.

The final significant role that DADU now plays in response to their farmer needs-driven activities is the provision of 'specialist' inputs and services for a fee. DADU has realised that in the district, farmers are not able to access critical agricultural inputs and services associated with some new agricultural technologies. Thus, DADU has taken on the responsibility to procure and distribute such inputs and provide those services for a fee to

farmers in the district. It sells certain veterinary drugs (e.g. Fowl Pox and Gumboro vaccines) to farmers, and provides specialist services such as livestock vaccination, meat inspection, and veterinary surgical operation. These inputs and services are referred to as “specialist” because their handling requires technical expertise, controlled conditions for storage (e.g. refrigeration) or equipment that farmers cannot access. Fees are charged for these inputs and services to recover DADU’s costs. In the next section the methods which the case organisation uses to ensure effective extension service delivery are described.

6.4 Ensuring effective extension service delivery

To ensure that the management of extension service delivery designed to improve the contribution agriculture makes to the livelihood security of farm households in the district is effective, three key factors have been identified as critical to DADU’s success as an agricultural extension organisation. The organisation: 1) targets extension activities to farmer needs; 2) strengthens its human and material resource base; and 3) fosters a cross-sector pluralistic extension system to service delivery (Figure 6:5). The following sections contain a description of how these three factors are implemented by DADU to improve its effectiveness in agricultural extension provision in the district.

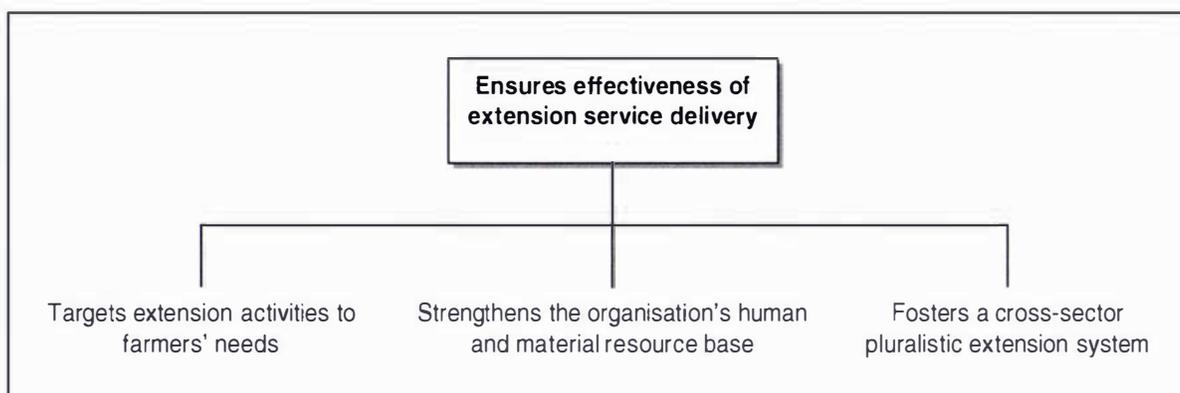


Figure 6:5. DADU's means of ensuring effective management of extension service delivery

6.4.1 Targets extension activities to the needs of farmers

To ensure that the organisational goal of improving the contribution agriculture makes to the livelihood security of farm households is met, DADU ensures that its extension

activities are targeted to the needs of the farmers in the district. As such, it must firstly understand what the needs of their farmers are (e.g. technologies, inputs, and markets) and secondly, provides suitable services to meet those needs. In other words, DADU undertakes only those extension activities that they believe will help improve the contribution agriculture makes to the livelihood security of farm households in the district. DADU's resources are insufficient to allow it to work with all farmers. Therefore, these limited resources must be directed to activities that will have greatest impact on the livelihood security of farm households. Three means are central to achieving this outcome (Figure 6:6). First, DADU develops a needs-based extension programme by using a consultative planning and review process. Second, the mechanism by which it implements this programme is primarily through needs-based farmer groups. Finally, DADU uses monitoring and evaluation techniques to ensure its extension programmes are effective and responsive to the needs of farm households in the district. These three methods are described in the sections that follow.

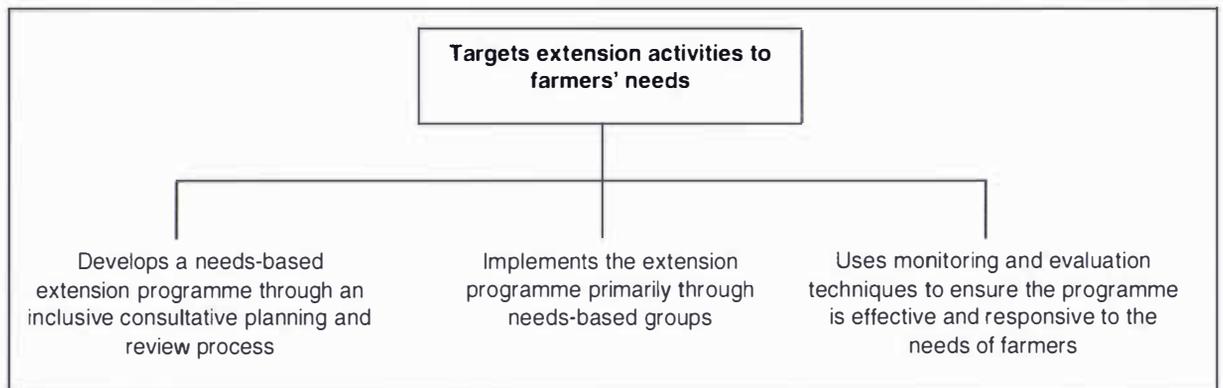


Figure 6:6. Methods used by DADU for ensuring extension activities are targeted to farmers' needs

6.4.1.1 Develops needs-based extension programme through consultative planning and review process

Prior to decentralisation, DADU used a “top-down” (i.e. noninclusive, nonconsultative) planning process to develop their annual extension programme. The director (DDA) received directives from the regional MoFA office, which he then discussed with a few senior extension staff (supervisors) before developing the extension programme for the year. The process of developing and reviewing the annual extension programme (plan)

has changed significantly in line with the new mandate DADU now has. DADU has realised that in order to develop an extension programme that will improve the contribution agriculture makes to the livelihood security of farm households in the district, it needs to involve a much wider range of stakeholders in the planning process. Therefore, all DADU staff (management and field staff) and a range of farmer and organisational representatives from within the agricultural extension and rural development system in the district are invited to participate in the development of DADU's annual extension programme –a major attitudinal change towards stakeholder participation. Thus, the planning process is more inclusive and includes consultation with a much wider range of stakeholders than in the period before decentralisation.

The term *consultative* is used here to describe the planning process, because DADU provides the means for interested and affected parties to openly present their views and be involved in the decisions being made. However, the extent to which such views are incorporated into the district extension plan is the prerogative of DADU. The inclusive and consultative planning and review forums fulfil multiple roles for DADU. Not only are they significant for the planning process, they also contribute to other significant outcomes for DADU, many of which have been outlined previously in this chapter. These forums contribute to the understanding of both the DADUs and of other organisations in the AgE&RD system concerning farm households' circumstances and needs in the district. This multi-stakeholder process not only fosters DADU's networks with farmers and stakeholder organisations, but also it provides a platform for forging networks between DADU, stakeholder organisations and farmers. Furthermore, the inclusion of all field staff in the process fosters greater ownership of the plan by staff and contributes to their commitment and motivation. Staff in the field also have a better understanding of needs.

6.4.1.1.1 The consultative planning and review process

All district level extension organisations are required by the Ministry of Food and Agriculture to complete a district extension plan. This plan provides the basis for DADU's extension activities for the following twelve months. The plan is developed through a consultative planning and review process that comprises a series of workshops that DADU organises to develop and improve their extension programme for the coming

year. Elements of the consultative planning and review process are referred to throughout this chapter to explain how DADU achieves outcomes important to its success. The planning and review process comprises three main phases (Figure 6:7) and each phase has a number of activities. The phases are 1) situation analysis of the district AgE&RD system phase, 2) the needs prioritisation and role identification phase, and 3) the action plan development phase as illustrated (Figure 6:7) and described below.

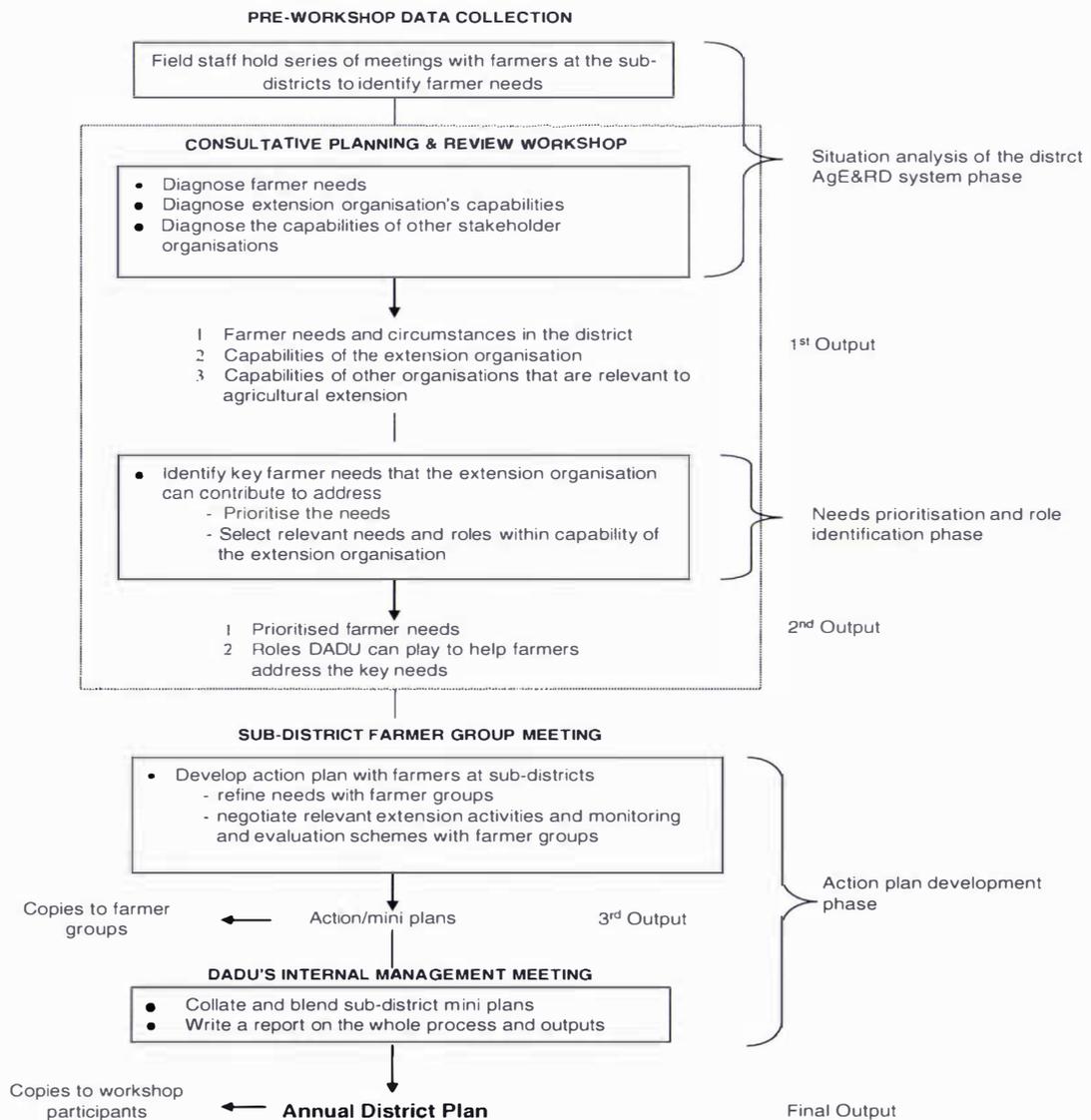


Figure 6:7. The consultative planning and review process followed by DADU

The situation analysis of the district AgE&RD system phase

The first step in DADU's planning and review process is the situation analysis of the district AgE&RD system phase. In this first phase, DADU diagnose the needs of farmers and the capabilities of other key players in the AgE&RD system of which it is part. This term *diagnose* is used here because the process requires a thorough analysis of both farmer needs and the organisational capabilities that are available to assist farmers meet these needs. The goal of this situation analysis of the district AgE&RD system phase is, firstly, for DADU to accurately identify farmer needs within the district. Secondly, to assist the organisation to accurately assess their current extension capability, and finally, to accurately assess the capabilities of other organisations within the district AgE&RD system that are relevant for improving the contribution agriculture makes to farm household livelihoods in the district.

The first step in the situation analysis of the district AgE&RD phase begins a month prior to the consultative planning and review workshop when field staff are asked by DADU to hold a series of meetings with local farmer groups at the sub-district level to gather information on farmer needs. The field staff hold general community forums with farmers, and also meet with their regular farmer groups to discuss their needs related to agricultural production. The field staff are then asked to bring this information with them to the consultative planning and review workshop which is organised in September each year. This is an important departure from what used to happen prior to 1997 when field staff had little input into the identification of farmer needs for the development of the district extension programme.

...each area has its peculiar problems and so we must give everybody (field staff) the right to be part of this discussion because each AEA (field staff) is coming from a different operational area (DDA-Ex, personal communication, July 15, 2004 paras. 16-26 follow-up).

Once the farmer workshops have been conducted by the field staff, DADU then initiates the consultative planning and review workshop. Representatives from local and regional organisations and farmer groups are invited to attend the workshop. Organisational

representatives are identified through DADU's data base and include individuals from both public and private sector organisations (see Figure 6:3).

Central to DADU's farmer needs identification process is the lengths to which it goes to involve farmers. To ensure it has a broad cross-section of the views of farmers from the district, DADU has developed a farmer classification schema based on farm enterprise type, geographic area and gender. For example, farmers are first classified by their main enterprise type (e.g. livestock farmer, maize farmer, cassava farmer). Farmers are then classified by geographic area, and gender. DADU believes that farmer needs will vary in response to farm enterprise type, geographic location, and gender. Thus, apart from ensuring that farmers from different enterprises and geographic locations in the district are represented, it also ensures that women have a voice in the planning process. To this end, DADU has supported the formation of all-women producer groups. These groups are mainly those involved in food crops production and agroprocessing determined by gender roles in the division of labour and production systems in the Assin district. Representatives from these groups are actively encouraged to attend the consultative planning workshop.

DADU uses the criteria farm enterprise type and geographic location to decide upon which farmer groups to invite to attend the planning and review workshop, to ensure it will obtain a good cross-section of farmers' views. However, DADU leaves the selection of the farmer representative who will attend the workshop up to the individual group. The groups select the person they think is most suitable to represent their views at the workshop. From the experiences of the organisation, workshop attendance is higher when the farmers are allowed to appoint their own representatives. DADU does not actively encourage poor farmers or women to attend the workshop as an entity. Rather, the staff believe that because a high proportion (32%) of the people in the district are poor, and have all-women farmer groups who send their representatives, they do not need to actively recruit these sets of people. It is assumed that most farmer groups comprise a high proportion of farmers who would be classified as poor.

To encourage farmer attendance at the workshop, it has been separated into two 2 - 3 day workshops. Experience has shown that farmers do not like to be away from their farms

for more than 2 -3 days and, as a result, they will not attend workshops that extend beyond this time frame. Furthermore, to ensure that stakeholder representatives who attend the planning and review workshops participate in discussion, DADU adopts three key measures: 1) it uses experienced workshop facilitators; 2) it divides participants into small mixed sub-groups to facilitate discussion and ensure that there is the opportunity for individual contributions; and 3) it uses the local language during the workshop to make it possible for every participant to express his/her opinions without difficulty.

At the start of the workshop, the chief facilitator welcomes the participants, sets the agenda for the meeting and divides participants into sub-groups for group discussions. The facilitator then discusses the workshop methodology with the participants. The workshop follows what DADU calls a “group learning and sharing methodology”. In this methodology, the facilitator aims to ensure that the participants are engaged in collaborative activities in small groups in a relaxed and positive atmosphere. The facilitator encourages the group to show mutual respect and share their experiences with each other and learn from this interaction. The facilitator stresses that every participant has some valuable experience to share, and that the information they provide will be important to the development of an effective plan.

Once the sub-groups are formed, they choose their own group leaders or rapporteurs. These individuals guide the groups through a brainstorming session to elicit participants’ views and opinions about farmer needs and circumstances in the district. The group members are asked to use the ‘problem tree’ approach as a tool to diagnose the farmer needs and circumstances. In this approach, the group leader asks the participants to identify the major farmer needs in the district, the causes of such needs, and the effects these needs have on farm households in the district. Once this session is completed all the participants get together in a plenary session to deliberate on the outputs from the sub-group discussions. The aim of this session is to reach some agreement and understanding about the needs and circumstances of farmers in the district. This understanding is central to DADU’s provision of an effective livelihood security-focused agricultural extension programme (see Section 6.3).

At the start of the plenary session, representatives from each sub-group present a group report for discussion. After the presentations by the sub-groups, a representative of DADU summarises the main results from their internal review of the previous year's extension activities. Participants are also provided with a summary of information about the policy mandate. Information is then provided on farmer needs that DADU has identified through the farmer workshops conducted by the field staff the previous month, and from various forums throughout the previous twelve months. These forums are organised in conjunction with organisations and often focus on particular projects (e.g. RTIP⁶, Cocoa Hi-tech project⁷, and PSI-Oil Palm project⁸). With inputs from participants, DADU evaluates its previous year's plan; how the government agricultural extension policy will define what they can do (policy constraints), and how the resources it has available for the next twelve months will define what it can do (DADU's capabilities). DADU also discusses who it is currently working with and in what way. The purposes of the evaluation of DADU's capability and previous year plan are: 1) to ensure that farmer needs that were not met in the previous year's plan can be captured in the current year; 2) to define the limits of their operation within government policy; and 3) to let participating farmers and other stakeholders in the district AgE&RD system understand DADU's limitations, and to identify opportunities for collaboration with other organisations for extension provision in the district.

After an evaluation of DADU's capability and previous year's plan, the next step in the plenary session of the workshop is to give the representatives of the participating organisations the opportunity to describe their roles in the district and outline their activities for the coming year. From this information DADU and other participants build up an understanding about the role stakeholder organisations in the district AgE&RD system are playing, or could potentially play, in the district. This information, together

⁶ Root and tuber crop improvement project (RTIP): IFAD-Ghana supported project for multiplication and distribution of improved root and tuber crops (cassava, yam, sweet potato and taro) planting materials with technical advice to smallholder farmers to enhance their household food security and incomes

⁷ Cocoa Hi-tech project: Government of Ghana sponsored project for assisting cocoa farmers with low interest loans to purchase and apply fertilisers on their farms to help improve cocoa yields.

⁸ Presidential Special Initiative (PSI) for oil palm: Government of Ghana sponsored project for multiplication and distribution of improved oil palm seedling with technical advice to interested farmers to enhance their incomes.

with that mentioned above is then summarised into three key areas: 1) farmer needs and circumstances; 2) DADU's current capability for extension; and 3) roles and activities of major organisations in the district AgE&RD system. The next section describes the needs prioritisation and role determination phase of DADU's consultative planning and review process.

The needs prioritisation and role identification phase

The second phase in the consultative planning and review process is the needs prioritisation and role identification phase. Similarly to the situation analysis of the district AgE&RD system phase, the needs prioritisation and role identification phase could take from 2 to 3 workshop days to complete. During this phase, DADU identifies the most important farmer needs in the district and the most suitable roles it can play to assist farmers address these needs. The criteria by which the farmer needs are ranked are based on their impact on farm household livelihood security in the district. Once the most important needs are identified, DADU will then determine which role it can best play to ensure that those needs are met.

Once an accurate understanding of farmer needs in the district is obtained, the first step in the prioritisation process is to rank the needs in terms of importance. This is principally to identify those needs that DADU can help farmers to address, and secondly to decide on which of the identified needs are most important in terms of the impact they have on farm household livelihood security in the district. The process in this step of the prioritisation phase is similar to the situation analysis of the district AgE&RD system phase where, after a discussion by sub-groups and a plenary session, a representative of DADU summarises the ranked needs based on consensus to produce a list of prioritised farmer needs that DADU can help to address in the district.

Once the farmer needs have been ranked in terms of priorities, DADU seeks to identify which of those needs the organisation has the capability to meet. Finally, the roles the organisation can play in meeting the needs are determined (Figure 6: 8). Knowledge of DADU's capability developed in the situation analysis of the district AgE&RD system phase is used to screen out needs which are important, but which cannot be met by DADU. However, this screening process is more complex than it first appears because

DADU has decided that to be effective in their livelihood security-focused approach to agricultural extension, it needs to take on a broader set of extension roles than that of the traditional extension service provider. In a similar way, DADU has also decided that to be effective in rural development it must take on different roles in collaboration with other extension service providers to avoid the duplication of services (see Section 6.4.2.3). This is why the identification of the extension roles of other service providers is such an important activity in the situation analysis of the district AgE&RD system phase.

With this shift in DADU's view of extension service provision as outlined above, it has adopted a more complex system of selecting which farmer needs require addressing or can best be met during the next twelve months. The criterion the DADU considers is the importance of the farmer need to the district, as determined by the farmers themselves and government policy. This is based on the potential impact of the need on agriculture and the livelihood security of farmers in the district. Once the needs have been ranked in terms of importance, DADU starts a role determination process (Figure 6:8) to select the best roles it can play during the next twelve months, given the farmer needs. This process starts at the consultative planning workshop, but does not end there. DADU continues with the process through its own internal discussions, and discussions with other interested stakeholders. As such, the actual role determination process is not systematic as is shown in Figure 6:8. DADU begins with the most important need and then determines if the organisation has the policy mandate to meet that need. If it does not, then it assesses if the need is being addressed by other extension providers. If they are, then DADU will plan to link farmers to these organisations, and move onto the next need in the priority list. If no other extension provider is addressing the need, DADU will then determine if it can play an advocacy role, especially, if the need is critical to farmers in the district.

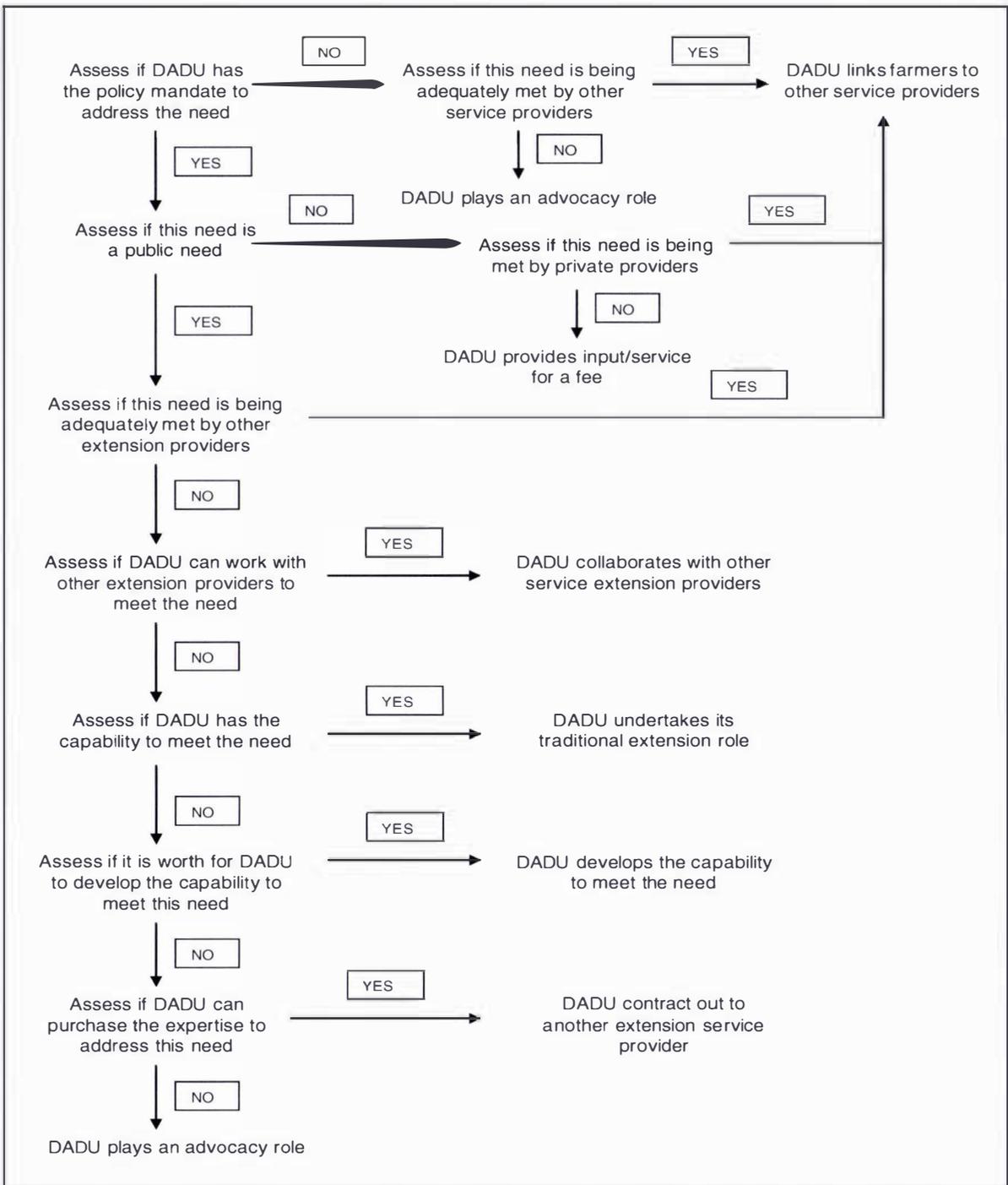


Figure 6.8. A representation of the process DADU uses to select its extension roles

If DADU does have a policy mandate for the farmer need, it first assesses if the need is a public need. *Public* here is concerned with *the level of excludability of farmers from the benefits that could be derived by addressing the need*. A public need is a need which when addressed (e.g. control of infectious agricultural diseases, feeder roads) provides benefits to a whole community or greater proportion of them. On the contrary, a private

need (e.g. castration of livestock, meat inspection or inputs supply) provides benefits to only a few people who have the need. To this end, if the need is public in nature, DADU assesses if it is being addressed by other extension providers. If this need is being met by other providers, DADU plan to link farmers to these providers. On the other hand, if the need is not being met, DADU assesses if it can work with other extension providers to meet this need. If it can, DADU collaborates with these organisations to meet the need. If not, it assesses if it has the capability to meet this need. If it has the capability, it will plan to meet the need. If not, it will assess whether it is worth developing the capability. If DADU, however, found that it was not worth developing a capability to meet this need, but believed the need was important enough, it would assess if it could purchase the expertise from other service providers (e.g. NGOs). If it could, then DADU would plan to contract another service provider to meet the need. If it can not afford to contract in, it will play an advocacy role for this need.

In a situation where DADU found that the farmer need was not public in nature, but believed the need to be important, it would assess whether or not it was being met by private providers. If it was, then, the DADU would plan to link farmers to these private sector providers. If this need was not being met by others, and DADU had sufficient resources and capability, it would mobilise the resources to meet the need for a fee. For example, DADU provides a specialised for-fee extension service, for such specialist inputs such as veterinary drugs (see Section 6.3.2).

In conclusion, DADU, through the decision-making process described above, is able to identify important farmer needs to address in the next twelve months, roles it might play to meet those needs and with whom it might collaborate. As indicated earlier, the process is complex, ongoing and occurs at different stages of the planning process. The following section describes how DADU develop their action plan at the sub-district level.

The action plan development phase

The final phase of DADU's planning process is the action plan development phase. A key issue here is that because of the diversity of soil types, micro-climates, crop type and sociocultural characteristics in the district, the priorities of farmers at the sub-district level may be somewhat different from those established for the whole district through the

consultative planning workshop. To overcome this problem, field staff take back DADU's priorities in terms of key farmer needs and the roles it intends to play, and discusses these with the farmer groups it works with at the sub-districts level. The field staff and supervisors then negotiate with the farmer groups what extension activities (mini-plans) they will actually undertake at the sub-district level. These "mini-plans" are a compromise between the district priorities and farmers' specific needs at the sub-district level. Resourcing issues are also important, and this is why the supervisor is involved in the process - because he has a clearer idea of resources the field staff have at their disposal.

This phase allows the DADU to refine their priorities by involving those who will be directly affected by the DADU's extension programme in the sub-district. The aims in this phase are threefold: 1) to ensure that extension activities are based on local constraints and opportunities, 2) to develop an annual district plan that is driven by the real needs of farmers in the sub-district, and 3) to encourage ownership of the extension programme by the farmer groups who will benefit from it. DADU has realised that this is critical in ensuring farmers' commitment and support for its programme implementation. The action plan development process starts after the end of the consultative planning and review workshop, when important farmer needs and extension priorities for the district are established. After the workshop on the prioritisation and role extension determination phase, the field extension agents - with their supervisors - go back to farmers in the villages and through participatory processes (e.g. PRA and group discussions), clarify and update the needs of farmers in the groups. The main purpose of this exercise is to ensure that DADU's extension priorities are relevant to the needs of farmer groups in each village.

Once sub-district farmer needs are updated, the field staff match the needs with the district level priorities and negotiate with each farmer group a mini-plan that can best meet the farmer needs. By negotiation, DADU discusses with the farmer groups their needs and what best can be done so as to arrive at a settlement on the best sub-district extension activities, methods and timelines to meet specific needs, and how to know whether specific activities are performing well and needs are being met. At this stage, the farmers are able to clearly define the nature of support they expect from the extension

agents. At the end of the sub-district's farmer group meeting, the field staff and farmers produce a collaborative and result-oriented daily and monthly activity plan which is called a *mini-plan*. The mini-plans ensure that both the extension agents and the farmers are clear about their roles and the indicators and criteria (monitoring and evaluation schemes) for determining the success of specific extension activities in the coming year. The term *collaborative* is used because the mini-plan is developed by both DADU field staff and farmers. The mini-plan is *result-oriented* because it is under regular review to check whether it is accomplishing the desired results (goals) effectively and efficiently, and if not, DADU find out what to do to achieve the goals.

When the mini-plans are completed, the farmer groups that were involved in their development are given copies for reference. DADU, at the district level, organises internal management meeting to synthesise the mini-plans into a district action plan and programme for the year. DADU compiles and writes a report on the outputs of the consultative planning and review process to produce the district annual extension plan or programme document. Copies of the programme document are sent to all the participants and organisations that attended the district planning and review workshops. The following section describes DADU's implementation of the district extension programme through needs-based groups.

6.4.1.2 Implements extension programme through needs-based groups

Prior to 1997, DADU worked mainly with geographic discussion groups - that is, farmer groups formed on the basis of geographic location. DADU found that because of the diversity of farming systems within a local community, many of the farmers within a geographic group had little in common in terms of their farming enterprises and the problems they faced. As such, any service DADU provided to the group benefited only some individuals, with the result that, the farmers tended to lose interest in the groups and many ceased to function. This approach was deemed ineffective because any extension message was relevant to only a sub-set of the group and was also inefficient because staff spent considerable time setting up groups only for them to disband after a short period of time. To overcome this problem, DADU decided to implement its extension programme through needs-based groups.

DADU defines a *needs-based group* as a collection of people in the farming community who have come together voluntarily because they have a common need or face similar problems relevant to agriculture. For example, a group may form because all of the members grow a specific crop (e.g., maize, cassava, plantain) and face similar problems, or a group may form because a non-agricultural problem (e.g., child nutrition, HIV/AIDS) is limiting their ability to enhance their household livelihood security from agricultural production. The needs-based groups that DADU works with can be classified into two main types: (i) farm enterprise-based groups, and (ii) special interest groups. The focus of the farm enterprise-based groups is the agricultural production system that underpins each enterprise. In contrast, the focus of special interest groups is not the agricultural production system, but factors outside the production system that impact on the contribution agriculture can make to the livelihood security of local farm households. The key attribute of these two types of needs-based groups is that members have a shared interest in learning about certain topics and/or solving particular problems.

The types of special interest groups with which DADU works in the district can be classified into two main types: (i) health-related groups, and (ii) groups with an interest in the further processing of agricultural products. DADU has identified that certain health issues (HIV/AIDS and child nutrition) seriously limit agricultural productivity and hence the livelihood security of farm households. Therefore it has approached local communities to form groups around these needs.

Groups with a focus on further processing were facilitated by DADU in a situation where it was identified that further processing of an agricultural output could improve farmers' returns and hence enhance the livelihood security of farm households. For example, DADU identified that a proportion of the output from certain crops (e.g. oil palm fruits, cassava) was going to waste because farmers could not sell a significant amount of their produce during major crop harvesting seasons. DADU therefore facilitated the establishment of agro-processing groups (e.g. palm oil producing groups, 'gari' [from cassava] producing groups). Some of the groups have been formed along gender roles in terms of division of labour and production systems exhibited by the people in the district. For example, the child nutrition and processing groups are mainly all-women groups. A list of the major groups that DADU works with in the district is provided in Appendix 3.

Although ensuring equity was not an objective set by DADU, it has realised that working through needs-based groups allows it to reach a wide range of farmers with extension services. Working with needs-based groups makes DADU more effective because they can efficiently target extension services to the common needs underpinning the groups. In addition, working through groups - as against one-on-one extension - improves the efficiency of DADU with respect to how it delivers services to meet the needs of the groups. Because members of a needs-based group have common needs, the field staff spend less time discussing and identifying those needs, and they can target and concentrate their resources and effort to achieve better results. The needs-based groups are also an important source of information for identifying key farmer needs because they provide direct feedback to field staff and volunteer representatives who attend DADU's planning workshops.

The establishment of needs-based groups

When a farmer need is identified, DADU holds community forums to discuss the need and assist interested people to establish a group based around the need. When a needs-based group is formed, DADU continues to work with the group to ensure that they operate well and do not cease to function. Such stable groups work with DADU for a longer period of time in the sub-district, and as such, are more efficient to work with.

DADU uses a two-pronged approach to establish farmer groups. First, it forms needs-based as opposed to geographic-based farmer groups. With these groups, DADU encourages and facilitates the process through public discussion forums to create awareness amongst farm families of the potential benefits of extension groups. A key part of the awareness raising is to ensure that people join extension groups because they want to learn about a particular crop, livestock, or to address a particular need, and not because they are coerced or given some financial or material incentives. DADU believe this is critical for the promotion of self-ownership of the groups. The long-term aim of DADU is to assist the groups to develop into self-reliant co-operative farmer-based organisations (FBOs) that could demand extension services and negotiate their own markets in the future. The groups are gradually being developed into co-operative economic units (business enterprises) where group members can jointly contribute or seek

capital, work together, manage affairs democratically and distribute profits or remuneration according to the work and capital share of members.

The second means DADU uses to establish its farmer groups is by training the group members in group management and cooperative practices. To this end, DADU has collaborated with the district Department of Co-operatives who provides training for the farmer groups. DADU works with several needs-based groups in the district, which are at different stages of their development towards self-reliant and co-operative status. Significantly, however, DADU's approach has been successful and the number of needs-based groups that are now organised into co-operatives has increased four-fold over the period 1997 to 2004 (Figure 6:9).

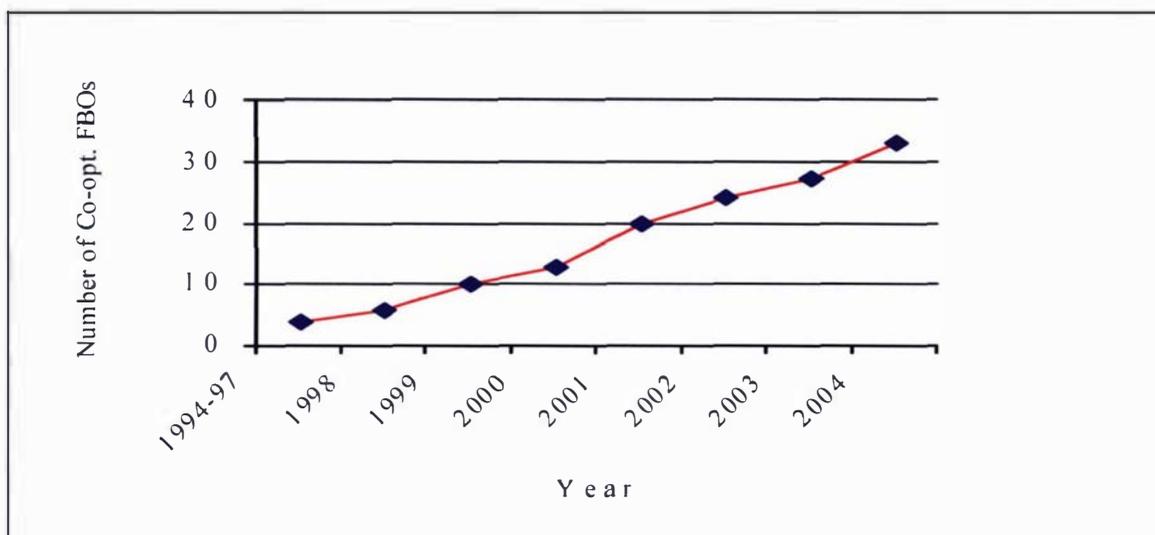


Figure 6:9. Growth of co-operative FBOs in the district between 1997 and 2004

6.4.1.3 Uses monitoring and evaluation techniques to ensure the extension programme is effective and responsive to needs of farmers

Because the resources for extension provision in the district are limited, DADU has found it important to ensure that its annual extension programme is effectively implemented to meet the needs of farmers. Once the development of the annual extension plan is completed, DADU initiates a regular monitoring of the action plan at the sub-district (field) level. However, the field supervisors visit field staff in the operational areas twice every month to check whether or not the mini-plans are meeting farmer needs. At this stage, the field staff are monitored very much on the basis of outputs (e.g. numbers of

farmers' groups they are working with, number of visits, number of training sessions conducted, number of demonstration plots, level of farmer participation, number of field days held and yields). The supervisors find out the problems field staff have with their mini-plans and, where possible, provide them with the needed support to assist them to achieve their targets and to make their activities relevant and useful to farmers. As part of their bi-weekly supervisory visits to the sub-district, the supervisors also meet extension agents together with some of the farmer groups to reflect on their successes and failures as a form of self-evaluation to assess whether or not their needs and expectations are being met through the extension activities. From this they identify areas for improvement.

Once every month, DADU also organises a peer review meeting on sub-district extension activities to assess whether or not the organisation is achieving its goals and meeting the needs of farmers. Prior to the decentralisation of extension in Ghana, the staff prepared monthly reports and sent them directly to the director. But now, the field staff first hold meeting with their supervisors to discuss and clarify their reports. The supervisors then hold their own separate peer review meeting to compare their observations and notes from the field. They check if the activities are relevant and meeting the needs of farmers given in the mini-plans, and what they can do at their level to assist the field staff to improve the situation in the field. The supervisors' meeting is followed by a general staff peer review meeting where all field staff orally present their reports and receive feedback from their peers and senior staff. A major aim of this part of the monitoring system is to support the field staff to achieve their targets and make their activities relevant and useful in meeting the needs of farmers.

Because the environment in which farmers operate and the problems they face are constantly changing, DADU has also found it important to ensure that its extension programme is responsive to farmer needs. The term *responsive* is used here to mean the extension programme is under regular revision to meet the changing needs of farmers. DADU believes that this flexibility to modify its extension programmes to respond to the needs of farmers is critical if the organisation is to improve the contribution agriculture makes to the livelihood security of farm households. New needs emerge as old ones are addressed, or as the external environment changes. To ensure the responsiveness of its

extension programme, DADU has developed an evaluation system that is integrated with its monitoring system (Figure 6:10).

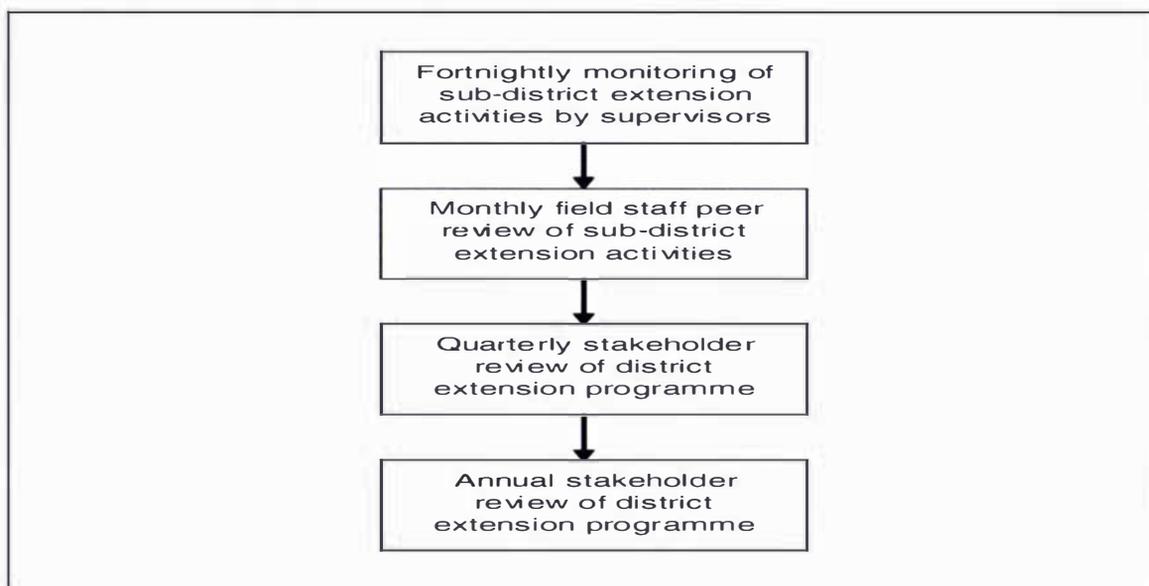


Figure 6:10. The monitoring and evaluation techniques DADU uses to ensure its extension programmes are responsive and effectively implemented

DADU conducts quarterly and annual stakeholder reviews to evaluate its extension programme. Prior to 1997, DADU reviewed its extension programme annually and the focus was on inputs (e.g. how much resource has been used?) and outputs (e.g. number of field visits by field staff). But, although DADU is still primarily output-focused, it is now involving invited representatives of farmers and other stakeholders in the AgE&RD systems to participate in its district level quarterly and annual programme evaluation workshops. A significant part of these workshops is that DADU draws on the information it collects through its bi-weekly and monthly monitoring process. It reports its extension activities to the participants, and then they follow a cycle of reviewing these activities (plan) to determine whether or not farmer needs are being met and then adjusting the activities for the desired results to be achieved. DADU uses the evaluation workshops to also seek the opinions of farmers and other stakeholders on the impact of its extension programme in the district.

Although DADU reports to farmers and other stakeholders in the evaluation workshops, accountability did not come out as necessarily a first priority for DADU in the workshops. Rather, its aim is to understand, and in turn to help stakeholders understand

the effectiveness (or outcomes) of the extension programme and to receive feedback from them to improve their extension activities in the district. In the following section, the means by which the organisation strengthens its human and material resource base are described.

6.4.2 Strengthens the organisation's human and material resource base

DADU has recognised that because of decentralisation and the adoption of a broader livelihood approach to agricultural extension, new skills and resources are needed to achieve its organisational goals. Thus, to ensure effective management of its extension delivery in order to improve the contribution agriculture makes to the livelihood security of farm households, the organisation has put in place mechanisms to strengthen its human and material resource base. To do this, DADU has four key means for improving its existing resource endowment (staff and materials) (Figure 6:11). First, it provides learning opportunities to ensure that staff have the competencies to deliver a livelihood security-focused extension service. Secondly, it ensures that its extension staff are motivated and committed. Third, it ensures that its existing resources are used efficiently, and finally it mobilises additional resources from public and private sources.

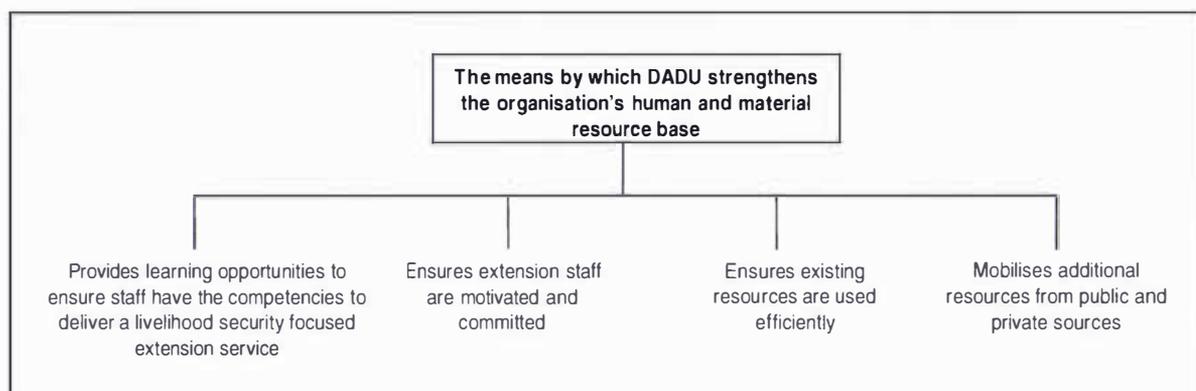


Figure 6:11. The means DADU uses to strengthen its human and material resources

6.4.2.1 Provides learning opportunities for extension staff

DADU uses two mechanisms to provide learning opportunities for staff. First, it provides formal needs-based training, and second, it fosters informal learning within the workplace. These mechanisms are discussed in the following sections.

6.4.2.1.1 Needs-based staff training

One of the major means by which DADU's staff develop the competencies they require to operate effectively is through formal training programmes. Prior to 1997, the training programmes undertaken by DADU's staff in the district were developed at the regional or national headquarters with little or no consultation with staff at the district level. As such, these training programmes often failed to take into account the needs of the staff in the district. An important reason for the success of DADU in the district has been that the district management team is now responsible for organising the training of its own staff. A key characteristic of its training programme is that it is "needs-based". In other words, each year, DADU identify what training needs staff have for the next twelve months given its organisational goals and current capabilities.

Central to the identification of staff training needs is a self-evaluation process developed by DADU. Once the district extension plan has been developed and staff know what activities they will be undertaking over the next twelve months, DADU goes through a training needs assessment process. Each staff member, from the director down, is asked to evaluate his training needs for the next twelve months. The field staff's training needs are discussed with their supervisors in a general staff meeting, and a training programme is developed for the field staff. DADU sends the training needs of the supervisors (DDOs) and the Director (DDA) to the office of the national Human Resource Development and Management (HRDM) Directorate of MoFA. The HRDM Directorate of MoFA develops specific specialist training programmes based on the training needs of DDOs and DDAs at the national level each year. Based on the training needs that the HRDM Directorate receives from the districts, the Directorate arranges a number of specialist training programmes for the senior extension staff from the districts. In addition to the technical staff, DADU also provides six-monthly in-service refresher training for the support staff in office management skills. The organisation believes this is critical - especially when it comes to information management and correspondence with stakeholders within the district extension and rural development system.

The training programme developed for the field staff at the district level specifies the content, training method and timing of the training. Training is scheduled to ensure that staff receive the required skills and knowledge close to the time they are required to use

them in the field. It was observed that because of the large amount of knowledge and skills the staff have to learn to meet the wide-ranging needs of farmers, as required in the livelihoods-focused approach to extension, it was difficult for the staff to retain all the information they receive through the series of training workshops they attend within a year. In view of this, DADU has found it useful to schedule their trainings to coincide with the seasons when the knowledge and skills are needed in the field. The majority of DADU's training is provided in-house by senior staff. Where DADU does not have the in-house expertise, the staff are given training through experts from other institutions such as NGOs, research institutes, universities and other government organisations. The training areas for DADU staff from 1997 – 2003 are summarised in Table 6.1.

Table 6.1. The major training and competencies DADU provided to staff in 1997-2003

Type of training	Competency areas	Beneficiaries
Training in extension skills	Computer systems, adult learning, extension communication	AEAs and DADOs
Training in agricultural technical skills	Agricultural pest management, soil and water conservation techniques, inland fish farming, livestock nutrition and housing, animal health, banana/plantain propagation, non-traditional farming (grasscutter, mushroom and bee farming)	AEAs and DADOs
Training in relevant issues that have direct impact on agriculture and livelihood security	HIV/AIDS control, balanced ration formulation from local food ingredients for children	AEAs and DADOs
Training in group and business management skills	Small group and cooperatives management, small-scale processing techniques, marketing, small-scale business management	AEAs and DADOs
Training in public administration and management	Human resource development, leadership and management	DDA and Assistant
Training in office management skills	Secretarial and computer systems skills	Support staff

The shift to a needs-based training approach has been critical in ensuring DADU's staff have the competencies required to provide a livelihood-focused agricultural extension service (extension service) in the district. For example, field staff and their supervisors received training in computer systems, adult learning and communication to improve their

skills in extension delivery. These staff members also received training in specific agricultural technologies – including pest management, soil and water conservation techniques, inland fish farming and livestock nutrition and housing – that could be given to farmers. Training was provided on issues that have direct impact on agriculture and livelihood security of farmers. For example, training was provided on HIV/AIDS control and the preparation of balanced rations from local food ingredients for child nutrition. The field staff and their supervisors were also given training in group and business management. The Director and his assistant were provided with training in public administration at the Ghana Institute of Management and Public Administration. This was to improve their proficiency in managing the organisation.

Prior to 1997, field staff were trained separately from subject matter specialists, who are now the DADOs. DADU has since realised that there are advantages in training these two groups together. The joint training allows field staff to acquire a better understanding of the theory behind their practice from the subject matter specialists. Alternatively, the subject matter specialists, who know the theory behind the practice, gain more understanding about how the ‘theories’ apply in real-life situations from the field staff. Apart from joint training, an equally important shift has occurred in relation to DADU’s change of attitude towards indigenous farmer knowledge. Before 1997, DADU viewed indigenous farmer knowledge as having little to offer in terms of improving agricultural production in the district. This meant that knowledge about agricultural production was provided to field staff only through DADU’s subject matter specialists. Since 1997, however, DADU has realised that indigenous farmer knowledge is a valuable resource for extension in the district. DADU has found that, in a number of cases, the practices used by farmers in the district are equally as good as - and sometimes better than - those advocated by their own field staff. Therefore the DADU has put in place in-house training processes whereby its field staff can learn about the practices of local farmers.

...we have seen that most indigenous technologies are improved technologies. But in those days (before 1997) we did not know that farmers had much to offer. So now there is the idea of getting information from the farmers to improve on it or adopt it. (DDA, personal communication, May 21, 2004 para. 442).

To assist their field staff to learn about the practices of local farmers, DADU invites farmer group representatives that produce and/or process the crop that is the focus of the training exercise to its training workshops, which are facilitated by a senior staff member or an invited resource person from another organisation. The aim of the facilitator is to encourage the farmer representatives to describe their farming practice and highlight those areas that are critical for achieving high yields. The facilitator also aims to get the SMS to discuss the theory behind the farmers' practice. Discussion is initiated between the field staff, the subject matter specialists, and the farmer representatives so that the field staff obtain a good understanding of both farmer practice and the theory behind their success. During these training sessions, the farmer representatives also learn about the theory behind their practices. Thus, the farmer representatives obtain scientific knowledge which they can combine with their indigenous knowledge to take back to their farm groups. As such, DADU view these workshops as "joint-training" exercises, because both farmer representatives and DADU field staff learn from the interaction.

...we include farmer representatives (in the training sessions) ...every month we have something to learn from them (farmers) when we attend a training workshop. (AEA1, personal communication, May 10, 2004 para. 627).

6.4.2.1.2 Foster informal learning in the workplace

Although DADU has put considerable resources into developing formal needs-based training programmes for its staff, it has also identified that there is an opportunity to further develop the competencies of its staff by fostering informal learning amongst the staff in the work place. DADU has recognised that although learning occurs through formal training programmes, equally important sources of learning are staff interaction and self-directed learning. To take advantage of these, DADU is providing internal support that allows reflection and learning by staff on the job. It has put considerable effort into (1) fostering an open environment in which staff feel comfortable about sharing information, (2) providing forums whereby the staff can meet, interact, share and reflect upon their knowledge, (3) organising a range of forums where their staff can meet with staff from other organisations to learn about a particular issue/project from a range

of perspectives, and (4) providing learning materials that the staff can access for self-directed learning (Figure 6:12).

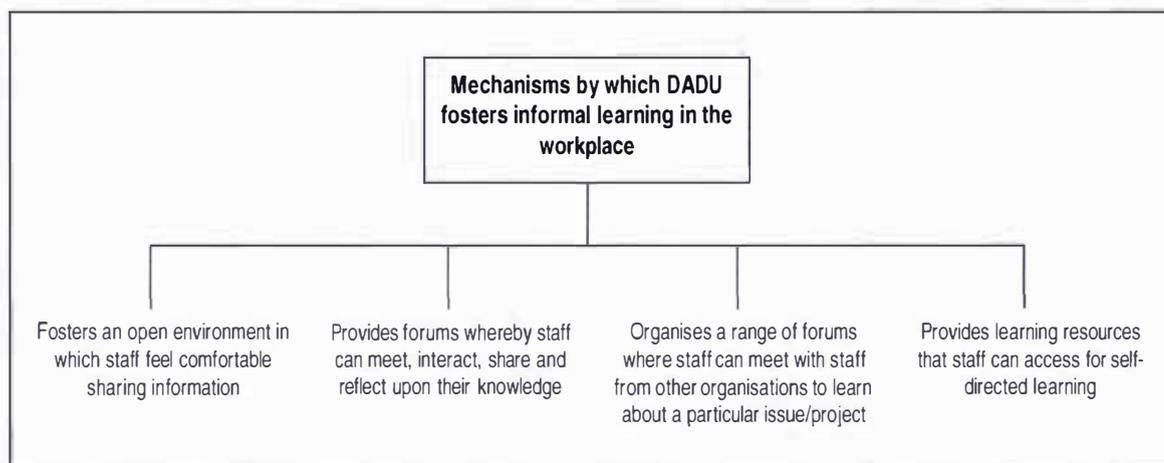


Figure 6:12. The means by which DADU fosters informal learning in the work place

DADU undertakes a number of critical measures to foster an open environment in which staff feel comfortable sharing information. First, field staff are encouraged to participate in planning and operational decisions. This often involves sharing potentially sensitive information such as DADU's annual income and expenditure. Second, the Director of DADU encourages teamwork among the staff to promote information sharing. Because the supervisors have clearly defined areas of expertise, but supervise the field staff - who are generalists - the Director believes that through teamwork the supervisors will build relationships and share their expertise and experiences to provide better supervision to the field staff. Likewise, field staff operating in adjacent geographic areas are encouraged by the organisation to team up in organising field days for farmers in their community. Through these field days they learn from each other, which fosters team building. Finally, the organisation ensures that the staff are kept well informed about policies and other relevant issues that affect them. This it does through regular staff meetings and circulars. DADU uses these measures to foster trust and mutual respect among the staff. This is built up over time through regular staff meetings, face-to-face contact among the staff, and staff members' working in various teams. DADU believes that these measures create an environment wherein staff can freely share information and learn.

Regularly scheduled staff meetings are the primary method DADU uses to create a forum where staff can meet, interact, share and reflect upon their knowledge. DADU has

identified that regular monthly meetings provide a valuable learning opportunity for its staff. These are attended by all staff and as such, they provide an opportunity for learning both within and across the levels of management within DADU. At these meetings, field staff describe their activities for the month relative to their mini-plans. The field staff are asked to highlight problems or constraints, opportunities, new initiatives and any other information relative to their operational area. The director chairs the meeting and encourages staff (supervisors and field staff) to ask questions and provide ideas to help the field staff member who is presenting his report. The aim in this meeting is for staff to learn about what other staff are doing, what is happening in the district and provide ideas to help fellow staff members who have problems. Staff are also expected to learn about extension practices and technical information, and identify new initiatives or ideas.

...Every month there is staff meeting and during these meetings issues from the field are discussed ...we (field staff) realised that any time we come to monthly meetings there is something new you learn ...something you have experienced or what someone else has experienced from his area of operation. He brings it out and we all discuss it and the best solution is found (AEAI, personal communication, May 10, 2004 para. 354).

The supervisors also use these meetings to discuss problems the field staff are having in relation to the implementation of the annual plan, and to provide suggestions that will improve the staff members' effectiveness. This is considered critical in view of the fact that the field staff have had to take on a range of roles that are outside their traditional role.

The final significant means by which DADU fosters learning within the organisation is that it organises a range of forums for the staff to meet with staff from other organisations to learn about a particular issue or project (e.g. HIV/AIDS and RTIP). DADU involves key informants from other organisations in their consultative workshops/forums and collaborates with them in programme planning and implementation (see Section 6.4.1.1.1 and Section 6.4.3.2). DADU believes that these stakeholder forums and collaboration with other organisations give its extension staff opportunities to interact, share ideas and learn from staff in other organisations.

To foster learning within the organisation, DADU also provides its staff with work-related learning materials. DADU provides an in-house database on basic district agricultural information for the extension staff. The organisation keeps computer-based district data on crop and animal production statistics, district profiles, staff training programmes, staff development records and district planning and evaluation reports on programmes and projects in the district office for use by staff. DADU also has a library and information resource centre with a wide range of agricultural (e.g. crop and animal production technologies) and agriculture-related (e.g. HIV/AIDS, policies, projects, environment, communication) learning resources such as books, flipcharts, models, training modules, folders and fact sheets for staff use. This learning resource facilitates self-directed informal learning in the organisation. Staff can choose what information they need and access it to meet their needs or learning goals. The following section describes how DADU ensures staff motivation and commitment in the organisation.

6.4.2.2 Ensure staff motivation and commitment in the organisation

Although DADU has put in place processes to develop a good extension plan, the management realises that with a field staff to farmer ratio of 1:5364, unless those staff are motivated, there is little chance that the plan will be implemented effectively. To this end, a cornerstone of DADU success has been the system it has put in place to encourage and support staff to ensure that they are motivated and committed. This system uses three key mechanisms to motivate staff (Figure 6:13). First, it has adopted a more inclusive approach to management. Organisational management in DADU before 1997 was top-down. The Director (DDA) received instructions from the regional office and, either alone or with a few senior staff, he made unilateral tactical decisions for the organisation. With this new approach, staff from every level in the management hierarchy are included in the decision-making process. DADU believes this is important because staff take ownership of the decisions made by the organisation. Consequently, this enhances the commitment of the staff and encourages them to perform well.

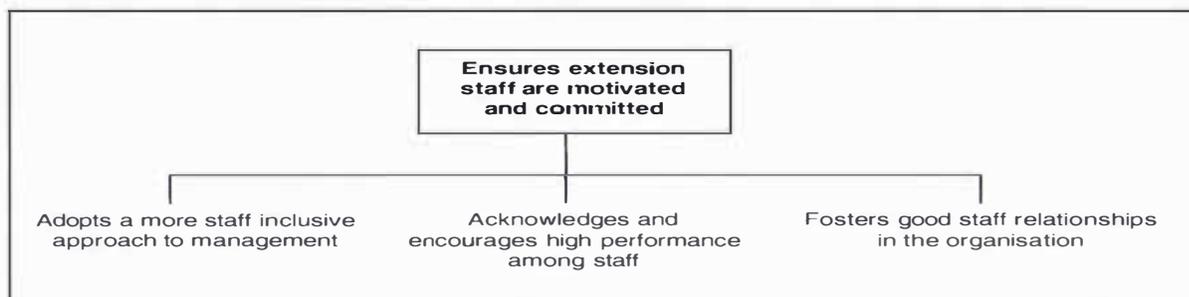


Figure 6:13. The mechanisms DADU uses to ensure staff motivation and commitment

DADU involves extension staff in decision making in two major ways (Figure 6:14). First, all field staff and supervisors are involved in DADU's annual planning and evaluation process. All field staff are involved in the development of the district's annual extension plan and each staff member is responsible, in consultation with his supervisor, for the development of his own annual work plan and training programme (see Section. 6.4.1.1.1). Second, DADU has a management team made up of representatives from all levels of the management hierarchy for tactical decision making. The management team of DADU in the district comprises the Director and his assistant, all supervisors, two representatives of field staff and a support staff representative. The management team is responsible for organising the annual planning and review workshop in the organisation. It also makes the tactical or medium-range decisions for the implementation of DADU's annual extension programme. The team meets on a monthly basis to review the organisation's activities and suggests changes for improvement. The Director is, however, ultimately responsible for all the decisions made by the organisation.

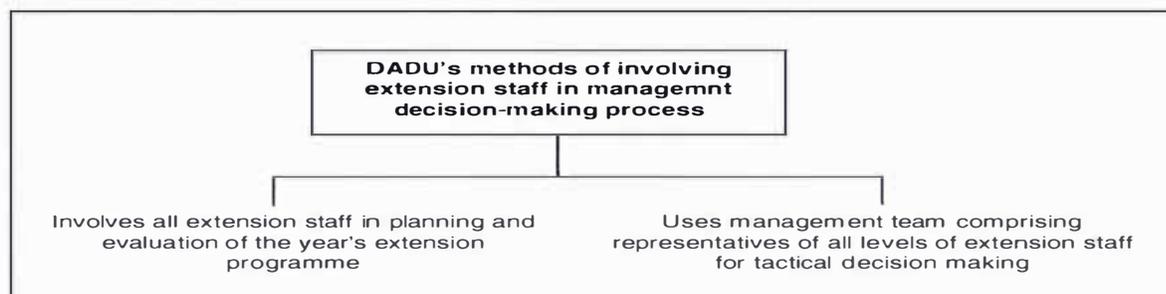


Figure 6:14. The methods DADU uses to involve its staff in management decision making

To enhance field staff motivation and commitment, DADU also rewards high performance among the staff. This is achieved in two ways. First, it gives awards to the best performing field staff. Each year, a staff appraisal system is used by DADU to select the best all-round field extension worker in the district for an award. Other best performing staff are also selected for specific projects (e.g. GTZ supported PTD & E). The awards are presented during the District's celebration of the national farmers' and fishermen's day in December each year. The award includes both tangible (cash, field gear - e.g. gum boots, raincoat, household equipment - e.g. tape recorders, television sets, and time off for professional studies) and intangible (a certificate of recognition, praise) rewards (Figure 6:15).



Figure 6:15. A field staff member (right) received the all-round Best Extension Agent award in 2003

...the rationale behind it (the award) is to motivate the best worker - and other workers who are not doing their best - to "back up" and do something... I know it is my job to do it and I am doing my best. I am doing what I can do, so if this thing (the award) should come in as a supplement then that will even 'ginger' me to go the extra mile at work (AEA), personal communication, June 10, 2004 paras. 82, 90 follow-up).

The second means by which DADU rewards high performance among its staff is through staff promotion. Prior to 1997, few staff were promoted and this had a negative influence on staff morale. DADU has recognised this problem and have now put in place systems to ensure that high performing staff are promoted. DADU now monitors and updates its staff development records on its computer system to ensure that it can provide a well documented recommendation to the national office when a staff's promotion is due.

...the motivation aspect, because in those days (prior to 1997) one can stay at one particular grade for a 'thousand years'...nobody minds, but now we are putting structures in place, we have records on everybody in this place in the district and the region. We have put them on diskette (computer) here and there, to ensure that at any time we will know who needs promotion at this time, and whatever the person is doing (DDA, personal communication, May 21, 2004, para. 318).

The tracking of staff development records is critical to DADU because staff promotion in MoFA has implications for remuneration and opportunities for further professional studies. The higher the rank of staff in the MoFA, the higher the remuneration and better chances of gaining scholarship for further professional studies. As such, this has been found by DADU as motivating to the extension staff in the district.

The final means by which DADU ensures that extension staff are motivated and committed to the organisation is by fostering good staff relationships within the organisation. The organisation has worked to create an environment of openness, trust and mutual respect. DADU believes that by creating a work environment where staff have trust and mutual respect, motivation and commitment will be enhanced and staff performance will improve.

...we are all living in harmony over here, the DDAs, the DDOs and the AEAs are all free with each other. In fact, we are staying like we are from one parent and this gives me peace of mind to do my job. I don't know of other places but here, that sort of cordial relationship exists in our

environment (AEA4 personal communication, June 7, 2004. paras. 359-361).

To foster good staff relationships, DADU uses two key means. First, it fosters mutual trust and mutual respect among staff. The Director and supervisors have built good interpersonal relationships with field staff by being open with them and demonstrating their trust in them and respect for their views by including them in decision making in the organisation. The Director and supervisors believe that good leadership must take into consideration its relationships with the people with whom they work.

The second means DADU uses to foster good staff relationships in the organisation is by encouraging open communication. To ensure open communication, DADU has established an internal communication culture which ensures transparency and accountability. The Director finds it important to ensure that all staff are well informed about both the resources that are available to the organisation, and all important events and activities in which the organisation is involved. . The Director uses the monthly staff review meetings to update staff on what is happening in the organisation. DADU encourages staff to speak their minds and constructively engage in dealing with issues that they face within the organisation. As such, the staff have a degree of freedom and the choice to design their own work plans with farmers in the sub-district with limited interference from supervisors. This level of open communication in the case organisation is expressed in the statements made by a field staff and a supervisor:

...There is transparency in all things we (DADU staff) do. It is not only the Director who knows the amount (funding) we have for operation...We can also go to our Director, we sit down with him and we all discuss issues. So with all these sorts of co-operation, it 'gingers' us to work (AEA2, personal communication, May 17, 2004 paras. 407, 600).

...I have realized that when you open up to your subordinates, you have people who are willing to work, willing to give of their maximum and their best. That is, if they all know what is happening in the administration (DDO2, personal communication, May 3, 2004 paras. 6-63).

The following sub-section describes the means by which DADU ensures that its existing resources for extension provision are used efficiently.

6.4.2.3 Ensures existing resources are used efficiently

The DADU has 23 field staff, and a budget of ₺197,383,182.00 (21,809.75 USD)⁹ to provide extension services to about 123,375 farmers in the district. Given the level of financial resources, a factor critical to DADU's success has been its ability to ensure the most efficient use of these resources. This has been achieved in three main ways (Figure 6:16). First, it tries to make sure that it does not duplicate extension services (or activities) that are available from other extension providers in the district. Second, it adopts group-based extension delivery methods in working with farmers in the district. Finally, it has put in place a systematic control process for ensuring the effective implementation of its extension programme.

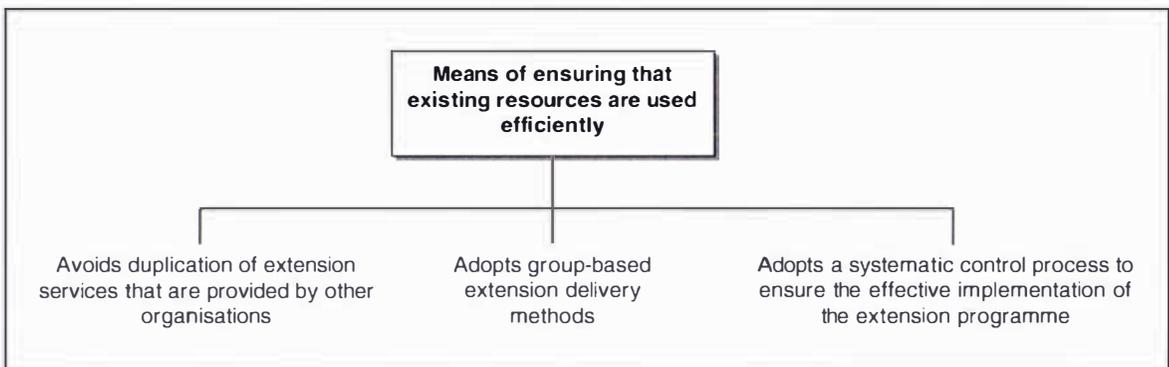


Figure 6:16. The means used by DADU to ensure its existing resources are used efficiently

DADU avoids the duplication of extension effort by ensuring it has a good understanding of the roles and activities undertaken by other extension organisations (government and nongovernmental) in the agricultural extension and rural development system. This information is obtained primarily through the consultative planning workshop (see Section 6.4.1.1.1) where DADU discusses its activities with stakeholders for collaboration. However, other forums (e.g. farmer group discussions, monthly and quarterly reviews) and networking by DADU staff also provide information about the

⁹ The cash inflow in the 2003 programme year for DADU. 1 USD = 9,050.23 GHC as of 30th April, 2006

extension activities of other organisations and opportunities for collaboration and role negotiations.

With a low field staff to farmer ratio (1: 5,364), DADU aims to be efficient in its field operation. To achieve this aim it uses group-based extension methods as the primary means of extension delivery. The field staff assist farmer groups to develop action-plans and provides them with information for decision making. The main means by which the field staff interact with farmer groups are through group discussions meetings, on-farm demonstrations and field days. This approach is efficient because it allows the organisation to reach out to a large number of farmers in a relatively short space of time.

The final means by which DADU ensures that its resources are used efficiently in the field is through the use of its monitoring system. As described in Section 6.4.1.3, once the annual extension programme is developed, DADU controls its implementation through regular field supervision at bi-weekly, monthly and quarterly intervals. This monitoring system is used to ensure that the mini-plans of the field staff are implemented as planned and that the field staff use the available resources efficiently.

6.4.2.4 Mobilises additional resources from external sources

Resource mobilisation has become an increasingly important activity for DADU because government funding is limited and uncertain. With the current resource base provided by government, DADU has realised that to better meet their goals it can mobilise resources from sources external to the organisation. This approach has allowed the organisation to have greater impact on the livelihood security of farm households in the district. DADU uses four key methods to secure additional resources from external sources (Figure 6:17). First, it lobbies the government to obtain access to additional funds for projects that are relevant to the district. Second, it canvasses for funds from nongovernment sources at the local, regional, nation and international levels for projects that are relevant to the district. Third, it provides certain private goods services for which farmers are required to pay. Lastly, it collaborates with other organisations within the district AgE&RD system.

The Ghanaian government provides grants for rural development projects (e.g. RTIP, Cocoa-Hi-tech project, PSI-Oil palm) through the Ministry of Food and Agriculture. These grants tend to be for projects that are of national interest. For example, the

Ministry of Food and Agriculture provided grants for projects that were designed to improve cocoa and rice production. DADU is pro-active in obtaining these grants. The management staff identify areas that may be of interest to the Ministry of Food and Agriculture and then prepares a report on the topic area. In the report they specify such things as the potential for a new crop, the number of farm households that might benefit from its adoption and the value of the crop to the region. They also specify how DADU could promote the new crop and what resources they will need to undertake the project. These reports are sent to the Ministry of Food and Agriculture and then the Director of DADU lobbies the Ministry to obtain project funding. To this end, the Director of DADU is proactive in maintaining a good working relationship with senior personnel in both the regional and national offices of the Ministry of Food and Agriculture.

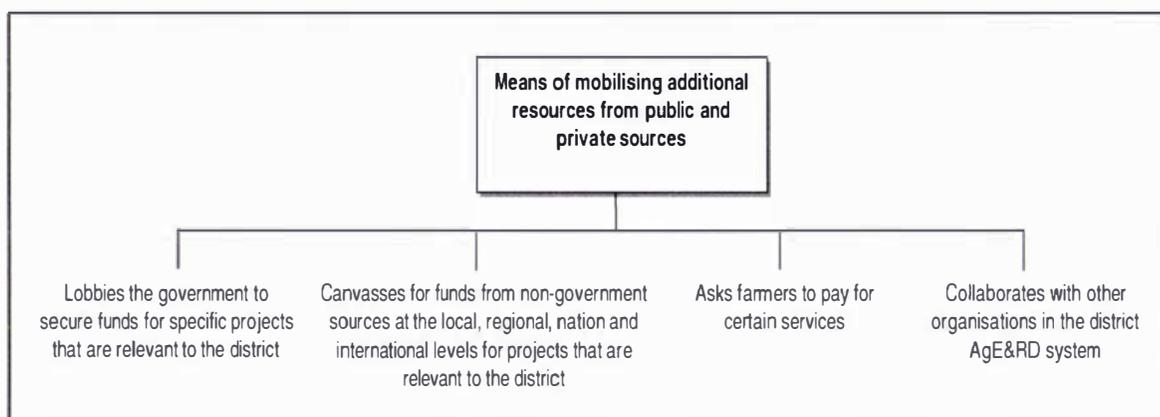


Figure 6:17. The means DADU uses to mobilise additional resources to meet the needs of farmers

To ensure a broader resource base, DADU obtains project funding from local, regional, national and international donor organisations. Through the consultative planning workshop and the networks that DADU has developed with local and external organisations, it is able to identify the interests of donor organisations and develop farmer needs-based project proposals in line with these interests. DADU then sends these proposals to the targeted organisations for grants. For example, through such proposals, DADU won support from the German Technical Cooperation (GTZ), a German government-owned corporation to undertake a project in Participatory Technology Development and Evaluation (PTD&E) for crop pest control on vegetables in 2002 (GTZ, letter Number ICP/MoFA/LS/CR/02/AF/01). To build donor confidence for continuous funding of such projects, once won, DADU ensures efficient delivery of the project and efficient use of the available funds. It also ensures accountability through continuous

dialogue with the donors (involve them in planning and reviews) and provides them with reports and information on the implementation of the projects on a regular basis.

The other avenue of income to DADU besides government and project funds is its provision of for-fee services. Before 1997, extension services provided by DADU for farmers in the district were completely free of charge. But, as part of the implementation of the government decentralisation policy, DADU is now undertaking limited privatisation of some of its services, especially in the area of veterinary services. Farmers are asked to pay for these specialised inputs and veterinary services. As described in Section 6.3.2, DADU now generates about 5% of its administrative cost from for-fee services, which include sale of veterinary drugs, meat inspection and veterinary surgical operations.

To expand its resource base, DADU has realised that there are advantages in collaborating with other organisations to ensure that it has greater impact within the district. Collaboration with other organisations within the district AgE&RD system, as previously indicated, is a major contributor to DADU's success. DADU collaborates with other organisations to gain support for agricultural extension provision in the district. This approach allows DADU to source resources from outside the organisation in terms of financial (cash) and non-financial resources which include human resource (i.e. subject matter specialists), vehicles, and materials for field demonstrations (see Section 6.4.3.2). In the next section, DADU's means of fostering a cross-sector pluralistic extension system in the district is described.

6.4.3 Foster a cross-sector pluralistic extension system

A further significant aspect of the shift in focus of this organisation that contributes to its success is that its provision of agricultural extension is not done in isolation. Rather, DADU has recognised that their efforts to improve the livelihood security of farm households have a greater chance of success if it fosters a cross-sector pluralistic extension system to integrate its activities with those of other sector organisations and groups in the AgE&RD system. Thus, it ensures that its agricultural extension programme is coordinated with those of other organisations in the AgE&RD system and

works and maintain ongoing collaboration with stakeholders organisations in the system (Figure 6:18).

...you need all of them (different stakeholders) on board, to solve the problems (of the community) and we solve them once and for all (DDA, personal communication, May 21, 2004, paras. 182-183).

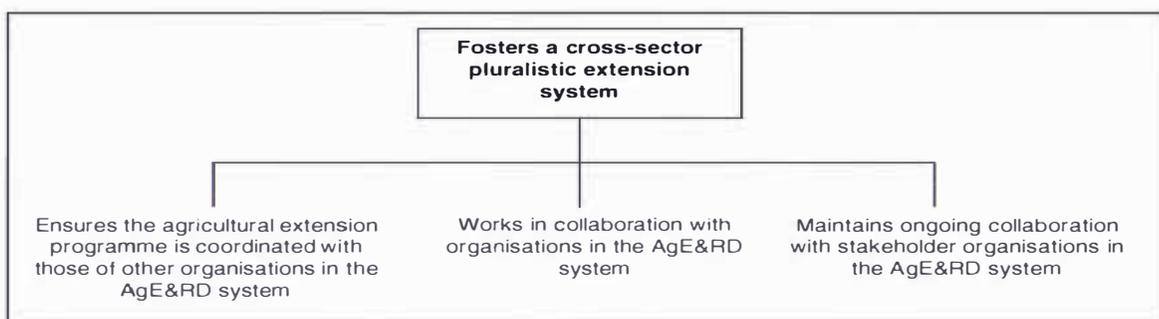


Figure 6:18. DADU's means of fostering a cross-sector pluralistic extension system

Fostering a cross-sector pluralistic extension system for DADU means that it tries to ensure that its efforts are integrated with those of other sector organisations (e.g. health, environment, and road and transport) in the AgE&RD system that are working to improve farm households' livelihoods in the district. This approach was found to be critical to the success of DADU because farmers' needs (or problems) in one single sub-district encompass many different sectors which go beyond the capabilities of a field extension agent and the district extension organisation to meet or solve.

...we (DADU) realized that the responsibilities (assisting farmers to improve their livelihoods) are not on MoFA (DADU) alone. Certain problems will best be solved in collaboration with other organisations (DDA, personal communication, May 21, 2004, para. 235).

6.4.3.1 Coordinating extension programme with other organisations

DADU integrates its extension activities with the activities of both public and private sector organisations in the AgE&RD system in order to ensure a unified service in the district. A level of coordination exists within the AgE&RD system that contributes to the

integrated efforts of these organisations to improve the livelihood security of farm households and rural communities. Farm household needs such as HIV/AIDS education/awareness campaigns and child nutrition are key agricultural needs as they significantly impact on farm households' ability to improve the contribution agriculture makes to their livelihood security. Such needs are beyond the capability of DADU to address. However, given the importance of HIV/AIDS awareness/education and child nutrition to the livelihood security of farm household, DADU and the Ministry of Health in the district are coordinating their efforts to assist farm households in these two areas of need. Field extension agents incorporate HIV/AIDS awareness information into their farmer extension meetings. Likewise, if DADU has organised a farmer forum for a particular reason it will inform other organisations such as the Ministry of Health or relevant NGOs so that they may come along and present to the forum as well. This integration allows farmers to choose among alternatives to address their needs because the various organisations that coordinate with DADU offer different services.

DADU ensures this integration through two key means. First, it ensures that the provision of agricultural extension in the district is informed by the understanding of the capabilities and programmes of all organisations, including farmer groups in the AgE&RD system. The term *capabilities* here, refers to what resources and organisational structures are available to DADU to meet the needs of farm households on an ongoing basis. DADU is able to gain this understanding as a result of the multi-stakeholder forums and discussions that its staff regularly have with these organisations. The second means by which DADU facilitates the integration of its programmes with those of other organisations is through the fostering of networks with other organisations in the AgE&RD system. Similarly to the process of gaining understanding of the capabilities and programmes of other organisations in the district, DADU - through multi-stakeholder forums and discussions - creates a platform where organisations including DADU interact among themselves to understand the needs and circumstances of farm households in the district and areas where they can collaborate to avoid duplication of effort. As such, integration activities in the district AgE&RD system contribute to the ability of the DADU to collaborate with other organisations in the district through different means.

6.4.3.2 Collaborating with other organisations

Collaboration with other organisation within the district AgE&RD system is a major contributor to DADU's success in the provision of cross-sector pluralistic agricultural extension for farm household livelihood improvement. The term *collaboration* here means *working together or in association with others for a common aim*. The forms of collaboration undertaken by DADU are twofold. It collaborates to support the efforts of other organisations in the system, likewise, it collaborates with other organisations to gain support for their efforts. DADU support other organisations in the district in two key ways (Figure 6:19). Firstly, DADU provides training for staff of other organisations. Some organisations in the district AgE&RD system are working with farm households in areas of agricultural production in which it lacks technical expertise. Where DADU has capabilities in these areas, it assists these organisations through staff training. An example of this is DADU's work with the Forestry Service Division (FSD) in the district. The FSD were promoting bee keeping, mushroom production and snail farming as alternative sources of livelihood for farm households living close to forest reserves in the district. DADU provided training for FSD field staff as they lacked technical expertise in these non-traditional enterprises.

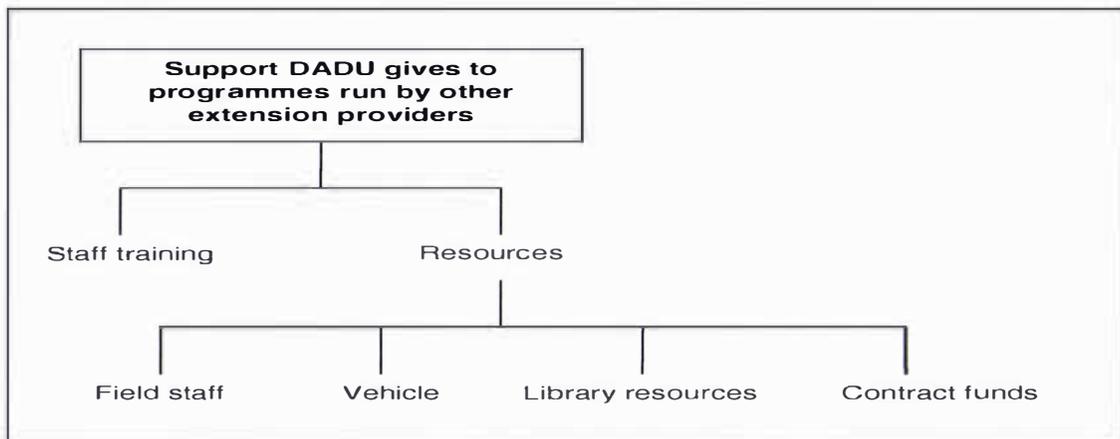


Figure 6:19. Typology of supports DADU gives to other extension providers

The second way in which DADU provide collaborative support is by making available its own staff and resources such as vehicles, library and contract funds to assist the field efforts of other organisations in the AgE&RD system. The level of collaboration by DADU with other organisations varies depending on the extent to which the efforts of the other organisation are directed at farm households' needs similar to those that are a focus

for DADU's extension work. Staff may work with another organisation for a short period of time or the relationship may be more of an informal partnership. DADU's field staff work together with the FSD to implement and monitor FSD's alternative livelihood schemes in the sub-districts because the scheme's desired outcomes for farm households match those that DADU also seek. Similarly, World Vision International (WVI) is an NGO working at the district level in Ghana. The Director of World Vision International in Ghana highlighted this type of collaboration in the following quotation:

...we are interested in helping development at the grassroots level in the rural communities in the area of food security... But we are not so operational (no field staff) so we depend on the stakeholders. We are interested in the MoFA (DADU) because their frontline staff are in the communities and if we work with them the support will eventually reach the beneficiaries (Director, World Vision International, personal communication, May 6, 2004, para. 96).

The WVI funds a project that promotes bee-keeping and improved banana and plantain varieties among farmers. Although WVI do not have field staff, because the focus of the project complements DADU's plan, DADU's field staff work to implement the project in the sub-districts. DADU also have a library facility that allows them to lend relevant agricultural reference materials to other organisations. The reading material is shelved in the district office where it is available for lending to organisations in the district.

...we (DADU) have a wide range of reading material available for lending to other organisations. The books are not only available to our (DADU) extension staff, but also for others, including World Vision International for reference (DDA, personal communication, May 21, 2004, para. 534-paraphrased).

Although the practice of contracting out NGOs by DADU for specific agricultural extension services in the district is not well developed, this is contributing to ensuring the best use of DADU's capabilities in meeting the key needs of farmers in the district. The term *contracting out* is being used in the sense that *DADU establish a formal contractual*

agreement with NGOs and fund specific services they undertake with farmers, which is also a major priority of DADU. However, DADU ensure quality control of the activities of the NGOs it contracts through regular monitoring and technical support where necessary. DADU has signed a contract with an NGO called Rural Friend to train farmer-based organisations (FBOs) in what it calls “development dynamics” (leadership skills, functions of management committees, conflict management resolution and book keeping) and business planning (production strategies, costing and marketing, and small-scale project management and expansion) in the sub-districts. This is important to DADU because it has an aim which is similar to that of Rural Friends, that is to build the business capacity of FBOs. However, DADU currently lacks the capability in terms of expertise in development dynamics and business planning to train the FBOs in the district. Similarly, due to a lack of field staff numbers, DADU has another NGO called the Adventist Development and Relief Agency (ADRA) to provide extension services to cocoa farmers (commodity-specific extension) in some cocoa growing sub-districts in the district.

...In fact the district is so big that there are some areas we don't have staff (numbers) to do the work. So, that is why we are bringing the NGOs in (DDA, personal communication, July 12, 2004 para. 224 follow-up).

As previously indicated, DADU collaborates with other organisations to gain support for their efforts in agricultural extension provision in the district. This collaboration by DADU is demonstrated in two key ways (Figure 6:20). First, DADU seek and receive training from other organisations. Some organisations in the district AgE&RD system have specialist expertise that is now needed by field staff of DADU because of their broader livelihood focus to agricultural extension. For example, in order to meet farmer needs relating to FBOs, child nutrition and forest resource management, DADU requested staff training from relevant organisations. The field staff were trained in management of co-operatives, balanced food formulation for children, and forest tree management by experts from the Department of Co-operatives, Department of Community Health and Department of Forestry Service Division, respectively.

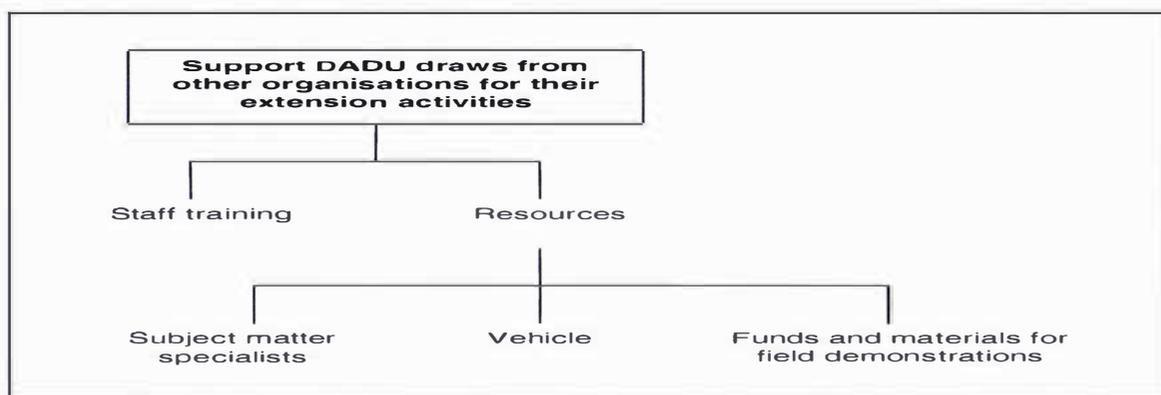


Figure 6:20. Typology of supports DADU draws from other organisations for extension activities in the district

The second means by which DADU seeks collaborative support from other organisations is by using their subject matter specialists or experts to provide technical support to field staff, and relying on their resources such as vehicles, funds and other materials for field demonstrations to assist the field efforts. DADU's field staff work with the Ministry of Health (MOH) to implement and monitor DADU's child nutrition improvement scheme in the sub-districts. This nutrition scheme is of interest to the district MOH, so it provides an expert community nurse to give technical support to field staff of DADU in the implementation of the scheme in the sub-districts. The scheme is meant to assist farm families to formulate and use home-prepared balanced rations to reduce child malnutrition in the communities. This requires specialist knowledge since the problem of malnutrition is complex and may involve other factors (e.g. worm infestation) besides balanced diet. This is where the expertise of the district MOH becomes very important.

Certain problems will best be solved with other organisations. That is how the whole thing started - because if you take the child nutrition aspect for instance, we can't solve it alone without bringing in the Ministry of Health (DDA, personal communication, May, 21, 2004, para. 235).

DADU establishes good relationships with organisations in the district where they could borrow and use their vehicles for field operation, especially where the particular operation is of interest to the organisations. DADU also uses the financial and material resources of other organisations, including farmer organisation/groups in the district AgE&RD system, to implement their planned activities as much as possible. For example, the German Technical Cooperation provided financial support for DADU's field demonstrations in

crop integrated pest management (IPM) in the district. Similarly, farmer groups in the district provide land for DADU to use as field demonstration plots. The following subsections describe how DADU operates to ensure effectiveness and efficiency in this relatively new decentralised context which is focused on improving the livelihood security of farm households.

6.4.3.3 Maintaining an ongoing collaboration with stakeholder organisations

A significant means DADU uses to improve its effectiveness in management of its extension delivery in the district is by maintaining ongoing collaboration with stakeholder organisations, including farmer organisations/groups in the district AgE&RD system. Given the broader livelihood focus adopted by DADU, it is not enough to initiate collaborative arrangements with stakeholders, but ongoing collaboration with the stakeholders has become necessary for ensuring success. Stakeholder input and commitment to the district agricultural extension programme are considered important by DADU. It is particularly important in defining what the key farm household needs are, and working together to address them. DADU believes that strong collaboration with organisations, including farmer groups in the district AgE&RD system, allows the organisation to gain the necessary resources and support for responsive extension programme planning and implementation in the district.

Two methods are central to maintaining ongoing collaboration with stakeholder organisations in the district AgE&RD system (Figure 6:21). First, DADU builds relationships with organisations and groups in the district AgE&RD system. These relationships are based on openness, trust, respect and understanding. This is demonstrated in the way that DADU works with other organisations and groups in the district. It demonstrates a high level of inclusiveness of representatives of the organisations and groups in their decision-making process. For example, farmer groups are involved in programme development and implementation at the district and sub-district levels by DADU. Similarly, DADU includes relevant organisations in its planning, implementation and evaluation processes in the district. This “inclusive” planning process provides a unique forum where all stakeholders share knowledge and experiences, and give and receive feedback which contributes to the formulation of more effective development initiatives in the district.

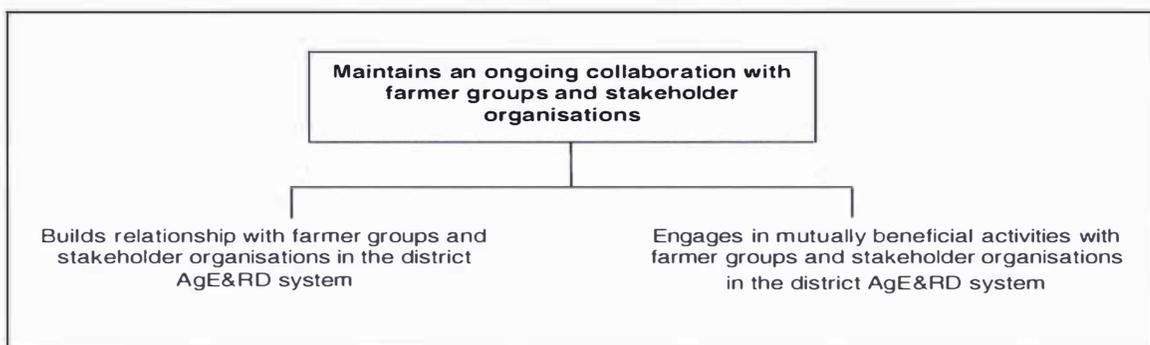


Figure 6:21. The means by which DADU maintains an ongoing collaboration with stakeholder organisations/groups in the district

The stakeholder organisations and groups in the district also have their representatives in a change management team of DADU. The team has the responsibility for promoting innovative approaches and ideas for improving communications, interpersonal relations, and organisational effectiveness in DADU. The team includes the Deputy DDA, 1 DADO, 1 AEA, 1 representative from the District Assembly, 1 representative of an NGO and 2 farmer group representatives. The regular management team liaises with the change management team and reviews proposals submitted to them, so that they can help judge the potential usefulness of proposals to targeted audiences and provide recommendations. Thus, the change management team meets only when there are major organisational issues in DADU. DADU believe that the inclusion of stakeholders in their decision making helps to eliminate mistrust, ensures openness and promotes commitment for stakeholder collaboration.

...the challenge (with collaboration) is about suspicion. ...A critical thing is mistrust. Why should people know what we are doing at all? The greatest challenge is trying to win the confidence of these stakeholders (DDA-Ex, personal communication, May 23, 2004, paras. 88-94).

...I think it is openness... Laying your plans before them (stakeholders) and discussing them thoroughly. That makes them feel they are part of you and you can not stand alone (DDA, personal communication, May 21, 200,4 para. 211).

The second significant means by which DADU maintains ongoing collaboration with stakeholder organisations in the district AgE&RD system is by engaging the organisations in mutually beneficial extension activities in the district. DADU believes that extension activities that bring mutual benefits improve the commitment and support of stakeholder organisations in extension provision in the district.

...child nutrition is our (MOH) work and we think it is also the work of MOFA (DADU) so if we come together, we will get experience from them, and they will also get experience from us (Nurse, District Ministry of Health, personal communication, June 17, 2004, para. 108)

DADU facilitates collaboration – particularly with farmers - through the promotion of stable farmer groups. DADU ensures the stability of the groups by encouraging farmers through awareness creation to form the groups around a common need(s), and provides them with training in group management (see Section 6.4.1.2). As previously indicated the farmer groups not only benefit from extension services provided by DADU, but also support DADU's activities. The farmer groups provide key informants for DADU's consultative planning and programme evaluation processes. They are also a major means through which the extension field staff enter the communities to disseminate extension messages. The establishment of stable farmer groups has contributed significantly in maintaining an ongoing collaborative relationship between DADU and farmers in the district.

DADU also engage in mutually beneficial activities with relevant stakeholder organisations in the district AgE&RD system as a way of maintaining ongoing collaboration with them. As already described in Section 6.4.3.2, DADU collaborates with relevant organisations in the district for reciprocal staff training and resource sharing when necessary. This reciprocal support among the organisations promotes good relationships between DADU and the other organisations for further collaboration. As was stated at the beginning of the chapter, a most significant factor that has contributed to the success of the case organisation is its ability to coordinate the district's agricultural and rural development (AgE&RD) system. The following section describes how DADU coordinates this system in the district for extension provision.

6.5 Coordination of the agricultural extension and rural development system

The final most significant factor that is contributing to the success of DADU is its contribution to ensuring coordination of the district AgE&RD system. The organisation promotes and supports agricultural extension and rural development networks of extension providers and sponsors (sub-systems) in the district. DADU has realised that coordination - in terms of harmonising effort to reduce duplication - is improved when organisations within the district AgE&RD system are brought together for interaction around a common aim. DADU believes that the direct contact and frequent interaction among the organisations improve the understanding each has about the others' aims, roles, activities and capabilities. These outcomes lead to other outcomes – farmer representatives can identify organisations that can help them, organisations can identify areas in which they can help farmers where needs are not currently being met by the organisations in the AgE&RD system, and organisations can identify areas where they can collaborate and areas where there is duplication and the opportunity to reallocate their scarce resources.

The agricultural extension policy in Ghana expects DADU to coordinate extension activities in the district. But, because there are no policy guidelines or legislated powers to do this, DADU has found it important to provide platforms for interaction among the key stakeholders in the district AgE&RD system. The platforms which DADU use to promote this coordination are pervasive in the processes of the organisation and have already been illustrated in other sections in the chapter – which indicate the inter-relatedness of DADU's activities and the multiple nature of its goals. DADU organise a number of stakeholder forums (e.g. planning and evaluation workshops and discussion forums, social functions) as practical approaches for improving interaction and mutual understanding of the rural development system among stakeholders in the district. As indicated in the earlier parts of this chapter, DADU hold annual planning and evaluation sessions, and quarterly reviews in which it invites key stakeholders to participate. Also, twice each year (mid-year and end-of-year), DADU hold social functions and invite representatives of key stakeholders for social interaction. Also contributing to this is the ongoing interaction DADU has with the District Assembly as a representative on the district's development planning committee, and the advocacy role it plays in influencing

the decisions and activities of other departments and organisations in the District Assembly.

Apart from providing the platforms for interaction, DADU has no control over the linkages that are formed to enable it to set common aims or policies, harmonise its working methods, exchange information or carry out follow-up and evaluation or their coordinated efforts. However, DADU believes that these forums (platforms) increase communication between the stakeholders, and consequently increase the knowledge stakeholders have about each others' needs, capabilities, aims, roles, activities and opportunities for assisting farm households to meet their needs in the district.

6.6 Conclusion

In this chapter the means by which a public district level extension organisation operates to assist farmers to improve the contribution that agriculture makes to their livelihood security have been described. Some key factors have been identified as significant to the success of the case organisation in improving the contribution agriculture makes to the livelihood security of farmers in the district. The organisation focuses not only on technologies for agricultural production, but also other factors that have direct and potential impacts on agriculture and farm household livelihoods. To operationalise this approach, the organisation ensures that its extension activities are based on the needs of farmers, its capabilities and capabilities of other organisations with which it collaborates in the district. The organisation also ensures that the management of its extension delivery is efficient to meet the important needs of farmers, taking into consideration its resource base and support from other organisations with which it collaborates in the district extension and rural development system. Finally, DADU is creating platforms for stakeholder interaction to encourage the coordination of extension activities of organisations in the district agricultural extension and rural development system to improve the contribution agriculture makes to farm households' livelihood security. In the following chapter, the means used by DADU to assist farmers to improve the contribution agriculture makes to their livelihood security at the district level are compared with those discussed in the literature.

CHAPTER 7:**DISCUSSION****7.1 Introduction**

In this chapter the operation of the case extension organisation is compared to the literature to provide understanding about the factors that determine the success of a district level extension organisation with a livelihood security focus in Ghana. For the purposes of discussion, the chapter is separated into two major parts. First, the chapter starts with a classification of the case organisation. This provides the context in which the results can be interpreted and compared to those of other studies. The key factors that influence the performance of the case organisation are then compared to those in the literature in the second part of the chapter.

7.2 Classification of the case organisation

The purpose of this section is to describe the distinct characteristics of the case organisation to provide the context in which the results can be interpreted and compared with those of other studies (Rousseau & Fried, 2001, Hartley, 2004). As suggested by Ragin (1992), a case must be described distinctly, based on its context and major features, so that it can be compared with other cases. Given that the effective operation of an extension organisation can be influenced by organisational and external environment factors (Peterson, 1997; Lai & Cistulli, 2005), the case organisation is classified on the basis of these characteristics in the following sections.

7.2.1 Organisational factors

Several theoretically important organisational factors can be used to classify the case organisation. The internal organisational factors here describe the important characteristics of the organisation that can influence its operation. These factors are summarised in Table 7:1. The case organisation is a public sector organisation. It was created to fulfil its responsibilities to government by delivering not-for-profit public goods services (Matthews & Shulman, 2005). Public goods are services provided to improve the quality of life of people in a community without a private profit motive (Lawton, 2005). In line with the literature (Hanyani-Mlambo, 2002), the case is a public agricultural extension provider, and as such, it is involved in public community

development and extension service provision. The organisation works at the district level, which is the lowest level of government administration in Ghana. There are 110 geographically defined districts in Ghana and each district has a public agricultural extension unit.

Table 7:1. Key theoretical characteristics of the case organisation

Characteristic	Case study Classification
Organisation	
Type	Public
Level of operation	District level
Decentralisation	Deconcentration
Period under decentralisation	Six years
Policy aim	Improve rural livelihoods by ensuring food security, agricultural raw material production and sustainable natural environment
Size	44
– Directors	2 (director and deputy)
– Supervisors	8
– Field staff	23
– Support staff	11
Ratio of extension agents: farmers	1:5364
Area covered	2,375 km ²
Funding	Mainly from government and variable

A critical element of this case is that the organisation operates in a decentralised extension policy environment. As a decentralised government unit, the literature (Rondinelli, 1981; Smith 1985; Carney & Farrington, 1998; World Bank, 2000a; Amezah & Hesse, 2002; Larson & Ribot 2005) describes this type of decentralisation as *deconcentration*. *Deconcentration is a form of administrative decentralisation where the organisation has administrative or operational responsibilities and authority from central government for extension programme planning, implementation and evaluation with the involvement of farming communities.* However, general agricultural extension policies are formulated at the regional and national levels and passed on to the organisation at the district level (Amezah & Hesse, 2002). Furthermore, the organisation does not have fiscal decentralisation where it can generate its own revenues or transfer financial resources, nor does it recruit its own staff. Rather, financial and human resources are supplied by the central government through the Ministry of Food and Agriculture.

As argued by Crook and Sverrisson (2001), it could take between ten and fifteen years of financial and political support to stabilise a decentralised system. The case organisation was decentralised in 1997 and can be described as an organisation that is in transition from a centralised to a decentralised extension organisation since this policy is relatively new and many of the key operational factors of this organisation are still unfolding. For the last seven years it has operated in the new policy environment. The case organisation has set a policy aim to improve rural livelihoods by ensuring food security, agricultural raw material production and a sustainable natural environment. This aim is consistent with the emerging thinking towards a sustainable livelihood approach to extension (Scoones & Thompson, 1994; Sutherland et al., 1999; Ingram et al., 2002; Molua, 2005). In this approach, food production is to be approached in relation to other issues such as food processing, natural resources management and the health of the rural people (Sutherland et al., 1999).

Similarly to what Feder et al. (2001) and Anderson and Feder (2004) have written with regard to extension organisations in developing countries, the case organisation has few extension agents (23) for the number of farmers (5,364) and a large geographic area (2,375 km²) to cover. Moreover, these are all males and though this did not come out as a limitation, there are those who believe extension organisations can respond better to farmer needs if there is a good mix of male and female extension agents. Besides, the case organisation relies heavily on government for its funding, but this funding is variable because funds released from government are sometimes delayed or fall short of what the organisation has budgeted for. The financial report on the case organisation in 2003 showed that about 95% of its operating cost was provided by central government. This does not include staff salaries, the cost of which is met directly by central government. The operating budget does not include non-financial resources (materials and personnel time) that the case organisation obtains from nongovernment sources. The other 5% of the operating budget came from revenue received from selling specialist vaccines, meat inspection and service charges. About 26% of the operating budget is used for administration and the rest funds their annual extension programme.

7.2.2 External factors

External factors include those factors which are outside the control of the organisation but which can affect the operation of the organisation. Although the only high level external factor identified in the literature as relevant to the success of a decentralised extension organisation at the local level was the political environment, a broader classification scheme is likely to be more useful when describing a case study. Therefore, for the purpose of describing the case organisation, the classification scheme developed by Peterson (1997) has been adopted. Peterson developed this classification scheme to describe contextual factors that influence the operation of extension organisations. He divided the external factors into macro and institutional factors (Table 7.2). *Macro factors* are defined as *those factors outside the case organisation's control excluding institutional factors that can impede or influence extension service provision*. In contrast, *institutional factors* are defined as *those factors related to the availability and operation of other support organisations (e.g. in finance, training, communications, research) in agriculture and rural development that can influence the case organisation's extension provision in the district*. Peterson separated the macro factors into policy, agroecological, political-economic, sociocultural, and infrastructure (Table 7.2). The political factors described by Lai and Cistulli (2005) are in effect macro factors as defined by Peterson (1997) and fall under Peterson's subclass of policy factors. The key external factors are discussed in more detail in the following paragraphs.

The case organisation is in Ghana, and thus operates in a developing country context. The policy environment (Peterson, 1997) has a number of attributes that influence the operation and performance of extension organisations (Table 7.2). It operates in a politically decentralised context where districts have deliberative, legislative and executive powers to plan and implement their own development programmes within general government policy guidelines (MoFA, 1997; MoFA, 2002a). The case organisation is part of a local government (District Assembly) administration in the district, and receives political support through the district's coordinating council. The literature (World Bank, 2000a; Feder et al., 2001; Asian Productivity Organisation, 2003) suggests that local extension organisations can be more effective if they are strongly supported by the local government. The organisation works in an environment where other government organisations are decentralised. This makes it easier for it to collaborate

with other government organisations at the district level as is suggested by the World Bank (2000a).

Table 7:2. Key external factors of the case organisation

Characteristic	Case study Classification
A. Macro factors	
▪ Country	Developing nation
▪ Policy	
– Decentralisation system	Yes
○ Other decentralised government agencies	Yes
○ Level of political support	High
○ Provide a clear legal framework	Yes
○ Focus on livelihood security and poverty reduction	Yes
▪ Agroecological zone	
– Type	Tropical
– Predominant farming enterprise	Crop-based
▪ Political-economic	
– Level of poverty	High (32 %)
– Scale of farming	Mainly small-scale (1-4 ha)
– Type of farming	Mainly mixed cropping with some livestock at subsistence level
– Land ownership	Mainly by chiefs, clans and communal
▪ Sociocultural	
– Cultural diversity	Yes
○ Migrant population	(49.1%)
○ Diversity in language	Yes
– Illiteracy rate	High (60.1%)
– Health problems	Yes
▪ Infrastructure	
– Roads, markets processing telecommunication, credit and schools	Poor
B. Institutional factors	
▪ Existences of well-developed institutions at the local level	Present
– Agricultural research	In adjoining major cities
– Training organisations for extension agents	In adjoining major cities
– Input supply organisations	Few
– Banking organisations	Few
– Farmers organisations	Few
– NGOs	Few

A key characteristic in the policy environment is that the government, through the MoFA, has provided a legal framework that clearly defines the roles, tasks and coordination mechanisms for the case organisation in relation to the MoFA and the District Assembly under this decentralised system (MoFA, 2004a). This supports the view in the literature (Smith, 1997; World Bank, 2000a; Nie et al., 2002) that a clear legal framework is critical

for improving extension decentralisation reforms, because interference and overlapping of roles in the extension system can be avoided and coordination and efficiency can be improved.

A major focus of the decentralisation policy in Ghana is to improve livelihood security and reduce poverty at the local level. The government of Ghana believes that the major way it can achieve this is through decentralised agricultural extension provision. Several reports (Carswell, 1997; Chambers, 1997; Reardon, 1997, 2001; Ellis, 1998; Gordon, 1999; Barrett et al., 2001a, 2001b; Reardon et al., 2001) have argued that the best way extension services can be effective in improving the well-being of rural people is to focus their operation on livelihood security and poverty reduction. However, there are limited examples in the literature of extension organisations - decentralised or otherwise - that have achieved this.

Another key macro factor that can influence the performance of extension organisations at the local level is its agroecological zone (Peterson, 1997). The case organisation is located in a tropical forest zone with an annual rainfall range of 1500 – 2000mm, temperatures which range between 26 °C and 30 °C and relative humidity of 60% - 70%. These diverse agroecological conditions support a diversity of farming systems – which are predominantly crop-based farming enterprises with some livestock farming.

Political-economic factors constitute another type of factor that influences the performance of extension operation at the local level (Peterson, 1997). The case organisation operates in an environment with a high level (31%) of poverty, and works mainly with small-scale (≤ 4.0 ha) crop farmers who tend to practise mixed cropping at a subsistence level. In addition, the organisation works in an environment where the land is owned by traditional political leaders with land tenure arrangement believed to be inimical to tenant farmers and agricultural development. This local power relationships with regard to land for agricultural purposes can have a major influence on agricultural extension given that about half (49.1%) of the people in the district are migrants.

Sociocultural factors are another type of macro factor that is believed to have an impact on the performance of local level extension organisations (Peterson, 1997). The case

organisation operates in an environment of cultural diversity. In the area, about half (49.1%) of the population are migrants from other cultures and ethnic groups within Ghana. As such, there is a diversity of local languages that are spoken in this area, with the dominant one being the Assin language. As in other parts in Ghana, the district has a high illiteracy rate (60.1%) and important health problems such as child malnutrition, HIV/AIDS and river blindness.

The final macro factor highlighted by Peterson (1997) as important in determining the success of a local extension organisation is infrastructure. The facilities in the case organisation's district in terms of roads, transport, markets, processing facilities, telecommunication and availability of credit are poor. According to Peterson (1997) the capacity to produce, send and receive information can be influenced by the state of infrastructure which, in turn, affects an extension organisation's extension activities. Given that the extension organisation operates in an institutional environment that has other public and private sector organisations working with farmers, it is important to understand this institutional environment. Peterson (1997) believes that the presence or absence of these organisations can affect extension effectiveness and efficiency with regards to opportunities for collaboration.

The organisation operates in a district where there are no agricultural research and extension training organisations. However, the organisation is only 75-180 km from three major regional agricultural research and training institutions from which it can seek support. Accessibility to such institutions can have a significant impact on extension organisations, particularly in relation to staff training and their managerial and technical capacity (Peterson, 1997). There are a limited number of input suppliers in the district. Peterson argued that farmers' access to inputs is critical to the success of extension organisations because farmers need inputs to be able to use some extension recommendations. The environment - apart from the decentralised departments of the District Assembly (Health, Social Welfare Community Development, Feeder Roads, Forestry etc.) - has a fair number of banking institutions, farmer organisations and NGOs that work alongside the case organisation in the district. In this section I have provided a description of the context within which the case organisation operates. In the following section, the key organisation factors that influence the success of the case organisation are discussed.

7.3 Organisational factors that influence the success of a decentralised extension organisation

Several organisational factors can influence the performance of an extension organisation in a decentralised extension environment (Lai & Cistulli, 2005). In this section I discuss the methods used by the case organisation under eight themes: (1) needs-based approach to programme development (2) accountability (3) stakeholder participation; (4) expansion of extension focus and roles; (5) a cross-sector pluralistic extension system; (6) institutional capacity building; (7) group-based extension approach and (8) resource management. These themes came out as important in providing an understanding of the case organisation's operation at the district level. As such, the factors are those that have influenced the organisation's success as a local level decentralised extension organisation that has farm household livelihood security focus, something not previously synthesised in the literature (see Figure 3.1). These themes are discussed in the following sections.

7.3.1 Needs-based approach to extension programme development

The case organisation stresses the importance of developing a needs-based extension programme. That is, it goes to great lengths to ensure that the needs of the farmers with whom it works set the agenda for the development of their extension programme. The literature (World Bank, 2000a; Richardson, 2003; Garforth, 2004) has also stressed that for livelihood security-focused extension services that operate in a decentralised extension context, their extension programmes should be needs-based. Needs-based extension programmes assist the case organisation to target its extension activities to the needs of farmers. This is in line with the views of Korten (1984) and Cristóvão et al. (1997) who argued that farmers are likely to become more confident and empowered to deal with their needs when an extension programme is based on their expressed needs.

Another key point in relation to the development of needs-based programmes is that the case organisation is interested only in needs that impact on the contribution agriculture makes to the livelihood security of farm households in the district – a major change in attitude or paradigm shift from agricultural productivity focus to livelihood security focus. As such, they have broadened their definition of farmer needs to tie in with the livelihood security focus they now have. The organisation defines farmer needs as *on-farm and non-farm needs that have impact on the contribution agriculture makes to the*

livelihood security of farm households in the district. This definition of farmer needs sets a boundary around what specific needs extension organisations with a farm household livelihood security focus can target at the local level. The literature (Reardon, 1997, 2001; Barrett et al., 2001a, 2001b; Reardon et al., 2001; Lanjouw & Lanjouw, 2001; Dorward et al., 2004) tends to describe farmer needs in terms of on-farm and off/non-farm needs. These broad terms provide little guidance in terms of determining where to set boundaries for extension organisation, and can mean anything.

The definition of *farmer needs* as provided in this case study has important implications for extension –the broader the definition, the greater the breadth of extension services that will have to be made available to farmers. In the extension literature in general, the term *farmer needs* has been used in terms of on-farm production needs. Lanjouw and Lanjouw (2001) highlighted the importance of taking into account both on-farm and non-farm factors when providing a livelihood security-focused extension service. They argued that farmers can best be assisted to improve their livelihoods if extension services focus on both farm and off/non-farm factors because the two areas are complementary sources of livelihood for rural people. The results of the case study support the emerging view in the extension and rural development literature (Scoones & Thompson, 1994; Chambers, 1995; Chambers, 1997; Sutherland et al., 1999; Ingram et al., 2002; Molua, 2005) which is that extension can no longer concentrate only on food production but must expand its focus into other areas of farmer needs because household food security and income are influenced by other factors (e.g. health, market and non-farm employment) which extension can influence.

To develop a needs-based extension programme, the case organisation uses a multi-stakeholder process as proposed by Sulaiman (2003). Farmers and stakeholder organisations' representatives are involved in the process. The case organisation also ensures that all its field staff are involved in the development of a needs-based extension programme because they have a good knowledge of the needs of farmers in their sub-districts from working with them on a day-to-day basis.

The multi-stakeholder approach has the advantage of providing a range of perspectives on farmers' needs. Because of the broad cross-section of views they obtain a more in-depth

understanding of farmer needs. This is consistent with the views of Röling (1991), Chambers (1997) and Garforth (2004) that a multi-stakeholder forum involving farmers and other stakeholders leads to the determination of the real needs of farmers. The process also provides the various stakeholders with a better understanding of farmer needs, a point made by several authors (Röling, 1991; Pretty & Chamber, 1993; Pretty, 1995b; van den Ban & Hawkins, 1996; Chambers, 1997; Garforth, 2004; Leeuwis & van den Ban, 2004). This understanding is important if the stakeholder organisations want to contribute in some way to help farmers. Chambers (1997) argued that the inclusion of stakeholders in extension planning generates both knowledge about the realities (needs) of farmers and the motivation to support the implementation of the plan that emerges. Finally, a multi-stakeholder process provides stakeholders with an understanding of the roles and capabilities of the various organisations that participate in the planning process. In accordance with the extension literature (Pretty, 1995b; World Bank, 2000a; Sulaiman, 2003) this is critical if such organisations want to collaborate and also avoid duplication of extension effort.

The study identified that the case organisation used a range of methods to identify farmer needs. First, information about farmer needs is collected informally through the networks which the case organisation's staff has developed with farmers, the rural community and other stakeholder organisations in the district. Second, at a more formal level, the case organisation conducts quarterly reviews and other forums where they meet with farmers and/or relevant stakeholder organisations to discuss particular needs - especially in relation to particular projects. However, the main method by which farmer needs are identified and incorporated into the case organisation's extension programme is through its consultative planning workshop. This is where representatives from farmer and other stakeholder organisations are invited to help develop the annual district extension plan.

The purpose of the consultative planning workshop is to identify and prioritise the farmer needs for the district and, from these, develop an extension programme for the next twelve months. Although these methods of assessing farmer needs have not been discussed in relation to a decentralised extension service, advocates of bottom-up planning (Röling, 1991; Pretty & Chambers, 1993; Pretty, 1995b; van den Ban & Hawkins, 1996; Chambers, 1997; Garforth, 2004; Leeuwis and van den Ban, 2004) have

stressed the importance of involving farmers in extension programme planning so that their needs are better identified. Also, Scholl (1989) in a general sense had indicated that extension organisations can use different sources such as advisory committee recommendations, requests, questions from individual farmers, results of other formal needs assessments, and evaluation reports from previous programmes to assess farmer needs. Scholl argued that no one source of information on needs is adequate, so, the use of multiple sources is important to reduce the weaknesses of using a single source. Given that a major challenge of the extension decentralisation reforms is the operationalisation of the principles (MoFA, 2002a; MoFA, 2003; Gustafson, 2004; Rivera & Alex, 2004a; Ackah-Nyamike, 2005; Sulaiman & Hall, 2005), in the following section the process used by the case organisation to plan the needs-based extension programme is discussed.

7.3.1.1 The planning process

Although the prescriptive literature (Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997) describes the general process which extension organisations can use to develop an extension programme, little empirical research has been undertaken on the processes used by extension organisations. Similarly, little - if any - empirical work has been conducted on programme planning for extension organisations in a decentralised extension context. Even though the planning process used by the case organisation is similar to others prescribed in the literature (Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997), some important differences were identified. The traditional planning process reported in the extension literature has key steps such as: situation analysis of community and clientele; identification of desired outcomes; identification of resources and support; design of instructional plan; design of programme of action; design of evaluation criteria (Oakley & Garforth, 1985; Cristóvão et al., 1997). Alternatively Bennett and Kay (1995) provided a three-step model comprising selecting needs; selecting delivery methods; and selecting targets for programme accomplishment. The programme planning process used by the case organisation can be usefully separated into three phases: (1) a situation analysis of the district AgE&RD system phase, (2) a needs prioritisation and role identification phase and (3) an action plan development phase (Figure 7:1). These three phases are discussed in detail in the following sections.

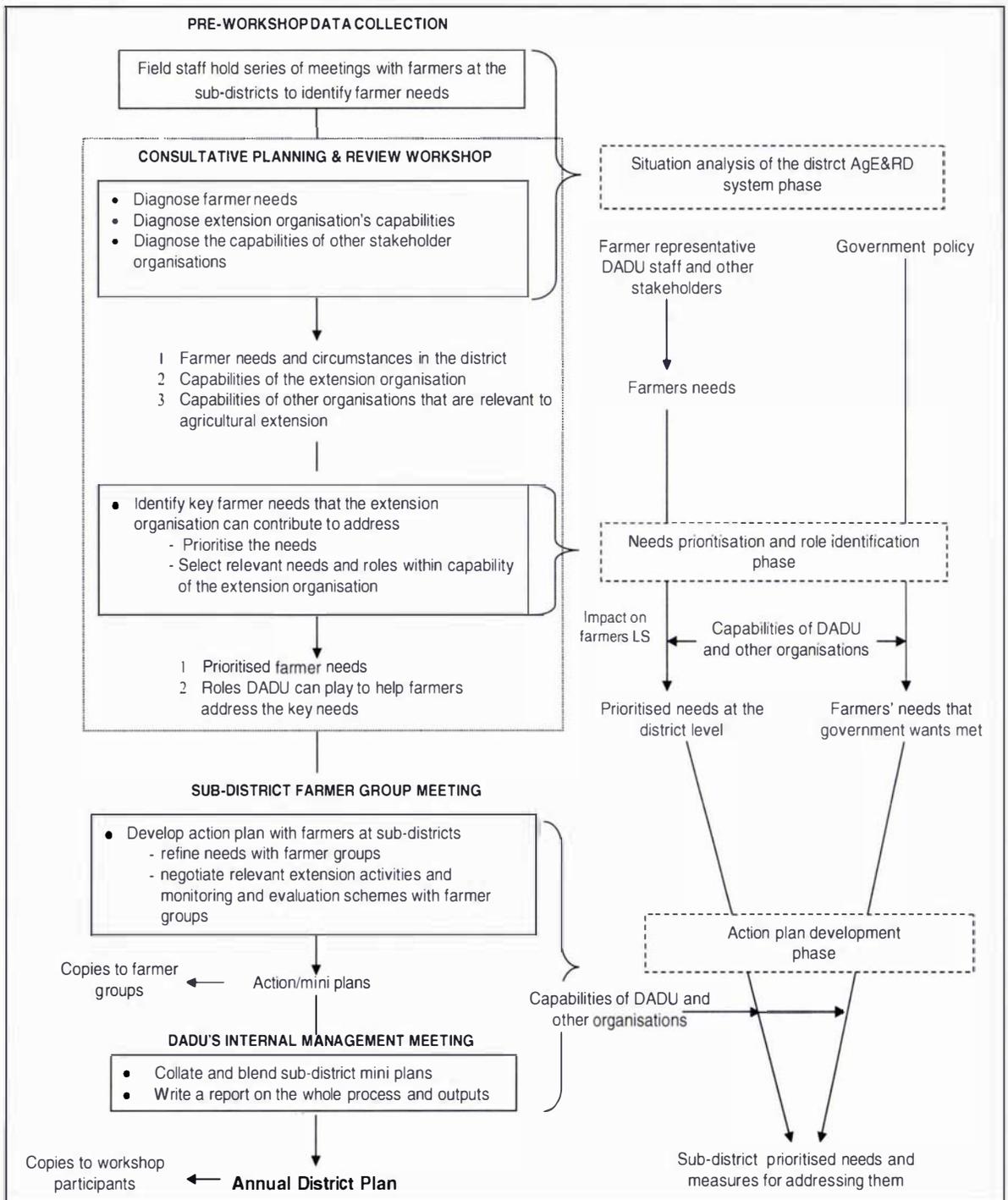


Figure 7:1. The programme planning process used by the case organisation

7.3.1.1.1 The situation analysis of the district AgE&RD system phase

The situation analysis of the district AgE&RD system phase of the case organisation’s consultative planning process is similar to what Oakley and Garforth (1985) and Cristóvão et al. (1997) called a *situation analysis of clientele and community* or what

Bennet and Kay (1995) simply called *selecting needs*. The term *the situation analysis of the district AgE&RD system phase* is used here because that describes the phase clearly not only in terms of analysing and selection of farmer needs, but *a thorough analysis* of both farmer needs and the organisational capabilities that are available to assist farmers to meet these needs. This term is more useful because it better describes what is occurring during this process. The literature (World Bank, 2000a; Richardson, 2003; Rivera & Qamar, 2003; Rivera & Alex, 2004a) suggests that to develop a needs-based extension programme, the needs will have to be identified jointly by extension staff and stakeholders (farmers and other organisations), and to ensure that, the extension organisation must participate in the process. The case organisation acts in accordance with this advice, but what has not been previously reported in the literature is how an extension organisation goes about this. Practical issues limit the number of farmers that can attend the consultative planning workshop. To reduce the impact of this constraint, the case organisation uses two mechanisms. First, its field staff undertake pre-workshop meetings with farmers at the sub-district level to identify their needs. Second, it has developed a method of selecting farmer representatives that is designed to ensure it captures the views of a broad cross-section of the farming community. Neither of these mechanisms has been reported in the literature as critical for farmer needs identification.

Although the literature (World Bank, 2000a; Richardson, 2003; Rivera & Qamar, 2003; Rivera & Alex, 2004a) stresses the importance of involving farmers in programme planning, little advice is provided on how to go about this. This is an important issue for the case organisation where it has a diverse farming population of 100,000+ farmers and only 23 field staff. Cristovao et al. (1997) argued that rural populations are not homogeneous and therefore it is essential to identify the important groups and sub-groups from within the rural population that should provide the representatives who attend the programme planning process. However, they did not provide any guidelines on how to go about this. In an attempt to obtain a better understanding of the needs of farmers in the district, the case organisation has developed a process whereby it attempts to obtain a cross-section of farmer representatives and ensure their participation. This process is discussed in detail in Section 7.3.3.1 on farmer participation. As such, to ensure effective diagnosis of farmer needs, the case organisation has set up enterprise-based farmer groups

(citrus growers, cocoa farmers etc.) across the district and it uses these as the sources of its farmer representatives.

Apart from farmers, the literature (Oakley & Garforth, 1985; Chambers, 1997; World Bank, 2000a; Sulaiman, 2003; Garforth, 2004; Leeuwis & van den Ban, 2004), suggests that to develop an effective extension programme, it must be done jointly with other stakeholders including researchers, national representatives and sponsors. Such a multi-stakeholder process allows the extension organisation to not only gain a diversity of views on farmer needs, but as well it provides them with access to skills and resources for programme implementation (Chambers, 1997; Sulaiman, 2003). However, there are limited examples in the literature of how decentralised extension organisations have achieved this. The mechanisms which the case organisation uses in ensuring the representation and participation of stakeholder organisations are discussed in Section 7.3.3.2 in which participation of stakeholder organisations in extension is covered in detail.

The other key part of the situation analysis of the district AgE&RD system phase of the consultative planning process is the diagnosis of the capabilities of the case and other stakeholder organisations. This is similar to the *identification of resources and support* step in Oakley and Garforth's (1985) model, but is absent from the other models. This step is undertaken by the case organisation to determine what capabilities it has for the coming year, and what the capabilities of other stakeholder organisations are in the district. This information is then used to help determine what roles the case organisation can play in meeting farmer needs and how it can collaborate with other stakeholder organisations and vice versa. The measures discussed in this section represent the key factors that are critical to the situation analysis of the district AgE&RD system phase of the case organisation's needs-based approach to its extension programme planning. In the next section the needs prioritisation and role identification process of the case organisation are discussed.

7.3.1.1.2 Prioritisation and role identification phase

The term *the prioritisation and role identification phase* is not clearly distinguished in the earlier extension planning models (Oakley & Garforth, 1985; Bennett & Kay, 1995;

Cristóvão et al., 1997). The term as used here is more useful because it better describes what is occurring during this process – it describes clearly how needs that are identified in the situation analysis of the district AgE&RD system phase are prioritised and how the case organisation determines which roles to play to meet each prioritised need.

Once the farmer needs and the capabilities of the extension organisation and other stakeholder organisations have been identified, the case organisation - with input from farmers and stakeholder representatives- then ranks the farmer needs in order of priority for the district. Once the needs are prioritised, the case organisation assesses whether it has the capabilities and the government mandate to address these needs and then it determines what role, if any, it will play in meeting them. It is interesting that these steps are not made explicit in any of the planning models in the literature (Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997).

The criterion the case organisation uses to rank these needs is the impact a need has on the livelihood security of farmers in the district. As such, district-wide problems or needs will have a greater priority than problems or needs that occur at a more localised sub-district level. The participants in the consultative planning workshop discuss, summarise and rank through consensus building to produce a list of prioritised farmer needs. However, the needs that the government has specified in the policy (e.g. HIV/AIDS awareness) are ranked first before those identified through the needs diagnosis process. This supports Garforth's (2004) comment that where a government funds most of an extension organisation's activities, it has a strong voice in what activities the extension organisations undertakes.

Once the case organisation has prioritised the needs for the district, they then decide what role, if any, they will play in meeting these needs. Because the case organisation has taken on a broader livelihood security focus to extension delivery, it has found that to now meet the needs of farmers, it must take on roles other than its traditional extension provider role. Although other authors (Pasteur, 2001; Rivera & Qamar, 2003; Sulaiman, 2003) have identified that under a livelihood security focus to service provision, extension providers will need to take on multiple roles, the process by which these multiple roles are determined has not been included in the prescriptive planning models

(e.g. Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997) or reported in the empirical literature.

To determine what roles it undertook, the case organisation needed a clear understanding of (1) its mandate, (2) its own capabilities and (3) the capabilities of other extension providers and organisations in the district. This information was obtained during the situation analysis of the district AgE&RD system phase of the consultative planning workshop. The case organisation used seven important criteria to determine what roles it would play in meeting the prioritised needs of farmers in the district (Figure 7.2). These include whether or not the need : (1) is within the government extension policy, (2) is a public need, (3) is being met adequately by other extension providers, (4) can be met by the case organisation working with other extension providers, (5) can be met with the current capability of the case organisation, (6) is of sufficient importance to require the case organisation to develop the capability in the long-run to meet it, and (7) is important enough to require the case organisation to purchase expertise from other extension service providers to address it (Figure 7.2). The study revealed six major roles that an extension organisation can undertake: that of a traditional extension provider, a collaborator with other extension providers, a provider of inputs or services for a fee, a linkage broker between farmers and relevant organisations, a contractor of extension services and a farmer advocate. The model can also be used to identify when an extension organisation needs to develop additional capability. These roles will be discussed in more detail later in Section 7.5.3. The next major stage of the consultative planning process is the action plan development phase. This is discussed in the following section.

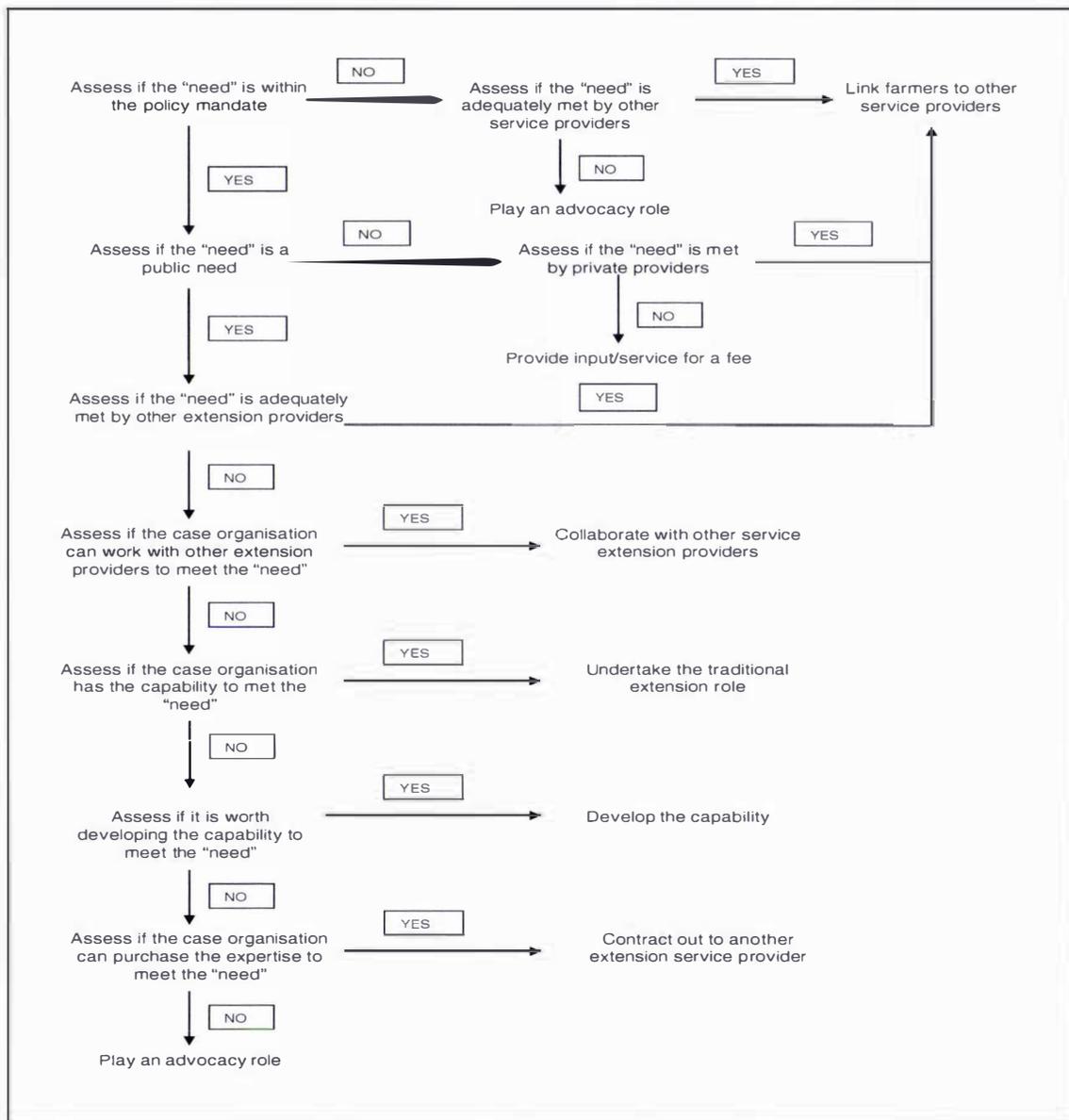


Figure 7.2. A representation of the extension role selection process

7.3.1.1.3 Action plan development phase

The action planning phase used by the case organisation is similar to the two steps described by Oakley and Garforth (1985) – design of programme of action and specification of evaluation criteria, and Bennett and Kay (1995) – selecting delivery methods and selecting targets for programme accomplishment). Although Oakley and Garforth and Cristóvão et al. (1997) include the design of action in their model, the method of action planning used by the case organisation is quite different from those prescribed in the literature (Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997). In contrast to these other models, the case organisation develops an action

plan through a process of negotiation between its field staff, supervisors and farmer groups at the sub-district level. The supervisor plays an important role in ensuring that the action plan is in line with the district extension priorities and the case organisation's capabilities. These sub-district mini plans are then aggregated to form the district extension plan. The reason that this process is undertaken at the sub-district level is that farmer needs at this level can be quite different from those identified at the district level. This is because of the diversity across the district. As such, this process allows the case organisation to tailor its extension programme to the specific needs of farmers at the local level. The process also ensures greater farmer ownership of the process.

Although local level farmer participation in extension programme planning is stressed in the extension literature (Korten & Klauss, 1984; Oakley & Garforth, 1985; Pretty, 1995; van den Ban & Hawkins, 1996; Cristóvão et al., 1997; Pretty, 2003; Garforth, 2004), few specifics are provided on how this might be achieved. One exception to this was a case study by Obaa et al. (2005), who reported that to better empower farmers and ensure their needs are being met, extension organisations should delegate the authority for programme planning to the village or group levels where farmers have greater opportunity to participate. Although programme planning was important for developing a needs-based extension programme, the study also highlighted the importance of the case organisation's monitoring and evaluation processes for ensuring that the programme is implemented effectively and that it generates the desired outcomes. These processes are discussed in the following section.

7.3.1.2 Monitoring and evaluation

The literature (FAO, 1988; van Crowder 1996a; Smith, 1997; Crook & Sverrisson, 2001; Swanson & Samy, 2004) suggests that, for decentralisation reforms in extension to be successful in developing countries, extension services would have to be more effective and responsive to the needs of farmers. In accordance with this literature, the case organisation has adopted a multi-level monitoring and evaluation system (Figure 7.3) that assists it to achieve a level of effectiveness and responsiveness by ensuring that: (1) farmer needs are determined for the annual extension programme; (2) extension activities are implemented effectively; (3) areas for improvement in the programme are identified and (4) new farmer needs are identified as they emerge.

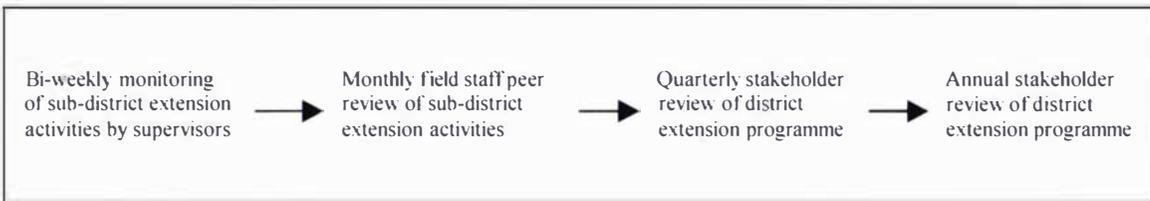


Figure 7.3. Methods used by the case organisation for ensuring an effective and responsive extension programme

At the lowest level of this multi-level monitoring and evaluation process, the field staff meet with their supervisor and local farmers every two weeks to discuss the implementation of their mini-plans. At this level, the participants are: (1) assessing whether or not the extension activities are being implemented as specified in the mini-plan, (2) identifying whether or not any improvements can be made to the implementation design, (3) establishing whether or not the extension activities are meeting the needs of farmers and (4) identifying any emerging needs. However, the main aim at this level is the monitoring of the mini plans to ensure that the implementation of an extension programme is in accordance with its design. Similarly, the case organisation also organises monthly meetings where there is a peer review of sub-district extension activities. This is done in-house without farmer involvement, and the major aim is to provide general feedback to the field staff and to find ways to improve programme implementation. This finding supports the views of Leeuwis and van den Ban (2004) that monitoring is important for providing feedback to extension staff and management in order to adjust implementation priorities and strategies to improve staff and organisational performance.

At the highest levels of the multi-level monitoring and evaluation process are the quarterly and annual reviews. These two levels are concerned with the evaluation of the extension programme, the purpose of which is to assess the impact of the programme and to ensure that the programme is responsive to the needs of farmers. This supports the view in the literature (Rogers, 1996; Dart, 2000; World Bank, 2000a) that a good review of an extension programme requires checking whether or not the programme is addressing the needs of the programme beneficiaries and having an impact on the quality of life of the beneficiaries. Key aspects of these quarterly and annual stakeholder reviews are that they involve (1) multiple stakeholders and (2) the use of both quantitative and some qualitative measures. The case organisation believes that it is important to involve

farmers in the evaluation process because they are in a better position to assess whether or not the extension programme is having an impact on the farming community and areas in which they may need further improvement. This supports the view of several other authors (Deshler, 1997; Farrington & Nelson; 1997; Dart, 2000; World Bank, 2000a) that stakeholders (especially farmers) are the best judges of the impact of agricultural extension programmes. The case organisation also involves other stakeholders in the quarterly and annual stakeholder reviews because they are also affected by the extension programme given that they work closely with farmers or in collaboration with the case organisation. Several authors (Chambers, 1997; Dart, 2000; Pretty, 2003; Sulaiman, 2003) have also stressed the need to involve other stakeholders in extension programme evaluation, especially if such stakeholders will be needed in the implementation of the programme.

The case organisation evaluates its inputs (e.g. funds and materials used), outputs (e.g. number of field days, demonstration plots, extension visits) and also qualitative measures like the degree of participation in extension activities, satisfaction with activities and outputs by stakeholders and the types of benefits received by stakeholders. In the stakeholder review workshops, the case organisation discusses the quantitative data it collects through the monitoring system and also asks stakeholders their opinions about the impact of the extension programme. This is consistent with the view of the World Bank (2000a) that strong evaluation systems and accountability provide management with the information necessary to understand who is benefiting from the programme and the real impact of the programme. This also supports the view in the literature (Rogers, 1996; Dart, 2000; World Bank, 2000a) that a good review of an extension programme requires checking whether or not the programme is (1) contributing to organisational improvement, (2) addressing the needs of the programme beneficiaries and (3) having an impact on the quality of life of its beneficiaries. A major factor that has been found to be critical not only to the evaluation, but also to the general operation of the case organisation is stakeholder participation. In the following section, stakeholder participation in the operation of the case organisation is discussed.

7.3.2 Stakeholder participation

In accordance with the literature (Parker 1995; World Bank, 2000a; Rivera & Qamar, 2003; Richardson, 2003; Rivera & Alex, 2004a Swanson & Samy, 2004; Lai & Cistulli, 2005), stakeholder (farmers and organisations) participation is one of the critical factors influencing the operation of the case organisation. A key point that can be drawn from the results is stakeholders' (farmers and organisations) willingness and commitment to collaborate and participate in the case organisation's activities – a major attitudinal change necessary extension decentralisation process. Stakeholder participation is critical because it provides the case organisation with a number of benefits. It helps the organisation to develop district level needs-based extension programmes and local level action plans. By involving a broad-cross section of farmers and organisations that are involved with farmers in the district, the case organisation obtains an in-depth understanding of the needs of farmers and the factors that impact on the livelihood security of farm households. This information is then used to develop a needs-based extension programme. This supports the views of several authors (Röling, 1991; van Crowder, 1996a; Chambers, 1997; Garforth, 2004; Swanson & Samy, 2004) that stakeholder participation is critical for the development of programmes that reflect the needs of farmers. The second benefit provided by stakeholder participation is that it allows the participants to gain an understanding of the needs of farmers and the roles played by various organisations in the district. Such information helps to reduce extension duplication and helps identify areas for collaboration. These benefits were also suggested by several authors (Cristóvão et al., 1997; Deshler, 1997; Rivera & Alex, 2004a) in the extension literature.

The third benefit of stakeholder participation is that it helps to improve accountability of the case organisation. Providing forums in which stakeholder (farmers and organisations) representatives participate in defining the case organisation's activities demands a level of transparency and accountability, a point made by Pretty (1995b) and the World Bank (2000a). Finally, through stakeholder participation, the case organisation is able to mobilise additional resources for extension service provision. The involvement of other stakeholder organisations in the planning workshops allows the case organisation to solicit resources from them for the implementation of its extension programme. This is consistent with the views of Cristóvão et al. (1997) and Sulaiman (2003) that the

participation of stakeholders in extension processes can assist in gaining a variety of resources, including skills and material resources, for programme implementation.

7.3.2.1 Participation of farmers in extension

The case organisation uses a range of mechanism to ensure farmer participation in its extension programme. It involves farmers in (1) the programme planning process, (2) its monitoring and evaluation process, (3) forums on important issues, and (4) it is developing FBO's for extension purposes. To improve farmer participation, the case organisation involves farmers in its programme planning process at different stages. To develop its annual extension programme, the case organisation holds pre-planning consultative discussion forums with farmers at the sub-district level to involve them in gathering information on farmer needs. The field staff hold general community forums with farmers, and also meet with their regular farmer groups to discuss their needs. It is interesting to note that this step is not highlighted in the conventional extension planning models (e.g. Oakley & Garforth, 1985; Bennett & Kay, 1995; Cristóvão et al., 1997) even though this is critical to the case organisation. This is because the case organisation can involve only a limited number of farmers from 100, 000+ farmers in its planning process, but to ensure greater farmer participation because of its benefits, it asks its field staff to hold general community forums and group meetings with farmers at the village level. This allows the organisation to collect information from large number of farmers to feed into the planning process.

To further improve farmer participation, the case organisation ensures that the people whom it invites to its consultative planning workshop represent a cross-section of farmers, a mechanism proposed by Cristovao et al. (1997). As with Cristovao et al., the case organisation understands that the farming population is not homogeneous and that they need to obtain a cross-section of viewpoints when developing their annual extension programme. Cristovao et al. (1997) highlighted the importance of identifying relevant farmer groups and sub-groups within a farming community. However, no further guidelines were provided by these authors about the identification of such groups. The case organisation uses a selection process in an attempt to identify farmers who will best represent the views of farmers from across the district. Two criteria are used to select the farmer representatives who will attend the consultative planning workshop. First, they

ensure that they have farmer representatives for all the main enterprise types. Second, they ensure that there is representation from farmers in each of the geographic areas within the district. Once the groups are identified, they are invited to select a representative who, they believe, will best represent their views at the consultative planning workshop. This process has not previously been described in the literature.

Although the literature (Chambers & Conway, 1992; Cristóvão et al. 1997; World Bank, 2000a; Pasteur, 2001; Brechin et al., 2002; World Bank, 2002a; Rivera & Qamar, 2003) has stressed that women and poor farmers should be involved in the programme planning process and the Ghanaian government has stressed this in their policy mandate, the case organisation does not actively seek representation from these sectors of the community. Women tend to comprise the majority of food processing groups in the district and provide representatives in this capacity. Women are also in the enterprise groups influenced by gender roles, and a proportion of these women are selected as farmer representatives. Because the poor comprise 32% of the rural population and the case organisation works with predominantly poor small-scale farmers, an affirmative action process in relation to poor farmers is considered unnecessary.

The findings suggest that where one is dealing with a district extension service that has limited manpower, and a large and diverse rural population, such an organisation has to take a pragmatic approach to ensuring that they obtain a representative view of the needs of their farmers. In such a situation, it is more practical for the organisation to draw its farmer representatives from existing groups rather than to seek out representatives from the general farming population. This approach is, however, based on the assumption that the farmer groups the organisation works with are reasonably representative of the farming population.

At a more operational level, to ensure that farmer representatives who attend the planning workshop participate in the process, the case organisation (1) uses experienced workshop facilitators to help encourage contributions, resolve disputes, and build consensus, (2) uses smaller sub-groups to encourage greater interactions and in-depth discussion among the participants before a general plenary session, and (3) allows the use of the local language to further encourage farmers to freely express their opinions. This supports the

prescriptive view of Cristóvão et al. (1997) that to improve participation in extension programme planning, it is important to put in place measures that open dialogue with stakeholders. Cristóvão et al. (1997) did not, however, provide practical methods of achieving this outcome.

Another important stage in the programme planning process at which the case organisation ensures the participation of farmers is during the action planning phase when the field staff and their supervisors meet with farmer groups at the sub-district level to develop an action plan. At this stage, the extension staff and farmers jointly decide upon the priorities that must be addressed by the extension organisation and then negotiate an appropriate action plan.

Apart from encouraging farmer participation through the consultative planning process, the case organisation also invites farmers to participate in its monitoring and evaluation process and other forums it organises on specific issues and projects during the programme implementation period. In addition, the case organisation is trying to build stable farmer cooperatives or farmer-based organisations (FBOs) that could drive extension provision in the district. They are establishing and training FBOs to empower them so that they can demand extension services. This supports the belief of Cristóvão et al. (1997) that some training is needed to improve farmers' capacity to participate in extension programmes. The need to empower farmers to demand extension services is also consistent with the views expressed by Richardson (2003), Rivera and Qamar (2003) and Garforth (2004) that to improve the performance of a decentralised extension organisation, its extension activities must not only be needs-based but also demand-driven.

The results suggest that the case organisation is still in a transition phase from being a top-down bureaucratic extension service to becoming a decentralised demand-driven extension service. Although it has developed some 40 FBOs with the aim that these organisations initiate demand-driven extension, these groups make up less than 2% of the farming population and have yet to get to the stage of demanding extension services. As such, the case organisation has involved farmer representatives, some of whom come from the FBOs in their programme planning and evaluation. This involves farmers in the

extension management process, but at this stage their role is primarily at the consultation level of participation as defined by Leeuwis and van den Ban (2004). However, in an interesting innovation designed to improve farmer participation, the case organisation involves farmers at the sub-district level in the design of local level extension plans. This process improves the level of participation to what Leeuwis and van den Ban (2004) define as collaboration. As such, the case organisation has modified their programme planning process to improve farmer participation as it moves from being a top-down extension service provider to functioning effectively in a demand-driven environment. Although the participation of farmers is critical in extension, the case organisation also recognises the importance of the participation of other stakeholder organisations in its operation. This is discussed in the following section.

7.3.2.2 Participation of stakeholder organisations in extension

The case organisation uses four mechanisms to obtain stakeholder organisation participation in their extension service. First it involves stakeholder organisations in programme planning and evaluation (quarterly and annual). Second, it invites stakeholder organisations to public forums on topics of relevance to farmers in the district. Third, it uses one-on-one interpersonal communication to build strong networks with the various organisations in the district, and finally provides progress reports to those organisations with which it collaborates in specific projects. These four mechanisms of stakeholder participation have also been highlighted by Cristóvão et al. (1997) and Leeuwis and van den Ban (2004).

The case organisation goes to considerable lengths to involve stakeholders other than farmers in its extension programme planning and evaluation processes, a point supported by Röling (1991). Röling believed that agricultural knowledge generation for effective extension programme is a multi-functional process that requires input from all major stakeholders. In accordance with Sulaiman (2003) the case organisation involves other stakeholder organisations in its programme planning process because it believes that because these stakeholders work with farmers, they have knowledge about farmers that can be useful in the development of a needs-based extension programme.

Central to ensuring stakeholder organisation involvement in the programme planning and evaluation processes is the development and maintenance of a database on the various public and private sector organisations that are involved in the district. On this database, the case organisation records information about other stakeholder organisations including key personnel, the roles and activities of the organisation in the district and their involvement in any of the case organisation's initiatives. This database is then used to identify which organisations should attend the consultative planning workshop and also which personnel from within those organisations should be invited. Neither of these methods of ensuring stakeholder involvement in extension planning has been reported in the literature as being critical to effective decentralised extension organisation.

Similarly to the mechanisms used in encouraging farmer participation in the planning workshop, the case organisation uses experienced facilitators and splits workshop participants into smaller groups as a means of ensuring better interactions and participation of stakeholder organisations. As indicated earlier with farmer participation, although this might be implied in the literature (Parker 1995; World Bank, 2000a; Rivera & Qamar, 2003; Richardson, 2003; Rivera & Alex, 2004a; Swanson & Samy, 2004; Lai & Cistulli, 2005) there is limited empirical support for these mechanisms in encouraging stakeholder participation in the new extension environment.

The case organisation goes to considerable lengths to also ensure the participation of other stakeholder organisations in its extension activities by inviting them to public forums on topics of relevance to farmers in the district. This supports the view of Leeuwis and van den Ban (2004) that stakeholder participation can be improved through public workshops, seminars and other forums. In accordance with the view of Leeuwis and van den Ban (2004), the case organisation also maintains one-on-one contact with key personnel in other organisation so that it can develop strong networks, and networks with key organisations that are involved with farmers in the district. To improve stakeholder participation, the case organisation also provides reports regularly to those with whom they are collaborating in specific projects. The view that this is an important factor is also shared by Leeuwis and van den Ban (2004). The collaboration the case organisation has with other stakeholder organisations is discussed further in Section 7.3.6.

The next major factor for discussion in this chapter is the accountability of the case organisation.

7.3.3 Accountability

Similarly to the view expressed in the literature (World Bank, 2000a; Rivera & Alex, 2004a; Swanson & Samy, 2004), accountability to stakeholders is one of the critical factors influencing the operation of the case organisation. Although the case organisation has a political and legal oversight system (Regional Agricultural Development Unit) and encourages private sector participation in extension (e.g. contracting out services to NGOs) which promote accountability, the key mechanism important to accountability by the case organisation is administrative - the establishment of a control (monitoring and evaluation) process - a view also shared by Parker (1995) and Swanson and Samy (2004).

Although such control processes are advocated in the literature (Dart, 2000; World Bank, 2000a; Feder et al., 2001), there is a limited number of empirical studies that explain this process. An interesting finding from the study is that accountability is achieved by the organisation at two distinct levels – at the district level and the local level. At the district level, farmer and stakeholder representatives are involved in the programme planning process and at the end of the process they are given a copy of the annual extension programme. These representatives are then involved in the evaluation of the programme, an action which supports the view of Dart (2000) and the World Bank (2000a) that stakeholder participation in evaluation is essential for ensuring accountability. The stakeholders help the case organisation to complete three quarterly reviews and an annual review. At the local level, farmers are involved in the development of sub-district extension action plans. These farmers help monitor the implementation of these action plans on a monthly basis. These practices have not previously been described in the literature as being critical to accountability of decentralised extension organisations.

Accountability is also important in relation to an organisation's staff. Swanson and Samy (2004) recommended that extension organisations use incentives and encourage professionalism to enhance accountability. Although the case organisation used these mechanisms, they were undertaken for reasons other than accountability. Although accountability was seen as important by the case organisation, the control processes

which the organisation put in place were primarily for the management and improvement of the extension programme rather than for ensuring accountability to stakeholders and beneficiaries. In contrast, the literature (World Bank, 2000a; Feder et al., 2001; Rivera & Alex, 2004a; Swanson & Samy, 2004) has stressed the importance of accountability, an outcome from monitoring and evaluation. Apart from accountability, another key factor identified in this case study that affects the success at the local level of the decentralised extension organisation is the expansion of extension focus and roles. This is discussed in the next section.

7.3.4 Expansion of extension focus and roles

In order to adopt a livelihood security focus, the case organisation has had to expand its focus, a point stressed by several authors in the extension literature (Alex et al., 2002; Rivera & Qamar, 2003; Anderson & Feder, 2004; Collion, 2004; Garforth, 2004). Worldwide, the role of agricultural extension has become more closely aligned with rural development, where extension organisations - particularly in the developing countries - are taking a more *holistic* view of agricultural extension (Alex et al., 2002; Rivera & Qamar, 2003; Anderson & Feder, 2004; Collion, 2004; Garforth, 2004). In responding to government policy, the case organisation has shifted its focus from agricultural production to the factors that impact on the contribution agriculture makes to the livelihood security of farm households. As such, this focus now encompasses on-farm factors that are indirectly associated with agricultural production such as health and human nutrition. It also takes into account non-farm factors such as marketing, processing, land ownership and access to infrastructure. As pointed out in Section 7.3.1, the case organisation has broadened its definition of farmer needs to match its new livelihood security focus. It now includes both on-farm and non-farm needs that have impacts on the contribution agriculture makes to the livelihood security of farm households in the district. Current use (Reardon, 1997, 2001; Barrett et al., 2001a, 2001b; Reardon et al., 2001; Lanjouw & Lanjouw, 2001; Dorward et al., 2004) of the term *farmer needs* suggests that it does encompass both on-farm and off-farm needs, but there is no clear definition of the term that provides a clear boundary around what constitutes a need and what does not. The definition that emerged from this study provides that boundary.

As a result of the expanded approach, the case organisation has worked, and continues to work, towards developing ways whereby it can assist farmers by providing them with improved agricultural technologies and other services that have direct or potential impacts on farm household livelihoods. This finding confirms the views of several authors (Sutherland et al., 1999; Pasteur, 2001; Christoplos, 2004) that it is important for extension organisation to still focus on agricultural production, but to realise that this is now only one of many interrelated areas that contribute to, and impact on, the livelihood security of farm households. However, this expanded focus requires that the case organisation adopt roles other than its traditional role wherein it was responsible for transferring agricultural production technologies to farmers. Several authors (World Bank, 1996; van den Ban & Hawkins, 1996; Pasteur, 2001; World Bank, 2003; Anderson & Feder, 2004; Leeuwis & van den Ban, 2004) have also suggested that extension organisations that adopt a more holistic livelihood security focus to extension provision will need to adopt multiple roles.

This study identified that the case organisation adopts five roles in addition to their traditional role as a provider of agricultural technologies (Figure 6:4). These roles include: a provider of inputs or services for a fee, a collaborator with other extension providers, a linkage broker between farmers and support organisations, a contractor of extension services and a farmer advocate. This is consistent with the view of van den Ban and Hawkins (1996) and Leeuwis and van den Ban (2004) that the provision of agricultural information by agricultural extension organisations will have limited impact in situations where farmers lack access to services (e.g. health, affordable credit and land, and markets) that will enable them to use the technologies or derive benefits from them.

Although several authors have stressed the fact that extension providers will need to adopt multiple roles in the new extension environment, little has been written about the exact nature of these new roles. In a case study of India's extension service, Sulaiman (2003) did identify the collaborator and information broker roles, but he did not report on the other roles of input provider, contractor of extension services and farmer advocate. The livelihood security focus of agricultural extension has also meant that the case organisation has had to work across sectors. This is discussed in the following section.

7.3.5 Cross-sector pluralistic extension system

An important finding from this study was that in order to meet the broader extension requirements of a livelihood security-focused extension approach, the case organisation had to work with (1) other extension providers within the agricultural sector and (2) other extension providers from sectors other than agriculture (e.g. health, forestry, roading etc.). As such, the case organisation fosters a cross-sector pluralistic approach to extension. This finding supports the view expressed in the literature (World Bank, 2000a; Minoiu, 2003; Richardson, 2003; Swanson & Samy, 2004; Vannasou, 2006) that to succeed in the new decentralised extension environment, extension organisations in developing countries must recognise the roles of other extension providers in their local extension system. This approach is important because the case organisation does not have the capabilities to deliver on this more “holistic” extension approach, it has to collaborate with other stakeholder organisations - a view shared by several authors (World Bank, 2000a; Minoiu, 2003; Richardson, 2003; Rivera & Qamar, 2003; Rivera & Alex, 2004a; Vannasou, 2006) in the prescriptive literature. To foster a cross-sector pluralistic extension system, the case organisation (1) facilitates coordination in extension provision and (2) collaborates with other organisations from the public and the private sector in extension delivery. These two mechanisms are discussed in the following sections.

7.3.5.1 Coordination

Similarly to the views expressed in the literature (World Bank, 2000a; Minoiu, 2003; Richardson, 2003; Vannasou, 2006), the case organisation is moving away from the single public sector approach to a multi-sector approach. First, a pluralistic extension system has developed in Ghana where extension services are provided by NGOs, input providers and some government departments. The case organisation has realised that it can make use of this pluralistic environment by taking a coordinating role so that the resources it and other organisations put into extension are used more efficiently. Second, it has realised that it does not have the capabilities to meet the broader livelihood security needs of farm households in the district, therefore it has sought input from extension providers and other organisations from sectors outside of agriculture such as forestry, health, and roading. Thus, it is attempting to coordinate cross-sector extension provision. To promote coordination between the organisations that work with farmers in the district, the case organisation provides platforms (forums) where organisations from different

sectors can interact. Several authors (Röling, 1991; Pretty, 1995; Chambers, 1997) have underscored the importance of creating a platform for stakeholder interaction for the provision of extension services that reflect the needs, values and realities of stakeholders. The case organisation uses two types of forums to promote this coordination. First, the consultative planning workshop is used as a forum where the extension capabilities of the various providers are identified and this information is used to plan the case organisation's extension activities and the ways in which it will collaborate with other extension providers. Second, the case organisation conducts issue-focused forums where it brings together farmers and organisations that have an interest in the issue to develop a coordinated approach to deal with the issue. These interactions provide opportunities for the organisations to build relationships and to understand each others' aims, roles, activities and capabilities. Such information is necessary for fostering a cross-sector pluralistic extension system in the district. This approach aligns with the views of Röling (1991) and Rivera and Alex (2004a) that rural development is complex and requires the provision of differentiated - but interrelated - extension services from several organisations.

The findings from this study support the emerging view that no one organisation can promote broad-based sustainable development without coordination with, and support from, other stakeholders (Röling 1991; Chambers, 1997; Pretty, 2003). It is also consistent with the views of key authors in extension and rural development (Röling, 1991; Pretty, 1995; van den Ban & Hawkins, 1996; Scarborough et al., 1997; Rivera and Qamar, 2003; Rivera & Alex, 2004a) that extension is no longer a unified public sector service, but rather it is a multi-institutional network of knowledge and information support for rural people. More importantly, the finding supports the views of Rivera and Alex (2004a) and Cristóvão et al. (1997) that government extension organisations can play an important "coordination" role in the development of a pluralistic extension system, where different organisations can work concertedly along individual lines or in collaboration to provide extension to meet a variety of farmer needs in a community.

7.3.5.2 Collaboration

An important factor that has contributed to the success of the case organisation has been its ability to collaborate with other stakeholders in the district, a practice supported by the

extension policy in Ghana (MoFA, 2002b). It has seen collaboration as a means of increasing its capability so that it can meet the broader livelihood security needs of farm households. By establishing different working relationships with other stakeholder organisations, it has obtained access to resources for extension delivery and staff training. The resources it obtains through collaboration may include materials, access to vehicles, staff, and funds. Similarly, it has provided resources and training to other stakeholder organisations where it believes such inputs will help it improve the contribution which agriculture makes to farm household livelihood security. The resources which the case organisation provides to other stakeholder organisations include access to vehicles and library resources, staff, and funds. This finding agrees with the claims of several authors in extension (World Bank, 2000a; Madukwe, 2003; Pretty, 2003; Rivera & Qamar, 2003; Garforth, 2004; Rivera & Alex, 2004a; Swanson & Samy, 2004) that ongoing working relationships and collaboration with stakeholders are essential for successful extension operation. The finding thus highlights the importance of the Ghanaian agricultural policy strategy, FASDEP (MoFA, 2002b) which supports and encourages stakeholder collaboration in extension provision.

To facilitate collaboration, the case organisation has placed emphasis on building strong relationships with stakeholder organisations. To this end, it involves stakeholder organisations in its decision-making processes (planning and evaluation). This opens up the organisation for public scrutiny, builds trust and enhances networks for service provision. Similarly, Torres et al. (2004), in a case study of extension through research in Colombia, reported that effective collaboration for extension provision depends on mutual trust among stakeholders. This is also consistent with the view of Jackson and Stainsby (2000) who emphasised the importance good and mutually beneficial working relationships with stakeholders. In their view such working relationships promote commitment for collaborative action in extension provision. Also, Torres et al. (2004) have argued that contact, respect, accountability and shared decision making with stakeholders are useful in forging good working relationships for effective extension work. The case organisation's actions also support the claim of Leeuwis and van den Ban (2004) that stakeholder involvement in planning and evaluation processes strengthens the extension organisation's relationship with stakeholders for collaboration. In this study, another key factor which was not explicated in the theoretical framework but which tends

to influence the success of the case organisation is the use of a group-based extension delivery approach. This is discussed in the following section.

7.3.6 Group-based extension delivery approach

An important extension delivery mechanism for the case organisation is the use of a group-based extension delivery approach. The case organisation has adopted this extension delivery approach to compensate for the high ratio of farmers to extension agents in line with government policy. Several authors (Adhikarya, 1994, 1996; van Crowder, 1996a; United Nations, 2000; Rivera & Qamar, 2003) have prescribed the use of group-based extension approaches in situations where there is a high ratio of farmers to extension agents. The effectiveness of extension delivery is enhanced because the case organisation uses needs-based groups rather than geographic- or location-based groups, something not highlighted in the literature. In the past the case organisation had found that the latter type of group performed poorly because farmers in these geographic groups had a diversity of enterprises, needs and problems. As such, it was difficult to find a common focus for the groups and they tended to become dysfunctional and disband. In response to this, the case organisation has formed groups around a common need so that they are more likely to be effective and stable. This is consistent with the description by Rouse (1996) of sustainable and successful farmer organizations as those with similarities in terms of backgrounds, interests and resource bases and focused on solving common problems experienced by all members. Rouse (1996) argued that those similarities reduce internal conflicts and allow the groups to function better than those with more heterogeneous backgrounds, interests and resource bases.

With limited resources, the case organisation does not have the manpower to justify the formation of groups that are likely to disband after a short period of time. As such, it has moved to the use of needs-based groups. The needs that form the basis for the groups are most commonly enterprise-based (citrus group, maize group etc.), however, some groups are based around specific problems such as child malnutrition. These findings support the notion that people organise best around a problem or need that they consider most important (Botchwey, 2001). Similarly, Gordon (1999), in a general rural development context, argued that to facilitate and broaden the provision of technical assistance to rural people, it is critical for a development organisation to work with small-producer groups

with identical goods/enterprises. Grootaert (2001) also stressed the importance of using farmer groups in ensuring effective extension delivery, but he made no particular reference to needs- or enterprise-based groups.

The case organisation has been actively working to develop a core of farmer-based organisations from its pool of needs-based groups, a practice supported by some authors (Smith, 2001; World Bank, 2000; Tossou & Zinnah, 2005) for decentralised systems. These farmer-based organisations (FBOs) are farmer cooperatives that have a constitution and operate as a business enterprise. The case organisation is playing a facilitating role in establishing the farmer groups by collaborating with other organisations to provide these groups with training in group management and cooperative practices, a point stressed by Rouse (1996) as critical to farmer group sustainability and success. The formation of the FBOs is seen as a critical step in the achievement of a demand-driven extension approach. The case organisation aims to develop these groups to a point where they can identify and demand extension services from the various providers in the district. This supports the World Bank's (2000a) claim that extension organisations can achieve much success if they build the capacity of farmer groups, because that will make the groups sufficiently self-reliant to demand their own extension services to meet their specific needs. At this stage in their development, the FBOs provide some of the farmer representatives who attend the programme planning and evaluation workshops, and work with field staff to develop and implement the action plans (mini-plans) at the sub-district level.

Although working with farmer cooperatives offers the case organisation opportunities for more cost-effective use of limited extension resources and for the participation of local level farmers in extension planning and implementation, it will take a considerable length of time to establish such farmer groups and to increase their overall influence in extension in the district. This is because the FBOs represent only a small percentage of farmers in the district. Besides the group-based extension approach, resources management is another major factor that influences the success of the case organisation. The resource management strategies used by the case organisation are discussed in the following sections.

7.3.7 Resource management

Agricultural extension provision in many developing countries is constrained by inadequate resources (Smith, 1997; World Bank, 2000a; United Nations, 2005). As a result, extension provision in many of these countries is said to be ineffective and inefficient (World Bank, 2000a). The literature (Parker, 1995; World Bank, 2000a; Swanson & Samy, 2004) discussed institutional capacity building and resource mobilisation separately as critical elements of success for decentralised extension systems. In this case study, however, it was found that the efficient use of existing resources is also an important element of success in the case organisation. As such, a more useful way to discuss the key resources management factors that influence the success of case organisation is to separate the factors into: institutional capacity building, efficient use of existing resources and resources mobilisation as presented in the following sections.

7.3.7.1 Institutional capacity building

With extension decentralisation, managerial responsibility is delegated to the district level and the district extension managers are expected to provide leadership for initiating, planning and implementing agricultural extension programmes (World Bank, 2000a). Similarly, the field staff are now expected to operate in a more holistic way and actively involve farmers and other stakeholders. Similarly to the view of Jutting et al. (2004), the case organisation believes that little can be achieved through extension decentralisation if it does not improve its managerial and technical capacity. Lack of managerial capacity of extension staff has been identified as a major limitation to decentralisation reforms in developing countries (Cristóvão et al., 1997; Vijayaragavan & Singh, 1997; Zinnah et al., 1998; Garforth, 2004; Swanson & Samy, 2004; United Nations, 2005) and particularly, in Ghana (MoFA, 2001; Amezah & Hesse, 2002; MoFA, 2002a; MoFA, 2003). To improve its managerial capacity, the case organisation provides the management and support staff with knowledge and skills in human resource development, leadership and management, secretarial skills and computer systems.

A recent review of extension decentralisation in Ghana by the MoFA (2003) showed that the level of competence of extension field staff is inadequate for their roles at the local level, a point also made in the literature (Cristóvão et al., 1997; Vijayaragavan &

Singh, 1997; Zinnah et al., 1998; Garforth, 2004; Swanson & Samy, 2004; United Nations, 2005). Because the case organisation has taken a broader approach to extension, the field staff need a broader base of technical knowledge. Similarly, because they are playing multiple roles, working in collaboration and trying to improve farmer participation, the staff of the case organisation need different skills from those they required under the previous extension approach. To improve the technical capacity of its staff, the case organisation provides them with knowledge and skills in a broad range of areas. For example, in 2003, they required training in: extension (computer systems, adult learning, extension communication); agricultural production (e.g. agricultural pest management, soil and water conservation techniques, inland fish farming and livestock nutrition and housing); other areas related to farm household livelihood security (e.g. HIV/AIDS control and child nutrition); group and business management techniques (e.g. small group and cooperatives management techniques and marketing); and agro-processing. These areas of training are similar to those proposed in the extension literature (Sulaiman, 2003; Garforth, 2004; Swanson & Samy, 2004; Tossou & Zinnah, 2005) as key competencies required of extension providers in general. Garforth, 2004 summarised them as technical knowledge and communication and facilitation skills. Thus, a key factor in the case organisation's operation has been its commitment to improving the capacity of its managerial and technical staff.

A combination of formal and informal methods has been used by the case organisation to ensure its staff have the managerial and technical capacity to meet the challenges of a decentralised extension system. First, they have developed a formal needs-based training process that identifies, and then responds to, the training needs of their staff. Second, they have fostered an informal learning culture within the organisation. This is similar to the distinction made by Kilpatrick et al. (1999) between training and informal learning, although they made this in reference to farmer learning rather than learning undertaken by staff in an extension organisation. Kilpatrick et al. suggested that both formal training and informal learning activities are important in knowledge acquisition. The means by which the case organisation improves its institutional capacity through training is discussed in the following section.

7.3.7.1.1 Needs-based training

The case organisation has adopted a formal needs-based training programme because it allows the managerial and field staff to identify the specific skills and knowledge they require to work effectively. This supports reports by Adhikarya (1996) and Pasteur (2002a) which indicated that extension staff training is more useful to staff when it is based on the needs of the staff, and these have been determined by the staff themselves. Stone and Coppernoll (2004) also argued that the training of extension personnel should be related to the development of staff to meet the organisation's goals. Need-based training is used by the case organisation to improve staff motivation and performance. This is consistent with Pasteur's (2002b) findings in Bangladesh where he found that staff training (in general) can improve the staff members' confidence, reflection, stimulation of new ideas and performance.

The case organisation provides in-service training to its staff in-house or they are sent on study leave. The case organisation relies on in-house expertise (subject matter specialists) for training its field staff. However, where it does not have the in-house expertise, it brings in experts from other institutions such as NGOs, research institutes, universities and other government organisations to facilitate the training. The proximity of the case organisation to major research institutions provides it with an advantage in relation to accessing expertise for training. An important aspect of the case organisation's needs-based training programme is that it uses self-evaluation by its staff members to identify training needs. Field staff then negotiate their training requirements through discussion with their supervisors. This procedure is similar to the competency-based training needs assessment process proposed by Stone and Coppernoll (2004).

A point highlighted in this study that has not been mentioned in the literature is that the case organisation schedules its in-house needs-based training programme so that the training occurs shortly before the field staff plan to apply the training in the field. The case organisation has identified that because field staff need a much greater knowledge base given their broader livelihood security focus, they have trouble retaining such information over a long period of time. Therefore the scheduling of the training has become an important tool for improving the effectiveness of field work in new areas.

A critical feature of field staff training at the case organisation is the involvement of farmers in the training process. This is undertaken to improve the field staff's knowledge of farmer practices and the reasons behind these practices. The organisation believes that by understanding farmers' practices and indigenous knowledge, it can better meet their needs because it can build on what they already know – a demonstration of major attitudinal change towards farmers' indigenous knowledge. This finding supports the views in the literature (van den Ban & Hawkins, 1996; Smith, 1997; Swanson & Samy, 2004) that extension staff require both new competencies and change in attitudes to be able to operate effectively in the new policy environment. Vijayaragavan and Singh (1997) advocated that field staff could benefit from understanding the indigenous knowledge of local farmers. Subject matter specialists (SMSs) are also involved in these training sessions and they encourage the field staff to identify the principles behind the farmers' practices to foster further learning. The role of the SMSs is to help the field staff understand the practices of farmers and the principles that underlie the farmers' actions. This three-way (farmer-field staff-supervisor) interaction also helps improve both the farmers' and the SMSs' knowledge. The farmers gain an understanding of the scientific principles behind what they do and the supervisors obtain a better understanding of the practices of farmers in the district. The farmers can take this scientific knowledge back to their farming community and the supervisors can use this knowledge when training other field staff in the district. The importance of indigenous knowledge has been highlighted in the literature (Chambers et al., 1989; Horton, 1991; Russell & Ison, 1991; van Beek & Coutts, 1992; Adhikarya, 1996; Vijayaragavan & Singh, 1997), but its acquisition by the extension organisation has been discussed in relation to extension programme planning and implementation rather than through joint-training.

7.3.7.1.2 Informal learning culture

Given the changing situation in agriculture and the increasing acceptance that farmers' needs are complex and should be approached from a holistic perspective, it is now acknowledged that continuous learning by extension organisations is needed for them to remain effective (Pasteur, 2001; Echeverria, 2003, Sulaiman & Hall, 2003; Leeuwis & van den Ban, 2004). The case organisation is an example of a district level public extension organisation that has recognised that formal training is only one means by which its staff can learn on a continuous basis. The organisation has taken steps to create

a work environment that fosters learning through other, less formal, mechanisms to augment its staff's need for a broader knowledge base. This practice has been advocated by several other authors (Pasteur, 2001; Echeverria, 2003, Sulaiman & Hall, 2003; Leeuwis & van den Ban, 2004) including Carney (1998) who stated that apart from providing extension staff training in new skills, it is equally important to improve the working environment to encourage learning among its staff.

To foster this learning culture, the case organisation provides a range of mechanisms through which staff can learn informally. First, it fosters an open environment in which staff feel comfortable sharing information. Second, it provides forums whereby the staff can meet, interact, share and reflect upon their knowledge. Third, it provides learning materials that the staff can access for self-directed learning. Finally, it organises a range of forums where its staff can meet with staff from other organisations to learn about particular issues (e.g. AIDS/HIV and RTIP) from a range of perspectives. Although the importance of these four factors to organisational learning has been highlighted in the organisational literature (Senge, 1990; Argyris; 1992; Argyris & Schon, 1996; Johnston & Hawke, 2002), few authors (Pasteur, 2002b; Leeuwis & van den Ban, 2004) have mentioned them in the extension literature. The range of mechanisms through which the staff of the case organisation learn informally is discussed in the following paragraphs.

The case organisation uses three mechanisms to create an open environment in which staff feel comfortable in sharing information. These are: (1) it provides support and involves the field staff in decisionmaking; (2) it encourages teamwork among the staff; and (3) it ensures that the staff are informed in a timely fashion about policies and other relevant issues that affect them. The aim of undertaking these measures is to improve contact rate, trust and respect among the staff, conditions critical for promoting information sharing and learning in the organisation, a view shared by Leeuwis and van den Ban (2004). The organisational studies literature (Senge, 1990; Argyris; 1992; Argyris & Schon, 1996; Johnston & Hawke, 2002) which provided the basis for organisational learning discourse in extension also highlights the importance of participatory decisionmaking, teamwork and the provision of feedback to staff in promoting learning in the organisation. Although also mentioned by some authors in extension (Pasteur, 2002b; Leeuwis & van den Ban, 2004), few details were provided

about how this informal learning can be fostered. However, the importance of team work as a key factor in enhancing learning and work performance is highlighted by both Pasteur (2002b) and Leeuwis and van den Ban (2004). Also, Leeuwis and van den Ban have stressed the need for extension organisations to develop systems that ensure that extension workers benefit from other workers' experiences.

To foster informal learning, the case organisation holds monthly staff meetings to provide forums for staff to interact, share and reflect upon their knowledge. All staff attend these meetings and the field staff describe their activities relative to their monthly mini-plans. Field staff are encouraged to highlight problems, opportunities, new initiatives and other information they want to discuss during the meeting. Such discussions may focus on technical information or extension methods. The management of the case organisation also used these monthly meetings to provide the staff with information about policies and other relevant issues of interest to them. This supports the views of Pasteur (2002a) and Stone and Coppennoll (2004) that face-to-face reporting provides extension staff with learning opportunities through questions, answers and ideas from peers. Similarly, the findings highlight the importance of frequent meetings for extension personnel and providing and sharing information with them, all of which motivate them to learn from their experiences, a view also shared by Leeuwis and van den Ban (2004). Also in agreement, Leeuwis and van den Ban (2004) argued that the promotion of interaction and information sharing among extension field staff provides the opportunity for the staff to learn by comparing the amount and quality of their work with those of their peers.

With this broader extension approach, the staff need access to a broader range of learning materials. The case organisation provides its staff with learning material for self-directed learning which includes an electronic-database, books, and training modules. Stone and Coppennoll (2004) and Adhikarya (1996) have also advocated the use of printed materials, the internet, and video and audio self-directed media to promote workplace learning. Moreover, the practices of the case organisation are consistent with the recent literature in extension (Richardson, 2003; Leeuwis & van den Ban, 2004; Swanson & Samy, 2004; World Bank, 2004) which prescribes the need for the adoption of computer systems in extension organisations because they are critical for improving the capacity of

extension staff to access (e.g. from the internet) and process important information for their work.

The case organisation uses workshops and other forums with farmers and other stakeholders to promote informal learning in the organisation. The forums provide the extension staff with the opportunity to interact, share ideas and learn from farmers and staff in other organisations. Although little is written in the extension literature on this topic, Leeuwis and van den Ban (2004) highlighted the importance of stakeholder contact and interaction in providing extension staff with the opportunity to gain new experiences and ideas. Moreover, the findings support the view in the management literature (Senge, 1990; Johnston & Hawke, 2002) that networks and organisational collaboration improve learning in organisations.

The organisation fosters a more transparent and open management system where all staff, to some extent, can contribute to management decisions. It also encourages more contact and open communication to build respect and trust among the staff, gives a level of flexibility to field staff to design their location-specific extension activities with farmers, encourages team work amongst the staff, and has opened itself up to increased scrutiny and input from farmers and other stakeholders through greater interaction with them. Finally, the organisation encourages the use of learning materials (computer systems and print materials) to facilitate information management and self-directed learning. Given these characteristics, the case organisations can be viewed as an extension organisation that is moving towards becoming what the organisational studies literature (Senge, 1990; Argyris; 1992; Argyris & Schon, 1996; Johnston & Hawke, 2002) describes as a 'learning organisation'. Interestingly, this is not explicitly stated by management, but what is apparent is that the organisation is seeking to become more responsive to farmers' needs, finding new ways to efficiently deliver relevant services to as many farmers as possible and working to improve the competence of its staff to meet the challenges they face in their job to enhance the contribution of agriculture to the livelihood security of farm households. Although fostering informal learning is important for improving the capacity of staff, motivation and commitment to work are equally important. In the following section the methods the case organisation uses to encourage staff motivation and commitment are discussed.

7.3.7.1.3 *Staff motivation and commitment*

Given its limited resources, low extension agent to farmer ratio and the wide geographical area that extension staff must cover in the district, this case is an example of a district level extension organisation that has adopted some realistic measures to improve the level of staff motivation and commitment. The case organisation uses three mechanisms to ensure staff motivation and commitment in the organisation. First, it has adopted a more inclusive approach to management. Second, it rewards high performance among its staff. Finally, it fosters good staff relationships within the organisation. These findings are in line with Herzberg's (1996) view that motivation is influenced by a favourable work environment that provides challenging tasks and opportunities for individual achievement, recognition, responsibility, advancement and personal growth.

Prior to decentralisation, the management of the case organisation was top-down -the district extension Director received and followed instructions from the regional and national offices with limited involvement of subordinate staff. With the inclusive approach to management, all field staff are involved in the development of the case organisation's annual extension plan and each staff member is responsible, in consultation with his supervisor, for the development of his own annual work plan and training programme. Two field staff representatives are also included in a management team comprising the director and assistant, the supervisors and a support staff representative. This team is responsible for the tactical and operational decisions made by the case organisation throughout the year. This allows much greater transparency of decision making because the field staff representatives are involved in the actual decision making and can report these decisions to their fellow staff members. As such, the field staff have a much greater involvement in the decisions related to their work and training throughout the year. Consistently with the literature (Mwangi & McCaslin, 1995; Natale et al., 1998; Hivner et al., 2003), the case organisation believes that this level of involvement gives staff a level of ownership, and this enhances their commitment and motivation.

The case organisation uses incentives to motivate staff and these incentives are provided in the form of tangible (monetary value associated with them) and intangible (no monetary value associated with them) rewards in line with the view of Leeuwis and van den Ban (2004). The organisation presents awards to best performing extension staff at

the end of each year. There are awards for specific projects and for the best all-round field staff member. Tangible rewards that staff of the case organisation had received in the previous year included cash, field gear (e.g. gumboots, raincoat), and household equipment (e.g. tape recorders and television sets). The intangible rewards included a certificate of recognition and praise at an award-giving ceremony. Several authors (Mwangi & McCaslin, 1995; van den Ban & Hawkins, 1996; Vijayaragavan & Singh, 1997; Leeuwis & van den Ban, 2004) have also stressed the importance of tangible (e.g. financial incentives) and intangible rewards (e.g. praise, recognition) in relation to staff motivation in extension organisations.

The case organisation views promotion as an important factor in motivating staff. Lack of staff promotion has been reported by Mwangi and McCaslin (1995) and Vijayaragavan and Singh (1997) as a cause of low staff motivation in extension services in developing countries. Promotion results in better remuneration for staff in the case organisation and it also opens up further opportunities for professional development through scholarships and further education. This supports Stone and Coppernoll's (2004) view regarding the importance of professional development in staff motivation. Because the decision to promote staff is taken at the national level, the case organisation has recognised the importance of timely promotion to staff motivation, a point made by Stone and Coppernoll (2004) and Leeuwis and van den Ban (2004). As such, it has developed an administrative system to ensure accurate staff records are maintained and the promotion of staff is sought promptly when it is due. Such a system was also recommended by Stone and Coppernoll.

The final means by which the case organisation motivates staff is by fostering good staff relations and creating an atmosphere of trust and mutual respect. The importance of good staff relations to motivation has long been recognised (Herzberg, 1996). To foster an environment of trust and mutual respect, the case organisation fosters frequent staff interactions and the sharing of information. It also encourages transparency of decision making by involving staff in the decision-making process. As previously mentioned, the staff meet with their supervisors in the field bi-weekly, and also monthly at the district office for general staff meetings. The director encourages field staff to speak their minds and he ensures that they are kept abreast of policy and resourcing issues that are likely to

impact on the organisation. Field staff are involved in programme planning, are given responsibility for developing their own work plans and training programmes and have representatives on the management team. This is consistent with Herzberg's (1996) view of motivation which highlighted the importance of trustworthy senior management staff (e.g. supervisors,) valuing inputs from junior staff and providing them with work related support. It is interesting that there is little information in the extension literature that has highlighted the critical role of fostering good staff relationships based on openness, trust and mutual respect in staff motivation and commitment. Another factor found in this study as critical to effective resource management by the case organisation is the efficient use of its existing resources. In the following section the methods by which the case organisation ensures efficient use of its existing financial and material resources are discussed.

7.3.7.2 Efficient use of existing resources

The case organisation uses three mechanisms in an attempt to make efficient use of its existing resources. First, it ensures that its extension efforts are not duplicating the work of other extension providers within the district. Second, it uses group-based extension delivery methods. Third, it uses a systematic control process to ensure the effective implementation of its extension programme. The literature (Cristóvão et al., 1997; Deshler; 1997; World Bank, 2000a; Sulaiman, 2003; Rivera & Alex; 2004a) has highlighted the importance of these factors as critical to the efficient use of resources for extension.

The staff of the case organisation have realised that with limited resources, it is not efficient to duplicate the extension activities of other providers. They minimise duplication by identifying what extension activities other stakeholder organisations are undertaking in the district. This is achieved primarily through the consultative planning process when the stakeholder organisations specify their planned extension activities for the coming year. The organisation also collects information about what extension activities the other stakeholder organisations are involved in through a range of other mechanisms such as the quarterly and annual review workshops, local meetings, joint forums and one-on-one communication between staff in the different organisations. Through a practice called 'listing' the case organisation has also built a data base on the

range of organisations and what they are doing in the district, to inform their activities. Other authors (Cristóvão et al., 1997; Deshler, 1997; Rivera & Alex, 2004a) have specified that one of the advantages of a multi-stakeholder planning process is that it can be used to identify areas of duplication and hence improve the efficiency of the extension system. However, these authors did not make mention of the other mechanisms reported in this study by which areas of potential duplication can be identified.

With a field staff to farmer ratio of about 1: 5000, the case organisation recognises the importance of using group-based extension methods in improving its efficiency. Group-based extension methods allow the case organisation greater contact with farmers than one-on-one extension methods. The importance of group-based methods in ensuring efficient extension delivery in the current context of decentralisation in developing countries has been emphasised in the prescriptive literature (Adhikarya, 1994, 1996; van Crowder, 1996a; United Nations, 2000; Rivera & Qamar, 2003).

Prior to decentralisation, the case organisation used geographic discussion groups, but because the needs of the members of such groups were often diverse, the groups tended to quickly become dysfunctional. The case organisation recognised this problem and instead developed needs-based groups. These needs-based groups tend to be more stable because the members have an area of common interest. This improves the stability of the groups which is important because there is a high cost associated with group formation for the case organisation. If groups remain stable, then this cost is reduced. This is a major finding that is previously not reported in the extension literature regarding the current decentralised extension system.

To further improve efficiency and effectiveness, the case organisation has begun to set up farmer cooperatives (Farmer-Based Organisations –FBOs) with the help of staff from the Ministry of Cooperatives. These groups are more formal than the needs-based farmer groups and have a written constitution and business plan. Such groups have a business-focus and are involved in both on-farm production and the processing and/or marketing of produce. Some groups may also lease land and farm it jointly. The members of these groups are trained in group and business management skills in addition to skills related to the specific enterprises around which the group is formed. The business-focus and

management training of these groups helps further improve group stability (Smith, 2001; Tossou & Zinnah, 2005). The move by the case organisation to develop farmer groups into self-reliant business oriented groups is one means by which it can achieve the demand-driven extension approach advocated in the literature (van Crowder, 1996a; Richardson, 2003; Garforth, 2004), where farmers are empowered to demand and pay for extension services.

The final means by which the case organisation improves its efficiency and effectiveness of resource use is through the use of a systematic control process. This process is used to control the implementation of the extension programme and to ensure that resources are used efficiently and effectively. Field staff meet with their supervisors on a bi-weekly basis to monitor the implementation of the extension programme at the sub-district level. Plan implementation is also discussed and evaluated at monthly staff meetings. The district plan is reviewed more formally each quarter through a multi-stakeholder review workshop that includes farmer representatives. During each of these control phases, the case organisation is trying to identify if resources are being used efficiently and effectively, and if there are areas for improvement. Feedback is provided to staff on areas for further improvement and these changes to the plan are then implemented and evaluated. The importance of monitoring, evaluation and feedback in ensuring efficient and effective resource use by extension organisations has been advocated by Leeuwis and van den Ban (2004), however, there is little empirical work in this area. Deshler (1997) claimed that involving farmers in evaluation such as is undertaken by the case organisation, would improve resource use because they would be the best judges of the impact of an extension programme. Efficient use of existing resources is important in extension service delivery, and resource mobilisation is a means by which the case organisation can expand its resources. In the following section, the means by which the case organisation mobilises additional resources are discussed.

7.3.7.3 Resource mobilisation

Because the financial resources provided by the government are limited, one means which the case organisation has identified for improving its impact in the district is to obtain resources from alternative sources to expand its resource base. Fleischer et al. (2004) also argued that the performance of public extension organisations depends upon

how well they are able to mobilise additional funds to supplement what they receive from government. The case organisation obtains resources in two forms. The first is in the form of grants from external sources and fees paid by farmers for inputs and services. The second is in the form of materials and services that are provided by various stakeholder organisations. These include such things as the provision of vehicles, training, extension materials, farm inputs (e.g. plant materials, fertiliser) and staff time. Although the literature has identified the importance of external funding sources (Anderson & Feder, 2004; Tossou & Zinnah, 2005), there has been little mention of nonfinancial resources. Although the results show that the case organisation is gradually developing strategies for mobilising resources from external sources, an estimate for the 2003 financial year suggests that the case organisation could raise only about 5% of its operating budget from the sale of inputs and for-fee services. These results support the point made by Qamar (2006) that public extension funding in developing countries is still primarily the responsibility of governments. Similarly, Tossous and Zinnah (2005) were of the opinion that there is limited capacity for decentralised extension organisations to mobilise local resources outside central government. However, there were insufficient data to place a monetary value on the external grants and the material resources provided by other stakeholder organisations.

The case organisation uses four mechanisms to expand its resource base. First, it lobbies the government to obtain access to additional funds for projects that are relevant to the district. Second, it obtains funds from nongovernment sources for projects that are relevant to the district. Third, it has asked farmers to pay for certain services. Fourth, it collaborates with other organisations. Although several authors (van Crowder, 1996a; World Bank, 2000a; Anderson & Feder, 2004; Garforth, 2004; Tossou & Zinnah, 2005) have identified the importance of mobilising additional resources for the effective operation of decentralised extension organisations, these authors have not provided a typology of the means by which this could be achieved. However, Anderson and Feder (2004) did suggest that extension organisations should seek funds from the external environment, a practice commonly used by NGOs (Carney & Farrington, 1998).

The first mechanism the case organisation uses to source additional resources is to lobby central government for funds for projects that will be of relevance to the district. The

government has specific national projects (e.g. Root and Tuber crops Improvement projects, Presidential Special Initiative oil palm and Cocoa Hi-tech project) which the case organisation lobbies to trial in the district because they are relevant to local farmers. Critical to the success of this approach is proactive leadership that is able to develop suitable project proposals, and establish and maintain a good working relationship with the regional and national offices. Given that the decentralisation of extension is relatively new in developing countries, and funding for extension has always been provided directly from the government, there is a lack of research and thus of examples of decentralised extension organisations having lobbying strategies similar to those reported here.

The second mechanism by which the government obtains external funding is by obtaining funds from nongovernment sources for projects that are relevant to the district. The case organisation, through its forums and networks with stakeholders, identifies stakeholder interests and develops relevant project proposals in line with these interests to seek funding. Similarly to the issue of lobbying from government, there is limited information in the literature regarding methods of soliciting funding from nongovernment sources (e.g. NGOs), although the literature (World Bank, 2000a; Anderson & Feder, 2004; Tossou & Zinnah, 2005) suggests that extension organisations would have to seek additional funds from other sources besides government if they are to succeed in the current new decentralised extension environment.

The third mechanism by which the case organisation sources additional funds is by charging farmers for specific services and inputs. The case organisation provides certain specialist services (e.g. animal surgical operations and meat inspection), and sells specific veterinary drugs to farmers. The organisation has realised that the farmers they work with are not able to obtain and store some critical agricultural inputs or access some services associated with new agricultural technologies. To assist the farmers, the case organisation goes to some lengths to procure and distribute such inputs and provide those services for farmers for a fee. This supports that view of van den Ban and Hawkins (1996) and Leeuwis and van den Ban (2004) that it is less useful to provide farmers with agricultural technologies, if they cannot access other inputs and services that are necessary to utilise those technologies effectively. The practice also supports the views of Beynon (1996) and Anderson and Feder (2004) that extension organisations must

diversify their sources of funding through selective privatisation where farmers pay for private goods and services as a means of ensuring financial sustainability.

More recently, some authors (Beynon, 1996; World Bank, 2000a; Paarlberg, 2002; Anderson & Feder, 2004) have raised the possibility of organising farmer groups into economically viable cooperatives that could either pay a levy that would contribute to the funding of public extension organisations or contract out for the extension providers for extension services they require. By 2003 the case organisation had organised some 40 farmer cooperatives (FBOs). However, this represents a very small percentage ($\approx 2\%$) of the farmers in the district. These FBOs have yet to reach the point where their working relationship with the case organisation can be described as a demand-driven extension system. As such, the results from this study support the World Bank's (2000) view that farmer groups in developing countries are not yet in the position to play a major role in funding public extension.

The final means by which the case organisation has extended its resource base is probably its most important, and this is through collaboration with other stakeholder organisations within the district. This supports the view (Cristóvão et al., 1997; Deshler, 1997; Sulaiman, 2003) that collaborating with stakeholder organisations from the public and private sector in extension programme planning and implementation provides an opportunity for resource mobilisation.

The case organisation extends its resource base in two ways through collaboration. First it provides resources to augment the efforts of other extension providers in areas it considers important to improving the contribution agriculture makes to the livelihood security of farm households in the district. As such, the case organisation plays a secondary role to the collaborating organisation, but is involved because the area is important to the achievement of its goals. Second, other organisations will provide resources to augment the case organisation's extension efforts in the district. In this case, the case organisation is the primary extension provider and the other organisation plays a secondary role. Although the literature (Cristóvão et al., 1997; Deshler, 1997; Sulaiman, 2003; Rivera & Alex, 2004a) has emphasised the importance of stakeholder involvement in extension delivery for resource mobilisation for extension programme implementation,

there is no clear distinction between the roles which extension organisations can play in this collaborative arrangements to achieve this.

The case organisation may provide support for another organisation by either training their staff or providing material resources (field staff, access to vehicles or library resources etc.). However, when it provides field staff, the other organisation is expected to provide transportation and extra-duty allowance for the staff. The support the case organisation receives from its collaboration with other organisations may take two forms. First, its staff may receive training from the collaborating organisation, or second, it may receive material resources such as access to vehicles, and cash and materials for field demonstrations. It is implicit in the literature (Cristóvão et al., 1997; Deshler, 1997; Sulaiman, 2003; Rivera & Alex, 2004a) that extension organisations can gain funds and different kinds of resources from organisations with which they collaborate, however there is little information on this topic and there are no examples of decentralised extension organisations having to collaborate for resources similar to those reported here. The next section provides the conclusion of this chapter.

7.4 Conclusion

In this chapter a theoretical description of the case organisation and its external environment has been provided. The key characteristics that can influence the performance of a decentralised extension service with a livelihood security focus were then compared to the literature. The needs-based programme planning process used by the case organisation was found to be similar to those proposed in the extension and rural development literature. However, there were modifications to allow for greater stakeholder participation, a better understanding of farmer needs and the development of appropriate location-specific action plans. A more detailed programme planning model was described. This includes three phases: (1) the situation analysis of the district AgE&RD system phase to determine farmer needs; (2) needs prioritisation and role determination phase to prioritise farmer needs at the district level; and (3) an action plan development phase to formulate action plans for the district and subdistricts. The definition of *farmer needs* is broadened and made more specific for extension organisations with a focus on farm household livelihood security. A typology of the roles which an extension organisation can play in this new environment was developed,

something previously not described in the extension literature. For effective extension service delivery, a more complex mechanism of monitoring and evaluation is provided. Furthermore, an in-depth understanding of how a decentralised extension organisation can operationalise stakeholder participation and accountability, expand its extension focus and roles, and foster a cross-sector pluralistic system is provided. The chapter also provides a description of how a local level extension organisation can develop and work with stable farmer groups at the local level. It also provides an in-depth understanding of how the case organisation combines both formal training and an organisational learning culture to provide its staff with managerial and technical competencies for their work in the district. In this chapter, a further understanding of how a local level extension organisation in Ghana can ensure staff motivation and commitment based on its context is provided. Finally, the chapter concludes with an explanation of mechanisms for the best use of existing resources and mobilisation of additional ones from external sources. Overall, the chapter provides a greater understanding of the critical success factors that can influence how a local level decentralised extension organisation operates to improve the contribution agriculture makes to farm household livelihood security. In the next chapter, the main conclusions from the study are drawn, the implications of the findings are outlined, the research methodology is evaluated and future research areas are identified.

CHAPTER 8:**CONCLUSIONS****8.1 Introduction**

The strength of the Ghanaian economy is based on agriculture, which contributes some 45% of Ghana's GDP and employs about 70% of its labour force. For that reason, agriculture and rural development in Ghana have been supported by extension services through the public sector under the Ministry of Food and Agriculture. From the 1970s until the 1990s there was a progression of extension reforms in Ghana. In 1997, decentralisation reforms were introduced that emphasised the grassroots participation of local people, extension pluralism, stakeholder collaboration, and poverty reduction. However, recent literature (MoFA, 2002a; MoFA, 2003; Ackah-Nyamike, 2005) has suggested that the Ghanaian extension service is struggling to implement the decentralisation policy. Interestingly, contemporary studies have focused on national policy strategies, with little empirical work on the factors that can contribute to the successful decentralisation of extension at the local level. This research contributes empirically to this area. As such, the aim of this study was to understand what factors contribute to the successful operation of a decentralised extension organisation at the district level, how such factors influence that organisation's success and why those factors have that influence. The research was guided by the following objectives:

1. to develop a theoretical framework to provide an understanding of how a decentralised government agricultural extension organisations with a livelihood security focus in developing countries can operate successfully in a decentralised policy context;
2. to identify and describe the key factors that influence the performance of a district level decentralised extension organisation;
3. to identify and describe the critical outcomes and processes that influence the performance of a district level decentralised extension organisation.

8.2 Research Conclusions

Extension decentralisation reform in Ghana is relatively new, however there are many theoretical and practical lessons that have been learnt from the study of a district level agricultural extension organisation identified as successful. The study highlighted that it was useful to make a clear distinction between external and organisational (internal)

factors when determining what factors influence the success of a decentralised extension organisation at the local level (Figure 8:1). In this study, the external factors were defined as those factors outside the control of the organisation which can affect the operation of the organisation. In contrast, the organisational factors are those factors which are internal to the extension organisation, and over which the organisation has a degree of control.

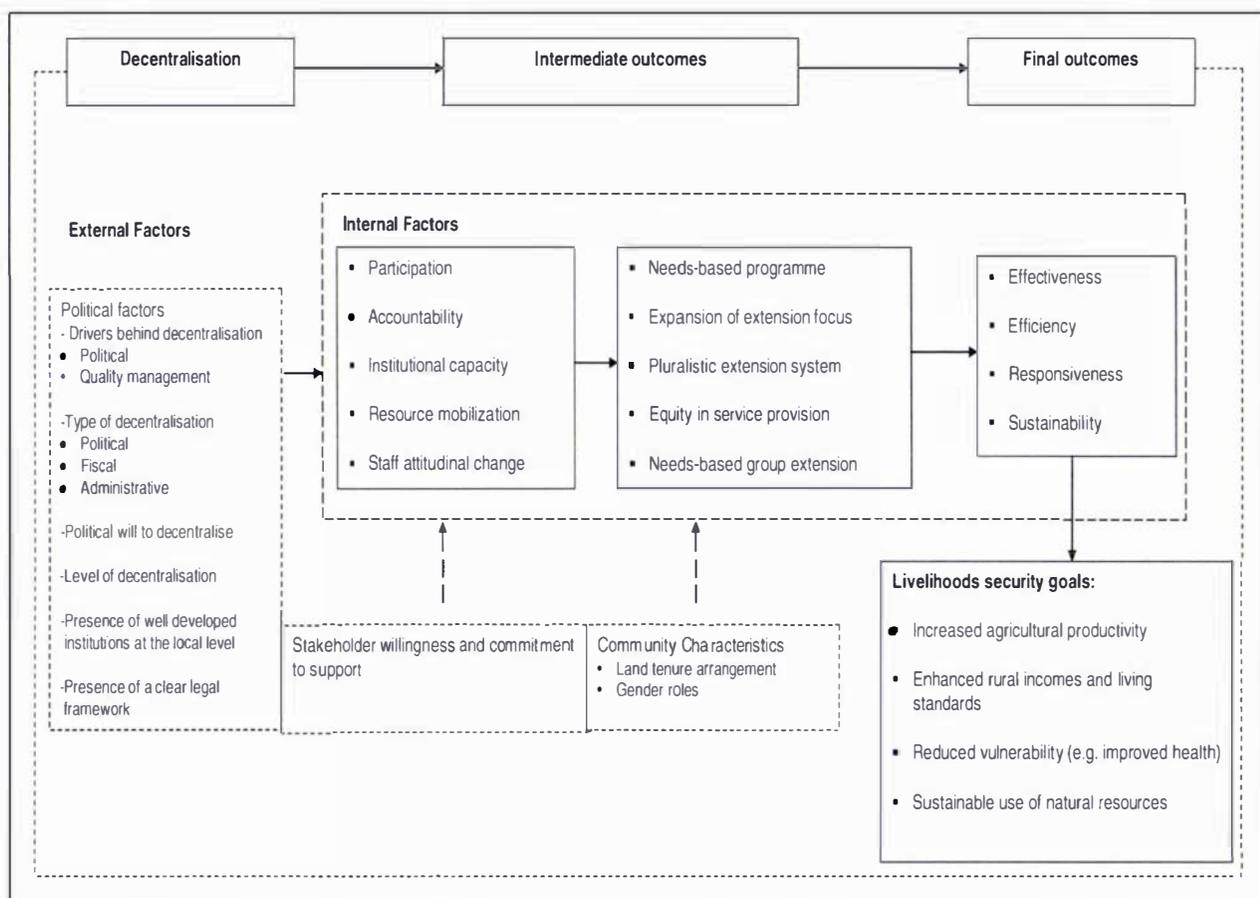


Figure 8:1. Expanded conceptual model of decentralised extension systems with livelihood security focus outcomes and goals

In terms of the external factors, the study highlighted the importance of the drivers and types of decentralisation in a country. Ghana's extension decentralisation is interesting because it seems to have a number of intersecting drivers to its extension decentralisation. The country seemed to be following a mix of *political* and *quality management* ideologies. The Ghanaian government wanted to achieve three main outcomes through decentralisation in relation to agricultural extension: 1) liberalization and de-regulation of

markets, 2) the withdrawal of state direct support for farmers through the promotion pluralistic extension system, and 3) the development of a needs-based extension system. These dual drivers of decentralisation have required district extension organisations to try to meet both local level and government needs.

The research results support the views of Parker (1995), Smith (2001), Swanson and Samy (2004) and Lai and Cistulli (2005) that external factors - such as the political will to decentralise, the decentralisation of other government departments, the presence of a clear legal framework of responsibilities, roles and coordinating mechanisms and the existence of established institutions that are willing to support the process - have an important influence on the performance of a district level extension organisation. In addition, the study also revealed that stakeholders' (farmers and organisations) willingness and commitment to support the decentralisation process, and the characteristics of the local community particularly land tenure arrangements and gender roles, have an important influence on how a decentralised extension organisation operates at the local level.

Several authors (Parker, 1995; Smith, 2001; Swanson and Samy, 2004; Lai & Cistulli, 2005) have identified four main interrelated internal (organisational) factors that they believed have an important influence on the performance of a local level decentralised organisation. These include stakeholder participation, accountability, institutional capacity building (managerial and technical capacity) and resource mobilisation or operational funding. The results from this study support their claim. However, the study also revealed five other interrelated factors that had not been reported in the literature. Distinctive amongst these new factors is extension staffs' attitudinal change necessary for the acquisition of new knowledge and skills and working with multistakeholders. The other factors included the need to: develop a needs-based extension programme, expand the extension service focus and roles, foster a cross-sector pluralistic extension approach and use needs-based groups for service delivery. These high level factors can also be considered as interrelated outcomes that the organisation needs to achieve to ensure that it can help improve the contribution agriculture makes to the livelihood security of farm households in the district. Importantly, in this study the process and mechanisms which the case organisation uses to achieve these outcomes are described.

In accordance with the literature (World Bank, 2000a; Richardson, 2003; Garforth, 2004), the case organisation has adopted a needs-based programme development approach to enhance the contribution which agriculture makes to the livelihood security of farm households. Through this research, a more specific and useful definition of *farmer needs* has been developed for use by extension organisations that adopt a livelihood security focus. From the case study, the term *farmer needs* is defined as *on-farm and non-farm needs that have impact on the contribution agriculture makes to the livelihood security of farm households in the district*. This view of farmer needs is more useful than previous views because it sets a more precise boundary around what needs an agricultural extension organisation should target.

The study revealed that the case organisation uses several mechanisms that operate at different levels (district and sub-district) to develop a needs-based extension programme. Farmer needs are identified informally through contact between field staff and farmers. At a more formal level, farmer and stakeholder organisation representatives are invited to forums on a specific issue that affects farmers. One of the outcomes from these forums is the identification of farmer needs. At the most formal level, farmer and stakeholder organisation representatives are invited to be involved in the development and evaluation of the district extension programme. During the programme planning exercise, the farmer needs for the district are identified. The case organisation also uses its quarterly evaluation process to identify emerging farmer needs.

As suggested in the literature, stakeholder (farmers and other organisations) participation is one of the critical factors influencing the performance of the case organisation. Three benefits were identified to flow from stakeholder participation. First, it is critical for identifying farmer needs. Second, it is important for reducing duplication in extension effort and promoting collaboration between extension providers. Finally, it allows the case organisation to mobilise additional resources from the various stakeholders involved in the process.

Although forums are one of the mechanisms by which stakeholders participate in the extension system, the primary mechanisms are through the case organisation's programme planning and evaluation processes. The case organisation adapted these

processes to ensure much greater stakeholder participation. Although the ultimate aim of decentralisation is the development of a demand-driven extension service, this change will take time and has yet to happen in Ghana. To foster greater participation of farmers, the case organisation has modified its programme planning, monitoring and evaluation processes through consultation and collaboration with farmers. It undertakes a pre-planning meeting with farmers where extension field staff consult farmers to obtain a wide cross-section of views at the village level. All field staff are then invited to the annual planning workshop so that the views from each sub-district are represented.

Once the field staff have consulted at the sub-district level, the case organisation conducts an annual planning workshop where it invites farmer representatives who are chosen on the basis of enterprise type and location to provide a broad cross-section of views at the district level. The mechanisms for improving farmer participation during the planning process include allowing farmer groups to select their own representatives for the consultative planning workshop, dividing the planning workshop into two shorter workshops so that farmers are not away from their farms for too long, and the use of the local language during the planning workshop. However, the level of farmer participation during the planning workshop can be classified only as *consultation* because the case organisation is the primary decision maker in this process.

The case organisation undertakes its action planning process at the sub-district level where its field staff negotiate with farmers to tailor their actions plans to specific local needs. Participation at this level moves from consultation to collaboration because the farmers and the case organisation's staff jointly make decisions. Farmers also participate in the regular monitoring and evaluation (quarterly and annual) of the extension programme, however, this participation is only at the consultative level. The case organisation is helping to develop needs-based farmers groups into cooperative farmer-based organisations (FBOs) so that that they will eventually have the capability to initiate their own farming projects and demand and pay for the extension services they require. The results from the study, however, suggest that attaining self-mobilisation and demand-driven extension will require a considerable length of time - particularly given the resource limitation and the nature of the changes required to move from top-down to demand-driven extension.

The mechanisms by which the case organisation fosters greater participation of other stakeholder organisations also include its programme planning and evaluation processes, and other forums. The case organisation has built a database that records information about the key stakeholder organisations in the district. It uses this data-base to identify which individuals it should invite to its various forums.

Accountability was identified in the literature as an important factor that influences the performance of a decentralised extension system. It is interesting that although the case organisation does not explicitly seek to ensure accountability to stakeholders, it does have a monitoring and evaluation process that contributes to accountability. In addition, stakeholders are involved in quarterly and annual evaluation of its extension programme. These same stakeholders are involved in the programme planning process and receive copies of the annual extension programme, ensuring further transparency in the process.

The results of the study confirm the views expressed in the literature that for an extension organisation to provide a livelihood security focused extension service, it must adopt multiple roles and a cross-sector pluralistic approach to extension delivery. The study identified that the case organisation uses a role selection process during its programme planning to determine which role it will adopt for a specific farmer need. The criteria for the role selection were identified to include whether or not the need : (1) is within the government extension policy, (2) is a public need, (3) is being met adequately by other extension providers, (4) can be met by the case organisation's working with other extension providers, (5) can be met with the current capability of the case organisation, (6) is important enough to require the case organisation to develop the capability in the long-run to meet it, and (7) is important enough to require the case organisation to purchase expertise from other extension service provider to address. Based on these criteria, the study identified a broader typology of the roles an extension organisation can adopt to ensure it meets the needs of farmers in this more holistic approach. Its role is not only to transfer agricultural technologies, but in this broader approach it may act as a farmer advocate, a linkage broker between farmers and support organisations, a contractor of extension services, a collaborator with other extension providers, and a provider of for-fee inputs or services.

To meet the broader livelihood security needs of farmers, the case organisation has to work with organisations from outside the agricultural sector. Similarly, because often it does not have the capabilities or resources to meet all the needs of farmers, it has adapted its extension programme planning process to facilitate cross-sector and within-sector coordination and collaboration. The multi-stakeholder approach to planning, where the needs of farmers and the roles and capabilities of the various organisations in the district are discussed, allows the case organisation to facilitate coordination and collaboration within the extension system.

Because of resource constraints, the case organisation has adopted the use of needs-based groups so that it can have greater impact on the farming community in the district. Needs-based groups are organised because they are more stable than geographic discussion groups and this stability is improved through training in management techniques and cooperative practices.

The results of the study confirm the significance of the role of effective resource management in ensuring the success of a decentralised extension organisation with a livelihood security focus. They also highlight the importance of the managerial and technical capacities of staff in ensuring the successful operation of a decentralised extension organisation. To improve staff capacity, the study highlighted the critical role of training, an informal learning culture and staff motivation. In relation to staff training, the importance of needs-based (competency-based) training and the role of farmers' indigenous knowledge in training of field staff were highlighted. Because of the multiple roles played by the extension organisation, the need to provide a wide range of competencies to narrow the gap between the knowledge and extension skills of the staff vis-à-vis the roles they are expected to play in the district was emphasised in this study. These competencies include extension and facilitation skills, technical knowledge and skills in agricultural production, other off/non-farm issues (e.g. health and marketing) that have direct impacts on agriculture and livelihood security, and public administration and management skills for the senior management staff.

The study showed the case organisation to have some characteristics of a *learning organisation*, something not previously reported in the literature on public extension

organisations in developing countries. These characteristics include fostering an open environment in which staff feel comfortable sharing information, the provision of in-house forums whereby the staff can meet, interact, share and reflect upon their knowledge, and other forums where staff can meet with staff from other organisations to share ideas. The study, however, revealed that the case organisation did not set out to explicitly become a learning organisation, rather, it exhibited these characteristics as a result of seeking ways to ensure continuous improvement in its operations.

The study demonstrated that because the case organisation does not have the power to control staff remuneration, recruitment and promotion - a problem faced by many district extension organisations in developing countries - it had to use a range of other mechanisms to ensure that it had motivated and committed staff. It uses a more inclusive approach to management that values staff input in management decision making, provides rewards for high staff performance, and fosters good staff relationships based on mutual trust and respect within the organisation.

The results of the study have confirmed the importance of resource mobilisation in ensuring the success of a decentralised extension organisation. The study however, has also identified useful mechanisms for ensuring effective resource management which takes into consideration the efficient use of existing resources and resource mobilisation. The study revealed that an extension organisation with a livelihood security focus at the local level can mobilise additional resources for extension provision through collaboration with stakeholder organisations, and lobbying for projects and development grants from government and donor organisations. To ensure the efficient use of existing resources, the study highlighted the importance of avoiding duplication of extension effort, the use of a group-based approach (enterprise-based farmer groups and FBOs), and the use of a systematic control process. The conclusions from this study have implications for agricultural extension in developing countries.

8.3 Implications of the findings

This study has been conducted at a time when governments in many developing countries are in different phases of decentralising their extension organisations. However, there is

little written on how decentralised agricultural extension organisations with a livelihood security focus can achieve success at the local level. Thus, the empirical evidence provided by this study will have significant implications for policy makers, extension organisations and their staff, organisations that provide training and education for extension staff and the extension discipline. For policy makers, the study indicates the need for political will, decentralisation of all other government departments and a clear legal framework, to create local external conditions which are conducive to the effective operation of a decentralised extension organisation. This calls for policies that will demonstrate a strong political will on the part of government to fully decentralise extension and devolve decision-making power and management to the local level organisation to provide services that meet local needs.

Decentralisation of extension in Ghana is at the level of deconcentration. As such, a government district level extension organisation does not have the power to employ, promote (or demote) and remunerate staff. A policy strategy is needed to move the country towards complete devolution to allow it to enjoy the full benefits of decentralisation. The study showed that to succeed, it is also critical to have other government organisations (e.g. health, forestry, and education) decentralised to facilitate coordination, collaboration and support for extension provision at the local level. This implies having (1) a policy that supports the decentralisation of other government departments and (2) a clear legal framework that specifies the roles and responsibilities of these departments, and (3) proper mechanisms for internal and external coordination, collaboration and local support. Finally, there is the need for long-term investment and support from central and local government for extension decentralisation, given that the reform process will require a considerable amount of resources and time (≥ 15 years) for a significant shift from a top-down agricultural production-focused extension service to one that is demand-driven with a livelihood security-focus.

The research findings have implications for extension organisations and their staff. The study has provided a general model of the key factors that are crucial to the successful implementation of a decentralised agricultural extension policy. This provides a framework from which other local level extension organisations and their staff can learn, and a framework which may be adapted to their particular contexts to improve their

performance. The findings suggest that in order for extension organisations that are decentralised to adopt a livelihood security focus and to succeed in improving the contribution which agriculture makes to the livelihood security of farm households, they should adopt a needs-based approach to programme development. To do this effectively they would need to adopt a multi-stakeholder approach that would allow them to draw information from a wide cross-section of farmers, their field staff, and other stakeholder organisations from within their district to define farmer needs and their extension focus. The results of this study also suggest that extension organisations that adopt a livelihood security focus must take on multiple roles and collaborate with other extension providers, both within and across sectors, in order to meet the broader needs of farm households. This broader extension focus also requires a better definition of farmer needs that can more precisely set boundaries around what the extension organisation can, and cannot, do. Because of the complexity associated with this broader extension focus, extension organisations may need to adopt a systems approach to agricultural extension management in order to understand the factors that impact on the livelihood security of farm households and how they might best assist to bring about improvements.

The findings also suggest that to succeed in the new environment, an extension organisation with a livelihood security focus would have to develop mechanisms that will enable it to ensure stakeholder participation and accountability. It would also have to develop mechanisms for the efficient management of resources in terms of the efficient use of its existing resources and the mobilisation of additional resources.

The results of the study suggest that the traditional training in technical areas and extension methods is not sufficient in this new environment. With the shift from a top-down management approach, managerial staff need much better training in management and administration. With a cross-sector pluralistic system, they also need training about the mechanisms that will facilitate coordination, collaboration and lobbying within the extension system. Also, given the broader focus and roles the extension organisation must adopt, the technical staff need a broader knowledge base of technical expertise. This will require extension organisations to a) train staff so they have this broader knowledge base, 2) train staff for attitudinal change so they can search for knowledge that

they do not have - including the indigenous knowledge of farmers, and/or 3) train staff so they can seek out others to provide the necessary knowledge.

The study has major implications for the agricultural extension discipline. The literature in this area of the agricultural extension discipline is predominantly prescriptive. There is little written on extension organisations that have taken a livelihood security-focused approach to extension (Garforth, 2004). This study has added to the understanding of how decentralised extension organisation can operate successfully to improve the contribution agriculture makes to farm household livelihood security. However, for the agricultural extension discipline to build reliable knowledge in this new and emerging area, there is a need for more in-depth case studies to build on the findings from this research. In the next section, an evaluation of the research methodology is provided.

8.4 Evaluation of the methodology

In this section the research methodology is reflected upon to evaluate its appropriateness, the challenges it presented and what aspects of it can be improved in addressing this type of research problem. The case study approach was found to be useful for identifying and clarifying the factors that were important to the successful operation of a decentralised public extension organisation.

The choice of a single-case as against a multiple-case study design was appropriate because the case was an organisation comprising 44 individuals and working in collaboration with several stakeholders, which meant that there were numerous explanatory variables and complex processes to be investigated, and data were collected not only from individuals within the organisation, but also from key informants from stakeholders (farmers and organisations). Overall, data were collected from 32 key informants through 38 interviews. In addition to the interviews, multiple documents and field observations were collected for analysis. The organisation and analysis of the materials from this case study took the researcher some 14 months to complete. The author could not have conducted a multiple-case study to this depth with the time and resources he had available.

The study highlighted the importance of developing a good theoretical framework to guide data collection and analysis. Some problems did occur during the data collection phase because the theoretical framework was found to be incomplete at the point of data collection. Although this problem is expected in qualitative studies such as this where there is limited theoretical development in the area, the problem was compounded because the researcher could not revisit the field site to collect additional data because of funding and access limitations. Primarily this was because the researcher was based in New Zealand and the field site was in Ghana. Normally, in such a study, additional theoretically important concepts emerge as a researcher iterates between data analysis and the literature. In such instances, a researcher can normally revisit the field to collect additional data on these concepts. However, this was not possible in this research. Knowing this could present a problem, the researcher collected data from multiple sources (interviews, documents and field observation) to reduce the likelihood of having missing data.

Data analysis was also more time consuming because the researcher's initial framework still required further development. The structure of the framework improved and additional concepts were identified as the researcher iterated between data analysis and the literature. This highlighted the importance of maintaining an ongoing review of the literature during the data analysis phase. In areas that have a well developed theoretical framework, this would not be so important. In places, the researcher had to review areas outside the extension discipline. One issue that was important here was to determine how in-depth these areas had to be for the purposes of the study. This problem was compounded because the researcher had little familiarity with the literature in these areas (e.g. organisational learning).

Semi-structured interviews supported with documents and field observations were appropriate for the data collection because they allowed the researcher to triangulate the data and collect additional information that became useful later in the data analysis. A key realisation by the researcher in the study was that the use of multiple-sources of data for triangulation was important in this study because the researcher could not verify all the key-informants' interview summaries before returning to New Zealand. Therefore he had to rely on other data sources to confirm their validity. As indicated earlier, this

highlights the problems which can occur where a researcher can spend only a limited amount of time in the field and does not have the opportunity to revisit the field site to verify his or her findings.

The use of tape recording and transcription was indispensable for this kind of study. This is because of the quantity of data involved, informal nature of the interview process and the complexity of the organisation's processes. It would have been very difficult to capture these data accurately through field notes. Some key informants showed signs of uneasiness with the tape recorder. To overcome this problem, the researcher made the interviews less formal and spent a longer time developing rapport prior to the start of the interviews. Questions were kept simple, nonthreatening and to the point until the informant appeared more relaxed. After this more open-ended questions were asked. Problems did occur also when the interviews were transcribed by someone other than the researcher. Because the transcriber did not understand the context and the jargon, numerous errors were made that had to be corrected by the researcher. It is also important to cross-check the transcripts as there is a possibility of losing important information, especially with respect to precision and emphasis.

A critical issue in this case study was the selection of key-informants from the extension organisation and the stakeholders with whom it works. The use of the informant selection team (IST) to select key informants proved useful in assisting the researcher to select appropriate informants for the investigation. Furthermore, specifying the selection criteria to the IST is important. The author doubts he could have obtained such good informants without the help of the IST.

Sampling individuals from different levels within the case organisation was important because informants at different levels of the organisation had information that was often not known by informants at other levels. Similarly, the informants from outside the organisation provided different view points on the case organisation and those views tended to be determined by the nature of the interactions they had with the case organisation. As such there were areas of overlap and differences between informants. The challenge for the analysis was to mesh these into a single model of the phenomenon.

An important aspect of this study was the use of the qualitative data analysis software package NVivo (Qualitative Solutions & Research Pty. Ltd, 1999), a computer-based qualitative data analysis tool. This played a crucial role that made it possible to complete the data organisation and analysis in 14 months. The software assisted the researcher to code and organise the data. However, it is important to note that NVivo software does not analyse the data, rather it is a tool that assists the researcher in the data analysis process. This means that the researcher must use his/her understanding of existing theory to analyse the data - which highlights the importance of having a clear conceptual framework for data analysis.

The researcher had had no previous experience in qualitative research and therefore found it a difficult process. Although the researcher had done some course work in this area, with the benefit of hindsight the researcher would recommend that individuals in this position undertake a full paper in this area to improve their skills before conducting their research. Closure is also a problem in this research, because the data analysis can be further refined indefinitely. This problem was compounded because there was not a well developed body of theory in this area. Overall, the research methodology in terms of methods of data collection and analysis worked satisfactorily, because it enabled the researcher to achieve the objectives that were set for this research. In the next section future research areas that flow from this study are highlighted.

8.5 Future research

The findings from this study present new research challenges that extension researchers must consider if they want to obtain a greater understanding of the factors that affect the performance of local level decentralised extension organisations that have a livelihood security focus. This topic is an emerging area in the agricultural extension literature. However, given that the majority of literature is of a prescriptive nature, there is a need for further empirical work to test the validity of this body of theory. An obvious follow-up study from this one is to investigate case organisations from within the same region that are exposed to the same external factors to identify what organisational factors are influencing the organisation's performance. Alternatively, research could be undertaken in other regions in Ghana, or countries where the extension factors are different. Identification of successful extension organisations that operate in non- or less supportive

external environments would be important because this is a problem in many developing countries (FAO, 2001; Alex et al., 2002; Anderson & Feder, 2004; Rivera & Alex, 2004a).

The case organisation used in this study was judged as successful relative to other district level extension organisations from one region in Ghana. Important future research is needed for the determination of which district level extension organisations are successful and which ones are not. The case classification system and the factors determined in the study can provide the basis for formulating testable hypotheses for research to determine criteria that can be used to assess the performance of district level extension organisations in Ghana. With this understanding, it will be intriguing to investigate other cases that are less successful, cases from different regions which may have different contexts and cases with better resources. Such investigations will increase the value of the findings from this empirical study because they will provide other evidence for comparison.

With the development of a useful theoretical framework from this study, it would now be possible to use this framework to develop a survey instrument and undertake a nationwide or intercountry survey of the factors that influence the performance of decentralised extension organisations.

Despite the importance of the factors identified in this study, specific areas need more in-depth investigation and understanding because of their pivotal role in contributing to the success of a decentralised extension organisation with a livelihood security focus. Both the needs-based approach to programme development and stakeholder participation were identified as important factors in this study and a number of key mechanisms for operationalising the two factors were identified. It would be interesting to conduct a multiple-case study on these topics to identify other mechanisms that can enhance or constrain the needs-based approach to programme development and stakeholder participation. The study highlighted that to operate with a livelihood security focus, an extension organisation has to coordinate and collaborate with other providers both within and outside the agricultural sector. The study provided some insights into how this was achieved, but there is scope for a more in-depth study of this area. The study also highlighted that the monitoring and evaluation process played an important role in programme implementation, needs identification, organisational learning and

accountability. However, the study provided limited information about how evaluation information is used to improve an extension organisation's performance. Future research into this area will provide useful information for extension organisations striving to improve their performance.

Managerial and technical capacity and the role of in-service training were highlighted by the study, as were the expanded number of roles extension staff are now expected to play in this new environment. These findings then raise the question, what pre-service training is required by extension agents? This would be another important area of future research. Given that a major problem of extension organisations in most developing countries is lack of resources (Parker, 1995; Feder et al., 2001, Hanson & Just, 2001 and Anderson & Feder, 2004), an important area of future research is to find new ways of ensuring the efficient use of existing resources and methods for mobilising additional resources.

The case organisation in this research had been decentralised for seven years, and as such is still in a process of transition from being a top-down to becoming a demand-driven extension provider. Given that Crook and Sverrisson (2001) have suggested that this process could take about fifteen years, important future research is required to identify the differences between stages in the transition process. Such longitudinal studies into this area will help to provide further insights into how extension organisations can operate to move from supply-driven to demand-driven extension, or to move farmers from the consultation level of participation to self-mobilisation.

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APPENDICES

Appendix 1: Main responsibilities of DADU's technical staff

1. District Director of Agriculture (DDA)

- Oversee the preparation of the District Agriculture Development Plan and its incorporation into overall district assembly plan
- Prepare District Annual Agricultural Work Programs and Budget for submission to the district assembly with copy to the Regional Director of Food and Agriculture.
- Manage and co-ordinate the day to day activities of the District Food and Agricultural Department, financial, human and material resources;
- Ensure that scheduled training programs are implemented and technical backstopping provided;
- Design and implement, in collaboration with the Regional Director of Food and Agriculture, a staff development programme for all categories of staff in the District;
- Facilitate liaison between Department of Food and Agriculture and stakeholders on programs related to the development of agriculture in the District;
- Ensure effective monitoring and evaluation of agriculture programs in the districts;
- Prepare and submit timely reports – monthly, quarterly, annual and special situation to the District Co-coordinating Director;
- Collaborate with the Regional Food and Agricultural Department for the preparation and production of technical leaflets;
- Ensure collection and collation and analysis of data in the district;
- Facilitate the development and promotion of agribusiness in the district;
- Establish relevant demonstrations, field days, and farmer fora in the districts;
- Ensure achievement of targeted demonstrations and
- Advise the district assembly on matters related to agriculture in the district;

2. Deputy Director of Agriculture

- Coordinate the technical functions of DDOs and AEAs and to ensure that adequate resources are available for discharging their required roles and responsibilities;
- Liaise with the regional directorate and relevant research and training institutions for information and assistance for the promotion of the District's agriculture;
- Formulate and implement a programme of district capacity building and training for all categories of staff in conjunction with the Regional Human Resource Development Unit and
- Ensure that agricultural development programs and projects are implemented in accordance with the rules, regulations and quality of standards of MoFA.

3. District Agricultural Development Officers (DADOs)

- Ensure the coordination and implementation of planned agricultural activities;
- Produce agricultural profile for the zone;
- Assist each AEA in the field to develop route maps, work calendar and programs;
- Visit each AEA in the field to guide, motivate and advise;
- Monitor and evaluate AEAs work programme and activities;
- Identify gaps between work targets and results;
- Liaise with farmer groups to assess farmers best practices;
- Assist AEAs to demonstrate proven results of OFAT to farmers;
- Ensure the completion of daily log record, monthly and quarterly reports by AEAs in his or her zone of supervision;
- Prepare and submit monthly, quarterly and annual reports;
- Provide any other report which the Deputy District Director of Food and Agriculture may require from time to time;
- Appraise the performance of AEAs in the zone at the end of each year and give comprehensive appraisal report to the DDA;
- Prepare annual leave roster for AEAs and submit to DDA and approve the movement of AEAs in and out of the district;

- Promote agribusiness development;
- Provide technical backstopping to AEA's;
- Provide input for the preparation of technical materials;
- Assist the DDA in the production of technical leaflets; and
- Establish and maintain agricultural information in the district.

4. Agricultural Extension Agents (AEAs)

- Compile agricultural profile of operational area i.e. soil, climatic, sociocultural and economic (including agriculture)
- Establish contact with farmer and farmer groups;
- Prepare route maps and visit schedules in collaboration with Development Officer;
- Assist farmers in the diagnosis of farm and farming related problems and advise on solutions to such problems;
- Conduct on-farm adaptive trials and collect relevant data for analysis of researchers;
- Establish mini-demonstrations, arrange field days with contact groups community based organisation and assess the results with farmers;
- Organise planning sessions with farmer and identify problems;
- Promote HIV/AIDS, gender awareness and other emerging issues in the development of all programs;
- Assist farmers in farm management education and practice in order to have a cost-effective farming enterprise;
- Form and develop viable farmer group;
- Assist farmers with information on farm inputs, credit support, marketing, HIV/AIDS, etc.
- Liaise with enumerator statistics for data collection at farm level and
- Undertake any other duties that may be assigned.
- Other specialised duties (e.g. veterinary, fisheries and MIS) as is assigned by management of DADU

The District Director heads the DADU in the District. He or she is assisted by a deputy, who is appointed from among the most senior development officers. There is a maximum of nine (9) DDOs. This includes DADO for: extension, crops, fisheries, MIS, livestock, Women in Agricultural Development, engineering/post harvest management, PPRSD and veterinary

Field Level Staff Structure

For efficient and effective service delivery, districts are demarcated into operational areas. A minimum of sixteen (16) and a maximum of thirty two (32) operational areas are proposed for a district. The number of such operational areas varies from one district to the other. An operational area is an aggregation of a number of enumeration areas as defined by the Ghana Statistical Service.

Source: MoFA (2004)

Appendix 2: Some infrastructural facilities of DADU

Assets	Number	General Condition	Use	Remarks
Computers	2	Good	For MIS	
Vehicles	2	1-Good 1-Working but Faulty	Field work and other trekking	One is not strong
Type Writing Machine	2	Old	Secretarial work	Need to be replaced
Steel Cabinet	2	1- Good (new) 1- Old	Keeping files and official documents	Four new ones are needed
Tables and Chairs	6	Old	Officer use	Need replacement
Plastic Chairs	15	Good	For meetings	

Appendix 3: List of the main registered co-operative FBOs working with Assin DADU in 2004

Name of FBO	Speciality
1. Assin Asamankese Co-op Oil Palm Growers and Millers Society Ltd Reg.CR/NC/110	Oil Palm production and procession
2. Assin Dosii Co-op Oil Palm Growers and Millers Society Ltd Reg.CR/NC/11	“
3. Assin Andoe Co-op Oil Palm Growers and Millers Society Ltd Reg.CR/NC/08	“
4. Assin Hasowodze Co-op Oil Palm Growers and Millers Society Ltd Reg.CR/NC/09	“
5. Assin Akrofuom Wodidia Gyabi Co-op Oil Palm Growers and Millers Society	“
6. Assin Kojo Benji Nyame Ntsi Co-op Oil Palm Growers and Millers Soc. Ltd. – Reg. CR/P/AC/13	“
7. Assin Jakai Peace and Love Oil Palm Growers and Millers Association	“
8. Nsuekyir Ye Edwuma Boa Wo man Co-op Oil Palm Growers and Millers Soc	“
9. Assin Akonfudi Women Oil Palm Growers and Millers Association	“
10. Assin Akropong-Odumase Co-op Oil Palm Growers and Millers Soc	“
11. Assin Juaso Women Co-op Oil Palm Growers	Oil Palm production
12. Co-op Oil Palm Growers Akafo Moa Kuo Ltd. Reg. CR/P/AC/11	“
13. Co-op Oil Palm Growers Akafo Moa Kuo Ltd. Reg. CR/P/AC/11	
14. Fremko Co-op Agro Processing Ventures – Assin Nyankumasi	Oil palm processing
15. Assin Manso Cassava Growers and Millers Society	Cassava production and processing
16. Assin Dawomako Nyame Akwan Women Cassava Farmers Association	“
17. Assin Ayinabrim Co-op Cassava Growers Society	“
18. Amposakrom Co-op Poultry and Livestock Farmers Society	Poultry and livestock
19. Assin Foso Poultry Farmers Association	Poultry
20. Assin Akonfudi Co-op Livestock Farmers Society - Proposed	Livestock
21. Assin Juaso Co-op Citrus Farmers Society	Citrus production
22. Assin Adubiase Co-op Citrus Growers Soc. Ltd – Reg. CR/P/AC/09	Citrus production
23. Assin Nsuta Citrus Growers Association	Citrus production
24. Assin Sekan Bodua Citrus Farmers Association	Citrus production
25. Assin Nduaso Red Cross Mothers Co-op Farmers Ltd. – Reg.	Food crop production

CR/P/AC/12	
26. Assin Wurakese Korye Farmers Association	“
27. Assin Dawomako Nyame Ye Farmers Association	“
28. Assin Endwa Women Farmers Society	“
29. Assin Dansame Nyame Bekyere rice Growers Association	Rice production
30. Assin Baanuye Nkosoo Co-op Rice Growers Society	Rice production
31. Assin Brofoyeddu Cash Crop Growers Association	Cocoa, oil palm production
32. Mamfi Wawase Rice and Cocoa Growers Association	Cocoa production
33. Anum Cocoa Farmers Association	Cocoa production

Appendix 4: Organisational relationships of DADUs, MoFA and the District Assembly

