THE ROLE OF CAPACITY BUILDING FOR LIVESTOCK EXTENSION AND DEVELOPMENT IN LAO PDR

By

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DEDICATION

DEDICATION TO THE MEMORY OF MY FATHER
MR. THISALIENG PHOTAKOUN WHO DEPARTED THIS LIFE

28th October, 2008.

AND

MY GODMOTHER

KHAMMEUNG PHOMMACHANH

WHO DEPARTED THIS LIFE

11 July, 2008
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ABSTRACT

Most farming families in the remote northern uplands of Lao PDR live in relative poverty, relying on subsistence agriculture. Many of the poor farmers are dependent upon government, non-government and other development and private sector organisations for technical advice and support. They need effective extension services to provide advice on marketing information, commercial and technical options, in order to supplement traditional practices and improve their livelihoods. The Lao government wants to reduce poverty through economic growth and providing alternatives to poor households who practice shifting cultivation. However, the district extension staff who are working in remote regions are limited in both quality and quantity. Improving the knowledge and skills of extension staff working with upland rural commodities is a key goal of the Lao Ministry of Agriculture and Forestry.

This thesis explores the role of capacity building being used for extension staff who are working across a range of livestock projects in the northern uplands of Lao PDR. Qualitative semi-structured interviews were conducted with 14 Livestock Project Managers and two Provincial Coordinators in five northern provinces to find out what capacity building methods they used and the relative effectiveness of each method. In-depth interviews were subsequently held with 10 District Heads and 20 District Extension Officers to gain more local perspectives on capacity building including factors influencing outcomes at the farmer level. Suggestions on how the capacity building of livestock extension staff can be strengthened and sustained were elicited from all interviewees. In addition, a survey was conducted of 30 District Extension Officers to rate eight capacity building methods against required competencies in livestock production.

Capacity building methods most mentioned by all interviewees included workshop training, on the job learning, cross visits and study tours, staff meetings and mentoring. Less used were on-site training, formal study, Farmer Field Schools, Village Learning Activities and the Internet.
Interviewees concluded that all methods have advantages and disadvantages, depending on how and when they were used.

Factors influencing the effectiveness of capacity building methods included the availability of government funding, value of and dependency on project funding, provincial (PAFO) and district (DAFEO) support and influence, opportunities to study, family support and commitment, influence of farmers and farmer groups, having good examples in the field, staff ownership and motivation, representation of women and ethnic minorities and staff relocation.

Designing and using a combination of capacity building methods works best because it takes advantage of their relative strengths and weaknesses. Building effective teams and providing opportunities equally to district extension staff is also important to building capacity. Capacity building can be further strengthened by working with partnerships between government, non-government, development organisations, private sector and other stakeholders.

The results suggest that the role of capacity building in livestock extension is of high importance to rural development and rural extension. Investment to build the capacity of district livestock extension staff can return benefits quickly to organisations and communities, particularly in remote areas. Therefore, the Lao government, development organisations and other stakeholders should continue to support capacity building components.

This thesis has focused on evaluation of capacity building for district livestock extension staff from the perspective of interviewees. Further research is needed to: 1) Measure the impact of capacity building on staff over time. 2). Measure the impact of capacity building on farmers, particularly ethnic minorities, women and poor farmers in the northern uplands of Lao PDR. 3). Evaluate the cost and effectiveness of each capacity building method.
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<td>ADB</td>
<td>Asian Development Bank</td>
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<tr>
<td>ADP</td>
<td>Agriculture Development Project</td>
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<tr>
<td>AIRP</td>
<td>Accelerating the Impact of Research and Extension on Shifting Cultivation in the uplands of Lao PDR Project</td>
</tr>
<tr>
<td>AusAID</td>
<td>Australian Agency for International Development</td>
</tr>
<tr>
<td>CBSLSP</td>
<td>Capacity Building for Smallholder Livestock Systems Project</td>
</tr>
<tr>
<td>CRWRC</td>
<td>Christian Reformed World Relief Committee</td>
</tr>
<tr>
<td>CSU</td>
<td>Charles Sturt University</td>
</tr>
<tr>
<td>DAFE0</td>
<td>District Agriculture and Forestry Extension Office</td>
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<tr>
<td>DLF</td>
<td>Department of Livestock and Fisheries</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
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<td>FLSP</td>
<td>Forage and Livestock Systems Project</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<tr>
<td>Lao-EU</td>
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<td>NGO</td>
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<td>Provincial Agriculture and Forestry office</td>
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<tr>
<td>PRONEA</td>
<td>Program National Agro-Ecologies</td>
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<td>SELN</td>
<td>State Extension Leaders Network</td>
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<td>SHDP</td>
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<td>SPFSP</td>
<td>Special Program for Food Security and South- South Cooperation Project</td>
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<tr>
<td>STEA</td>
<td>Science Technology and Environment Agency</td>
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<tr>
<td>UNDP</td>
<td>United Nations Development Program</td>
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<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organization</td>
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CHAPTER 1

INTRODUCTION

An overview of the research problem

Most farming households in the remote northern uplands of Laos live in relative poverty. The policies of the national government aim to increase food security and improve the livelihoods of all Lao people. The Lao Government wants to alleviate poverty and reduce shifting cultivation practices by encouraging rural communities to intensify their agricultural production through growing cash crops and fruit trees and raising livestock (GOL, 2005). Many of the farmers in remote upland regions of Laos are dependent upon government, private or contract agricultural extension staff for technical advice and support.

For livestock development, farmers need advice on growing and using different feedstuffs, breeding, controlling diseases, housing and marketing (Millar & Photakoun, 2008). Since 1995, there have been many livestock development projects in the north of Laos that have focussed on increasing livestock production via government extension services (Millar & Photakoun, 2008). Government livestock extension officers are stationed in each district to assist farmers with livestock production and management. However, their knowledge and skills are lacking due to low education levels, inexperience and limited funds to support the upgrading of staff (Stur, Gray & Bastin, 2002).

Staff ability to learn technical and extension skills is critical to success and is influenced by the capacity building methods used for extension (NAFES 2005; Millar and Connell 2009). However, there has been little research into the capacity building methods used for extension professionals, their effectiveness in influencing staff performance and confidence, or ways to strengthen the capacity building of extension staff.
Capacity building is important for extension in Laos because government extension staff work closely with farmers (NAFES 2005). They take on a role as facilitators helping farmers to identify their main problems and opportunities. They transfer new technical knowledge using extension methodology to individual farmer and farmer groups, and help farmers to access markets (NAFES, 2005). The Lao Government needs extension staff who have knowledge, skills, attitudes and abilities appropriate to all levels from the national to Kumban (village cluster) level. Extension staff provide information services in agriculture including technical, extension and marketing information to farmers (NAFES, 2006).

NAFES/NAFRI (2005) pointed out that all stakeholders; the government, the private sector and international organisations have functions, roles and the responsibility to assist and support production improvement based on farmers’ needs. However, human resources and capacity factors, including lack of awareness, knowledge and skills at the provincial and district agriculture and forestry office level needs to be addressed (NAFES 2005).

During the last ten years there have been many livestock projects funded by international donors, such as AusAID, ACIAR, EU, ADB and Heifer International that include capacity building components. This investment is in cooperation with the Lao government, in particular, the National Agriculture and Forestry Research Institute (NAFRI), National Agriculture and Forestry Extension Service (NAFES) and Department of Livestock and Fisheries (DLF). Some projects continue to build the capacity of Government extension staff under these three organisations.

Non Government Organisations (NGOs) are also playing a major role in agricultural technology development as well as rural development, education, and social development. They use participatory approaches and focus on gender issues and ethnic minorities in remote areas (NAFRI, 2004). Capacity building has been a high priority for NGOs and donor organisations and they have funding to do so. On the other hand, the government has limited funds to support staff capacity. Each project uses
different methods for capacity building but these methods and their impacts have not been widely studied or evaluated.

**Aim of the research**

The aim of this research was to explore the role of capacity building in improving livestock extension and farmer outcomes in Laos, from the perspective of those working in livestock development. The study sought to understand the capacity building methods being used, their effectiveness in achieving positive outcomes for staff and farmers, the factors influencing their effectiveness and ways to strengthen the capacity building of extension staff. Those interviewed were project managers, district heads and district extension staff working across a range of livestock projects in five northern provinces of Laos (Xieng Khuang, HouaPhane, Luang NamTha, Bokeo, Vientiane and Luang Prabang).

Due to time limitations and the requirement to be resident in Australia, the study did not attempt to measure changes in the capacity of staff over time or measure the impacts of staff capacity building on farmers.

**Research questions**

The research was guided by the following key research questions:

1. What capacity building methods have been used to support livestock extension staff in northern upland areas of Laos?
2. How effective have these methods been and why?
3. What factors influence the effectiveness of capacity building outcomes?
4. How can the capacity building of livestock extension staff be strengthened?
5. What are the implications for capacity building for livestock extension in Laos?
Lao PDR and the role of agriculture

Lao PDR lies between 14 and 20 degrees North longitude and 100 and 107 degrees East latitude (MAF, 2005 cited in Wilson, 2007). Laos is a landlocked country located in Southeast Asia and surrounded by five countries (Figure 1). In the North, Laos shares borders with the Peoples Republic of China, in the North-west with Myanmar, in the West with Thailand, in the East with Vietnam and in the South with Cambodia. The total land area covers 236,800 square kilometres, stretching more than 1,700 km from north to south and between 100 and 400 km east to west (STEA, 2006). The land area is 80% mountainous with plateaus.

Figure 1. Map of Laos
The climate of Laos is identified as tropical monsoon, however wide variations in temperatures occur between areas due to differences in altitude. The weather is divided into two seasons; the wet and dry seasons. The wet summer season is from May to October and the dry, cool season runs from November to February. The remainder of the year is hot and humid (STEA, 2006).

The total population is about 6.6 million people divided into three major ethnic groups known as Lao Loum (Lao), Lao Theung (Khamu), and Lao Soung (Hmong). These three groups include a further 49 official ethnic minorities (United States Central Intelligence Agency, 2008). Almost 55% of the population are Lao, while 11 percent are Khamu and 8% are Hmong (Sisouphanthong, 2001).

In 1986 the Lao Government moved away from a centrally planned economy to a market-based economic approach allowing the private sector to become more active in socio-economic development (STEA, 2006). Laos is one of the poorest countries, and the Human Development Index ranks the country at 133rd out of 177 countries (International Monetary Fund, 2008). The poverty level declined from 46% to 33% from 1992 to 2002 (IMF, 2008). However, in 2020 the Lao government plans to exit the group of Least Developed Countries (LDCs), in part by modernising the agriculture and forestry sector. This is a top priority for the Lao Government in achieving food security and better livelihoods for all Lao people (NGPES, 2004 cited in MAF, 2008, p. 7).

Agriculture and forestry play a key role in the processes of sustainable development and poverty eradication in Laos. According to MAF (2007), agriculture is the mainstay of the economy of Laos. GDP is expected to increase at least 3.4 percent per year and agriculture is also to contribute at least 36 percent of the national GDP growth until 2010 (MAF, 2007). In Laos, agriculture is changing and many Lao farmers are moving from subsistence farming, where they produce food for their family’s self sufficiency, to commercial farming in order to produce commodities for the market (NAFES, 2006). Nowadays many Lao products are competitive in
international markets including rice, coffee, maize, sugarcane, green tea, cattle, plantation timber, and non-timber forest products (MAF, 2007).

**Livestock development in Lao PDR**

**Potential of livestock production**

The Lao government has given high priority in its rural development strategy to improving livestock production systems (ACIAR, n.d.). Livestock production in Lao PDR contributes around 15% to national GDP and 33% of agricultural GDP (Government of Lao PDR (GOL), 2005 cited in Millar & Photakoun, 2008, p. 93), and is thus of crucial importance to the economy (“FAO launches”, 2009). This production includes livestock such as buffalo, cattle, pigs, poultry and insects. Livestock is a particularly important activity for upland households and farmers as they receive more than 50 per cent of their income by selling animals (Wilson, 2007). Livestock is important for farmer’s livelihood security because when crop production fails they can sell animals and buy rice (Ingxay, Vongsouvanna & Vongtilath, 2009). In general, livestock are most used as a source of cash income by farmers who live in remote areas without road access to markets. They can walk livestock to markets but are unable to transport perishable crop products (Stur, Gray & Bastin, 2002).

There is potential to improve and develop livestock production, because firstly smallholders already have local knowledge and experiences on livestock management and production which have been transferred from generation to generation, there is natural grassland and other areas that suitable for ruminant production and the most important is that the government of Laos has developed a strategy for diversifying its agricultural economy, particularly the livestock sector (Ingxay et al. 2009, p. 6)

In 2009, livestock production in Laos has increased 4.4 percent and net livestock production, at 240,500 tonnes, now exceeds domestic consumption - indicating that Laos has the ability to export livestock to neighbouring
countries (“Northern farmers fatten”, 2009). The government has a 2006-2010 plan to export between 100,000 and 120,000 tonnes of livestock per year, however exports in 2008 reached only 98,000 tonnes (“More livestock”, 2009). About 75% of cattle and buffalo produced are consumed domestically, and the remaining 25% are exported to neighbouring countries. Lao PDR exports about 100,000 head per year to Thailand (FAO, 2005, cited in Millar & Photakoun, 2008). In general, farmers like to keep the poorest animals for consumption and sell the good quality animals to the capital Vientiane, Thailand and Vietnam (Stur et al., 2002). The National Growth and Poverty Eradication Strategy identifies targets of an average meat supply of 60kg/capita/year and increased exports to value of $50 million by 2020 (FAO, 2005 cited in Millar & Photakoun, 2008, p. 93). The Lao government has declared the goal of becoming a regional exporter of cattle and buffalo (Michael, 2009).

While the northern provinces of Lao PDR are suitable for raising livestock, in particular small animals, cattle and buffalo, most farmers still use traditional methods (“Northern farmers, 2009). They use local breeds and do not manage breeding for commercial purposes. Livestock suffer food shortages and frequently die of diseases including foot and mouth disease (FMD) (“More livestock”, 2009).

To overcome these limitations and achieve its goals, the government needs policies and strategies to improve animal breeding, such as through imports of exotic livestock. Selection of the best bulls for insemination will help to improve local breeds (Wilson, 2007). The Department of Livestock and Fisheries (DLF) has planned to ensure cattle destined for export weigh at least 180-250 kg. Upland areas will be encouraged to breed cows because local weather conditions are suitable for livestock raising (“More livestock”, 2009). Extension programs should stress the importance of the selection and use of the best male animals in the progressive improvement of stock. As everywhere else, however, livestock development and improvement programs require parallel improvements in management, nutrition and health care (Wilson, 2007, p. 451). At present many government projects, non-government organisations and development projects have been working
on improving animal feed and feeding systems (Ingxay et al. 2009). Regular vaccinations are another way to keep livestock disease-free each year (“What’s more important”, 2009). The vaccination program needs to be expanded to both urban and suburban areas. In urban areas at least 80% and in local areas at least 40% of animals need to be vaccinated. Improving the meat processing industry and the prevention of illegal imports of meat and eggs from neighbouring countries is needed to safeguard local production (MAF, 2008 cited in Ingxay et al. 2009). The Lao Government needs to give greater support to equipment, materials and qualified personnel than it has in the past (Wilson, 2007).

Since 1995, there have been many livestock development projects focussed on increasing livestock production in the upland areas of Laos. There have been livestock development projects funded by the Australian Government (AusAID and ACIAR), the Asian Development Bank and the European Union directed at improving the livestock sector in Laos, some of which have involved capacity building. Completed projects include the Forage for Smallholder Project (FSP), Forage and Livestock Systems Project (FLSP), the Lao-EU Strengthening of Livestock Service and Extension Activities Project, and the Capacity Building for Smallholder Livestock Systems Project (CBSLSP). Current projects include the Livestock Development Project and the Legumes for Feeding Pigs Project. These projects have focussed on building the capacity of staff and farmers in animal feeding, animal health, and marketing in the northern upland provinces and some southern areas of Laos.

The national research and extension system

The Ministry of Agriculture and Forestry (MAF) governs the National Agriculture and Forestry Research Institute (NAFRI), the National Agriculture and Forestry Extension Service (NAFES) and the Departments of Livestock and Fisheries (DLF). MAF operates a decentralised research and extension service at three levels. NAFRI, NAFES and DLF are at the central level and work closely with Provincial Agriculture and Forestry
Offices (PAFO) and District Agriculture and Forestry Extension Offices (DAFEO).

NAFRI was established in 1999 and its role is to design, implement and coordinate all agriculture and forestry research in Laos (NAFRI, 2004). NAFES was established in 2001 and has the status of a Department within MAF (NAFES, 2005). NAFES consists of four Divisions (Administration, Planning, Extension and Information Management) and one Training Centre (The Shifting Cultivation and Stabilisation Hoaypamone Extension Training Centre) (NAFES, 2008). NAFES supports the work of Provincial and District levels of the extension system (NAFES, 2005). Government policy is to introduce a village based extension system throughout the country. This is known as the Lao Extension Approach. According to Vannasouk (2006), the LEA is built on a set of ideas about how farmers learn to address their problems and the most effective way of supporting them in this process. The extension system in Laos consists of two aspects such as the Government Extension Service and Village Extension System.

However, extension is mostly done on a pilot scale, as part of donor funded projects. There are two types of extension projects, some run by government and some by NGOs. A key problem for extension, therefore, is to scale up from small projects to significantly increase extension program coverage for all farmers (NAFRI, 2004, p. 36). The Lao Ministry of Agriculture and Forestry does not have enough staff, especially staff located in the provinces, so human resource development is needed (UNDP, 2001 cited in Nielsen & Chanhsomphou, 2006).

**Capacity of livestock extension staff**

The role of government extension staff and village extension workers is to help farmers “to learn new developments, new technologies and new ways of organising their work” (Schroeter, 2006, p. 13). Livestock extension staff need not only agricultural technical skills to assist farmers in growing forages, livestock feeding and breeding, controlling animal diseases and livestock marketing but also require knowledge and skills in social
assessment and facilitation (MAF, 2008). Extension staff should have good social skills to help upland communities to organise themselves better. They also need to have basic knowledge about finance, marketing and micro-enterprise development to link farmers and producers groups to market systems (MAF, 2008).

However, the knowledge and skills of government livestock extension staff is lacking in quality and quantity (Stur et al. 2002). Their ability to learn technical and extension skills is critical and is influenced by the capacity building methods used in Laos for livestock extension (NAFES 2005).

Livestock projects need to cooperate with local government to build the capacity of extension workers (including men and women) who can communicate in local languages (Stur et al., 2002). “Improving staff capacity is necessary to upgrade the knowledge and skills of local staff and ensure their direct contact with ethnic minority groups, which has been an obstacle to developing agricultural practices in upland areas so far” (UNDP, 2001, cited in Nielsen & Chanhsomphou, 2006, p.13).

Strengthening the capacity of livestock extension staff to enable disadvantaged communities to improve productivity and the quality of livestock products is necessary before villagers can benefit from the increasing demand for livestock products (Thomas & Rangnekar, 2004 cited in Rangneckar, 2006). Upgrading knowledge, skills, attitudes and ability of extension staff to a very high level is required, especially for extension staff working in commercial agriculture, to satisfy market demands and resolve problems in the field, on the farm or for industry.

**Methodology**

This research explored the role of capacity building using social qualitative inquiry. Data collection methods included semi-structured interviews with project managers, district managers and extension staff. A simple quantitative survey was also used to supplement the district extension officer interviews. Thirty district staff were asked to fill in a survey to rate eight major capacity building methods against a range of livestock extension
competencies in order to gain another measure of effectiveness. The phases of the research included:

- Semi-structured interviews with 14 project managers and 2 provincial coordinators involved in livestock development,
- Semi-structured interviews with 10 DAFEO Heads and 20 extension staff working at the District of Agricultural and Forestry Extension Office (DAFEO), especially staff working closely with farmers,
- Rating of eight key capacity building methods against required competencies by 30 district extension staff.

**Project manager interviews**

Semi-structured interviews were conducted in March 2008 with 14 Livestock Project Managers and two Provincial Coordinators to find out what capacity building methods they used, their views on the relative effectiveness of each method and how capacity building could be improved. Purposeful sampling was used to select experienced project managers from a range of livestock projects operating in Laos. Six projects were administered by the National Agriculture and Forestry Extension Service (NAFES), four projects were within the Department of Livestock and Fisheries (DLF), and two projects were managed by non-government organisations. Half of the projects were focussed on livestock production only, whilst the remaining projects were more integrated with livestock production as a component.

According to University ethics guidelines, the Ethics in Human Research Committee approved my proposal entitled “Evaluation of Capacity building for Livestock Extension in Laos” (protocol number 2008/062). Interviewees were firstly contacted by letter or email with information regarding the purpose of the research and nature of the interviews. A follow up phone call confirmed their willingness to participate in a 1-2 hour interview. Interviewees were given a consent form to sign to acknowledge confidentiality and the opportunity to withdraw at any time from the
interview. Interviews were taped and transcribed using codes instead of names. Pre-testing of interviews was conducted with an Australian researcher and two project managers before making changes to the interview process and interview guide.

The following questions were used as an interview guide;

1. What role have you played in capacity building within your project?
2. What methods have you used for capacity building?
3. What methods were most effective?
4. What have you learnt about the different methods for capacity building?
5. How can capacity building of staff be strengthened to improve outcomes for your project?

District manager and extension officer interviews
Following analysis of the project manager interviews and identification of several themes, further exploration was needed at the district level to gain local perspectives on capacity building methods from those directly affected. In-depth interviews were subsequently held in November 2008 with 10 District Managers and 20 District Extension Officers from the five northern provinces of Phonsaly, LuangNamtha, LuangPrabang, XiengKhuang and Vientiane. The same ethical procedures were followed as with project managers with a similar interview guide; however discussions invariably focussed more on outcomes at the farmer level.

Rating capacity building methods against competency requirements
In addition to the district extension officer interviews, 30 district staff were asked to fill in a survey to rate eight major capacity building methods against a range of livestock extension competencies in order to gain another measure of effectiveness. This survey was not designed to be statistically significant but rather to provide descriptive analysis of trends that may or may not support interview findings.
Research outcomes

The results from this research are expected to be useful for extension managers and staff in the Lao government, in particular the National Agriculture and Forestry Extension Service (NAFES) and the Department of Livestock and Fisheries. It will also help to inform the increasing number of international non-government organisations operating in Laos, by informing them of the most effective capacity building methods and overall strategies to use for livestock extension.

The thesis and a summary report of my research will be given to Ministry of Agriculture and Forestry, NAFES, NAFRI, CIAT Asia, Department of Livestock and Fisheries (DLF), National University of Laos, ACIAR, and CSU supervisors. It is also intended that several articles will be published for wider dissemination of my research findings.

Thesis outline

This research thesis consists of another five chapters and additional information in the appendices. Chapter 1 has introduced Laos and the roles and challenges of agriculture and livestock production in the northern provinces. It has provided the research background and research problems, the aims and objectives of this research, the research question and an introduction to the methodology.

Chapter 2 reviews the literature around various definitions of capacity and capacity building, levels of capacity building, and provides the history of capacity building in Lao extension. The important role of capacity building for rural development, rural extension and capacity building methods used for rural development and rural extension are introduced.

Chapter 3 describes the methodology used to gather data in order to address the research questions. It discusses the role of social science research in rural development, social research methods and general types of data collection. This is followed by an explanation of the research design, data collection process and data analysis.
Chapter 4 presents the findings of my interviews with key informants who have experienced capacity building in six Northern provinces of Lao PDR. It documents the capacity building methods used and their relative effectiveness.

Chapter 5 presents the research findings regarding factors influencing capacity building and how to improve outcomes.

Chapter 6 interprets the findings in relation to the research questions and makes recommendations aimed to improve capacity building. It focuses on the selection of representative and motivated extension staff, designing and using a combination of capacity building methods, building effective teams, rewarding staff equally and forming partnerships.

The concluding chapter summarises my research findings and points to areas requiring further research.
CHAPTER 2

THE ROLE OF CAPACITY BUILDING IN RURAL DEVELOPMENT AND AGRICULTURAL EXTENSION

Introduction
This chapter provides a review of the role of capacity building in rural development and agricultural extension. The meaning of capacity building and its elements are firstly defined. The emergence of capacity building as a concept and development tool is then discussed including why capacity building is important for rural development. The role of capacity building in rural extension is then described. The last section outlines capacity building methods used in rural development and extension.

Definitions of capacity
Before defining capacity building, it is necessary to understand the meaning of the words ‘capacity’ and ‘capabilities’. According to Frank (1999, cited in Hussein, 2006), there is a difference in meaning between capacity and capability. Capability is defined as the knowledge, skills and attitudes of individuals. In contrast, capacity is defined as the general ability of individuals or organisations to carry out the responsibilities required to achieve their goals. Baser and Morgan (2008) referred to capacity as the collective skill and ability of organisations to achieve a particular process either inside or outside the organisation. Goodman et al. (1998 cited in LaFond & Brown, 2003 p. 7) pointed out that capacity is “…the ability to carry out stated objectives.”

Capacity can include “hard” attributes (e.g. personal skills, functions, structures, infrastructure and resources) and “soft” attributes (e.g. motivations, beliefs) (Land 2000, cited in Hunt, 2005). Hinings and Greenwood (1988, cited in Stevens, n. d) stated that “capacity relates to the capabilities and competencies of an organisation….the capacities and competencies of an organisation include leadership and knowledge
components, as well as technical knowledge and skills.” Capacity is the power or ability of something - a system, associations, groups or individuals - to conduct and produce appropriately (UNDP, 1997). Capacity is the people, institutions and practices that enable countries to achieve their development goals and it is a key factor in development (World Bank, 1997).

Capacity refers to an organisation’s ability to achieve its mission effectively and sustain itself over the long term. Capacity also refers to the skills and capabilities of individuals (Linnell, 2003, p.13). According to Honadle (1986, p. 10) “capacity’ also means the ability of an organisation to be self-sustaining”. Brinkerhoff (1995 cited in Melen 2001, p. 4) believed that “capacity is an instrument for an individual, team, organisation or system to achieve objectives”. Melen (2001) stated that the ability of individuals, groups and organisations to establish and implement development objectives on a sustainable basis all contribute to sustainability.

Therefore, the term capacity has a variety of different meanings and translations depending on who uses it and in what situation (Enemark, 2003). The head of one of the key NGOs working in Laos stated that:

Capacities cannot be handed over from outside. They must be developed from within, even if knowledge from outside is a key for development of capacities. (Country Director of SNV (Organisation of Netherlands Volunteers), 2004 cited in Stephen, Brien & Triraganon, 2006, p. 27)

**Definitions of capacity building**

The concept of capacity has been broadened to include the building of capacity. As Hilderbrand (n. d, p.39) stated:

Capacity is the “mean”, or the ability, to fulfil a task or meet an objective effectively…and capacity has often been used in a narrow sense to refer only to the skills of staff and strength of
specific organisations; thus, training staff and creating or strengthening single organisations is equated with capacity building.

Capacity building means a new build-up of capabilities (Kuhl, 2009). Capacity building is a concept that has different meanings for different people, but in general relates to enhancing or strengthening a person’s or organisation’s capacity to achieve their goals (Lusthaus, Adrien & Perstinger, 1999). Capacity building also increases the abilities and resources of persons, communities and organisations to manage change (Coutts, Roberts, Frost & Coutts, 2005). Capacity building refers to activities that improve an organisation’s ability to achieve its mission or a person’s ability to define and realise his/her goals or to do his/her job more effectively (Linnell, 2003, p.13). Capacity building is as important as capital investment and infrastructure (Mati, 2008, p. 339).

UNESCO (2006) reports that capacity building focuses on increasing an individual and organisation’s abilities to perform core functions, solve problems, and objectively deal with developmental needs. This is supported by Morgan (1997, cited in Horton 2002) who referred to capacity building as improving or upgrading the ability of the person, team and institutions to implement their functions and achieve goals over time. Capacity building is important for all levels, from individuals to national organisations (Horton, 2002). Capacity building also alludes to building the organisational capacities of communities, and supports the formation of non-profit organisations (Paul & Thomas, 2000).

Macadam et al. (2004, cited in McKenzie, 2007) took the view that capacity building is a concept involving people learning and sharing experiences together (co-learning), supported by people who have special expertise. It is not only through education, training or the transfer of technology. These are simply tools that can be used to develop capacity. Capacity building is often equated with training, a one-time financial input or short-term external technical assistance (Potter & Brough, 2004, cited in Hartwig, Humphries & Matebeni. (2008). However, capacity building is not defined through the
instruments used, but through its goal to enhance the capacity of people and institutions sustainably to improve their competence and problem-solving capacities (GTZ, 1999 cited in Low and Davenport, 2002, p. 368).

Capacity building processes can be initiated from inside or outside. They can assist individuals and organisations with links to local areas to increase and manage their development goals in a sustainable way (Stephen et al., 2006). UNDP (2009) claimed that “capacity development is the ‘how’ of making development work.” Self-dependence and a sense of ownership are real capacity building, and these are very important factors in the development process (McKechnie, 2003 cited in UNESCO, 2006).

Some authors argue that there are four common approaches to capacity building; top-down organisational (e.g. policy); bottom-up organisational (e.g. staff training); partnership organisational and community organising approaches (Crisp et al., 2000 cited in Hartwig et al., 2008). Capacity building is important for research and development organisations to develop economically and socially (Horton, 2002). However, capacity building can be costly and time consuming (Low and Davenport, 2002, p. 377).

**Levels of capacity building**

**Individual level**

Capacity building at the individual level is often referred to as human resource development (HRD) and is considered the most important element of capacity building. It is one of the major requirements for capacity building that aims to develop competent managers and decision-makers as well as stakeholders (Biswas 1996). HRD includes motivating people to develop positive attitudes and progressive approaches within their job.

Capacity building may relate to leadership development, advocacy skills, training/speaking abilities, technical skills, organising skills, and other areas of personal and professional development (Linnell, 2003, p. 13). Adhikari, Bhandari & Shrestha (2007) similarly described individual level capacity building as linked to personal development such as leadership development, advocacy skills, training and facilitating abilities, technical skills and
organizing skills. Often good leadership or strong leadership is needed for an efficient institution. In other words, having the right professionals is the first prerequisite for better institutions and policies, as they are more able to take care of any policy constraints even in the “absence of appropriate legal frameworks and unresponsive institutional settings” (Biswas 1996, p. 401).


Human resource development covers all actions necessary to develop a qualified and motivated staff in organisations at all levels. These actions include training and education, staffing plans… and the creation of a stimulating personnel environment within organisations.

Human resource development is the process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively (Sheng and Mohit, 1999). The knowledge, skills, attitudes, behaviours and abilities of individuals can develop through many approaches: formal and informal education, training, workshops, conferences, meetings, field day/study tours, learning by doing and on-the-job training (UNESCO, 2006). It is also understood that developing individual capacities will automatically lead to improved organisational capacity and performance (Horton, 2002).

**Organisational level**

Capacity building may relate to almost any aspect of an organisation’s work. Capacity building can improve governance, leadership, mission and strategy, administration (including human resources, financial management and legal matters), program development and implementation, fundraising and income generation, diversity, partnerships and collaboration, evaluation, advocacy and policy change, marketing, positioning and planning (Linnell, 2003, p. 13).

Capacity building at this level needs to ensure that individual capacities are strengthened and utilized (UNESCO, 2006). For example, extension organisations can develop their capacities through human resource support,
training in research experiments, front line demonstrations, and exposure visits. For research organisations, capacity building mostly takes place in the form of support for equipment, research consumables, and the development and training of human resources (Prasad and Reddy, 1999).

**Systems level**

The importance of creating an enabling environment, or systems in building capacity is widely accepted. Frank and Smith (1999) stressed that without supportive policy and legislative framework, no agency will have the capacity to perform effectively however capable the individuals within it. Often the creation of appropriate policy and legal environments is not enough. It is the implementation of them that counts. However, even people with full legal and institutional authority may not be able to make appropriate decisions or take full responsibility due to lack of initiative and an entrepreneurial spirit (Biswas, 1996).

In many countries, policies and laws support a capacity building process and they are effective in achieving capacity building. However, the improvements of policies and laws are not essential for facilitating appropriate capacity building conditions. As Biswas (1996, p. 400) explained, it depends on the “will and the determination of the people to take up and implement most of what can be achieved under the existing policies and laws”.

There are many system components such as administrative, legal, technological, political, economic, social and cultural, which impinge on and/or mediate the effectiveness and sustainability of capacity building efforts (UNESCO, 2006). Decentralisation is one example. It is important to understand the country-specific decentralization context and its impacts on sector and local government agencies because decentralization is regarded as a capacity building advance. Decentralisation can contribute to greater community-based organisation and stimulate grassroots organisations to be involved in the development process (ADB, 2007).
Institutional development is another level of capacity building. Bromley (1989) defined institution as ‘the rules and conventions that define individual behaviour’. However, Brinkerhoff and Goldsmith (1992) pointed out that an institution may mean a variety of things. They define institution as “stable, valued recurring pattern of behaviour”. In practice this applies both to rules and procedures for regulating human interaction and organisational entities which are responsible for undertaking particular responsibilities.

Brinkerhoff and Goldsmith (1992) pointed out that institutions are more than organisations. They are organisations with difference, in that they survive over time and provide a service, which is valued by at least some parts of the community. Any desirable change in an institution may be termed as institutional development.

The following table (1) summarises the types and levels of capacity building.

<table>
<thead>
<tr>
<th>Level</th>
<th>Methods and resources</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Formal workshops, educational training, personal skills and qualified staff.</td>
<td>Changed awareness and perceptions, increased motivation, increased solidarity, cohesion and beliefs.</td>
</tr>
<tr>
<td>Community</td>
<td>Function, infrastructure and resources (human, financial and information).</td>
<td>Demands of material, cultural or social nature,</td>
</tr>
<tr>
<td>Organisation</td>
<td>Mission and strategy, function, competencies, processes, structure, infrastructure and resources (human, financial and information).</td>
<td>Ability to collaborate, Ability to manage change, Innovation and learning.</td>
</tr>
<tr>
<td>Systems</td>
<td>Policies legal/regulatory framework, management and accountability, perspective and resources.</td>
<td>Ability to collaborate, Ability to manage change, Innovation and learning.</td>
</tr>
</tbody>
</table>

*Table 1* Types and levels of capacity building
Adapted from Enemark (2003) and VicHealth (n.d)
History of capacity building theory and methods

Many authors have described the emergence of the field of capacity building in development from the early 1960s to the 1990s. There have been four periods of capacity building (see Table 2.2). Initially, in the 1950s and 60s, capacity building was focussed on institution building. Secondly, in the 1970s it changed to a focus on development management. Thirdly, in the 1980s there was more emphasis on private sector development and by the early 1990s, capacity building became embedded within development organisations (Wubneh, 2003)

According to Adams et al. (2007), between the 1960s and 1970s, developing countries lacked experience in administration. Capacity was seen to be limited as a result of lack of sufficient skills and development experience of public servants. Therefore, rural development focussed on delivering management courses to public servants, and providing training to aid-administrators. The educational methodology gradually changed from training courses to workshops, from teaching to sharing experience, and from instructing to facilitating.

From the 1980s onwards, supporters or donors changed their emphasis from persons to groups and organisations, building the capacity of local associations to carry goods and services stipulated in aid contracts. However, on the practical side, donors continued to use the same methods such as training and workshops. From the 1990s, the idea of capacity building was developed and accepted by development organisations and has become an approach to development. The emphasis is on increasing the knowledge, skills and ability of people at various levels to be more effective in their work.

Today, capacity building is recognised as a must for grass-roots organisations globally, in order to achieve sustainable development (Sessions, 1993). Capacity building is becoming an increasingly popular activity in many sectors including natural resource management (water and
agriculture sectors). For example, the World Bank has endorsed mainstreaming of capacity building activities into all of its operations. Since 1996, capacity building has remained high on the agenda of the World Bank, particularly with the vision of institutional building and development of a partnership framework (World Bank, 1997). The Bank is promoting institutional capacity building, believing that it is critical to successful, sound and equitable development.

Therefore, capacity building is not a new concept and like many other concepts, its meaning depends on the context where it is introduced. Moreover, it has many different meanings such as ‘institutional development’, ‘institution building’, ‘institutional strengthening’ and ‘human resource development’ (Biswas, 1996). Capacity building requires a variety of sources of technology development, dissemination and integration of institutional networks. In the last ten years capacity building has also related to the strengthening of national agricultural education institutions (Crowder, 1996).

The following table (2) gives an historical overview of approaches to capacity building
Table 2  Historical overview of approaches to capacity building

<table>
<thead>
<tr>
<th>Period</th>
<th>Dominant approach</th>
<th>Application</th>
<th>Methods Used</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950s and 1960s</td>
<td>Establishing institutions</td>
<td>Individuals, Organisations.</td>
<td>Training and technical assistance only.</td>
</tr>
<tr>
<td>1960s - 70s</td>
<td>Shift from establishing to strengthening institutions</td>
<td>Individuals, organisations, institutions with broader perspective.</td>
<td>Tools were expected to help improve performance. From courses to workshop, from teaching to sharing experience, from instructing to facilitating.</td>
</tr>
<tr>
<td>1970s – 80s</td>
<td>Development management and administration</td>
<td>Public sector administration, Industrial nations and management experts, organisation development.</td>
<td>Providing advice, training, workshops and management courses.</td>
</tr>
<tr>
<td>1980s – 90s</td>
<td>Private sector</td>
<td>Private sector development. From project assistance to program support.</td>
<td>Training and workshops.</td>
</tr>
<tr>
<td>1990s to now</td>
<td>Capacity Building embedded with institutions</td>
<td>Individual, groups and organisations.</td>
<td>Training and workshops.</td>
</tr>
</tbody>
</table>

Why capacity building is important for rural development

Capacity building at local, regional and national levels has become central to the goals of development organisations working in developing countries (OECD 2000 cited in Horton, 2002). This is due to past failures of rural development programs to reduce poverty and empower local people to improve their livelihoods. Development organisations tended to transfer only funding and modern technology to farmers or provide formal education to rural communities (Horton, 2002). These activities were conducted by government or non-government organisation researchers and extension officers, with little involvement of local people. After the project finished, local people could not continue to improve themselves and develop their communities.

Need to help the poor

Many countries and communities have remained poor and still have weaknesses in their development. Rural communities often become dependent, waiting for donors and government sectors to continue to support them, because the development projects did not maintain activities and facilities (Horton, 2002). Projects are often expensive, donor-driven, depend on outside experts and don’t follow the national priorities of the country (Fukuda-Parr, Lopes & Malik, 2002). Eade (2007, p. 633) concluded that “The sad reality is that most development aid has precious little to do with building the capacities of ‘The Poor’ to transform their societies.”

Therefore, improving the capacity building of individuals, groups, organisations and communities is necessary for rural development, poverty alleviation and environment protection (Degnbol-Martinussen, 2002). Eade (2007, p. 634) pointed out that “We have heard a thousand times that if you give a man a fish, you feed him for a day, and if you teach him to fish, you feed him for a lifetime.” Horton (1999, p. 157) added that “investment alone cannot lead to the desired level of development.” Therefore, building the capacity of local people, groups and organisations is vital because they must
have the ability and responsibility to resolve their problems and develop their communities.

Many international studies indicate that smallholder and poorer farmers could make a major contribution to national economic growth if they received opportunities to become more productive (NAFES, 2006, p. 4). Poor rural people are a high priority for donors and international NGOs focussed on building capacity. For example, in the Lao PDR, target groups are upland people, particular minority ethnic groups and district, provincial and national government staff (Stephen et al. 2006).

The basis of development is strengthening people’s capacity to determine their own goals (Ku, Yeung and Sung-Chan, 2005). The focus has been on encouraging participation and giving opportunities for participation by the poor. There has been somewhat less attention to the other side of the equation- helping the poor to build capacities that enable them to participate effectively (Hilderbrand, n.d).

**Need to support women and ethnic minorities**

Along with men, women play an important role in contributing to all activities in rural development, particularly in agriculture areas such as livestock production, fisheries, cropping, forestry, irrigation and horticulture. Women who are living in remote areas, especially ethnic group minorities work hard in the field. Their products are low in quantity and quality because they use traditional methods. Women are faced with selling raw materials for low prices and experience food shortages, particularly of rice for consumption. Swanson (1997, cited in Mwangi, 2003) explained that smallholder farmers particularly women have little access to farm inputs. Lack of marketing information, products of low standard and difficulties in transporting goods to market are other constraints. In addition, women farmers lack technical knowledge and skills to produce their products (e.g. technical skills in harvesting or value adding).
Paying particular attention to women is needed to improve their knowledge and skills and increase their role in decision-making at local, regional, national and international levels. According to Crowder (1996 cited in Squire, 2003) upgrading women’s knowledge and skill by providing extension training and advanced formal education improves their overall socio-economic status and in particular contributes to agricultural and rural development. Squire (2003) explained that by providing women farmers with suitable resources such as information, credit, and land to empower them to invest in agricultural production, women can achieve goals and participate in agricultural development and environment conservation.

**Need to ensure development impacts are sustainable**

According to UNDP reviews, development organisations have been effective in getting the job done, however not effective at improving local people, institutions or building local capacities. Projects are criticised as being expensive, donor-driven, dependent on outside experts and unclear about national priorities (Fukuda-Parr, Lopes & Malik, 2002). One author pointed out that after projects ended the results were often not sustained because local capacity had not been established (Hilderbrand, n.d).

In order to expand the good results or impact of each project, all organisational levels concerned about rural development need to support funds, energy and ideas to meeting the farmer’s needs. Building the capacity of individuals, farmer groups and district extension staff is one way to upgrade farmer’s knowledge and skills. To do this, project designers need to focus where the impact is likely to be greatest on participant’s social and economic environment (World Bank, 1999 cited in Mwangi, Agunga & Garforth, 2003).

**Enabling participation and empowerment**

Capacity building also has to do with providing poor and disadvantaged groups with the political influence necessary to achieve representation in question of resource use and allocation (Honadle, 1986). However in reality, there are controversy and hurdles in empowerment of the disadvantaged. Generally, in developing countries, local power structures prevent
Participation of poor from resource management decisions (Zaman, 1984). The poor in remote areas have many problems and they have difficult challenges in organizing themselves. They have fewer resources for making themselves heard. A system of governance that enables their participation will probably require clear effort to build the mechanisms and channels through which it can happen. Therefore, development within the political system to encourage participation of the citizens, and their ability to be responsive to that participation is important (Hilderbrand, n.d).

**Organisational change to support rural poor**

Capacity building also involves organisational change, for example, by the addition of new staff members, administrative units or equipment, by giving new responsibilities to staff members, or by the reallocation of existing organisational resources (Jacobs & Weiner, 1986). The purpose of these changes in organisations is meant to aid in the process of implementation. However, the building of capacity is not an easy task as there are many deficiencies associated with agencies or organisations. These deficiencies are mainly in terms of “finding knowledge and expertise” (Jacobs & Weiner, 1986, p. 144).

For organisational change, strategies include raising funds, providing information about appropriate capacity building activities and enhancing the level of expertise (particularly through the provision of technical assistance to an institution) (Jacobs & Weiner, 1986 p.145). However, Hilderbrand (n.d, p.49) emphasised that “capacity development is usually slow and incremental, shaped by history and a country’s social, political and cultural roots. Organisational and institutional change is a political process: it creates winners and losers and challenges vested interests.”

Martinez (2007) suggested that working with partnerships can allow an organisation to share its resources with other organisations and to coordinate collective efforts for maximum impacts. According to Dugan (1993), participation of a wide range of stakeholders or interest groups in rural development is instrumental for two main reasons:
• Helping the persons or communities involved to obtain information and knowledge required for diagnosing an issue or situation;

• Ensuring or encouraging involvement of the appropriate persons or groups in the planning and implementation of activities to deal with a particular situation.

According to Schacter (2000) nowadays capacity building is as much an approach for development assistance organisations to conceptualize and conduct their mandate as it is about new field level techniques. Therefore, a capacity building strategy for poverty alleviation will need to take into account the most critical capacity needs at all levels from national to lower levels (Hilderbrand, n.d).

**Why capacity building is important for rural extension**

Building the capacity of rural extension staff is central to this process so that extension services can be effective in helping poor farmers. However extension capacity building is often overlooked in the rush to get the results of research and development products out the door and taken up by rural communities (Millar & Connell 2009). Public and private agricultural extension play a major role in the capacity building of rural people (Coutts et al, 2005). Their mandate is to facilitate farmer learning and decision making regarding changes to farming systems including trialling new technology and overcoming problems such as food security, poverty reduction, environmental management and marketing of products (Rangnekar, 2006).

However, extension services often have some weaknesses such as lack of timely information and input supply, less accountability of public extension personnel, the blanket nature of recommendations, and the absence of extension personnel during office hours, which make clientele become less committed to the service (Saravanan & Veerahadraiah, 2007, p. 91)
Building the capacity of farmers

Building the capacity of rural extension staff is important because they can help poor farmers. The State Extension Leaders Network (SELN) (2006, p. 3) stated that “extension is concerned with building capacity for change through improved communication and information flow between industry, agency and community stakeholders.” Dwarakinath (2006) explained that extension is a major vehicle for rural development because it transfers new technical knowledge to farmers and then farmers can feedback problems from the field to extension staff and researchers to consider. There is a need for a capacity building role for extension that includes farmer training but that also includes strengthening the innovation process and building linkages between farmers and other agencies to support the bargaining position of farmers (Sulaiman & Hall, 2006, p.24)

In agriculture, especially in livestock activities, extension staff work closely with farmers in the fields of animal feed, animal health and animal marketing. Their role is to strengthen farmers’ abilities, and help them gain empowerment and ownership. The extension workers need to understand farmers’ opportunities and problems and help them to find the best way to make decisions for their future. In working closely with farmers the extension staff can better understand the farmers’ needs. For example, if the farmers need to improve their animal feeding, the extension workers can work with them on this activity. The extension workers are then in a position to introduce appropriate technologies or information relevant to farmer’s situation. As Hassanullah (2006, p. 190) stated;

People prefer to solve their problems more than to merely be informed, or adopt or buy a technology with somewhat vague or diffused perception of their purposes or benefits which may or may not relate to their problems.

Karbasioun, Biemans & Mulder (2007) found that information sources such as governmental extension agents and farmers’ own experiences are the most important information for farmers. Van Linh (2006) found that farmers
receive information in two ways: from informal and formal sources. Informal information is a learning process between farmers where farmers, groups of producers and local buyers exchange experiences and share ideas. It is the most important method of interaction in rural communities. Mati (2008) found that farmers particularly gain knowledge and experience from learning processes such as field days and meetings, at which they come together and learn in the field with active farmers. These learning processes can be provided by government extension staff.

**Building capacity of rural communities**

Coutts (2003) stated that capacity building is upgrading the abilities and resources of individuals, organisations and communities to achieve a goal. This occurs through a number of ways apart from organized extension and education activities. The main activities inside communities which also build capacity are mentoring, self-directed learning, experiential learning and other personal and community growth processes. Sulaiman and Hall (2006) illustrated that the new vision of extension has to concentrate on ways of resolving the farmers’ needs not only strengthening the voice of the poor and helping farmers build profitability in increasingly competitive markets but also collaborating with other stakeholders such as the private sector.

A sustainable productive future is heavily reliant on improved community capacity building, new ways of interaction, and more efficient use of resources…extension and capacity building are highly interconnected, with capacity building important component of extension activities (SELN, 2006, p. 2)

**Increasing access to information for extension staff**

Many district extension staff who work in rural remote areas in developing countries find it difficult to get new information because poor districts lack electricity and access to the Internet. The Lao government is trying to
resolve this problem using mobile information packs (known as wisdom bags), mobile phones and using the Internet to some local field staff.

NAFES and NAFRI have just started a new cooperative program; the ‘Agricultural Information Mechanism’, that is aimed at producing short, easy-to-read booklets and handouts on agricultural topics. These products will be disseminated to extension offices and district information centres in so called “wisdom bags” (MAF, 2008, p. 16).

The Savannakhet Provincial Government Livestock and Fisheries section have developed modules of learning packages which focus on district extension staff to facilitate learning at a distance. The extension staff can learn Basic English skills, fish culture techniques, how to conduct training, the establishment and system of field data management and other subjects. This capacity building method has become a model for other provincial areas in the southern region of Laos (Lithdamlong, Meusch & Innes-Taylor, 2002).

**Building capacity of NGOs in rural extension**

Increasing relationships is one way to make capacity building for extension successful. The donor and aid agencies have changed their vision and now try to develop more equal relationships with local people by putting the emphasis on ‘partnership’ and ‘policy dialogue’. Development donors now give higher priority to ‘participants’. This means they do not work alone but try to cooperate not only with government organisations but also with other non-government, development and private sector organisations to increase outcomes (Fukuda-Parr, Lopes & Malik, 2002). Increasing relations between many agricultural education institutions, research organisations, public and private extension agencies and NGOs can achieve multiple effects.

Governments or donors can also buy capacity building potential by contracting services to the private or NGO sectors when there is no time to build local capacity (UNESCO, 2006). Working with NGOs can encourage
participation and build capacity among the poor. NGOs have played an important role in supporting services in order to strengthen capacity in many ways, for example in implementation and monitoring. In a study comparing the quality of services of agricultural consultants, NGOs and government, it was found that there was a higher level of extension service commitment from consultants and NGOs than from the government sector. This was due to high accountability and the committed service of the extension personnel (Saravanan & Veerahadraiah, 2007, p. 91)

Mati (2008) illustrated that NGOs have been instrumental in facilitating the start-up of activities of smallholder farmers. NGOs not only provide training workshops and some input to farmers but also take farmer groups on study tours in order to increase their knowledge and awareness. However, NGOs have disadvantages as well as advantages. They are good in the social dimension of development efforts but are often poor in technical know-how. On the other hand, Government extension organisations are strong on the technical side of the development (Hassanullah, 2006), but often lack community development capacity. As ADB (2007, p. 5) pointed out, “effective capacity development will usually depend on the successful integration of capacity development inputs from many sources, involving different types of organisations and groups working in a variety of roles.”

**Helping younger extension staff**

In Laos, most extension officers are young, having just finished studies at Agriculture Colleges or University, when they apply to work with government, non-government, private and other development organisations. These new younger staff members have technical knowledge and energy to work in remote areas, but they lack extension knowledge and skills (e.g. how to share new technology and knowledge with farmers, how to conduct training, build team work, organize group and village meetings and organize cross visits/study tours).

UNESCO (2006, p.2) stated that “capacity building in education is important both for the functioning of the education system as well as for
capacity building in other sectors…an essential aspect of capacity building is enhancing the ability of individuals, institutions and systems to cope with change and unforeseen challenges”. Building the capacity of new staff is not surprising as it is the rule of Lao society that all organisations should consider and attempt to employ younger people instead of older people who will retire.

Martinez (2007, p. 94) believed that “capacity building opportunities should focus on young people who are not burdened with administrative or other duties and have more time to drive developments from the bottom up.” Supporting younger extension staff who have just finished Agriculture Colleges and Universities is necessary because young extensionists will run extension in the future. However, not all young people are suited to extension roles, as they depend on personality and commitment.

**Capacity building methods used for staff involved in rural development and extension**

Capacity building methods may include conferences, workshops, consultations, study tours, participatory research and extension, on-the-job training, demonstration plots, coaching and mentoring (Stephen et al., 2006). Providing formal and informal training, on-the-job training, workshop/meeting, seminars and conferences, cross visits/study tours are the main methods to build the capacity of extension staff to guarantee a good mix of theory and practice. The following definitions are provided.

<table>
<thead>
<tr>
<th>Workshops</th>
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<tbody>
<tr>
<td>Workshops are a series of educational and work sessions. Small groups of people meet together over a short period of time to concentrate on a defined area of concern. The purposes for workshops may vary. For example: Informing, problem solving and training (SIL International, 1998).</td>
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<table>
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<tr>
<th>On-the-job learning</th>
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</thead>
<tbody>
<tr>
<td>On-the-job learning is a learning process in the field with farmers applying theory to known ground practice. It is also known as learning-by-doing.</td>
</tr>
</tbody>
</table>
### On-the-job or on-site-training

On-the-job training is training undertaken in the workplace as part of the productive work of the learner.

### Study tour

A study tour is a travel experience with specific learning goals. Study tours emphasize experiential learning and offer both group and self-directed activities that enable learners to explore new territories, cultures, and people.

### Cross visit

A cross visit is when you take farmers from one area to farmers in another area to learn about agricultural practices. Cross visits can also be organised for staff to learn from these (Millar, Photakoun & Connell, 2005).

### Mentoring

Daniel (2006, p. 5) describes a mentor as “an individual with expertise who can help develop the career of a mentee.” According to University of Cambridge (2008) “mentoring is about motivating and empowering the other person to identify their own issues and goals, and helping them to find ways of resolving or reaching them….by understanding and respecting different ways of working”.

### Village Learning Activities (VLA)

Village Learning Activities are a participatory tool to show the benefits of a new technology, allow farmers to learn about the new technology, and encourage all interested farmers in the village to participate and learn from the VLA. District extension staff can also learn from VLAs (Stur, 2007).

### Farmer Field School (FFS)

FFS is weekly meeting in the field for a few farmers and staff to observe and discuss the issues in the field, from the beginning of implementation to end of activities. Staff can learn about farmers’ situations and build their capacity, while farmers learn new information (Bentley, 2009).

The main sources of information that capacity builders use to support capacity building are training, international NGO project material, general text books, workshops, meetings, exposure visits, project/NGO documents, national networks, state/national sources, own research, on-the-job learning,
using Internet and other (e.g. many sources, friends, facilitators, advisers and consultants).

There are four main tools for the development of capacities: information dissemination, training, facilitation and mentoring, networking and feedback to promote learning from experience (Horton, 2002). Each have advantages and disadvantages.

Training is often used as the main capacity building method in developing countries or regions in Asia (Nelson, 2006 cited in Stephen et al., 2006). Training, on-the-job training and workshops are important activities of capacity building in the field of agricultural research, extension and development (Harrison, 1994 cited in Horton, 2002 and Opatpanakit, 2006). Training is often about the need for staff to be competent in one or more areas, including program management, proposal writing, accounting procedures, general administration and so forth (Low and Davenport, 2002, p. 373). However, once the training is finished, there is often no follow up support for district extension staff or farmers.

Of central importance to most capacity building is ‘learning-by-doing’ (NAFES, 2005, p. 70). The learning-by-doing approach has been an important part of education to develop capacity and insights in a wide range of settings (Bounde et al. 1985, cited in Benjamin, Bessant & Watts, 1997). Learning-by-doing is one of the most commonly quoted processes through which partners’ capacities are understood to develop, and it is a good way for people to learn. Individuals, groups, and some organisations can learn-by-doing (Gillespie, 2005). Learning-by-doing or experiential learning is at the heart of capacity development. New knowledge is quickly applied to the benefit of individual and organisational goals (Horton, 2002). However, Owen et al. (2004, p. 309) argued that “… not every problem can be easily dealt with by a “learning-by-doing” approach. For example, dealing with contagious diseases is not suitable for on-farm experimentation”.

Experiential learning is a very powerful method and appropriate for people who work with groups. It is an excellent way to develop good insights into
the ways groups work (Benjamin et al., 1997). Demonstration plots, cross visits, study tours and Farmer Field School are useful methods to transfer information and technology to staff and farmers, particularly in remote areas. The advantages of FFS are that both farmers and staff are able to gain knowledge, skills, good relationships, facilitator skills, communication skills and experiences.

Mentoring is an important method for capacity building in extension. Mentors are senior research and extension staff who are experienced persons. Mentors are people who have more experience in livestock production and extension methodology. Mentoring involves passing on skills, attitudes and knowledge from experienced staff to newer extension workers. Hopkins-Thomson (2000, p.29) asserted that “mentoring and coaching processes can serve to augment the succession planning and professional development of districts.”

Millar & Connell (2009) stated that building the technical and extension skills of staff using experienced people as mentors is a key element of scaling out impacts. They can provide the support trainees need in order to become responsible as they acquire new skills and adapt to change. Mentors should be highly skilled in communicating, listening, analysing, providing feedback and negotiating with less experienced persons (Hopkins-Thomson, 2000). Nowadays, mentoring is commonly used for academic, job and personal development (Bierema & Hill, 2005).

According to Abbott, Stening, Atkins & Grant (2006), many organisations need mentors or coaches who have tertiary qualifications of at least Masters level. Evidence-based coach-specific training and a background in the behavioural sciences is often preferred. Eade (2007, p. 637) summarised the requirements of a mentor with “you can’t build capacities in others that you don’t have your self. And if you can’t learn, you can’t teach either.”

The following table (3) summarises the capacity building methods and tools used in rural development and extension.
<table>
<thead>
<tr>
<th>Methods</th>
<th>Tools</th>
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<tbody>
<tr>
<td>Mentoring/coaching</td>
<td>Meeting and field visits.</td>
</tr>
<tr>
<td>Training programs</td>
<td>On-the-job training, in-service-training, in-site-training.</td>
</tr>
<tr>
<td>Cross visits/Study tours</td>
<td>Local, regional, national and international, with individuals, groups, teams.</td>
</tr>
<tr>
<td>Workshops/Meetings/Conferences</td>
<td>Group discussion, presentation of results, sharing ideas and exchanging experiences.</td>
</tr>
<tr>
<td>Networking</td>
<td>E-mails, telephone and face to face.</td>
</tr>
<tr>
<td>Participatory approach</td>
<td>Participatory research and extension.</td>
</tr>
<tr>
<td>Partnerships</td>
<td>Exchanging of know-how between stakeholders, NGOs, private and government sectors.</td>
</tr>
<tr>
<td>Research</td>
<td>Demonstration plots, experiential learning, Village Learning Activities.</td>
</tr>
<tr>
<td>Equipment, infrastructure, connectivity, benchmarking and new technologies</td>
<td>Computers, using Internet, telephone/mobile phone.</td>
</tr>
<tr>
<td>Publications</td>
<td>Journals, newsletters, fact sheets, online publications, pamphlet/leaflets, books and manuals.</td>
</tr>
<tr>
<td>Monitoring/evaluation</td>
<td>Middle and the end of the project: own work and partners’ activities.</td>
</tr>
</tbody>
</table>

**Table 3**  
Methods and tools used for capacity building in rural extension

Source: Adapted from Crowder(1996), Stephen, O’Brien & Triraganon (2006)
CHAPTER 3

METHODOLOGY

Introduction

This chapter describes and justifies the methodology used in this research which was based largely on a social, qualitative inquiry in order to openly explore the role of capacity building in livestock extension. An overview of the role of social science and social research in rural development is firstly presented. Social research methods are then described including interviewing, observation, focus groups, mail surveys, document analysis, case studies, Participatory Action Research, and associated types of data (qualitative, quantitative and mixed). This is followed by a description of the chosen research design, research methods, ethical considerations, data collection and data analysis.

The role of social science research in rural development

Social science is the process of understanding people’s beliefs, values and attitudes and how this affects society. Social science is also the theory of the nature, growth and functioning of human societies (Hunt and Colander, 1984, p. 3). Black (1993, p.1) agreed that “social science research involves investigating all aspects of human activity and interactivity.” Babbie (2007, p.11) further stated that “social research aims to find patterns of regularity in social life.” According to Jones and Wallace (1986, p.1),

Social scientists have taken on an increasingly important role in the implementation of agricultural development activities. In the tradition of agricultural development, social science had been largely restricted to the participation of agricultural economists…..social scientists have entered into multiple roles including
research, implementation and management, in support of overall of farming system research project objectives.

Holland, Ashby, Mejia & Voss (2006) felt that the role of social science researchers is to bring advanced practical field skills, allowing new forms of farmer organisations and relationships to be created and hence, researched. In this regard, Aw-Hassan and Martini (2006, p. 253) claimed that;

Social scientists influenced the development of community-based research in several projects. It is too early to assess the full impact of such research, but it represents a shift from the single-technology farm approach to dialogue with the whole community and its participation in defining problems and evaluating technology.

Social research methods
Social science requires the use of different methods to that of the natural sciences because social systems operate in less predictable ways than natural systems (Veal, 1997). Social research can use a range of research methods to directly investigate human societies and behaviours. These include conducting face to face interviews; using surveys with structured questionnaires by phone, mail or email; taking observations; using focus groups, workshops, and case studies, or undertaking Participatory Action Research. The data analysed can be qualitative, quantitative or a mix of both.

The choice of research methods depends on the research questions being asked and the information needed. For example, understanding demographic or population changes requires quantitative information via large surveys. To understand the reasons for demographic change might require individual interviews, group discussions, and case studies to highlight important drivers of change.
Interviews

Interviews are a data collection procedure where an interviewer asks questions to an interviewee. According to Gillham (2000, cited in Ingleby and Oliver, 2008, p.106) “an interview is a conversation between two people in which the interviewer seeks particular responses from the interviewee.” Interviews can be divided into three general kinds: the unstructured conversational interview, the semi structured interview and the standardised or structured interview (Patton, 2002). Each approach has its advantages and disadvantages.

Unstructured and semi-structured interviews are like conversations between interviewer and interviewee, but the interviewee does most of the talking. The interviewer should only talk for about five percent of the time, allowing the interviewee to do most of the talking (Babbie, 2007, p. 306).

King (2004) suggested that the aim of conducting semi-structured interviews is to focus on the research topic from the viewpoint of the interviewee, and to understand how and why they have come to this perspective. While most interviews are carried out face-to-face, they can also be done by telephone and via Internet or email.

Patton (1990) believed that the aim of interviewing is not only to get answers to research questions, but to also focus on understanding the real life experiences and ideas of others, and the meaning they make of that experience. He also suggests that interviewing people is a way to get important information from them about those things we cannot directly observe by ourselves. Interviews provide a background of the perspective of people’s behaviour (Seidman, 2006). They involve people telling stories; people “select details of their experience from their stream of consciousness” Seidman (2006, p. 7-14).

The advantages of face to face interviews are that information is direct and the researchers can directly know who this information is from, and when
and where it was obtained. Conducting interviews can build relationships between interviewee and interviewer. Face-to-face interviews are useful for exploring issues but are not practical in broader contexts (Mckenzie, 2007, p. 54).

Interviews have the advantage of providing potential ‘rich’ and detailed information about the research topic. If a researcher is interviewing a research subject for half an hour there is the possibility of gathering much data. It is also possible to treat the interviewee as an ‘individual’ so their views and opinions are respected during the research process (Ingleby and Oliver, 2008, p. 107).

Interviews can also have some disadvantages such as maintaining control when interviewees go ‘off track’, interviewees not understanding questions, or interviewees having knowledge and experiences but experiencing difficulty in giving their opinion. Interviews are “a useful way to get large amounts of data quickly, but they involve personal interaction: cooperation is essential (Marshall & Rossman, 1999)”.

Other disadvantages of interviewing are the time required to contact informants and/or to wait for them when they are not available or busy with their activities, and to transcribe the data. Some interviewees may be very difficult to contact. The labour, money and vehicles needed to attend interviews may be costly. Researchers may not have the money to pay for someone to help to transcribe tapes. In short, according to Mckenzie (2007) face-to-face interviews are costly and time consuming.

**Observation**

Marshall and Rossman (1999, p. 107) suggested that “observation is a fundamental and highly important method in all qualitative inquiry: It is used to discover complex interactions in natural social settings.” Dale (2004, p. 144) agreed that “observation means carefully looking at or listening to something or somebody, with the aim of gaining insight for
sound assessment.” Observation is the process of observing and taking notes on important points or the details of participants’ and facilitators’ action when they attend workshops and seminars or work in the field. Observation can be divided into two kinds: informal and formal observation with or without being a participant in the research setting. Structured observation is defined as being a quantitative analysis of actions whereas participant observation is regarded as being a qualitative engagement in interaction (Ingleby and Oliver, 2008, p. 106).

Informal observation means that before researchers conduct observation they do not let participants in the workshops or seminars know that they are observing and taking notes. However, this approach has ethical implications. The interviewer needs to have an ethical framework for addressing problems that may occur at the time of the research process (Patton, 2002). Formal observation means that researchers openly participate in workshops or seminars and share ideas with participants.

Participant observation is necessarily a combination of observing and informal interviewing. It is important that the evaluator or observer does not make assumptions about the meaning of what they observe without including the perspectives of participants about their own behaviours (Patton 1990, p. 226). The researcher shares as closely as possible in the life and activities of the setting under study. The aim of participant observation is to build an insider’s view of what is happening. The observer not only sees something occurring, but also interprets what is happening and their role in the process (Patton, 1990).

According to Patton (1987, p.70) “observational field work is hard work both physically and mentally.” Other disadvantages are that observations are able to focus only on outside behaviours but the observers cannot see what is happening inside people (Patton, 1990). Observations are also limited when the participants in the meeting use their own language and sometimes the interpreters cannot translate the direct meaning. In addition, observers may lack proficiency in the language used by participants, so observers may not follow the discussion, presentation and sharing of ideas.
Patton (1987; 2002) also pointed out that:

- Lack of experience in the observer may hamper their ability to get the best information (i.e. How to take notes),
- The observer needs to concentrate on listening and taking notes,
- The observer may affect those being studied so they might act differently from normal as they know that they are the subject of the research, and
- The observer cannot see what is happening inside people.

**Focus Group Interviews**

A focus group interview is a conversation with small numbers of people who are concerned about the same situation to discuss one topic (Patton, 2002). The focus group interview is, indeed, an interview. It is not a discussion. It is not a problem-solving session. It is not a decision-making group. It is an interview (Patton, 1990, p. 335). Usually, the interview is held for one to two hours (Patton, 2002). Babbie (2007, p. 308) described a focus group as “typically 12 to 15 people… brought together in a room to engage in a guided discussion of some topic.”

Focus groups are a form of in-depth interviewing to gain rich and detailed knowledge into people’s understandings of the topic. The purpose of the focus group is to generate and capture the different opinions of the people in the group (Travers, 2006). Morgan (2002, p. 146) suggested that “most treatments of focus group methodology emphasise the need to keep the discussion on the topic while encouraging the group to interact freely.” Krueker (1988 cited in Babbie, 2007) lauded the focus group as a socially oriented research method capturing real-life data in a social environment. It has flexibility and high face validity, speedy results and is low in cost. Mckenzie (2007) similarly described focus groups as semi-structured group interviews with at least four to five participants. Cost is medium and the process can be completed in a short time. It does not have numerical validity but is highly valid for measuring attitudes and opinions.
I have used focus groups previously with farmers and staff in-program participatory evaluation in my project to explore a program’s strengths, limitations and needed improvements. In my experience at least five to eight people are suitable for focus group interviewing.

According to Patton (1990), focus group interviews have many good points when used for program evaluation objectives. It is a highly useful qualitative data gathering technique. The evaluators can collect information from eight people in only one hour rather than one person. Focus group interviews can also be used with staff to identify key elements in a program’s implementation and treatment (Patton, 1990, p. 336). However, there are weaknesses in that there are more people, so the number of questions that can be asked in the time allotted is limited. It can also be difficult to take notes as well as facilitating, and discussion with participants in the focus group meeting needs to be well facilitated.

According to Hays (2004, p.127) “very talkative or quiet participants can be a problem. Talkative people need to be gently curbed, while quiet ones need to be encouraged to participate.” In addition, facilitators need skills to ask questions and know how to take notes. If facilitators and participants have some conflict the focus group interview may not be successful. Other authors also mentioned that the researcher has less control than individual interviews, and data are difficult to analyse. Moderators require special skills and difference between groups can be troublesome. Groups are sometimes difficult to assemble and the discussion must be conducted in a conducive environment (Krueker, 1988 cited in Babbie, 2007).

**Mail surveys**

Mail surveys are a process to gather data from people without direct contact with the researcher, and are particularly useful for structured surveys (Mckenzie, 2007). Researchers can send questionnaire forms by post to participants at home and at work to fill in. Researchers then wait for questionnaire returns to come in and analyse the answers. Mail questionnaire or surveys are a method for gathering data from large numbers
of people (Dale, 2004). The advantages of mail surveys are that they offer a relatively cheap method of data collection, at lower cost than face to face interviews. If dealing with ethically or politically sensitive issues, respondent’s anonymity may be advantageous. People can take their own time to fill in the questionnaire and consider their responses. It is possible to cover a wider geographical area at a lower cost (May, 2001). Mail surveys can be sent out far and wide to interviewees.

However, mail surveys have some disadvantages in that they are time consuming, and there can be low responses. There is high input for data entry from hardcopy sheets (Mckenzie, 2007). The researcher has no control over how people interpret the questions. The possibility of probing beyond the answers that people give is absent. There is no control over who answers the questionnaire and it is possible that researcher cannot check on the bias of the final sample (May, 2001).

**Document Analysis (Secondary data)**

Data is often generated as a result of conducting projects in the form of reports or publications. The information is certified and used by researchers and extension workers in government and NGO organisations. Babbie (2007, p. 277) described secondary analysis as “a form of research in which the data collected and processed by one researcher are reanalysed, often for a different purpose, by another.” Secondary data has a lot of information, and can be reviewed repeatedly (Yin, 1994). There can be broad coverage over a long span of time, many events and many settings. Mckenzie (2007, p. 54), observed that “documents range from satellite imagery to grids to observers at events. It is less intrusive than other research methods and complements other data.” Yin (1994) noted that document analysis has some limitations in that retrievability can be low, and selectivity biased, if data collection is incomplete. Reporting may reflect the (unknown) bias of author and access to documents may be deliberately blocked.
Case Studies

Babbie (2007, p.298) stated that a “case study is the in-depth examination of a single instance of some social phenomenon, such as a village, a family or a juvenile gang.” A case study is “characterised by researchers spending extended time on site, personally in contact with activities and operations of the case, reflecting, and revising descriptions and meaning of what is going on (Stake, 2005, p. 450).”

According to Patton (2002, p. 447), “The purpose is to gather comprehensive, systematic, and in-depth information about each case of interest.” Ideally, said Flyvbjerg (2005, p. 390-391), “the case study produces the type of context-dependent knowledge that research on learning shows to be necessary … context-dependent knowledge and experience are the very heart of the expert activity.” Dale (2004, p. 151) suggested that “the in-depth case study may be particularly useful for studying the impact of development schemes on communities or groups among the community inhabitants.”

Case studies can be an example of the impacts of a project on a person’s life. For instance, in the field of agricultural research and development, case studies are an important approach for stimulating other people to learn. There are many types of case studies: individuals, groups, programs and organisations. The case study method is uniquely suited to exploratory and even explanatory research in the social sciences (Fischler, 2000, p. 185). Case studies can also be critical incidents, stages in the life of a person or program, or anything that can be defined as a “specific, unique, bounded system” (Stake 2000 cited in Patton 2002). A case study can be summed up as an in-depth exploration from multiple perspectives of the complexity and uniqueness of a particular project, policy, institution, program or system in a ‘real life’ context (Simons, 2009, p. 21).

I have also used case study research for previous projects in Laos (2003-2006). I learnt from case study experiences from other countries and I used case studies for the projects that I was involved in. These were used as a
process of learning to gain from the experiences of researchers working with model or exemplary farmers. District extension workers used case studies to show these best practice farming methods to other people and target farmers in order to stimulate their awareness and desire to adopt similar practices. Jones (2006) illustrated some strengths about case study research; It allows the research to focus on one or a few instances and deal with the subtleties and intricacies of complex social situations. Case studies allow for a more detailed and more interconnected understanding of what is going on. They allow the research to examine relationships and social processes in way that other methods do not.

Case studies … become particularly useful where one needs to understand some special people, particular problem, or unique situation in great depth, and where one can identify case rich in information-rich in the sense that a great deal can be learned from a few exemplars of the phenomenon in question (Patton, 1990, p. 54).

However, there are some disadvantages as case studies take time to develop and require skills in recognising, capturing and documenting impacts. The cost of developing photos and text may be prohibitive. Collecting, analysing, processing and interpreting data need time and energy (Mulder, 1999). Negotiating access to case study settings can be difficult. They create vast amounts of data that might be overwhelming and issues of generalisability need to be addressed (Jones, 2006).

**Participatory action research (PAR)**

Participatory action research is a research process where local people join with researchers in all stages: thinking, planning, implementing, evaluating and expanding. Participatory action research (PAR) is a learning process. Allan, Davidson and Curtis (2005, p. 208) explained that PAR has been used “to build on the goals and practice of ‘Action Research’ and give greater emphasis to participatory approaches to data creation, analysis and dissemination and to emancipator research goals”.

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By doing PAR, people can come to understand the situation in which they live and work, and change practices by themselves. The picture of the spiral of cycles of self-reflection: planning, acting, observing and reflecting, replanning, acting and observing again, has become the dominate feature of action research as an approach (Kemmis and McTaggart, 2005, p. 564-568). PAR is a valuable research approach with specific advantages and requirements. However, there will be variation in how researchers use this approach to resolve problems inside their areas (Allan et al., 2005).

In my experience I have found the PAR approach useful for research in the field of agriculture, especially in livestock production. I used to conduct research only in the research station and all stages were controlled by researchers and foreign experts without farmers or outsiders. The results of the research was then provided to extension workers to offer to farmers in order to expand a new technique to large areas. Unfortunately, the farmers did not understand these new techniques, how to use them or what benefits they would provide. Researchers spent lots of money and time, but this did not necessarily lead to the results of their research being used by farmers.

Since 1995, researchers in Laos are using the new approach of ‘Participatory Action Research and Evaluation’ (PAR & E). This approach is an important and highly valued research approach, because researchers work closely with farmers and local people are involved at all stages of their research. We conduct research both on-farm and on station. The impacts of our projects are able to expand very quickly to large areas. From experience, I feel that PAR & E supports my research objectives. However, PAR has some limitations:

- It has no research leader,
- It may be impractical,
- It has no timeline,
- It takes time (Kemmis and McTaggart, 2005; Jones, 2006).

The following table (4) summarises the advantages and disadvantages of a range of social research methods:
<table>
<thead>
<tr>
<th>Method</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Case studies</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jones (2006)</td>
<td>• Allow the research to focus on one or a few instances and deal with the subtleties and intricacies of complex social situations.</td>
<td>• Negotiating access to case study settings can be difficult.</td>
</tr>
<tr>
<td>Millar &amp; Photakoun (2005)</td>
<td>• Allows for the use of a variety of methods.</td>
<td>• Creates vast amount of data that might be overwhelming.</td>
</tr>
<tr>
<td>Simons (2009)</td>
<td>• Allows for a more detailed and more interconnected understanding of what is going on.</td>
<td>• Require high investments of time and energy.</td>
</tr>
<tr>
<td></td>
<td>• Allows the research to examine relationships and social processes in way that other methods do not.</td>
<td>• Issues of generalisability need to be addressed.</td>
</tr>
<tr>
<td></td>
<td>• Easier for district staff to organise</td>
<td>• Cost for developing photos and text.</td>
</tr>
<tr>
<td></td>
<td>• Especially useful for villages that are far away</td>
<td>• Content of case studies is limited.</td>
</tr>
<tr>
<td></td>
<td>• Useful for exploring and understanding the process and dynamics of change.</td>
<td>• Case studies did not appear to be a preferred method for learning about proven technologies.</td>
</tr>
<tr>
<td></td>
<td>• Flexible, that is neither time-dependent nor constrained by method.</td>
<td>• Uses more district staff as we need to do this activity together.</td>
</tr>
<tr>
<td></td>
<td>Potential to engage participants in the research process.</td>
<td>• Uses lots of time to introduce the process.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Staff find it difficult to explain in detail case studies from other districts.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Doesn’t build confidence with staff and farmers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The mass of data accumulated is difficult to process, reports are too long and detailed for stakeholders to read and narratives that over-persuade.</td>
</tr>
<tr>
<td>Participatory action research (PAR)</td>
<td>• Participatory action research is applied,</td>
<td></td>
</tr>
<tr>
<td>Jones (2006)</td>
<td>• Collaborative,</td>
<td>• Has no research leader.</td>
</tr>
<tr>
<td>Kemmis and McTaggart (2005)</td>
<td>• A social process,</td>
<td>• May be impractical.</td>
</tr>
<tr>
<td></td>
<td>• Participatory,</td>
<td>• Has no timeline.</td>
</tr>
<tr>
<td></td>
<td>• Practical,</td>
<td>• Takes time.</td>
</tr>
<tr>
<td></td>
<td>• Emancipatory,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Critical,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Reflexive (e.g., recursive, dialectical);</td>
<td></td>
</tr>
<tr>
<td><strong>In-depth interviews</strong></td>
<td>Allows the research to address meaning in depth, and with more attention to complexity than structured interviews,</td>
<td>Addresses the experience of a small group of people only, and so the results cannot be used to make generalisations about larger populations,</td>
</tr>
<tr>
<td>---</td>
<td>Possible to address the experiences or perspectives of people in a variety of social settings,</td>
<td>Interviewees may give misleading or false information,</td>
</tr>
<tr>
<td>Travers (2006) Babbie (2007)</td>
<td>Can deal with a wide range of topics: from life histories to experiences at work,</td>
<td>Difficult to address taken-for-granted or routine activities; preferable to combine ethnographic fieldwork,</td>
</tr>
<tr>
<td></td>
<td>Require less time than conducting ethnographic fieldwork,</td>
<td>Encourage the assumption that the interview is a window into the mind of the interviewee,</td>
</tr>
<tr>
<td></td>
<td>Less intrusive and impose less demands on research subjects than ethnographic fieldwork,</td>
<td>Conversation analysts have shown how the interview is produced collaboratively through the interaction between the interviewer and interviewee,</td>
</tr>
<tr>
<td></td>
<td>Interviews are socially acceptable: we live in an ‘interview social’ (Silverman 1997 cited in Travers 2006),</td>
<td>Time to contact with interviewees,</td>
</tr>
<tr>
<td></td>
<td>The interviewers can make friends,</td>
<td>Place some time is not available for interviewing,</td>
</tr>
<tr>
<td></td>
<td>Interviewers can give explanation when interviewees do not understand some questions,</td>
<td>Interviews in person are more costly than questionnaires,</td>
</tr>
<tr>
<td></td>
<td>It is easy for interviewees who lack in reading skills,</td>
<td>The interviewer can affect the data, eg, if he or she is not consistent,</td>
</tr>
<tr>
<td></td>
<td>We know exactly who the data come from,</td>
<td>Expensive recording equipment may be needed.</td>
</tr>
<tr>
<td></td>
<td>Permits depth of understanding.</td>
<td></td>
</tr>
</tbody>
</table>

<p>| <strong>Observation</strong> | First hand; the observer can see with their eyes and hear what participants discuss with each other, | The observers lack of experiences may not get the best information, |
| --- | The observer is better able to understand the context, | The observers need to concentrate for hearing and taking notes, |
| Patton (1987; 2002) | The observer is able to be inductive in approach. | The observer effect may operate when those being studied |</p>
<table>
<thead>
<tr>
<th>Focus group</th>
<th>The observer can learn about things.</th>
<th>might act differently from normal, knowing that they are the subject of the research. The observer cannot see what is happening inside people.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Krueker, 1988 cited in Babbie, 2007)</td>
<td>The technique is a socially oriented research method capturing real-life data in a social environment, It has flexibility, It has high face validity, It has speedy results, It is low in cost.</td>
<td>The researcher has less control than individual interviews, Data are difficult to analyse, Moderators require special skills, Difference between groups can be troublesome, Groups are sometimes difficult to assemble, The discussion must be conducted in a conducive environment.</td>
</tr>
<tr>
<td><strong>Documents Analysis</strong></td>
<td>A lot of information, Stable - can be reviewed repeatedly, Unobtrusive - not created as a result of the case study, Exact contains exact names, references and details of an event, Broad coverage - long span of time, many events and many settings.</td>
<td>Retrievability can be low, Biased selectivity, if collection is incomplete, Reporting bias reflects (unknown) bias of author, Access may be deliberately blocked.</td>
</tr>
</tbody>
</table>
A lower cost than face to face interviews,
If dealing with ethically or politically sensitive issues, anonymity may be advantageous,
People can take their own time to fill in the questionnaire and consider their responses,
It is possible to cover a wider geographical area at a lower cost.

- The researcher has no control over how people interpret the questions,
- The possibility of probing beyond the answers that people give is absent,
- There is no control over who answers the questionnaire,
- The response rate may well be low and it is possible that the researcher cannot check on the bias of the final sample.

<table>
<thead>
<tr>
<th>Mail survey</th>
<th>May(2001)</th>
</tr>
</thead>
</table>

### Table 4  Summary of advantages and disadvantages of social research methods
**Types of Data (qualitative and quantitative)**

Qualitative and quantitative research methods have often been represented as two basically dissimilar research strategies through which to study the social world (Seale, Gobo, Gubrium and Silverman, 2007). However, they can also be complementary. Campbell & Holland (2005, p.2) explained:

… quantitative research produces data in the form of numbers that can be collected and analysed to explain and guess relationships, while qualitative research tends to produce data in prose or text forms and can help to search and explain those relationships, and to explain contextual differences in their quality.

Patton (1987, p.11) noted that “the major way in which qualitative evaluators seek to understand the perceptions, feelings, and knowledge of people in programs is through in-depth, intensive interviewing.” Patton (1990, p.184) pointed out that for qualitative evaluation methods “There are no rules for sample size in qualitative inquiry”. Patton (2002) further explained that qualitative methods are ways of finding out what people do, know, think and feel by interviewing, observing and analysing data from documents. Qualitative research offers advantages such as:

- Explanatory powers from the richness and depth of information it can provide;
- Seeking to explain a difference by aiming to understand social diversity and social interaction within population groups; and
- Attempting to explore the realities and complexities of societies and communities. (Patton, 2002)

However, qualitative methods are not suitable for all program evaluation or action research questions. Quantitative research, according to Campbell & Holland (2005), has the comparative advantage to qualitative research because it produces numbers that enable analysis of changes over time and for comparison. However, as Dale (2004, p.138) mentioned, a disadvantage
of quantitative research is that it is not flexible in the planning and implementation of evaluation studies. He maintains that qualitative research is more flexible and therefore provides “virtually endless possibility for elaboration and explanation.” In addition, qualitative research allows more opportunities for participation by staff and other stakeholders. The following table (5) summarises the characteristics of Qualitative Research and Quantitative Research:

**Table 5  Characteristics of qualitative and quantitative research**

<table>
<thead>
<tr>
<th>Qualitative research</th>
<th>Quantitative research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sampling of study units through personal judgement</td>
<td>Sampling of study units through predetermined criteria and techniques</td>
</tr>
<tr>
<td>Flexible overall research design</td>
<td>Pre-determined and unchangeable research design</td>
</tr>
<tr>
<td>Enquiry through more than one method</td>
<td>Enquiry through one method only</td>
</tr>
<tr>
<td>Facilitates incorporation of a broad range of research variables and allows high complexity of variables</td>
<td>Reduces the field of investigation to what is statistically controllable</td>
</tr>
<tr>
<td>Allows direct exploration of processes of change</td>
<td>Confinement to the contemporary or to different points in time</td>
</tr>
<tr>
<td>Information recorded in flexible formats</td>
<td>Information recorded in fixed form in predetermined categories</td>
</tr>
<tr>
<td>Substantiating relations through reasoning and interpretation</td>
<td>Verifying relations through statistical testing</td>
</tr>
<tr>
<td>Participation in analysis by non-professionals possible</td>
<td>Analysis by professionals only</td>
</tr>
<tr>
<td>Non-numerical information</td>
<td>Numerical information</td>
</tr>
<tr>
<td>Specific (contextual) population coverage</td>
<td>General (non-contextual) population coverage</td>
</tr>
<tr>
<td>Active population involvement</td>
<td>Passive population involvement</td>
</tr>
<tr>
<td>Inductive inference methodology</td>
<td>Deductive inference methodology</td>
</tr>
<tr>
<td>Broad social sciences disciplinary framework</td>
<td>Neoclassical economics (and natural sciences) disciplinary framework.</td>
</tr>
</tbody>
</table>

Source: adapted from Dale (2004, p.130), and Kanbur (2003, cited in Campbell & Holland 2005, p.2)
Research Design

There are many possible types of research methods that could be used to evaluate capacity building. My research design was aimed at exploring the role of capacity building for livestock extension in Laos. Therefore, I chose a qualitative inquiry approach to enable me to collect rich and detailed data on capacity building methods, views on their effectiveness, factors influencing capacity building outcomes and ways to strengthen capacity building of livestock extension staff in Laos. The research design consisted of four data collection sets.

1. Semi-structured interviews with approx 16 project managers involved in livestock development,
2. Semi-structured interviews with 10 District and Deputy Heads,
3. Semi-structured interviews with 20 district livestock extension staff working at the District of Agricultural and Forestry Extension Office (DAFEO),
4. Survey of 30 district livestock extension staff to rate eight capacity building methods against required competencies in livestock management.

I focussed on using semi-structured interviews because they are valuable for understanding interviewee’s knowledge, skills, opinions and abilities about capacity building and how to improve their capacity building processes. Even though interviewing can be time consuming, it is an appropriate means to gather this kind of data. The mail survey method is not reliable in Laos because staff are located in remote areas without postal services and I was not confident of their ability to fill out a questionnaire by themselves. In addition, structured, closed questions would not deliver the information required about the qualitative aspects of capacity building - reasons why certain methods are preferred and exploration of factors influencing capacity building from interviewee’s perspectives, not from a predetermined set of factors.
One reason that I did not choose to use observation, PAR, focus groups or case studies methods is because I had little time for my field work, as I was required to be based in Australia. These methods take time, are costly to prepare and difficult to organise (e.g. accommodation, travel expenses, meeting room bookings, and ‘Perdiem’ payments to interviewees). Moreover, it would have been difficult to bring key informants together because they are busy project managers. Focus groups need the right people, who have experience in facilitation, to run the meeting successfully. Focus group interviews need at least two people; one person to facilitate and one person to take notes. These resources were not available to me.

Case study methods were not suitable, because I needed to explore capacity building methods across a mode range of livestock projects and districts.

**Data collection**

**Selection of interviewees**

All study sites were located in the uplands of northern Laos in Viengphoukha District, Luang Namtha Province; Luang Prabang, PakOu and Xieng Ngeun District in LuangPrabang Province; Mai District in Phonsaly Province; NongHet, Pek and Khoune District in Xieng Khuang Province; Hine Heup District and PhoneHong District in Vientiane Provinces. These northern districts were chosen due to the presence of livestock projects over the last decade or more.

The research used purposeful sampling to identify project managers with experience in capacity building of extension staff. Sixteen project managers were selected as suitable representatives or key informants. Most were located in Vientiane with two from Luang Prabang and two from Xieng Khouang (see Figure 2). These project managers have experience with capacity building for district livestock extension staff because their projects have capacity building components and are linked with district livestock extension staff who work in the upland areas. Eight of the fifteen interviewees were directly responsible for capacity building of extension staff. The number of district livestock extension workers involved with these projects was at least one to six people per district in five provinces.
The other seven of the fifteen interviewees’ projects were integrated including livestock, crops, education, public health, forest, and irrigation components. The number of district extension workers involved within the integrated projects was one person per each component. These projects had not yet evaluated capacity building yet, so my research presented an opportunity for them.

District heads were selected using stratified purposeful sampling (Patton, 2002) to ensure representation from different districts and provinces. These key informants were also important for my research because they have responsibility for district staff at the district level. They have knowledge, skills and experience in building the capacity of district staff, so I believed they could help address my research questions. Figure 2 shows the location of project managers and DAFEO heads.
Twenty district livestock extension staff were selected as important informants because these staff had direct experience of capacity building methods and outcomes (see Figure 3). Thirty district livestock extension staff including the 20 interviewed district staff were chosen to rate eight capacity building methods in order to supplement data to address my research questions.

Figure 3 shows the location of district livestock extension staff.

Pre testing of interview guide

Before I conducted my fieldwork in Laos, I did a pre-test interview to gain experience and develop my confidence in interviewing and analysis. The
The purpose of doing a pre-test interview was to practice using a semi-structured interview approach in order to gain more knowledge and skills before conducting my fieldwork in Laos. I needed feedback from my interviewees about my skill in conducting interviews in order to avoid mistakes arising in the research process. I chose an interviewee for my pre-test interview who had experience in evaluating capacity building processes. The interviewee was also a post-graduate research colleague at CSU.

The pilot interview or pre-test interview was conducted in my office. I chose this place because my office is comfortable, there was only me working there and I did not want someone else to listen in or disturb my interviewing. I thought that my room was more appropriate for interviewing rather than the interviewee’s office – there were many postgraduate students working there. I thought that it was bad to interview in an office with lots of people, because I did not want to interrupt the postgraduate students who worked there. The interview was held on 2008-02-27 at 9:30 am.

I contacted the interviewee by e-mail about one week before I conducted my pilot interview and on the day before I did the pre-test I confirmed with them again. The interviewee and I discussed general topics in order to warm up and establish a rapport before starting the recorded interview on the specific topics of my research question related to capacity building. Equipment that I used were a list of questions, tape-recorder, a note book, pens and a watch. The interview was conducted in English.

Initially, I prepared my list of questions (see Appendix B). I tested the tape-recorder to make sure it worked and placed it between myself and the interviewee. I used a tape-recorder as the tape provided me with a much more detailed record of our verbal interaction than any amount of note-taking or reflection could offer. I also wanted to interact with the interviewee and I did not want to spend time taking notes.

I introduced myself and the purpose of the pre-test interview to the interviewee and then obtained their approval to use a tape-recorder during the interview. I asked the interviewee to tell me a bit about her background.
before asking the five questions from my interview guide (see Appendix B). I used opening questions and followed up by using probing questions when I wanted the interviewee to provide more detail on important points. I also tried to be neutral during the interview process (i.e. not influence interviewee) and avoid using leading questions. I was careful in asking questions and listening to interviewee and I took notes of some important points. At key points during the interview, I also summarised what I thought I had heard so that I could check with the interviewee that I had understood her correctly. I always smiled and nodded in order to keep a good atmosphere because I wanted the interview to go well. I did not want to talk for more than five percent of the time to avoid dominating the discussion. My approach to the pre-test and subsequent interviews was consistent with the method discussed and approved by CSU.

After the pre-test I identified some strengths and limitations of the interview process. The limitations were:

1) The interviewee had not done capacity building per se, but she had evaluated capacity building for Natural Resource Management (NRM) in Victoria,

2) As it was my first interview in English with an Australian, I was anxious about the process and it was difficult for me to fully concentrate and respond to the information I was receiving,

3) I was unfamiliar with the equipment, and

4) I did not provide an information sheet and consent form which I would need to do for my interviews in Laos.

The strengths were:

1) The interviewer and interviewee were able to establish a relationship before the actual interview (via a process of correspondence prior to the interview)

2) The interviewee was very responsive and provided a lot of detailed information, so the interviewee was a good choice for my pilot interview.
I learnt from my pre-test that the interviewer needs to build a good relationship with the interviewee using good communication skills and be confident with the interviewee. This pre-test enabled me to improve my knowledge and skills of using the semi-structured interview approach. The pre-test gave me an opportunity for adjustments before I conducted the first field work in Laos. I practiced using opening questions and following up with probing questions. I was able to avoid leading questions or suggestions. I strongly agree with Babbie (2007, p. 306) that the interviewee should do 95% of the talking with the interviewer talking no more than five percent of the time, so I kept this point in mind. I also learned the importance of accessing the right people and asking the right questions to obtain good data.

**Conduct of interviews**

I conducted the first fieldwork in March 2008 and second fieldwork from October to December 2008 in Laos. I obtained approval from the CSU Human Ethics Committee and then I prepared information sheets and consent forms for implementation of interviews (see Appendices E and F). In planning for interviewing, I developed interview guides for key informants (see Appendices C and D) and met with supervisors. I prepared equipment: tape-recorder, information sheets and consent forms, note books and other documents. On arrival in Laos I confirmed arrangements again with interviewees. I met with colleagues at NAFES in order to plan my research field trip to the northern uplands of Laos. MAF requires the details of activities, with official letters from NAFES to PAFO heads, DAFEO heads and district livestock extension staff before any such studies are made. Before I interviewed the key informants I met PAFO heads to introduce my research and obtain official letters to each DAFEO and district staff whom I wished to interview.

**Project Manager interviews**

The first fieldwork was held in March 2008 with 14 Livestock Project Managers and two Provincial Coordinators to find out what capacity
building methods they used, the relative effectiveness of each method, and their views on how capacity building could be improved. Six projects were administered by the National Agriculture and Forestry Extension Service (NAFES), four projects were within the Department of Livestock and Fisheries (DLF), two projects were implemented with the National Agriculture and Forestry Institute (NAFRI) and two projects were managed by non-government organisations. Half of the projects were focussed on livestock production only, whilst the remaining projects were more integrated with livestock production as a component.

On arrival at the survey sites in Vientiane Capital I called them again in order to remind them of my purpose and then I made appointments with each project manager. The first fieldwork was conducted in Vientiane Capital, LuangPrabang and Xieng Khuang Provinces (see Figure 2). All of my interviews were conducted in the key informants’ offices to prevent other people disturbing the process.

Before interviewing I gave them information sheets and consent forms to sign. All interviewees approved the use of the tape-recorder during interviews. I interviewed in Lao because all of the project managers are Lao. Interviewing took between one and two hours per person. The following questions were used as an interview guide for project managers:

1. What capacity building role have you played in within your project?
2. What methods have you used for capacity building?
3. What methods were most effective and why?
4. What have you learnt about the different methods for capacity building?
5. How can capacity building of staff be strengthened to improve outcomes for your project?

When time allowed, additional questions were asked and following by probing questions to clarify data, avoid confusion and develop a better understanding of the situation.
After completion of the interview I reviewed the main points with the informant to make sure that the data were correct and true. Before interviewing the next person I carefully listened to the previous interview to ascertain on what points I did well and what points I needed to improve, so my interviewing was learning-by-doing. At night I made notes, listened to the tape and made reflections to ensure impressions were recorded.

On returning to CSU I reported the progress of my fieldwork to my supervisors. I started codification of interviews and analysis of data to prepare for a presentation to the School of Environmental Sciences. At this point I realised that this fieldwork had some weaknesses. All 16 interviewees were men, with no women. I gave information sheets and consent forms in English, not Lao, which made the information difficult for interviewees to understand. One interviewee was very busy with his work and during my interview he took a telephone call. I needed to stop and wait until he was available.

**District Head and District Extension Staff interviews**

Following analysis of the project manager interviews and identification of several themes, further exploration was needed at the district level to gain local perspectives on capacity building methods. The second fieldwork was conducted in October 2008 with 10 DAFEO heads and 20 district livestock extension staff from the five northern upland provinces of Laos: Phongsaly, Luang Namtha, LuangPrabang, XiengKhuang and Vientiane provinces, using in-depth interviews in their offices. The same ethical procedures were followed as with project managers with a similar interview guide (see Appendix D), however discussions invariably focussed more on outcomes at the farmer level.

The DAFEO heads are responsible for district livestock extension staff and work closely with farmers. The same process of data collection in the field was used as with the project managers. All interviews were taped and as the interview concluded I summarised the main points to interviewees to ensure
data collected was correct. Semi-structured interviews were used with 20 livestock extension staff, nine of whom were women. Thirty district staff were asked to rate the effectiveness of each CPB method against a range of knowledge and skills required for livestock extension. The livestock extension staff interviewed work closely with farmers, and are employed by one of the following projects with interests in livestock development:

1. Capacity Building for Smallholder Livestock Systems Project (CBSLSP)
2. Christian Reformed World Relief Committee (CRWRC)
3. Forage and Livestock System Project (FLSP)
4. Livestock Farmer Support Project (LFSP)
5. Lao Extension for Agriculture Project (LEAP)
6. Legumes for Pigs Project (L4PP)
7. Livestock Development Project (LDP)
8. Nam Ngum River Basin Development Project (NRBDSP)
9. Special Program for Food Security South – South Project (SPFSSP)
10. Small Holder Development Project (SHDP)
11. Heifer International Project in Laos (HIP in Laos)

The following questions were used as an interview guide for DAFEO Staff.

1. What staff capacity building strategies have been used in your district?
2. What are the advantages and disadvantages of these capacity building methods?
3. What factors (positive and negative) affect your own capacity building?
4. How can capacity building for livestock extension be improved?

**Ratings of capacity building methods against competency requirements**

In addition to the district livestock extension staff interviews, 30 district staff were asked to fill in a survey to rate eight major capacity building methods: workshop training, on-the-job learning, on-site training, cross
visits and study tours, mentoring, staff meetings, Farmer Field Schools and using the Internet against a range of livestock extension competencies in order to gain another measure of effectiveness. The rating ranged from 1-5; 1 = non effective, 2 = a little effective, 3 = average effectiveness, 4 = highly effective and 5 = very highly effective. This survey was not designed to be statistically significant but rather to provide descriptive analysis of trends that may or may not support interview findings. Forty technical and extension topics related to livestock production were used in seven parts;

- knowledge and skills in livestock production,
- knowledge and skills in forage development,
- knowledge and skills in livestock management,
- knowledge and skills in animal health,
- knowledge and skills in livestock marketing,
- knowledge of livestock extension (LEA method) and theory,
- livestock extension skills in and out of the field.
<table>
<thead>
<tr>
<th>Date</th>
<th>Process of data collection</th>
<th>Output</th>
</tr>
</thead>
</table>
| Phase 1 March-May 2008 | 1. Selection of interview and study sites.  
2. Prepare equipments for survey.  
3. Contact with key informants by e-mail and telephone. Sending information sheets and consent forms to project managers.  
4. Key informants semi-structured interviews focussing on methods used for capacity building of district livestock extension staff, advantages and disadvantages of each method, the factors (positive and negative) affecting and how to improve capacity building methods. (N=16 project managers) | • 16 semi-structured interviews of project managers in Vientiane Capital, Xiengkhuang and Luang Prabang Provinces.  
• Coding and analysing of qualitative data  
• Results used to presentation for School of Environmental and Science and also design for next fieldwork. |
| Phase 2 October-December 2008 | 1. Selection of interview and study sites  
2. Meeting with Mr Boualy Sengdala, NAFES staff to plan surveys and prepare equipment.  
3. Contact with key informants.  
4. Semi-structured interviews with 10 district managers (district heads = 6 and deputy heads = 4).  
5. Semi-structured interviews with 20 district livestock extension staff (men = 14 and women = 6).  
6. Preparing questionnaires.  
7. Rating of eight methods capacity building by 30 district staff (women = 9). | • Met with NAFES staff to plan together and gained approval and official letters from NAFES to access the study sites.  
• Appointments with target interviewees.  
• Semi-structured interviews with DAFEO heads and district staff.  
• Coding and analysing of qualitative data.  
• Quantitative analysis of ratings. |

*Table 6* Summary of the process of data collection and outputs
Ethical considerations

Ethics is an important component along with methodological and practical considerations for researchers. Ethics is concerned with the attempt to formulate codes and principles of moral behaviour (May, 2001, p. 59). The interviewer needs to have an ethical framework for addressing problems that may occur within the research process (Patton, 2002). The main ethical considerations for this research were ensuring confidentiality, obtaining voluntary consent to participate or withdraw at any time and agreement on a suitable location and time to conduct the interview (i.e., neutral, non-threatening). Anonymous direct quotes from the interviews were used. Participants were assured that transcripts and tapes of discussions would be shredded after analysis and writing up.

The Ethics in Human Research Committee approved my proposal entitled “Evaluation of Capacity building for Livestock Extension in Laos” (protocol number 2008/062). According to Charles Sturt University ethics guidelines, interviewees were firstly contacted by official letters or e-mail with information regarding the purpose of the research and nature of the interviews. A follow up phone call confirmed their willingness to participate in a one to two hour interview. Interviewees were given an information sheet and consent forms to sign to acknowledge confidentiality and the opportunity to withdraw at any time. For the field work I followed Lao government protocol before I went to the provinces. I gained approval from the MAF and obtained official letters on behalf of NAFES to the PAFO and DAFE0 heads. I always paid respect to the local authorities.

Data Analysis

Qualitative data analysis relies on three main components: data reduction, data display and drawing and verifying conclusions (Miles & Huberman cited in Punch, 2005, p.197). According to Onwuegbuzie and Teddlie (2003, p. 373) data analysis is carried out “in seven stages: data reduction (stage 1), data display (stage 2), data transformation (stage 3), data correlation (stage 4), data consolidation (stage 5), data comparison (stage 6), and data
integration (stage 7). The discovery of patterns among the data, patterns that point to a theoretical understanding of social life is the purpose of data analysis (Babbie, 2008).

Analysing the content of my interviews involved thematic coding to describe and discuss the interview content as described by Patton (2002). Patton (1987, p.11) noted that “the major way in which the qualitative evaluators seeks to understand the perceptions, feelings, and knowledge of people in programs is through in-depth, intensive interviewing.” This is the process of identifying, coding and categorising the primary patterns in the data (Patton, 1990).

**Coding and analysing of qualitative data**

Coding is described as putting tags, names, or labels against pieces of data (Punch, 2005). It is the process of coding-classifying and categorising individual pieces of data (Babbie, 2008). There are three main purposes for coding qualitative material: data reduction, organisation and the creation of search aids, and analysis (Hays, 2005). I started coding with all interviewees by using numbers instead of names. For instance, for project managers I issued numbers 1 to 16. My codes were Project Managers; PM 1-16, District Head; DH 1-10, District staff; DS 1-20. Coding helped me to reduce data by putting them into small packages.

**Analysing the interview data**

I first listened carefully to the recordings of individual interviewees. Then I looked at my notes and added data. I listened again to the interview and I started to summarise all the points made by interviewee. I needed to listen several times in order to make sure that I had understood the informant and that my notes were a good summary. Next I identified the main points from their responses to the questions that I used as the themes for my data analysis. The interview proceeded according to each question so it was easy to organise their responses into these themes. I used the computer to save each interviewee’s data in an individual file. I summarised the number of
each capacity building method mentioned by three levels of interviewees in a table and developed charts.

**Analysing the ratings data**

Data from thirty district livestock extension staff who were asked to rate eight capacity building methods were put into a spreadsheet. I put each interviewee’s responses for knowledge and skill in livestock production and extension from number 1 to 30 in the table. I summarised separately knowledge, skills and abilities for district livestock extension staff for each of the eight methods and then developed charts for presenting.

**Rigour and validity of analysis**

The verification process used to validate findings emerging in this research included responses from my interviewees, reflection on the effectiveness of the interview methods used and my competence in applying them, finding and bringing themes together from informants and discussion with friends and supervisors. This research combined information from a variety of sources found through reviewing current literature in the fields of extension and capacity building and the data generated by my fieldwork.

The data that I analysed was similar to the information found from other sources. This process of self-reflection helped me through the highs and lows of doing qualitative research and made me more confident in dealing with emerging themes. Finally, the process of validation does not finish with this thesis but will go on as I develop further research on capacity building for staff and farmers and the impacts of capacity building on changing livestock systems, improving livelihoods and protecting the environment in Laos.
CHAPTER 4

CAPACITY BUILDING METHODS USED
AND THEIR RELATIVE EFFECTIVENESS

Introduction

This chapter presents the findings of all interviews with project managers, provincial coordinators, District Agriculture and Forestry Extension Office Heads and Deputy Heads and DAFEO livestock extension staff who work closely with farmers. The results address research questions one and two including the main capacity building methods used, interviewee’s perception of the effectiveness of methods used and rating of capacity building methods against competency requirements.

Total interviewees were 46 at three different levels. The project managers (PM) were 16 out of 46 or 34.8%, district heads and deputy heads (DH) were 10 out of 46 or 21.7% and district livestock extension staff (DS) were 20 out of 46 or 43.5%. All project managers and district heads and deputy heads were men. However, 5 out of 20 district staff were women. Most project managers and DAFEO heads had a Bachelor degree in animal husbandry or Master degree or PhD from outside Laos and had been working for 10 to 25 years. The qualification of district staff was Middle Diploma to Bachelor degree in Livestock Husbandry from agriculture colleges and the University of Laos. Interviewees were aged between 26 and 60 years old. All extension staff were Lao Loum, except for five Hmong staff.

In addition to the district extension officer interviews 30 district staff were asked to fill in a survey to rate eight major capacity building methods against a range of livestock extension competencies in order to gain another measure of effectiveness. Nine out of 30 district staff surveyed were women including the 20 district staff interviewed.
Methods mentioned for capacity building

The most commonly mentioned capacity building methods by all 46 interviewees were training workshops and courses, on-the-job-learning, staff meetings, mentoring and attending cross visits or study tours. Less common methods were on-site training, Village Learning Activities, Farmer Field Schools, formal study and using documents or the Internet. Figure 4 shows the total number of mentions by interviewees regarding capacity building methods used in their projects and districts.

![Figure 4. Capacity building methods mentioned by all interviewees (N=46)](image)

Table 7 summarises the capacity building methods mentioned by project managers only. Workshop training, on-the-job learning, cross visits and study tours were equally used by all project managers, district heads and district extension staff with most also using staff meetings and mentoring. On-site-training was used by 37.5% of project managers, with 33% using the Internet for capacity building. Village Learning Activities, formal study and Farmer Field Schools were used by a small number only. This table summarises methods mentioned by project managers:
Table 7  Capacity building methods used by project managers

Table 8 illustrates the methods used at the district level to build the capacity of district extension staff according to DAFE heads and deputy heads. The study found that most interviewees responded that workshop training is an important method for building the capacity of district staff (90%). On-the-job learning and staff meetings were mentioned by 70% of DAFE heads and cross visits and study tours by 60%. Formal study and mentoring were used less by DAFE managers and Village Learning Activities, on-site-training, using the Internet or documents and Farmer Field Schools were not mentioned at all.

<table>
<thead>
<tr>
<th>No</th>
<th>Methods</th>
<th>Total interviewees</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Workshop training</td>
<td>9</td>
<td>90%</td>
</tr>
<tr>
<td>2</td>
<td>On-the-job Learning</td>
<td>7</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>Staff meeting</td>
<td>7</td>
<td>70%</td>
</tr>
<tr>
<td>4</td>
<td>Cross visits/study tours</td>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>5</td>
<td>Formal Study</td>
<td>5</td>
<td>50%</td>
</tr>
<tr>
<td>6</td>
<td>Mentoring</td>
<td>3</td>
<td>30%</td>
</tr>
</tbody>
</table>
Table 8  Capacity building methods experienced according to DAFEO heads and deputy heads

Table 9 shows the capacity building methods mentioned by district extension staff. There was a similar order to methods mentioned by project managers and district heads with workshop training, on-the-job learning, cross visits and study tours most commonly experienced by staff. Mentoring and staff meetings were mentioned by about two-thirds of all staff interviewed. Interestingly, some staff said that using documents was important for capacity building which was not mentioned by project managers or DAFEO heads. Formal study, Village Learning Activities, Farmer Field School, and the Internet had been used by very few staff, and no-one mentioned on-site-training as a capacity building method.

<table>
<thead>
<tr>
<th>No</th>
<th>Methods</th>
<th>Total interviewees (N=20)</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Workshop training</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>On-the-job Learning</td>
<td>19</td>
<td>95%</td>
</tr>
<tr>
<td>3</td>
<td>Cross visits/study tours</td>
<td>16</td>
<td>80%</td>
</tr>
<tr>
<td>4</td>
<td>Mentoring</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>5</td>
<td>Staff meeting</td>
<td>12</td>
<td>60%</td>
</tr>
<tr>
<td>6</td>
<td>Formal Study</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>7</td>
<td>Documents</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>8</td>
<td>Village Learning Activities</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>9</td>
<td>Farmer Field School</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>10</td>
<td>Using Internet</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>11</td>
<td>On-site-training</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 9  Capacity building methods mentioned by DAFEO extension staff
Summary of methods used
The most commonly used capacity building methods were workshop training, on-the-job learning, cross visits and study tours, staff meeting and mentoring. Less common were Farmer Field School, Village Learning Activities, using the Internet and documents. Workshop training and on-the-job learning appear to be the most popular methods for capacity building. Project managers and district staff also thought that mentoring was useful, while DAFEO heads suggested that formal study is important. DAFEO heads did not mention five methods including on-site-training, using the Internet, Village Learning Activities, Farmer Field School and documents, while district staff did not state on-site-training and project managers did not mention using documents.

Effectiveness of capacity building methods for district extension

Workshop training

All interviewees except one said that workshop training is very important because it is an effective way for extension staff to gain theoretical knowledge of livestock production and project requirements. Project managers provided training for extension staff in specific knowledge, skills or abilities that can be applied immediately on completion of the workshop. For example, six projects provided workshop training on how to conduct a ‘participatory livestock problem diagnosis’ (PD), whereby extension staff help farmers in target villages to identify their general and specific livestock problems in the village. Some project managers provide workshops in the first six months of project implementation.

One project manager explains the value of workshops as;

“...workshops bring stakeholders, experts, researchers, local staff, NGO staff and facilitators together to present results of the project and new technologies for animal feeding. There are benefits for all participants gaining access to research results and they are able to share ideas with each other.” (PM 2)

According to district managers, training is the base method and very important for upgrading knowledge, skills and attitudes of district extension
staff. Training helps district livestock extension staff understand the purposes, approaches and activities of projects, and also helps to improve their work planning (DH 3). District staff confirmed that training workshops and courses are an important capacity building method for them along with working closely with farmers in the field. As district staff (DS 3) stated;

“...training helped me to understand the theory underlying the initiative. It explained the initiative to me.”

Another interviewee said that:

“...for me training and practice are the best methods to help me gain knowledge, skills, attitudes and ability and I can become a good facilitator in my district.” (DS 7)

The disadvantages of training workshops are the high cost (eg for Perdiem, meals, accommodation, transportation, meeting room fees and equipment) and the time required for preparing materials and presentations and contacting facilitators. The cost of workshops can vary but an average five day workshop cost for 20 people is approximately $5,000 US, and can take more than two months to organise (Millar, pers. com, 2009) Another limitation of workshop training mentioned by district managers was that they could not provide training to all staff in their district because they haven’t enough budget to support everyone. For example:

“...we want to upgrade knowledge of district staff but we cannot do this because we haven’t the budget, so we are waiting for PAFO or donors to provide this support.” (DH 10)

Staff who are associated with donor funded projects are more likely to go to workshops. According to one district head “district livestock extension staff in this district who are working with projects, - the projects provided training to them.” (DH 6) On the other hand, some extension staff attend training courses that are not directly related to their jobs, suggesting poor or misguided selection of participants. If workshops or training are held over a short time and have lots of written text, some participants find it difficult to follow. Another limitation can be the quality of the facilitator as illustrated by several interviewees as the following quotes;
“...the facilitators spoke very fast and without handouts to provide us, so I can’t follow the text ... the facilitator lacked communication skills.” (DS 4)

“...if facilitators in the workshop lack experience and participants have different technical knowledge, then the workshops are unlikely to be successful.” (PM 1)

“...I observed that some facilitators lacked skills in transferring knowledge to participants.” (DS 16)

Hence, the teaching and learning process used in workshop training is dependent on the skill of the facilitator. The following table (10) summarises the major strengths and weaknesses of workshop training as reported by all interviewees:

<table>
<thead>
<tr>
<th>Workshop training</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓ Introduces concepts and theories of livestock management and extension knowledge</td>
<td>⚠ Costly</td>
</tr>
<tr>
<td></td>
<td>✓ Shows the results of activities and projects</td>
<td>⚠ Takes lot of time to organise</td>
</tr>
<tr>
<td></td>
<td>✓ Sharing ideas and experiences</td>
<td>⚠ Need to have good facilitators</td>
</tr>
<tr>
<td></td>
<td>✓ Getting feedback</td>
<td>⚠ Workshop training cannot be provided in all locations and for all functions of each organisation</td>
</tr>
<tr>
<td></td>
<td>✓ Improves knowledge, skills and attitudes of staff</td>
<td>⚠ Need to provide materials or hand outs</td>
</tr>
</tbody>
</table>

*Table 10* Strengths and weaknesses of workshop training
On-the-job learning

On-the-job learning was considered equally important to workshop training by most respondents. The advantages mentioned by project managers were that it develops good relationships between staff and farmers, and extension staff can stimulate farmers to participate in projects. Extension staff gain knowledge, skills or abilities, experience and confidence. The district livestock extension staff understand very clearly what farmers need. According to one program manager:

“...the results of this learning process indicate that district extension workers were able to identify the problems and opportunities in farming systems. They improved their technical and extension knowledge, so they can help their project to achieve the goals.” (PM 8)

In the field of livestock management, extension staff need to focus on animal feed and feeding systems, and animal health. Working closely with interested farmers in the field of livestock production helps them connect the new learning to previous knowledge and practice.

“...working directly with farmers in the field can help my district livestock extension staff gain skills, ability and confidence more than another methods because they share ideas and experience with model and interested farmers.” (DH 1)

District staff talked at length about their experiences in the field including how they introduced new management concepts to farmers and how they built relationships with farmers. District staff claimed that:

“... my fieldwork has made interested farmers believe more in me...I have become more confident (about 95%), for introducing about planting forages.” (DS 17)

“...the beginning I was afraid that how can I work and transfer my knowledge to share with farmers’ traditional knowledge....because I haven’t experience.” (DS 1)
Another advantage of on-the-job learning is that staff can improve knowledge, skills and abilities and expand technologies and impacts to large areas very quickly. For example, the techniques of fattening cattle, buffalo and pigs can spread fast from one household to the village and from one village to the whole district. For example:

"I always give opportunities to my staff work closely with farmers in the field ....at present I believe that my district extension staff gained experience through conducting hand-on in the field by themselves with target farmers...planting forage for fattening cattle is popular among farmers in my district, so the number of households for fattening cattle and forage area are increasing." (DH 3)

The disadvantages of relying totally on on-the-job learning are that some district staff lack theoretical knowledge and experience in extension methodology for working with target farmers. For example, they can’t respond and give advice to farmers when farmers ask questions. A District Head said that:

"...some time my staff asked me to help in problem solving. So I went to villagers and helped my staff to explain very clearly to farmers so they understand about the animal feed and feeding, and animal health such as de-worming parasites and vaccination.” (DH 2)

Another interviewee illustrated that

"....I believe that some of my district livestock extension staff have the technical knowledge, but they lack extension skills in techniques working with farmers. They do not know how to transfer knowledge to target groups.” (DH 10)

On-the-job learning also requires having some examples in the field. Not all problems can be dealt with via the on-the-job learning approach. For example, dealing with infectious diseases such as Bird flu is not suitable for on-farm experimentation;

"....control of infectious diseases requires outside expertise to deal with. "(PM 6)
They following table (11) summarises the strengths and weaknesses of on-the-job learning as reported by all interviewees:

<table>
<thead>
<tr>
<th>On-the-job Learning</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Working closely with farmers</td>
<td>70% to 90% of the time in farmers’ fields</td>
<td>❌ Staff need to have enough time, be responsible and have experience</td>
</tr>
<tr>
<td>✓ Allows a learning process between staff and farmers and build relationship</td>
<td></td>
<td>❌ Need to have good examples in the field with farmers.</td>
</tr>
<tr>
<td>✓ Staff gain technical and extension knowledge and skills learn about problems and develop confidence</td>
<td></td>
<td>❌ Some staff are shy to give advice to farmers, because they lack communication skills.</td>
</tr>
<tr>
<td>✓ Farmers gain benefits from staff and understand the extension process</td>
<td></td>
<td>❌ Not all problems are easily dealt with by this method</td>
</tr>
<tr>
<td>✓ Increased number of interested farmers involved</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Table 11 Strengths and weaknesses of on-the-job learning*

**Cross visits and study tours**

Eighty two percent of interviewees reported that cross visits and study tours are the third most commonly used method after workshop training and on-the-job learning. Most project managers, district heads and district staff believe that cross visits and study tours are important to build the capacity for district extension livestock staff. District staff who attended cross visits and study tours gained knowledge by discussing, exchanging and observing activities with host farmers and among themselves. One project manager thought that

“....cross visits stimulate the learning process between experienced and younger extension staff and between government and NGO staff.” (PM 2)
In addition, cross visits not only give opportunities for staff to meet each other but also allow farmers to learn together in the field. For example, everyone can see how to cut and carry forage, fatten cattle and use dry stylo ‘CIAT 184’ mix for animal feed. The visitors have a good chance to see the impacts and exchange experiences with experienced villages, and the extension workers who are responsible. An interviewee explained that

“...cross visits are useful to compare and evaluate activities by different stakeholders.” (PM 5)

One Project manager described how

“New extension staff can learn how to organise cross visits, prepare the host farmers and activities, ask questions, give advice and learn other techniques of working with farmers as well as providing feedback from those cross visits.” (PM 3)

District managers and staff had similar comments and were able to talk about what they had learnt from study tours and cross visits. One district head (DH 3) illustrated that after he and some of his district livestock extension staff returned from attending a study tour to Vietnam and cross visits in Xang village, Pek district, he had many new ideas (which he exchanged with Vietnamese farmers) about planting forage for fattening cattle in pens. For example;

“Using lesson learnt from cross visits and study tours on planting forage for fattening cattle in pens by smallholder households can help farmers in my district change livestock systems. Before they put animal in free-range, nowadays, they are planting forage for fattening cattle in pens for selling.” (DH3)

Another interviewee mentioned that

“Cross visits are useful for me and a very important method to help me gain knowledge and experience on livestock production, because I have evaluated and compared activities of my district villages with other district extension teams and farmers in other villages, districts and provinces. I can see real activities and have a good chance to discuss with district teams and host farmers. I can use the lessons
learnt from cross visits to improve my field work...I have more confidence and increasing experience.” (DS 19)

One interviewee asserted that

“....I can see and understand very clearly the steps of planting forage, management, cut and carry and using forage to fatten cattle for selling” (DS 10)

On the other hand, three project managers stated that cross visits cost a lot of money and can be difficult to organise (e.g. $1,000 US for 2 days). During cross visits it is difficult to facilitate discussion between visitors and host villagers, and after cross visits and study tours (e.g. feedback). Some interviewees claimed that visitors thought that the cross visit was for tourism or fun (not for learning).

Cross visits can suffer from lack of time as visitors want to see many places. Sometimes there is not enough time to discuss and exchange experiences with host district staff and experienced farmers. In addition, travelling for visitors is also difficult because sites can be far from the office and not all activities are of interest to them. One interviewee said that

“...too many participants attended the each cross visit...and each visitor want to question to host district staff and model farmers. They got more information from us, but we did not learn from them because we hadn’t enough time.” (DS 6)

The following table (12) summarises the strengths and weaknesses of cross visits and study tours as reported by all interviewees.
**Cross visits/study tours**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ To see the impacts and exchange experiences with host extension workers and farmers, ✓ To compare and evaluate activities done by different stakeholders, ✓ Facilitate new staff’s learning experiences.</td>
<td>☹ Costly, ☹ Some visitors think that cross visits are for fun and entertainment only, ☹ Field visit too far away, ☹ Short time, ☹ Seasonal activities sometimes not suitable, ☹ Some activities not interesting.</td>
</tr>
</tbody>
</table>

*Table 12  Strengths and weaknesses of cross visits and study tours*

**Staff Meetings**

Staff meetings are regular meetings in which district livestock extensions staff report, give feedback and exchange their ideas on a particular problem (e.g. administration, technical issues and managing conflicts) and make plans. Staff meetings are of five kinds: weekly, monthly, quarterly, middle annual or annual meetings depending on the situation of each organisation. In this research it was found that most projects used monthly meetings more than other types.

All project managers and two thirds of all district level staff stated that staff meetings are valuable for capacity building of extension staff, because it allows staff to share experiences, solve problems in the field and make plans. The timing of meetings varies from monthly to three monthly to every six months. For example one project manager organised meetings for district officers about eight times per year.
According to one district head, all his staff come together every month at the district agriculture office. Managers update staff on the latest government policy and urgent issues. Staff then report on their work progress and outcomes including any issues they have faced from their fieldwork. Participants discuss and give feedback to each other. As he explained;

“...monthly meetings are a learning process between staff from different specialities.” (DH 6)

A clear advantage of holding meetings are that administration, technical and other problems can be resolved quickly, because DAFEO heads and staff have a good opportunity to interact, give feedback and suggest solutions during the meeting. Monthly and quarterly meetings also have potential to help staff improve by broadening their outlook and providing examples for comparison;

“...district livestock extension staff reported on the progress of their activities in the field, the main problems they faced and what the farmers needed. They compared those activities between different districts in the province and other provinces.” (PM 2)

“.... attending monthly meeting is inspection activity for district extension staff...what activities they have done well and....what activities they needed to improve.” (DH 4)

One project manager pointed out that the District Agriculture and Forestry Extension Office (DAFEO) Head and project managers could also know the progress, impacts and problems if they attended meetings.

In addition, monthly meetings appear to be useful for building capacity for senior and new extension workers to learn together. One project manager stated that, the project managers and DAFEO heads were able to follow up all activities which had been done by district extension workers (PM 14). Another project manager recommended that
“…using monthly meetings is suitable for June to October of each year because this period has a lot of activities. As for November to May, monthly meeting are not necessary, because there are few activities in some projects.” (PM 2)

However, according to other district managers, attending monthly meeting cannot stimulate all staff involved because some are too shy to give recommendations or seek feedback. Some provinces have only one district in a project, so there is no opportunity to share information. Other limitations occur when district managers are too busy to meet or staff are absent due to heavy workloads. The disadvantages of staff meetings according to some interviewees are that they use up a lot of money and time (e.g. can cost for per diems, lunch and petrol for motorbikes). Quarterly meetings have an advantage in this respect over monthly meetings, and it gives district staff more time to conduct their activities so they have progress reports to share. However, three monthly meetings can be a long time to wait if district staff experience serious problems that need peer discussion.

Several district staff mentioned the value of staff meetings. The most outstanding example of this was a district staff member who challenged me for even asking the question;

“…two districts come together in order to exchange ideas between teams. For instance, Guinea grass in this village is growing well, but in other village does not grow well, so each team have a good chance to discuss each other.”(DS 10)

“Staff have opportunities to exchange ideas between teams, report progress of activities and feedback to each other...about information farmers need and together resolve problems and planning for next month, if lack of monthly meeting the problems each team face will take a long time for waiting to resolve it.” (DS 7)
Another interviewee stated that:

“...in the monthly meeting or staff meeting the participants have reported the progress to DAFEO Head, given feedback to each other and can resolve problems quickly...DAFEO head give advice to staff.” (DS 9)

The following table (13) summarises the strengths and weaknesses of staff meetings.

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔ District extension can learn from each other about planning, implementation, mentoring, evaluation and resolving problems, ✔ Can help staff resolve the problems quickly, ✔ The project managers and DAFEO heads are able to follow up all activities.</td>
<td>✗ It is not suitable for some provinces that have only one district, there is no opportunity to share information, ✗ Quarterly meeting is long time to wait and cannot always resolve problems in time, ✗ Costly (e.g. travel, Perdiems).</td>
</tr>
</tbody>
</table>

| Table 13  | Strengths and weaknesses of staff meetings |

**Mentoring**

Mentors are people who have extensive experience in livestock production and extension methodology. They can be national staff, district managers, or provincial and senior district staff. Mentoring involves passing on skills, attitudes and knowledge from experienced staff to newer extension workers. As a capacity building approach, mentoring was mentioned by 30 interviewees with a higher proportion of program managers than district managers or staff. One project manager was of the opinion that mentors were crucial in the first year of project implementation; “...in the first year of implementing the mentors are very important and necessary to help the
newer district livestock extension staff.” (PM 1) Mentors helped new district extension staff to conduct livestock problem diagnoses (a general PD and a specific PD), learn how to plant forages and demonstrate to farmers how to plant and use forages to feed animals.

“...mentors could help the district extension workers resolve problems very quickly.” (PM 1)

Another project manager added that

“...the mentor teams managed and facilitated the mentees’ learning experiences in the field – how to develop their relationships with the farmers, stimulate farmers involved with project and expand new technology to large areas.” (PM 2)

Mentoring or coaching is particularly important for building the capacity of volunteer or contract staff who have even less experience with forage technologies and extension methodology. District head (DH 8) explained his policy to develop new district staff by mixing teams of older and younger staff, and men with women. Another district head followed the same approach;

“... I never let my new volunteer and contract staff go to work in a village without a leader and unaccompanied ...because they have not enough experience.” (DH 2)

For the district officers interviewed, the benefits of being mentored were gaining knowledge and having ready access to someone for advice. One district staff mentioned that

“...I think mentoring is a useful method for me because the mentors have more experience and their recommendations are linked with real situations in the field, they give advice very clearly, step by step. I can easily understand.” (DS 10)

Another interviewee explained that
“...mentoring saves time, it keeps me on track and opens my mind.... I gained knowledge and skills from mentors so I am able to work with farmers and I have more confidence than before.” (DS 13)

One district staff had also become a mentor;

“...at present I am able to do mentor to new district staff...I have knowledge in planting forage, de-worming parasites and using vaccination.” (DS 10)

However, mentoring also has some weaknesses according to some project managers. Mentors may have many other responsibilities so they don’t have enough time to follow up and give advice to staff. DAFEO district staff can waste valuable time waiting for mentors to come. For example:

“....land preparation, planting forage, during the time of cut and carry... we are awaiting mentors to give advice and the farmers are also waiting for district staff to come.” (PM11)

Other limitations with mentors involved personal styles and communication difficulties;

“...the mentors sometimes have personality conflicts with district extension staff. For example, there are some mentors who lack credibility and mentees do not listen and accept these mentor’s advice.” (PM1)

“...it is difficult to contact mentors to ask questions....communication is a problem because mentors and mentees are far away from each other.” (DS13)

“...in the field of animal health activities some newer district extension staff liked to ‘show off’. For example, they think that they know everything but actually they don’t.” (PM 8)

Table 14 summarises the strengths and weaknesses of mentoring as reported by all interviewees.
Mentoring

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Passing knowledge and skills to newer extension workers,</td>
<td>☹ Mentors may have other activities, so they don’t have enough time to meet with newer extension staff,</td>
</tr>
<tr>
<td>✓ Giving advice to trainees in the field with farmers,</td>
<td>☹ Mentor and trainee have some conflicting ideas and views,</td>
</tr>
<tr>
<td>✓ Facilitate the trainee’s learning experiences,</td>
<td>☹ Mentors may be biased and lack credibility,</td>
</tr>
<tr>
<td>✓ Resolves problems quickly.</td>
<td>☹ Not enough communication between mentors and mentees.</td>
</tr>
</tbody>
</table>

Table 14 Strengths and weaknesses of mentoring

Village Learning Activities
Village Learning Activities (VLAs) are a new participatory extension method developed by a project for farmers to learn about new technologies and for scaling out the technologies and impacts to the other farmers. Extension workers carry out simple experiments with interested farmers in target villages. An example is a simple trial involving feeding two pigs exactly the same feed, except for adding fresh Stylo to one of the pigs, and observing the differences as they grow.

According to one project manager, VLAs are a useful participatory learning tool to evaluate new technologies;

“…. this method can help staff learn about technical and extension knowledge very quickly.” (PM 2)

This interviewee said that the farmers and extension workers can learn together. Extension staff have confidence and have a good relationship with farmers. For example, he said that extension staff worked well with farmers
during the VLA of feeding pigs in XiengNguen district. Extension staff conducted on-farm trials with farmers who wanted to resolve problems. The extension team shared ideas together and tried to help farmers to resolve their problems.

A district staff member explained that using Village Learning Activities for scaling out new forage technologies such as stylo ‘CIAT 184’ for supplementation of pigs to interested farmers has been successful. Farmers can now see the real experiment in their village and they can develop feeding formulas by themselves. They can see impacts and other farmers are stimulated to learn from the VLA. The farmers now keep pigs in pens and feed high quality feed containing protein sources such as stylo.

“...I believe that VLAs are a useful method for upgrading knowledge of farmers and district extension staff.” (DS 3)

District extension staff can get results or information from simple trials in order to introduce to other villagers. District extension teams can help farmers to change pig production systems from traditional methods to semi intensive.

“...I am working hard and very closely with farmers group in improving pigs feeding system... I have experience and confident, so I can show.” (DS 20)

One disadvantage of this method is the inability to undertake this activity when there are no good examples in the field to use. Interviewee PM 2 said that extension staff need to have good technical and extension knowledge to use this method.

Other drawbacks are that if some farmers haven’t enough labour they can’t join this activity. Sometimes staff haven’t enough time to follow up their activities with interested groups and sometimes the farmers wait for the district extension staff to give advice. For instance;

“...I haven’t enough time to follow up all experiments with target groups and cannot help farmers resolve all their problems... sometimes I need to ask the national staff to help.” (DS 3)
The following table (15) summarises the strengths and weaknesses of VLAs.

<table>
<thead>
<tr>
<th>Village Learning Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>✓ Working closely with farmers,</td>
</tr>
<tr>
<td>✓ Staff gain knowledge, skills and confidence,</td>
</tr>
<tr>
<td>✓ Get comparative results,</td>
</tr>
<tr>
<td>✓ Can see real impacts.</td>
</tr>
</tbody>
</table>

Table 15  Strengths and weaknesses of VLAs

On-site-training

Six interviewees mentioned that on-site-training is a useful method for building the capacity of district livestock extension staff. Interviewee PM 2 explained that on-site training provides a learning process between district livestock extension workers and interested farmers. District extension staff understand more clearly than training in the meeting room because they can see real materials, experiments and good examples in the field.

Another interviewee has noticed that

“...nowadays some projects are changing from training in meeting room to on-site- training or worksites.” (PM 1)

This program manager also stated that the extension staff had expertise to show how to plant forage, sowing rates, weed control, and cut and carrying forages to animals.

“..extension staff have opportunities to listen, observe and do by themselves in the forage demonstration plots in the village.” (PM 1)
The extension staff work closely with farmers so they can both learn very quickly, and clearly understand the main technical problems and farmers needs. Program manager PM 2’s staff had received training on soil erosion, low yield of forage, seed production, harvesting methods, and drying and storing seeds. He had found this method less costly than organising training in a meeting room. On the other hand, he pointed out that if the project lacks good examples in the field, this method is not effective and should not be used. Providing on-site-training to district staff must also consider the season and time. For example, during the forage planting period training should focus on only the techniques linked with this period.

Table 16 summarises the strengths and weaknesses of on-site-training as reported by interviewees.

<table>
<thead>
<tr>
<th>On-site-training</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
<td><strong>Weaknesses</strong></td>
</tr>
<tr>
<td>✓ Informal learning process between staff and farmers, ✓ Staff gain more technical and extension knowledge, skills and high confidence, ✓ Staff clearly understand the process of theory and real examples, ✓ Saves money.</td>
<td>☞ Staff need to have enough time and experience, ☞ Need to have good examples in the field with farmers, ☞ Season and time of organizing this method should be appropriate.</td>
</tr>
</tbody>
</table>

Table 16 Strengths and weaknesses of on-site-training

Using the Internet

Providing internet access for staff in the office at provincial and district levels is another method for building the capacity of district staff that six interviewees mentioned. Interviewee PM8 stated that steering committee members from the Provincial Agriculture and Forestry Office (PAFO), and the livestock and fisheries section of the District Agriculture and Forestry Office can use the Internet to search for information, receive and send
information linked between five provinces under the Livestock Development Project (LDP). An interviewee explained that

“...nowadays Laos Extension for Agriculture Project (LEAP) provide an online service by mobile phone to the provincial level. Staff can access the Internet to search, receive and send information and messages from the centre office to the provincial and district staff.” (PM 12)

Another interviewee found that using the Internet is easy for district staff in searching for information, receiving messages and sending messages from district level to provincial, national and international level very quickly.

“...after I know how to use the Internet...I can access it to search for a variety of sources of information around the world, in the field of livestock production, extension and in particularly learning English programs.” (DS 3)

However, one extension officer said that his district was located in remote areas so he can only use the Internet at night until 9:00-10:00 pm, because the electricity is not available in his office.

“....Even though I work in remote areas and I have a little time in using Internet each day, I can access information...it is useful for me.”(DS 4)

Another interviewee mentioned that:

“....I spent more money to buy computers and other equipment for district level and when it broken down the district staff sent it to Vientiane to repair it.” (PM 8)

Staff using the Internet need to know English and computers skills, according to district staff

“....I cannot use Internet, because I don’t know English and how to use it.” (DS 5)

The following table (17) summarises the strengths and weaknesses of using the Internet by some interviewees
Using the Internet

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Very easy and quick to search and get lots of technical information from around the world, quick in connecting and sending messages.</td>
<td>☹ Costly in buying equipment (estimated US$ 1,500), ☹ Without electricity cannot use, especially in remote district areas, ☹ It may not resolve all problems.</td>
</tr>
</tbody>
</table>

Table 17  Strengths and weaknesses of using Internet

Formal Study

Providing scholarships to district livestock extension by the government and donors is one way to build the capacity of district staff. Upgrading qualifications in technical and extension methodologies to new generations and staff who have been successful in their jobs is essential (DH 2). According to interviewee PM 7, formal study is provided to Government staff working at central and provincial level, in the Department of Livestock and Fisheries (DLF), and Ministry of Agriculture and Forestry (MAF). The Department of Livestock and Fisheries select staff who are active in their work and have high responsibilities within their job to study Masters Degrees in Thailand.

Providing scholarships rewards staff and stimulates other staff to pay attention to their work. District livestock extension staff who have qualified at lower middle diploma and Bachelor degree may want to have higher qualification in livestock production.

“...younger staff have motivation to study at high level but senior staff have motivation to have high rank of position.” (DH 2)

This method is limited by lack of funds to support staff. For example:
“...we are district level and it is difficult to get scholarship to study compared with provincial and national level.” (DH 1)

There are some barriers that affect opportunities for district staff to get scholarships. For instance, some senior staff have middle degrees, are very experienced and have good English proficiency but are too old to apply for scholarships. Younger staff are excluded because they have high qualifications, are less experienced and have lower English proficiency levels. Some staff have opportunities to get scholarships and approval from DAFEO heads but their family commitments prevent them from studying. The high cost of studying is also prohibitive:

“....most of my extension staff want to upgrade their qualification, but a few of them are able to study...other staff lack of fund...because they need to pay for study fees, transportation, accommodation, books and etc...it is difficulty to find budgets to support them.” (DH 9)

Another interviewee expounded that:

“....my qualification is middle diploma in livestock husbandry....I work here so many years...I want to study Bachelor degree at Nabong or Souphanuvong University... I cannot, because my situation is not suitable for me... I need to think about family first and then study.” (DS 13)

A similar view expressed that

“....it is difficult to me to get scholarship because I have just entered the government staff this year...I need to pay attention to work hard in order to make opportunity for my future plan.” (DS 9)

Table 18 summarises the strengths and weaknesses of formal study.
<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Experience other countries,</td>
<td>☞ High cost for study fees and lack of funds,</td>
</tr>
<tr>
<td>✓ Lots of information and materials for studying,</td>
<td>☞ Lack of English,</td>
</tr>
<tr>
<td>✓ Staff have opportunities to make many friends overseas,</td>
<td>☞ Age,</td>
</tr>
<tr>
<td>✓ Staff gain more technical knowledge, skills, experience and confidence from Universities.</td>
<td>☞ Family commitment,</td>
</tr>
<tr>
<td></td>
<td>☞ Not available to all staff.</td>
</tr>
<tr>
<td></td>
<td>Limited amount of staff go to study.</td>
</tr>
</tbody>
</table>

**Table 18  Strengths and weaknesses of formal study**

**Documents and Handbooks**

Five district staff found that documents and handbooks are useful tools in building their capacity. Providing books, handouts and hard information about livestock production, animal feed and feeding and animal health of each presentation in the workshop training courses helped staff upgrade their theoretical knowledge. The advantages are that staff can use these materials as guidelines when they work in the field with farmers. Sometimes staff cannot follow the facilitators giving presentations in the meeting room and cannot remember the text or particular information, so they are able to see the documents and articles and use them later. The disadvantage is that some articles and documents are in English, so it is difficult for staff to understand:

“...*some facilitators talked very fast in the workshop training, I cannot follow the texts...and made me confused...”* (DS 3)

“...*hand out that I got from attending the workshop training most in English...I do not understand.*” (DS 5)

In general, documents and handbooks are very important for district livestock extension staff and farmers because these materials summarise
results, output and impacts from processes and experts. Thus, staff and farmers are able to use this information for real practices in the field in order to improve their farming systems.

Farmer Field Schools
An interviewee explained that district extension workers use Farmer Field Schools (FFS’s) to support farmers with training materials, animals, plants and real problems. The topics of training depend on farmer group needs. Topics may include crop production (land preparation, planting, weed control, fertilization and harvesting) or livestock production (housing, feed and feeding, vaccination). District extension staff need to follow up each activity but farmers conduct activities by themselves. The farmers pay attention and make close observations of the conditions of study plots. FFS is usually conducted in the first year only. This interviewee believed that FFS is a useful method to build the capacity of district extension staff and interested farmers.

“...it is experiential learning between extension staff or facilitators and group farmers.” (PM 9)

The advantages of this method are that both farmers and staff are able to gain knowledge, skills, good relationships, facilitator skills, communication skills and experiences. Farmers can do activities by themselves and more women participate (about 70%). In the FFS, all activities are based on experiential learning (learning-by-doing). It is participatory, hands-on work and there are no lectures.

“...I accepted that FFS is useful for me I learned more in working with farmer groups (chicken raising groups and vegetables planting groups in Nam Lue, Luang Name Tha district. After five years I gained knowledge, skill, ability and confidence.” (DS 2)

The disadvantages are that the FFS’s follow a one-year cycle, which doesn’t fit with the three month crop cycle for cash crops and rice production. Thus some farmers cannot be involved. Also, farmers who are living far away cannot be involved in this approach. Extension staff also found that farmers
thought the FFS activities belonged to the community, so they felt no
individual responsibility for monitoring and evaluation of the FFS activities.
(PM 9)

The following table (19) summarises the strengths and weaknesses of FFS

<table>
<thead>
<tr>
<th>Farmer Field School</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>✓ Staff gain knowledge, skills and confidence in working with farmers,</td>
</tr>
<tr>
<td>✓ Increasing relationship between Staff and farmers,</td>
</tr>
<tr>
<td>✓ Farmer groups organized themselves,</td>
</tr>
<tr>
<td>✓ Learning-by-doing process,</td>
</tr>
<tr>
<td>✓ Increased number of interested farmers involved (more women)</td>
</tr>
</tbody>
</table>

*Table 19* Strengths and weaknesses of FFS

**Rating capacity building methods against competency requirements**

In addition to the district extension officer interviews, 30 district extension staff were asked to fill in a survey in order to gain another measure of effectiveness. They were asked to rate eight major capacity building methods against a range of livestock extension competencies. The scale for rating effectiveness was from one to five: 1= non effective, 2= a little effective, 3= average effectiveness, 4= highly effective and 5= very highly effective.

This survey was not designed to be statistically significant but rather to provide a simple quantitative assessment to cross reference with interview data. Figure 5 shows the relative effectiveness of capacity building methods for overall livestock competence in animal breeding, feeding, health and management.
On-the-job learning was rated the most effective method for gaining knowledge and skills in animal breeding, feeding and management followed closely by on-site-training and workshop training.

It is interesting to note that district staff gained more knowledge through on-the-job learning in animal feed and feeding than in the other knowledge areas. Similarly, workshop training provided more knowledge in the areas of animal feed and feeding and animal health. Animal breeding knowledge was lower than the other knowledge areas in mentoring because mentors focussed more on feed and feeding and management. On the other hand, Farmer Field Schools increased staff knowledge of animal health above the other areas. Using the Internet, district staff got information particularly on animal management and breeding.

On-the-job learning and workshop training had the same level of effectiveness for staff learning about animal health, with on-site-training also important. Cross visits and study tours were rated as important as mentoring for all livestock competencies except for breeding where it was slightly less (possibly due to mentors not being as competent in this area). Staff meetings were the sixth highest method rated by district staff on all livestock management aspects while Farmer Field Schools and using the Internet were rated least effective.
Knowledge and skills in forage development and management

Figure 6 illustrates the effectiveness of capacity building methods for gaining knowledge of forage establishment and management, such as selecting forage species, planting forage, seed production and expansion, how to cut and carry and how to feed forage to animals. District extension staff gained knowledge on forage management mostly from on-the-job learning and on site training.

![Knowledge and skills in forage development](image)

**Figure 6** Rating capacity building methods for forage knowledge

However, workshop training, cross visits and mentoring also rated above average for learning about forages. Technical knowledge on planting, cutting and managing forages was passed on at cross visits. Staff meetings were less important for gaining forage knowledge and skills but consistent across the four aspects indicating all topics are discussed and shared at meetings. Farmer Field Schools rated about the same as staff meetings and slightly higher for planting and feeding, however the lower ratings may have been due to lack of experience with FFS by most staff. The Internet rated very low for forage development topics. Overall, on-the-job learning, on-site-training, cross visits, workshop training and study tours are effective capacity building methods for gaining knowledge and skills in forage development for district extension staff.
Knowledge and skills in livestock management

Figure 7 shows the relative effectiveness of capacity building methods for the animal management competencies expected of livestock extension staff. As with forage management, on-the-job learning and on-site training were rated the highest for feeding, housing, cleaning, working and worm treatment. Workshops were rated evenly for all topics (around four out of five). It is interesting to note that district extension workers rated learning about feeds and feeding slightly higher than other topics for six methods, which probably reflects a higher knowledge level of forages than other more advanced livestock competencies. The exceptions to this were workshop training and Farmer Field Schools. Farmer Field Schools and the Internet rated average to low for all topics. Overall, on-the-job learning, on-site training, cross visits and workshop training appear also to be the best capacity building methods for district extension staff to gain knowledge of animal management.

![Graph showing the effectiveness of capacity building methods for livestock management](image)

**Figure 7** Rating capacity building methods for livestock management

Knowledge and skills in livestock marketing

Figure 8 below shows the effectiveness of capacity building methods for knowledge of livestock marketing such as market chain surveys, marketing information and commodity production. Marketing information is rated slightly higher than the other components in both on-the-job learning and on-site-training. Knowledge of commodity production is higher than other
activities within cross visits and study tours, because staff and farmers are able to exchange experiences; for example on fattening cattle for sale. Overall, on-the-job learning, on-site training and workshop training are the most effective capacity building methods for livestock marketing followed closely by cross visits and study tours and mentoring.

![Rating of capacity building methods for livestock marketing](image.png)

**Figure 8** Rating of capacity building methods for livestock marketing

**Knowledge and skills in animal health**

Figure 9 shows that district livestock extension staff gained knowledge and experience on livestock movement and quarantine, disease prevention and vaccination, and disease diagnosis and treatment mainly through on-the-job learning and on-site or workshop training. However, learning about storage and use of vaccines also came about from mentoring, which rated higher than cross visits compared to forages and livestock management/marketing. This indicates that mentors play a key role in teaching district extension staff about animal health procedures. However, staff rated cross visits equally highly for all other aspects. Staff meetings appear to be of average importance for learning about animal health issues. On the other hand, diseases diagnosis and treatment, and handling of vaccination were mentioned as learnt to some extent at Farmer Field Schools. Overall, on-the-
job learning, on-site training, workshop training, cross visits and study tours and mentoring emerge again as the most effective capacity building methods for district workers to learn about animal health.

![Figure 9: Rating capacity building methods for Animal health](image)

**Knowledge and skills in Animal health**

**Knowledge of livestock extension (Theory)**

Figure 10 shows the rating of the eight key capacity building methods against knowledge of six livestock extension theory areas; participatory research approaches, participatory problems diagnosis (general and specific), knowledge of communication with farmers, adult learning and learning styles, participatory evaluation with farmers and how to expand the impact of forage and livestock.

On-the-job learning and workshop or on-site training rate the highest for all knowledge areas. It is important to notice that all activities within on-the-job learning are rated similarly, as opposed to other methods. It is evident that knowledge of participatory research approaches is higher than the other activities within the mentoring method, and it is also higher within mentoring than within the other seven methods. This is because mentors use participatory research approaches with farmers to introduce new technologies such as forages. It is also interesting to note that the component of how to expand impacts of forage and livestock is higher than the other knowledge areas within cross visits, because district extension workers
gained experience and share ideas with other district teams through cross visits.

![Knowledge of livestock extension (Theory)](image)

**Figure 10** Rating capacity building methods for livestock extension theory

Another point to note is that participatory research approaches (PRA) and participatory diagnosis (PD) activities are similar in both workshop training and on-site-training. This is because the project managers, facilitators and mentors particularly focus on both activities in order to make district staff understand very clearly the process requirements of projects. Farmer Field Schools appear to be useful for most extension knowledge areas, particularly how to share ideas and stimulate adult learning and learning styles. The Internet scored very low for all extension knowledge areas. Overall, the top five methods for gaining extension knowledge are on-the-job learning, workshop training, on-site-training, mentoring and cross visits and study tours.

**Knowledge of livestock extension (LEA methods)**

Figure 11 shows the effectiveness of capacity building methods used by the Lao Extension Approach (LEA). The Village Extension System (VES) is a way of structuring villages in a learning process. Training Needs Assessment - Keep It Short and Simple (TNA-KISS) is another tool to help DAFEO extension workers to identify the skills needed by village members. Farmer to farmer Exchange (FFE) is a tool to help members of a production group to share what they have learned with other farmers. Extend Extension
System (EVES) is a tool to help DAFEO extension workers to evaluate and plan new activities in a village meeting.

As would be expected, FFE is rated more effective than the other LEA tools within on-the-job learning, on-site-training and cross visits. FFE also rated more highly than other tools within staff meetings, indicating that staff share their experiences on farmer learning and how to spread impacts to other farmers. Another point is that VES is rated more highly than the other tools in workshop training, while it is similarly rated with other tools in mentoring and using the Internet.

Overall on-the-job learning, workshop training, on-site-training and cross visits and study tours are effective methods for building staff capacity in the LEA methods for livestock extension.

![Knowledge of livestock extension (LEA) methods](image)

**Figure 11** Rating capacity building methods for livestock extension (LEA methods)

**Skills in livestock extension (non field)**

Figure 12 indicates how extension staff best gain skills in planning and managing their livestock extension activities according to six different skills. These include the ability to run workshop training, ability to plan extension activities, ability to present, ability to make the posters, ability to manage budgets and ability to evaluate their own work.
The abilities to run training workshops, plan activities, make presentations, manage budgets and evaluate their own work all rated at a similar level, higher than making posters, within the on-the-job learning method. The ability to manage a budget is rated higher than the other activities within the workshop training method because the program managers emphasise this activity for careful financial management of their projects.

On-the-job learning, on-site-training, workshop training and mentoring emerge as the most effective methods for skills in livestock extension. Cross visits and study tours are also effective. Farmer Field Schools and using the Internet are less effective for livestock extension staff.

**Figure 12**  
Rating capacity building methods for livestock extension (non-field)

**Skills in livestock extension (in the field)**

Figure 13 shows the effectiveness of the eight capacity building methods in building on-ground livestock extension skills including organising cross visits, facilitating farmer groups, ability to communicate with farmers, ability to work at the Kumban (village cluster) level, ability to build teams and ability to develop revolving funds.

Analysis shows that most skills are more similarly rated within on-the-job learning, than the other methods. While the ability to build teams is higher than the other skills within the staff meeting method, it is still lower than
within on-the-job learning, on-site-training, workshop training and mentoring methods. All skills for livestock extension are rated at a similar (low) level using the Internet method.

District livestock extension staff gain particularly in building team work from on-site-training, workshop training, mentoring, staff meetings and Farmer Field School methods. Skills in organising cross visits are particularly gained through attending cross visits and study tours.

**Figure 13** Rating capacity building methods for livestock extension (in the field)

**Summary**

District extension staff rated on-the-job learning, following by on-site-training, workshop training, cross visits and study tours and mentoring as the most effective capacity building methods for all knowledge and skill areas. Staff meetings, Farmer Field Schools and using the Internet were less effective. Most components of knowledge and skills in livestock production and extension are gained through on-the-job learning backed up by training, mentoring and cross visits and study tours.

**Combining capacity building methods**

Most interviewees suggested that all methods are useful to build the capacity of staff, but they are best used in combination. One informant pointed out that all methods mentioned above have advantages and
disadvantages, depending on how and when they are used (PM 2). Another interviewee recommended that

“...it is necessary to use all these methods: combining these methods together can make my project successful.” (PM 3)

One program manager prioritised workshop training as the first step of a project followed by mentoring, monthly meetings and lastly cross visits (PM 3). Another similarly stated that providing workshops is necessary and suitable for introducing the project’s objectives, activities, expectations and outcomes. New concepts and the budget can be introduced to PAFO heads, DAFEO heads, district livestock extension staff and stakeholders to understand, accept and agree at the beginning of projects. Then the project managers need to go to the project sites to describe the project’s objectives and meet face to face with PAFO and DAFEO heads in order to make sure they understand the project (PM 1).

Project managers have found that they need to provide workshop training at the beginning of projects in order to make staff clearly understand the process. For example, they provide training courses on ‘Participatory Research and Extension’. This training course gives staff new ideas about research and extension approaches (PM 2). However, project managers have also learnt that

“... training course cannot make the extension staff gain enough experience. The district livestock extension staff need to practice in the field with target farmers in the villages.” (PM 1)

Most interviewees mentioned that livestock extension staff need to conduct field practice and learn with the target farmers. According to some interviewees, in the first year of implementation of planting forages the trainee who has less experience needs senior extension workers or mentors who have more experience to follow up and give them advice. Mentor teams can continue to follow the trainee in the field where they are working with farmers. A program manager stated that

“....mentoring is necessary in the field practices to give advice to newer extension workers.” (PM 3)
One program managers explained that on-site-training provided in the field gives good examples to staff and farmers. For example they can learn how farmers plant forage, control weeds, and use forage and seed production systems. National staff help district staff and target farmers to find solutions to problems and make future plans. When district extension workers have on site training and field experience, they gain technical and extension knowledge and have more confidence. The farmers also gained knowledge and experience and are able to see the impacts by using forages to feed animals (PM 2).

Program managers also pointed out that providing monthly meetings is necessary because meetings allowed senior extension workers, national staff, provincial staff, and some times experts, to attend. New extension staff can report the progress of their activities. The mentors praise them on activities they have done well and give some suggestions to improve their weak points. New district extension workers share ideas and exchange experience each other. The mentors help them to resolve the technical problems they face (PM 2, PM 3).

Once impacts have occurred in each village, district and provincial staff can organise cross visits for extension workers and interested farmers. The national level staff and mentors have done pre- training at provincial level for training staff in cross visit processes. They can ensure that new staff understand very clearly about the process before, during and after cross visits; how to select visitors, host villages, what activities they would like to see, who will take notes, who will be observers, and who will be facilitators.

Village Learning Activities (VLAs) are useful for the capacity building of both farmers and extension workers by comparing current farmers’ practices with the benefits of using new technology.

“...it evaluates new ideas and shares the results and experiences with other interested farmers in their village.” (PM 2)
One program manager feels that if he follows the capacity building methods with flexibility then he can use all of them.

“The issue... is how and when to use them.” (PM 2)

For instance, training and visits were used at the beginning of his project where staff had a meeting then went to the target village to share their technical solutions with farmers. However, later in the project this was not as effective as the staff were responsible for more villages. This meant that they did not have enough time, so they changed their method to having monthly meetings and mentoring. Therefore, the program manager felt that it really depends on how and when we use the methods more than which methods.

In summary, interviewees emphasised that lessons learnt from practicing in the field plus learning theories in workshops and meetings can build the capacity of district staff. They gained technical knowledge of livestock production, especially feeds and feeding, and extension knowledge and practice for working with farmers. They knew what the main problems were for farmers and what farmers needed.

The following case studies describe three different extension officer experiences with capacity building methods. The first case study describes how a male district extension officer gained experience through training and on-the-job learning. The second case study describes a female extension officer who gained knowledge, skills and ability in livestock production through cross visits, on-the-job learning and workshop training. The third case study describes how a male district extension worker gained knowledge, skills and ability in livestock production through on-the-job learning.
Case study of Mr Viengsouk Lorbriayao from Pek district, Xiengkuang province

Mr. Viengsouk Lorbriayao is one of six district livestock extension staff working in Pek district, Xiengkuang province. After he completed the middle diploma (MD) in Livestock Husbandry at the Northern of Agriculture and Forestry College in LuangPrabang province, he applied to work in the District Agriculture and Forestry Extension Office (DAFEO) in Pek district as a contract staff member.

Viengsouk worked with the Forage and Livestock Systems Project (FLSP) from 2000-2005. The project supplied his salary at the same rate as the government pays to other government district staff. In working with project he gained knowledge from several training workshops provided by FLSP such as how to use participatory approaches to introduce forage and livestock technologies, extension methodologies and livestock marketing.

He developed skills in transferring knowledge to farmer groups through on-the-job learning. For example, he taught farmers how to fatten cattle. He worked with Mr Neng Lao Ly from Xang Village to teach other farmers in Xieng Kuang province. He is able to organise training for farmers, village meetings and cross visits. He has the ability to build teams. For instance, he mentored new young staff in his district. He can make plans and write reports for DAFEO heads and projects.

Viengsouk said that workshop training is useful and very important, followed by on-the-job learning and working closely with farmers. Nowadays he says he is a good mentor and facilitator. He is enthusiastic and has high responsibility within his job.
Case study of Ms Chansouk from Pak Ou District, Luangprabang Province

Ms. Chanhsouk is a district livestock extension officer working in Pak Ou district, LuangPrabang province. Her specialist area is agronomy and she has worked with projects such as FLSP (2000-2005), AIRP (2003-2006), CBSLSP (2006-2008), L4PP and some on-going projects as LDP and L4PP Phase 2.

Before working with the projects she did not have enough experience in transferring technology to farmers especially livestock techniques. She was afraid that she would not be accepted because she is a woman and is also not a livestock specialist. However, her DAFEO head approved her work with those projects. In working with projects she gained knowledge from cross visits and study tours provided by the projects. She had a chance to exchange ideas with other district livestock extension staff and learn from host farmers about planting forages and animal health. For example, she learnt about using stylo for pigs and fattening methods for pigs and cattle with farmers in Hadya and Somsanouk Villages, Pak Ou district, LuangPrabang province.

Chansouk is now able to organise training for farmers, village meetings and cross visits for villagers and staff. She has becomes an experienced mentor and facilitator. She feels that cross visits are the best method to give experience followed by on-the-job learning in the field with farmers and then workshop training.
Case study of Mr Somvanh Phommaly from XiengNguen district, Luangprabang province

Mr. Somvanh Phommaly is one of the district government livestock extension staff working in XiengNguen district, Luangprabang province. After he completed the middle diploma (MD) in Livestock husbandry through Luang Prabang Agriculture and Forestry College, he applied to work in the District of Agriculture and Forestry Extension Office (DAFEO) in XiengNguen district as the government district livestock extension worker.

The DAFEO head allowed Somvanh to work with several projects: the FLSP project (2000-2005), the AIRP project (2003-2006), the CBSLSP project (2006-2008) and the L4PP project from 2007. These projects provided a variety of methods in order to build his capacity including workshop training, working with farmers in the field, cross visits and study tours within Lao provinces and in Vietnam.

He gained knowledge on participatory research and extension, extension methodologies, new technologies for forage development and animal marketing. He developed skills on transferring new technologies to farmers, such as in animal feed and feeding. He has the ability to organise training for other staff, facilitate farmer groups, organise and run cross visits for farmers and VIPs, build team work and to plan and report to DAFEO heads and project managers. He is a good mentor to new trainees or mentees. He has experience with experiential learning on legumes for supplementation of pigs. He can mentor and train NGO project staff within his district. Somvanh said that on-the-job learning, Village Learning Activities, workshop training, cross visits and study tours are the most important for him.
Summary

Project managers, DAFEO heads and deputy heads and district field staff mentioned a total of eleven methods of capacity building used for district livestock extension in upland areas of Laos. Different projects have their own objectives and approaches, so they use their own methods depending on the situation.

The most common capacity building methods of greatest value to district livestock extension staff include workshop training, on-the-job learning, field trips such as cross visits and study tours, staff meetings and mentoring. Less common were formal study, Village Learning Activities, on-site training, using the Internet, documents and Farmer Field Schools. Interviewees agreed that all methods have strengths and weaknesses but it depends on when and how each method is used. The advantages of one method can be used to overcome the disadvantages of another.

Workshop training helps extension staff to gain new theoretical knowledge of livestock and extension methodologies, and helps to increase staff confidence in solving farmer problems. However, they are expensive and quality of delivery depends on having good facilitators and experts. On-the-job learning is highly regarded as a complementary method to workshop training as it enables staff to put theory into practice and create mutual learning between extension staff and farmers. Cross visits and study tours also creates learning in the field, particularly between extension staff as they compare livestock systems to their own districts.

Staff meetings create opportunities to share experience. They create an environment to present the progress, outputs and outcomes of activities, share experiences, get special feedback from the field and together solve problems (administrative and technical on research and extension and other issues) and make plans.

Mentoring is seen as crucial for new district staff including volunteers and contract staff in their first year of project implementation, because new
younger ones are less experienced and need mentors who have more experience to give advice. Village Learning Activities, on-site-training, using the Internet, formal study, documents and Farmer Field Schools are also regarded as important methods for building the capacity of district livestock extension staff, but are less used by my informants.

The most effective methods; workshop training, field trips, meetings and mentoring can however be costly, raising the issue of sustainability when using these methods for government extension.

Hence, a key learning from this research is that a combination of capacity building methods is recommended to spread the cost, optimise learning at strategic development phases and take advantage of the relative strengths and weaknesses of each method.
CHAPTER 5

FACTORS INFLUENCING CAPACITY BUILDING AND HOW TO IMPROVE OUTCOMES

Introduction
This chapter presents the findings from all interviews related to research questions three and four. The first section describes findings on the main factors influencing the effectiveness of capacity building for livestock extension according to interviewees. The second section covers informants’ views on ways to improve capacity building outcomes for district extension staff, farmers and livestock systems. The results give further insight into the utilisation and effectiveness of different capacity building methods for livestock extension staff, but go further in addressing broader approaches and institutional issues. For definition of the capacity building methods mentioned in this chapter, see chapter 2.

The main factors influencing effectiveness of capacity building

The main factors identified by interviewees (N= 46) were:

- Availability of funding
- Value of and dependency on projects funding
- Provincial (PAFO) and District (DAFEO) support and influence
- Opportunities to study
- Family support and commitment
- Influence of farmers and farmer groups
- Having good examples in the field
- Staff ownership and motivation
- Representation of women and ethnic minorities
- Staff relocation

Note that: PM= Project manager; DH= DAFEO Heads; DS= District staff.
Availability of government funding

Despite the slowly increasing number of government extension staff working at the district level, the issue of ongoing lack of budget was raised by most interviewees as a major limiting factor to capacity building. Government funds are inadequate to provide capacity building opportunities for staff, let alone for daily extension activities or salaries for volunteer or contract staff beyond projects. A district head explained:

“...my district is located in city and without any project coming to work with us...we lack opportunities to build the capacity for my staff...we lack funds to support new volunteers and contract staff.” (DH2)

According to another district head,

“...we have only some budget for administration activities. Some contract staff were developed by projects and they waited a long time to enter the government but then they had to work in other places. In my district there is still a lack of staff to work in the livestock section.” (DH 8)

Another district head mentioned that;

“...in my district we need more district extension staff but we lack budget to provide their salary. At present, there remains only one contract staff developed by a project. We are looking for funds to support his salary.... 10 villages worked with the project and since the project has finished we haven’t had budget for district extension staff to follow up those activities. Some farmers continue the good impact (forages) by themselves.” (DH 10)

Project managers also talked about this issue.

“In a previous project, some activities; poultry production, rural pig production and Village Veterinary Worker ran well when the project was running.....after the project finished the district managers lacked funds to follow up, but some groups continued raising poultry and pigs”. (PM 6)
However, some district staff continued to work despite the lack of funds:

“…sometimes I tell my team that if district head don’t have budget for providing our Perdiem…. I need only money to buy fuel for our motorbikes to visit farmer groups, because I am missing them.” (DS18)

One district head spoke about how he allocated funding to support staff:

“I used some budgets from other sources to provide fuel to my district extension staff to follow up some activities… at present we are working at the Kumban development. I asked my staff to divide their time to visit the farmers groups when they ride motorbikes via those villages”. (DH6)

Value of and dependency on projects
Reliance on donor projects for the capacity building of district staff is a result of lack of government funding. According to district head DH 10, in the past some projects such as FLSP, AIRP, Lao-EU phase I and CBSLSP focussed on building the capacity of livestock extension staff. These projects provided workshops, training and cross visits/study tours for DAFEO heads, provincial staff, district staff, traders and target farmers. The district livestock extension staff gained knowledge in participatory research and extension approaches, new technologies in feeds and feeding, animal health and animal marketing.

Although projects have provided important skills, this creates a cycle of dependency amongst managers, as illustrated by the following quote;

“…I would like to invite donors, NGOs and development projects come to join and work in my district in order to upgrade staff’s knowledge, skill and ability.” (DH 3)

Several interviewees found that support from projects helps district staff gain competence in administration management, planning, reporting, and transferring new technologies and extension methodologies. For example;
“I observed that two of my district staff gained experience with projects, they have opportunities more than other staff…compared with before they were waiting for someone to tell them what to do. Now I use two staff, not only to train to volunteers and contract staff but also to help me in admin and planning activities.” (DH 8)

A similar view was expressed with
“…until now we have eight projects that are working in my district. These projects build the capacity of my staff and supply equipment (computers, digital cameras, motorbikes) and budget for field staff.” (DH 5)

One district head further elucidates the value of working with projects:
“…I never control them and I have always thought that the projects’ activities are the same as the government activities too, because they are implemented in my district to improve farmers’ livelihoods. I allow district staff to work with projects. At present my staff become good facilitators…some projects invite them to train their staff and other districts come to exchange with them about planting forages and fattening techniques.” (DH 1)

**Provincial (PAFO) and District (DAFEO) support and influence**
The influence of provincial and district managers on capacity building of extension staff can be profound according to those interviewed. The attitudes and managerial abilities of the district heads can motivate or inhibit staff capacity building and performance:
“…my project provided equipment and new technologies to both government and contract staff and supported funds for contract staff’s salary in some districts… DAFEO heads are responsible to educate or lead their ideology and improve behaviour.” (PM 1)

Each year PAFO and DAFEO provide awards to individual staff who have progressed. Awards are allocated through a process of self-assessment, group evaluation within units or sections and final selection by a steering
committee meeting at DAFEKO. Providing awards to district livestock extension staff is one way to recognise staff who are successful in their jobs. Awards can include attending study tours abroad, providing study scholarships to recipients and being promoted to new positions. Many staff strive to improve their position within the DAFEKO;

“...younger district extension staff want to study at high level, but senior staff want to get new positions or become a head of units or sections and upgrade their knowledge and skills by attending cross visits and study tours... volunteer staff want to become contract staff, the contract staff want to enter the government staff and younger staff want to study at high diploma, BSc and MSc. Senior staff want to get the high rank of position.” (DH2)

Thus, providing awards to staff can stimulate staff to be active in their work and have high responsibility in their jobs. It is an important factor influencing capacity building.

For staff who are not active in their work and/or not successful, some DAFEKO heads give them advice, starting from simple things they can do to improve in a step by step fashion. Some DAFEKO also mentioned that they follow up staff actions in the field:

“...I need to follow up in order to evaluate staffs’ activities in the field and ask farmers who the staff work with...check what activity they have done well and what activities they need to improve and where they need advice from me.” (DH 3)

One district head said that he tries to help staff to resolve their problems, including personal problems or not understanding their responsibilities:

“...I give advice to staff who are not experienced in working with farmers (using new technology). Sometimes in the village meeting I help them resolve problems.” (DH 4)

A district staff member confirmed the importance of support from the district head:
“...at the present time I have ability and confidence to work with farmers 90% in improving animal feed or livestock production, because my DAFEO head supported me by giving advice and feedback and allowed me to attend the training courses.” (DS3)

District extension staff explained that:

“...DAFEO head and deputy head have followed up and given advice when I work in the field. For example, in some villages I cannot explain to farmers to help them understand. I asked my bosses and the district governor to help me.” (DS 8)

If staff do not change their behaviour or do not listen to feedback and advice, DAFEO heads or district steering committees have the power to disqualify them.

“...some district extension staff have knowledge but lack of skills, behaviour and lack of credibility, some people have good behaviour but lack skills....thus we need district staff who have good behaviour, knowledge, skills, ability and are enthusiastic to work.” (DH 9)

At the district level, the number of volunteers and contract staff are increasing, because district heads want staff to work and have responsibility in each Kumban. Some district heads need two or three staff per village. However, the quota for approving people to become government staff is limited (e.g. one or two staff per year), so selection of staff is necessary:

“..I need more district extension staff who have abilities...but each year my district receives a quota from PAFO which is limited to one candidate per year only....in contrast with the number of contract staff in whole district -. irrigation, livestock, forestry, crop, administration units -. plus volunteers, we have more than ten people....it is difficult for us to decide.” (DH 9)

The criteria for selection of district staff depends on the situation of each district. One district head explains that
“...We evaluate volunteer staff to enter contract staff and contract staff enter to the government staff by using individual evaluation and via group discussion. In the next step 35 people or all of the district staff come together to give scores or vote... and the head of DAFEO decides. Then they need to pass PAFO’s exam and are selected by PAFO.” (DH 5)

Another informant explained how he selected staff:

“...the criteria for selecting contract staff to enter the government staff. First of all I choose women and second I consider the staff who come in first and who come in late, how long they work as livestock specialists, and I look at their work, outcomes and enthusiasm.” (DH2)

A district head said that

“...I select district contract staff to enter the government staff I choose people who can transfer new technologies to farmers, communicate in ethnic minorities’ languages with upland farmers. I need people who know ethnic groups’ cultures very well, respect local people and can stay overnight with them. I also evaluate their impacts in the field with farmers...I interview those who district staff work with.” (DH 3)

Some district managers prefer staff who were born inside the district or province in the belief that they have local knowledge and will be more inclined to stay in the region:

“...local people know the communities more than outside people.” (DH 9)

This attitude can cause difficulties. A district staff member stated;

“...I am government staff. My home town was in Vientiane Capital, my qualification is Bachelor degree from Nabong. I work here for nine years already... I want to be a deputy head or head .... here, but it is impossible because I am not a local person... district staff
who come from outside the province are often overlooked for permanent positions or for promotion to more senior jobs.” (DS 10)

However, some DAFEO heads supported selection of non-local people:

“….it is good if we have staff from outside come to work here… I am a head of DAFEO here and I am not local.” (DH 4)

Many projects have built the competence of contract staff to provincial and district government staff level. Once projects finish, people look for new jobs and some want to work with government. This is not easy:

“…I work here for six years already but I am still a contract staff…. I want to be a government staff.” (DS 6)

Most project managers worry that DAFEO heads will not continue to use extension staff that have been developed by the project managers. They also worry that DAFEO heads will not support the good extension methods and the impacts that have already been developed:

“….some contract staff who were developed by us from 2000 until now they have not entered the government yet. I think PAFO and DAFEO should consider people who have experience to save time and work, better than starting to train new staff.” (PM 2)

District heads often select staff born inside the district or province in the belief that they have local knowledge and will be more inclined to stay in the region. District staff who come from outside the province, are often overlooked for permanent positions or promotion to more senior jobs. The attitudes and managerial abilities of the district heads can motivate or inhibit staff capacity building and performance.

**Opportunities to study**

Providing opportunities to district staff to study is another way to reward staff who are active and have outcomes from their work and also increases their knowledge and skills. In some provinces PAFO and DAFEO select
students who have completed high school to go and study at Nabong and the other Agriculture Colleges. When those people have finished they return home and apply to get jobs with DAFEO in their provinces. DAFEO heads also select district staff who have lower diploma (LD) and middle diploma (MD) to study at Agriculture Colleges and then return to their place of work. They may also select volunteers who have been very active and like to work in livestock extension to study.

“…along with providing intensive training to staff within the district I also allowed some staff to study part time within the province; long term study in Vientiane by distance-learning modules and full time study. Some of them used their own funds.” (DH 1)

One district head explained that the Lao government often gives opportunities for staff to upgrade their knowledge and skills by attending training courses and studying for higher qualifications such as Bachelor of Science or Master of Science. The government needs staff who have higher degrees, as well as adequate knowledge and skills to work in each position:

“…my education and English proficiency is lower than other DAFEO Heads, so I need to upgrade my degree… I have applied to study for a Master of Science degree in Thailand… in order to be able to cooperate with donors and foreign experts.” (DH 10)

Only a few district staff get scholarships because attaining a scholarship depends on their age, English proficiency level, family commitments and the organisation’s selection process (DH2). Also, only a few scholarships are provided by donors. Some projects have no funds for capacity building components and DAFEO heads sometimes do not have funds, so they wait for government and foreign scholarships.

“…. in my district we received some funds from the government but I used these funds for administration activities, so I did not have enough funds to provide training or support staff who study at Uni.” (DH 9)

However, district heads do provide support in other ways:
“.... my staff study part time at Souphanuvong University, Luangprabang. I allow them to use a work motorbike and give some extra money for fuel.” (DH 6)

Project managers also supported staff to go and study:

“...as for building the capacity of national, provincial and district extension staff my project provided some intensive training for staff and selected some staff who have opportunities for long term study at University in Thailand.” (PM 7)

One program manager organised a study tour for DAFEO Heads, provincial coordinators and field staff to Vietnam in order to upgrade their technical, extension and administration management knowledge:

“...providing study tour for three levels helped my project work best and gain more impacts, because it helped field staff to stimulate more farmers to be involved.” (PM 3)

**Family support and commitments**

The family economy can contribute to building the capacity of family members. The level of family support and outside work commitments can influence staff opportunities for capacity building, and the effectiveness of their work. This study found that some district staff can work hard because their family supports them towards success in their jobs. However, extension staff have limited income and often have to be involved in other income generating activities within the family (eg farming, fishing, and small businesses):

“...one livestock officer, the government approved him to enter as government staff and then he left ... for his business, because of family commitments. Thus we lost one quota for extension staff.” (DH 1)

These commitments and the demands of family members can limit opportunities to improve their capacity as extension officers. Some staff cannot study or stay overnight in remote areas because they have many
responsible in the office and at home, such as looking after children and relatives when they get sick:

“....I can work in remote areas and I can go early morning and come back home evening. I cannot stay overnight there because I have family (baby) and nobody to look after the baby.” (DS 16)

However, some staff are able to study for high diploma degrees in their provinces or at Universities in Laos using family funds. Some are selected to study part time in their province. DAFEO heads support them by approving the use of office motorbikes and petrol. These staff have high determination to study because their families support them.

“...I used my own funds to study part time at Souphanuvong University for 5 years.” (DS 20)

A district government staff member told how this year he applied to study for a High Diploma Degree;

“....before I thought that my qualification as Middle Diploma is enough for me, actually it is not enough, so I need to upgrade my knowledge by distance study at Dongkhamxang Agriculture College with my funding.” (DS 3)

While many may wish to study, funding the study is critical:

“...this year I study part time in Xiengkhuang with my family budget, and my plan is to study Bachelor degree at Nabong campus on livestock husbandry. If a scholarship is not available I will use my own funds.” (DS 7)

“...I have planned to study Bachelor Degree but first of all, I need to save money for the study fee.” (DS 4)

“…I wish to study a Bachelor Degree at Souphanuvong University, but my situation is not suitable, because I haven’t got money.” (DS 13)
Influence of farmers and farmer groups
The influence of farmers can have a strong bearing on the skill development of livestock extension staff. Some interviewees said that working closely with farmers using participatory approaches creates a learning process between district extension staff and farmers. District staff introduced new technology options to farmers and farmers make decisions to choose techniques which are suitable for their situations.

Some interviewees mentioned that sharing knowledge with local farmers can improve their knowledge and skills very quickly, make them more confident and improve their relationships with farmers. A district staff member told the following story of how they learnt from farmers:

“For planting stylo, I introduced farmers how to plant in rows about two centimetres deep. The farmer made plots and sowed seeds and then watered them. For the cut and carry process I told them as I have learnt to cut; 15-20cm high from the ground, but the farmers cut 10 cm high from ground. They said that stylo grows well with higher yields than district staff suggested.” (DS 19)

“For using stylo with animals, staff told the farmers to slice and mix it with local feed...Some people dried stylo then mixed it with local feed...they sliced the young leaves in small pieces mixed with mulberry leave and other sources of local feed to pigs. For animal health...I told them to vaccinate one or two times per year. The farmers asked me if they could use vaccinate quarterly or each five months.... I discussed this with mentors in the office and they said that OK! For de-worming parasites, I told farmers that you should mix the medicines with water and then give to animals... the farmers put the medicines inside cooked sticky rice and then gave to the animals... they said ‘we do not need to catch pigs’. So learning on-the-job and learning from farmers feedback increases my experience and I have more confidence.” (DS19).
Other district staff stated that:

“...70% of what I learnt about how to use traditional medicines for treatment animals is from farmers.” (DS 20)

“...I learnt extension knowledge from farmers about 85-90%” (DS 9)

District staff described how they start off learning from individual farmers to gain confidence, and then slowly start working with farmer groups as livestock improvements begin to emerge (so they have something to show the group). They often start working with farmers who have land and livestock already, some kinds of local feed, and understanding of what the projects is offering them. For example

“...I focused on working with individuals and used the impacts from individuals to group and from group to whole village - chicken groups, fattening cattle groups, pigs raising groups and animal marketing groups.” (DS 3)

Staff working with the Legumes for Pigs Project explained that they are grateful to see farmers’ impacts and the numbers of farmers involved increasing every day. For example, some projects had finished but farmers are still expanding forage areas, fattening cattle and expanding their activities. An interviewee explained:

“I help farmers in developing group pig production - about 16 households... farmers in Hadya village want to visit the commercial animal feed factory in Vientiane and visit Nongtheng Pig Breeding Centre... they want to order new pig breeds and commercial animal feed directly from the station... they do not want to order via the middle man.” (DS 13)

A government program manager felt that providing training on extension approaches to district staff and farmers groups provided benefits to both staff and farmer groups. He illustrated the benefits of farmer groups:

“Farmer groups raising chickens made profits of 1.2 million kips per cycle. They made profits from rice production about 3 million
kips/ha. If we compared to investment for training the project spent 30 US$ per farmer. The benefit for society is that the farmers know how to manage groups. Farmer to farmer relationships are getting better. The learning process is also occurring within the family from dad to mum and children.” (PM 12)

Another government program manager explained that the “...project had finished but some activities or impacts have been continuing in the communities, because those activities help them get more income and improve their livelihoods. For example, groups raising pigs and chickens.” (PM 6)

On the other hand, informants pointed out a tendency amongst farmers to expect things for free: “...it is difficult to stimulate farmers involved with vaccination. They need DAFEO to subsidise everything.” (DH 7)

“...in addition the farmers have received subsidy free from some projects. For example, they might provide vaccination free to farmers. However, my project I have only advice or demonstration plots to show them...one day I said that please come tomorrow I will give you some seeds, then the farmers came to meet with me.” (DS 8)

**Having good examples in the field**

Having good examples for staff and farmers to learn in the field is necessary and important according to those interviewed. District livestock extension staff can use demonstration plots and simple trials to stimulate interested farmers and learn themselves. For example, the L4PP uses simple trials on supplementation of legumes for pigs in two provinces; Luangprabang and Xiengkhuang.

“... I am working with L4PP in using simple trials with farmers. I know what farmers need and what problems they face and get feedback from interested farmers. The benefits for staff are
knowledge in the formulation of feed using stylo as a protein source to mix with local feed.” (DS 20)

Thus, having a good example in the field is one factor influencing capacity building for district staff because they can exchange experiences with each other in the field. Several interviewees found that hands-on activities in the field are a learning-by-doing process. An interviewee explained that

“...I applied theory to a real situation,... sharing ideas with the team and farmers on forage planting and using them for animals... learning process between staff and farmers. The farmers believed us, because they saw real impacts.” (DS 18)

However, sometimes there are not good examples in the field because the extension process has not worked. Some district extension staff know theory but lack experience and extension skills. Farmers have many activities to do (e.g. cropping) and may not have time to create good examples. Some farmers received elements free from other projects, so they think that all project will support them free too.

“...the project supported the technical aspect only, no funds to support farmers...if we are without funds to support them....the farmers are less involved with us. Also staff did not go to the village on time, farmers did not wait... farmers have less respect for staff.” (DS 19)

Some interviewees found that introducing new technologies about animal feed to farmer groups who had problems and wanted to resolve those problems went well. However, they also found that when introducing to farmers who did not understand the new technologies, they wanted to see impact from other farmers first, before making decisions. It took time to stimulate them to become involved with the project. For example;

“...some farmers did not accept new technologies. For example, some ethnic groups have limited sources of feed and feed shortages for pigs... changing methods from raising pigs the traditional method - free-range- to keeping them in pens some farmers can not do.” (DS 15)
Changing traditional livestock systems by introducing new technology to farmers is not easy. Different farmers have different problems. Some farmers have a good situation but they need information from district extension staff to improve their farming system. Other farmers may have poor conditions (e.g. feed sources and labour), or do not understand the processes of changing from traditional methods to new systems. According to one district staff member:

“Some activities the farmers cannot do. For example, raising pigs in pens... farmers have always put their pigs in free range....on the other hand, we want them to raise or keep in pens. It is difficult to make them understand... we need more time to do this... in some parts the farmers have not enough kinds of feed - it is difficult for them to make formulas with us. They do not know how to count the percent of protein of feed resources.” (DS 1)

Another district staff member pointed out the importance of decisions made in the extension process:

“...some staff selected the wrong farmers to attend the project... selecting sites that were not suitable... the number of farmers involved with the project changed at each stage: in the beginning we had a lot....during the implementation it was less and after planting the farmers did not use the forages, although they are still had animals.” (DS 17)

At present not only forage technology but many new activities are introduced to farmers in upland areas. Some activities cannot integrate with forage activities and they create conflicts that affect farmers raising livestock. As a result some farmers who raise livestock have moved their livestock out of the village and they are now too far away. Some farmers have changed to try other activities. For example;

“...model farmers who were involved with us, they had many good impacts but after they heard other people in their village saying that planting rubber trees will get good income, they changed their mind... I think that planting rubber trees at this time affects model farmers who planted forages... and another thing; the DAFE
head’s policy is also a barrier to livestock production. For example, at the present time in Houayhia village there are not any cattle and goats. Farmers sold their cattle and goats because they suffered from policy or regulation by the DAFEO head.” (DS 20)

**Staff ownership and motivation**

Most district livestock extension staff such as volunteer, contract and government staff have high ownership and motivation to work closely with farmers at different sites. These staff want to benefit farmers and they work for society’s benefit more than their own. Sometimes they face problems such as long walks to villages (four to five hours) and staying overnight in remote areas.

“... I am working hard with farmers. I have high responsibility in my job... it makes me satisfied when I see farmers get benefits.” (DS 12)

Other interviewees illustrated their motivation thus;

“...the villages that I am responsible for are far from my office. I need to walk for three or four hours to get there and stay overnight with villagers... for introduction of new technologies.” (DS 20)

“I especially pay attention to my work and work hard... I have a good chance to practice and learn with my team and farmers... I have high determination to do my work in order to improve animal feed and feeding: planting forage, using animals, fattening cattle and pigs, de-worming parasites and vaccination, animal management, housing, watering to farmers.” (DS 5)

A similar view was expressed by district government staff:

“I wish to become a good extension worker in order to transfer new technologies to farmers and I want to help other extension workers to have the ability to work with farmers.” (DS 7)

Another district government staff member added
“...sometimes I use my own money to buy fuel to go to visit farmers. For me I like working with farmers more than working in the office, because I am very happy when I see activities with farmers, especially when they get impacts.” (DS 20)

**Representation of women and ethnic minorities**

This study found that each district only had a few women doing extension. They work alongside male extension staff to help farmers in improving livestock production, especially feeding and animal health. Female extension staff work well with women farmer groups, especially if they are of the same ethnic group. They can introduce new technologies to female farmers who are responsible for raising small animals such as pigs and poultry. Interviewees said that in most districts they have women working in extension. However, there are not enough women, particularly from ethnic minorities, to work for the livestock section in the district office, with the Kumban developments or at Technical Service Centres. As one interviewee explained,

“...I need more women from different ethnic groups to do livestock extension, however it is difficult to find them because younger women of each ethnic group find it hard to finish or complete high school and Agriculture College.” (DH 4)

A similar view was expressed:

“..I need women and ethnic minorities to do extension. In my district we have nine Kumban developments, so I need to support livestock extension for each Kumban. However, the quota for approval to enter government staff is limited.” (DH 5)

Using female district livestock extension staff to work closely with women of ethnic minorities is more appropriate, especially with small animal groups such as those raising pigs and chickens. In upland areas women do most of the labour in raising small animals.

“Usually Hmong woman like to grow vegetables garden and raise small animals. If we use Lao Loun men and women extension staff
to work with them... they will not understand because communication has problems... one thing is that men and woman are different if we talk about traditional culture... If the extension workers are men and the farmers are women, when we go to the field to demonstrate it is not suitable because we afraid that their husbands may get angry or misunderstand... Male extension staff and women farmers are difficult to make friends... So the same gender works best.” (DS 1)

There is a general lack of extension workers from different ethnic minorities, especially in the northern part of Laos. Most researchers and extension staff are Lao Loum so they cannot speak the same language. One program manager described the difficulties in communicating with Akha and Muser ethnic groups because they needed to translate from Akha and Muser language into Lao and from Lao language into English for foreigners. In general, this interviewee had seen only district extension workers from Hmong and Khamu minorities.

“...working with local people it is very difficult to communicate with them because district extension staff are not from those ethnic group minorities, so building the capacity of district extension staff from those ethnic groups is needed.” (PM 8)

The poorest districts have mainly ethnic minorities. According to one district head, if district livestock extension staff come from different ethnic groups than farmers it is very difficult to help farmers resolve problems in remote areas (DH1). For example;

“It is difficult to work with Hmong farmers, I am a woman and Lao Loum so I cannot communicate with them. One thing is my activities are not interesting for them so sometimes I go to the villages but don’t see anybody in those villages.” (DS 8)

“...I found that working with ethnic minorities especially woman is difficult to make them understand me, I am also woman but Lao Loum.” (DS 18)
“It is not easy to work or transfer new technologies to farmers in remote areas, especially with ethnic minorities. If we are without local people of the same ethnic minorities, the outside district staff do not know them well. The local situation and needs are also difficult to communicate about with farmers... They want to see impacts first before they make the decision to get involved with us.”
(DS 7)

Staff relocation
Staff relocating regularly is another issue mentioned by interviewees that influences capacity building. One of the reasons for relocation is that some staff move to study, or to seek a higher position after study:

“...some government staff, after they graduated from Nabong campus, they moved to apply for a new job with NGOs in other provinces, so I am faced with the problem of staff shortage.” (DH 4)

Secondly, reorganisation and changing positions means either staff work in new places, or they work at the same office but have different responsibilities. According to one program manager,

“...some provincial and district staff who work with this project gained knowledge and skills in livestock production and extension methodology. Then they were promoted to a new position and they were responsible for new activities, so they did not have enough time to work with this project. Therefore I need to build up the new one in order to work instead of them.” (PM 6)

Another perspective on this is shown by a district head:

“...two district staff moved from the livestock and fisheries unit to work at the administration unit after reorganisation, because they have experience from working with projects for five years, so I want them to help me in the office.” (DH 8)

The third reason is that contract staff cannot enter the government after the project finishes, so they need to move to look for new jobs. Some contract
staff want to work in the city only; they do not want to work in remote areas.

“...it is difficult to control the staff and be sustainable...because it depends on many factors such as personal objectives, motivation, situation and environment.” (PM 7)

“...some staff who came from other provinces worked with us for three years. After they joined the government staff they still worked with us...then we provided scholarship to study at Nabong. After they finished they did not return to work with us (DH 9)

“...one local staff worked in my district for five years. After they joined the government staff they worked with us for two years then they left the DAFEO....doing their own business.” (DH 1)

**How to improve capacity building outcomes**

The main ways to improve capacity building outcomes identified by interviewees were; 

- Improving the role of DAFEO heads in building staff capacity,
- Building teamwork using mentoring,
- Providing opportunities for study,
- Working with NGOs to further build capacity for livestock extension,
- Building the capacity for staff to become permanent, and
- Giving equal opportunity to staff.

**Role of DAFEO Heads in building staff capacity**

Many interviewees said that heads of DAFEO should have their own ideas about what levels of staff they need and how to select responsible staff (eg younger, senior, women, and ethnic group minority). District extension staff should be a balance of male and female staff and from different ethnic groups, especially, Hmong, Khamu, Akha and Muser ethnic groups.

“We have already built Hmong and Khamu ethnic district extension workers, so building district livestock extension staff for Akha and Muser ethnic groups is also necessary because they are better facilitators than outside extension staff - they know the community
and it’s members, speak the local language and know the areas well.” (PM 8)

Some interviewees stated that PAFO and DAFEO heads should build district extension staff capacity in four areas; technical skills, project management, administration management staff and leadership. For example:

“In developing our socio-economic capacity we need to build the capacity of staff in four areas because each area is very important. We need to select or look for students from Nabong campus and other agriculture colleges who like extension and want to be good extension workers, rather than the other people. If they like they can do everything (e.g. listening to give advice, active and keen to work and able to stay overnight in remote areas)… train them with 30% theory and 70% practice in the field. The personal development of district staff should be an on-going process. After training them DAFEO heads should consider how to use them; where, when and for what? And they need to evaluate them and give rewards.” (PM 7)

According to one interviewee, DAFEO heads need to build younger staff to become trainers, and then build the trainers to become facilitators and build the facilitators to become leaders.

“…the process of building the capacity for staff should be followed step-by step.” (PM 8)

Several interviewees found the best strategy to improve the capacity building of district extension staff is to support staff to attend intensive training, and cross visits and allow them to work at the Kumban development level:

“…the policy for younger staff (volunteer and contract staff): if we provide training, mixed teamwork with senior staff, and have them work in the field, especially at the Kumban and other Technical Service Centres.” (DH 8)

“…my role is to develop district extension staff to support the Technical Service Centres and Kumban development.” (DH 3)
Another interviewee asserted that;

“My role is in directing overall functioning, especially politics, administration management and technical activities of DAFEO and to assist PAFO…. (I) give advice and support staff to attend training and long term study, send them to work at the Kumban development for learning with local people, other staff and different specialists, follow up all activities, provide awards to staff who are successful in their jobs….build district staff to be a member of the party and all organisations and support their position with appropriate specialists.”  (DH 4)

Nowadays each district has volunteers who have just completed livestock husbandry from agriculture colleges and Nabong campus. They return home and want to work in their district to gain experience in extension and become government staff. Using volunteers can contribute to resolving the problem of lack of budget, build the capacity of staff and assist in choosing the right person to do extension. According to one district head, at present in his district there are volunteers who are local people that have just completed Bachelor degree, High diploma and Middle diploma in livestock production.

“...I sent the volunteer staff to join with the team to work at the Kumban in order to help farmers... we need to build local people as village extension workers to assist the district extension staff, especially village veterinary workers.”  (DH 9)

Another district head explained that, DAFEO heads are now focussing on Kumban development. District extension workers are working closely with villagers in order to help them develop village plans, collect data, and provide technical support and information to farmers:

“...we send district staff to work at the Kumban development for 15 days per month in order to support livestock production, crop production and commercial products and for 15 days per month they work at the office.”  (DH 8)
Building teamwork and using mentoring

At the district level, there are volunteer, contract and government staff working together in order to help farmers to improve their livelihood, and protect the environment. Interviewees pointed out that experienced and younger (less experienced) extension staff have relative strengths and weaknesses. For example, a program manager argued that younger district livestock extension staff have more energy and are more active in their work. They have the ability to quickly learn new things from senior staff, experts and other stakeholders. They have high enthusiasm, higher than senior staff. They can go to work and stay overnight in remote areas because they are single.

“...giving opportunity for younger district extension workers who have more energy and are active to work at the remote areas, they can learn from farmers about traditional knowledge and local culture. They can also help farmers to develop new technologies.” (PM 8)

Although many of the younger district extension workers have completed a higher educational level such as BSc, they have limited practice in livestock extension activities at the field level. Some interviewees pointed out that younger ones with education know the technical knowledge only, but they lack extension skills. They have not enough experience to work with local people.

“...I believe that my staff understand the technical knowledge very well, but they lack extension knowledge and skills. They still have weaknesses in technical aspects of working with farmers.” (DH 10)

Several district heads made reference to what they see as the ideal qualities of extension staff:

“...extension staff need to know and understand very clearly about the government’s policies, as well as technical and extension knowledge.” (DH8)
“...district extension staff not only need to have technical and extension knowledge and skills but also need to be a party member and member of the youth union and the women’s union.” (DH 3)

Strengthening district livestock extension can empower the whole district. District extension staff who are developed by projects gain technical knowledge and experience and become good mentors in their districts to help others to achieve goals:

“...at present my district has some government staff who worked and were developed by projects. Those staff have more experience in livestock production and animal marketing, so I use them to facilitate and mentor the new volunteers and contract staff.” (DH 8)

Therefore, according to district heads and district staff, work teams need to consist of both senior and younger staff because both have advantages and disadvantages. Combining both groups can overcome the challenges they face. Senior and younger staff can share ideas and exchange experiences. For example, senior staff have more experience in working with village authorities and villagers in such areas as vaccination, facilitation, communication and relationship building. However, some are qualified at middle diploma level only, in contrast with younger staff. Therefore, senior staff can instruct younger ones in methodologies and practice, and younger ones who have just finished university can tell senior staff about new approaches, new information and new technology:

“...teams of extension workers need to mix younger and senior workers in one team in order to share their knowledge and experience with each other.” (PM 7)

“...if you mix senior and younger district in one team they can address the problems they face.” (PM 4, PM 5)

“...in general, development teams mix seniors and younger district extension in one team. They are able to address the limitation points because each person has difficult personality, so they can learn from each other.” (PM 11)
Mixed experience teams can also alleviate problems of conflict and competition:

“...if young district livestock extension officers are in one team, it is not suitable because they get angry very quickly and have conflict with each other. For example, I observed that three younger staff come from the same district they attended the meeting, they have some conflicts with each other...” (PM 7)

Some interviewees see that the strength of senior staff is that they have experience working with farmers. They have the ability to transfer technical and extension knowledge to newer district extension staff and farmers and they also can communicate with farmers, especially ethnic groups and women, better than younger staff. They are able to build good relationships with farmers and stakeholders. However one interviewee raised the issue of problematic attitudes of senior staff:

“...some senior staff worked with my project I observed that they liked to control the younger ones. The younger ones did not have a chance to give their ideas in the meeting.” (PM 3)

Program managers had further comments on the ideal makeup of teams. One program manager (PM 2) thought that DAFEO heads and project managers need to increase the number of extension staff so that there are at least two people per team. If some one moves out a replacement needs to be found. Another program manager explained that;

“...each team work should consist of men and women extension staff together, because women staff can work with women groups - for example raising pigs and poultry. Men are responsible for cattle and buffaloes.” (PM 5)

Another (PM 10) felt that there were too few livestock specialists working with each district within his project sites.

Interviewees felt that mentors are a key factor in the sustainability of capacity building at the district level. They help new younger staff (volunteer and contract staff) to work with farmer groups:
“...mentors or seniors can assist DAFEO heads to build the capacity of new generation.” (PM 3)

“For me, mentoring is better than other methods to build the capacity of district extension staff, because mentors have experience and they give true advice, linked with real situations, so I can resolve problems quickly. If this project stopped supporting my district I could continue to expand the impacts of forage development because I know how to do participatory diagnosis - general PD and specific PD.... I have the confidence to stimulate farmers to get involved or join with us... I can introduce farmers to planting and using forages... I know the technical aspects of working with farmers, communication and relationship building... I can build teamwork, plan and write reports to my boss (DS 10).”

One limitation to mentoring can lie with the mentor’s qualification. One government program manager mentioned that;

“...national staff or mentors should have a high degree (PhD or Masters) to advise provincial and district staff, because provincial and district staff already have Bachelor, high diploma and middle diplomas. If the mentor’s qualification is lower than the provincial and district staff I think that nobody will listen to them.” (PM 9)

Providing opportunities for study
Upgrading the knowledge, skills and abilities of district extension staff can also be achieved through providing opportunities for attending training, workshops, cross visits and study tours and undertaking long term study:

“...provincial and district staff have technical knowledge but they lack extension knowledge, so supporting training on extension knowledge - technical, how to work with farmers, communication skills - is needed. Projects need to consider the factors to support them. For example, give opportunities to attend cross visits abroad, training, providing budgets for their field activities, for example allowance, motorbikes and fuel...” (PM 9)
Providing opportunities for study is like a reward to district staff who have been successful in their job. Government program manager PM 3 mentioned that the DAFEO head and project managers need to consider that some extension staff want to upgrade their knowledge and skills. Some staff have already been educated at middle diploma (Md), high diploma (Hd), Bachelor of Science (Bsc) and Master of Science (Msc) levels. Of course, some of them want to upgrade from Md to Hd or Bsc. Some of them cannot study at University level but they want to attend a study tour in Laos and abroad.

Most district livestock extension staff want to upgrade their knowledge, skills and attitudes. They want to attain a high position and have responsible, important activities. Providing scholarships to staff to study at BSc and MSc level is are one way to build the capacity for district staff according to DH 9. To do this, searching for scholarships from the government, projects and donors is necessary:

“...most of my staff have Middle diploma. Some of them would like to upgrade their knowledge on livestock husbandry at Nabong or the Technical College in Vientiane province. I always ask PAFO and projects if they can support my staff, but some projects have no budget for long term study... Some staff use their own funds. Now that Dongkhamxang College provides distance-learning it is so easy for staff to join with this program - they do not have to leave their family and their work.” (DH 9)

Some projects do encourage study. One program manager explained that:

“...my project has budgeted for a capacity building component of national, provincial and district staff who work within project... I want to send them to study in Australia, but it is difficult for me to find staff who have the English proficiency level.... so I have decided to choose a University in Thailand.” (PM 7)

Funding, however, is a limitation on what can be offered. Government program managers said that:
“...my project is small and has no funds for sending staff to study abroad...but we do have some budget for providing training workshops and cross visits - within the country only.” (PM 2)

“...no budget to provide for long term study for staff, but we have some funds for intensive training and study tours to neighbouring countries.” (PM 12)

**Working with NGOs to further build capacity for livestock extension**

Improving capacity building outcomes is the responsibility of all government levels, as emphasised by one interviewee;

“...the government needs to cooperate with stakeholders; development organisations, donors and NGOs, to increase capacity building outcomes... from my experience I believe that this approach works best, rather than working individually.” (PM 2)

Most DAFEO heads stated that good collaboration and working with NGO projects is the best way to help DAFEO in building capacity for district extension staff. Most NGO projects conducted in upland areas have livestock production and capacity building components. DAFEO heads can co-operate with these projects and use their funds to support district staff.

Giving opportunities to government district extension workers to cooperate with non-government extension staff and stakeholders who work in the same district forms good relationships and they are able to share ideas and exchange experience with each other. As one district extension staff recalled;

“...my boss allowed me to work closely with the World Vision project’s staff in my district. I had a good chance to exchange experience with them.” (DS 20)

The main purpose in forming partnerships is to scale out new technologies or impacts to interested farmers in those areas. There are advantages to Government projects cooperating within partnerships with NGOs. For example;
“Our project has technical and extension approaches as well as facilitators or good mentors, but NGOs have money and staff - government and contract.” (PM 2)

One government program manager explained that NGO and government extension staff at the district level shared ideas and cooperated with each other. They worked in pairs, for example a government district staff (mentor) working with an NGO extension staff member in Pek district, Xiengkhuang province (PM2).

This program manager also explained the government approach to working with NGO projects. Initially, NGO’s would be shown the project’s approaches and impacts at a workshop or seminar. Then they would be contacted by e-mail, or telephone and a meeting organised to help them to understand and accept their approaches:

“...the way to make them decide to use our approach is not easy, because each NGO project has their own approach and strategies already. Some NGO projects are afraid that we will destroy their approaches.” (PM 2)

Another interviewee mentioned that his project cooperated with NGOs by organising workshops in Luangprabang and Savannakhet provinces to exchange ideas and share new technologies with stakeholders.

“...each year NGOs and development organisations ordered forage seeds with us to provide to their target farmers and they took their staff to visit our sites. This is a learning process with stakeholders” (PM1)

According to an NGO program manager, networking with other NGOs is another way to build the capacity of district extension workers. This approach can help district extension staff gain knowledge and skills on forage development. (PM 13)
Assisting staff to become permanent government employees

Building the capacity for staff to become permanent was a major issue for DAFEO heads and project managers. Some stated that their district hadn’t enough staff to work in extension for each unit or section within DAFEO. DAFEO heads found that staff moved away for a variety of reasons; some to work in other places, some to study, some to work with NGOs or in their own business. Some simply moved back to the capital, Vientiane. Thus, the districts have insufficient staff to work in the offices and with farmers.

In addition to having insufficient staff, the quality of staff is also an issue:

“...I think at the present time lots of volunteers and some contract staff plus the government staff are working with this district, but I still need more to support each Kumban development and other Technical Service Centres.” (DH 5)

“...I need quality and quantity of extension staff...I need at least two or three person per village...but I need staff who have both technical and extension knowledge.” (DH 4)

Some districts are increasing the number of volunteers who have completed agriculture colleges and University and are willing to work for little pay. The main problem of each district at the moment is the lack of funds to provide salary to volunteer and contract staff. However some districts have been able to use funds to continue supporting contract staff. For example, one interviewee explained that;

“...I used budget from another component to support my staff who were developed by FLSP and also allowed them to use motorbikes and petrol in order to continue activities in the field.” (DH 10)

The volunteer and contract staff need to pass a period of testing in the field for several years. The details for individuals depend on personal, group and committee assessment and feedback from village authorities and farmers where those people work. People living within provinces are considered first because they know communities better than outside people. People from outside provinces who marry local people and want to work in the
province also have the right to apply for local jobs, but they also need to pass the period of testing system:

“...my home town was in Vientiane. After I graduated my Middle Diploma on livestock husbandry from Luangprabang, I applied for a job here (in Xiengkhuang) ... I got married here and I want to work in Xiengkhuang province ... I need to pass the period of testing - show knowledge, skill, behaviour and enthusiasm to do my job - before entering to the government staff ... I work hard and I have progressed in helping farmers improving livestock production ... Now I am a government staff and I am a head of the Technical Service Centre.” (DS 3)

Program managers stressed the need for cooperation in building staff capacity:

“...district heads should make agreements between project managers about contract staff who were built by projects. After the projects have finished the DAFEO heads need to consider and accept the contract staff to enter the government staff, because the projects managers have already spent lots money and time to build these staff rather than considering other people.” (PM 4)

“...I need district staff to work with this project until it finished, so I have made a regulation with the head of DAFEO that district staff who are working with this project will not change until this project has finished, because I want to build the capacity of district staff for the DAFEO head in order to work in their district.” (PM 8)

As another interviewee pointed out, making good use of project provided capacity building is important:

“...building the capacity of local district extension staff is necessary... district livestock extension staff, both government and contract staff, have been developed by this project. Most of the staff are local people, so they can use their knowledge and experience to train and mentor new district extension staff... some of them become good mentors... when the projects have finished they can continue to
expand the good impacts because they already know the process of extension.” (PM 1)

**Giving equal opportunity to all staff**

Giving equal opportunity to district staff improves capacity building as it stimulates staff to have high motivation in their job. In addition, district staff are able to consolidate and avoid conflict between districts. According to one district head,

“…giving a green light to district staff to do their job can make the activities in district work best, because district staff have independence to think and have high responsibility, rather than controlling them.” (DH 1)

DAFEO heads need to be a fair and not favour certain district staff. For example, in providing scholarships to staff, both local people and outsider people, senior and younger staff, women and ethnic group minorities should be considered. One interviewee said that:

“…DAFEO heads should be careful in reorganisation inside the district and provide support equitably to staff.” (DH 4)

According to some interviewees, showing injustice to staff is a big barrier for capacity building so DAFEO heads need to provide equal opportunities. For instance, several interviewees found that:

“…some bosses look-over me… I have applied for scholarship to study at Bachelor degree in Nabong campus but my boss said that this year no scholarship… then I have heard that they gave scholarship to their children who were not government staff. I think to stop and leave my work, but it is difficult for me to decide, because I am still missing the farmers who I work with.” (DS 7)

Other district staff said that:

“…I am a government staff. I work hard and have been very active to work with farmers for many years but I was not selected for a study tour.” (DS 20)
“... I work here from 2003 until now and I have got married here too...but I am still a contract staff. I think that my boss is not fair.” (DS 6)

One district head pointed out that;

“...in some cases we did not give equal opportunity to extension staff. For example some staff passed the exam but they did not consider entering the government staff, because we need to especially consider women for extension more than men.” (DH 4)

Summary
This chapter has described interviewees’ views on the factors influencing the effectiveness of capacity building in achieving positive outcomes for extension staff and farmers.

Capacity building of livestock extension staff relies to a large extent on donors and project funding as the government has limited funding. Greater recognition and support for provincial (PAFO) and district heads (DAFEO) to enable district livestock extension staff to build teamwork are needed. Providing awards and opportunities to study for district livestock extension staff are ways to recognise staff achievements. Awards can include attending study tours abroad, providing study scholarships to recipients and being promoted to new positions. For example, younger district extension staff want to study at high level (e.g. High Diploma, Bachelor, Masters and PhD Degree), but senior extension staff want to get new positions, become heads of units or sections and upgrade their knowledge and skills by attending cross visits and study tours.

The family economy can contribute to building the capacity of family members. Some district livestock extension staff are able to work hard because their family supports them. Some district staff use their own funds to study.
Farmers can have a strong influence on the skill development of livestock extension staff. Sharing knowledge with local farmers can improve district extension staff’s knowledge and skills very quickly, making them more confident and improving their relationships with the farmers.

Having good examples for staff and farmers is one factor influencing capacity building for district staff and farmers as they learn in the field. Demonstration plots and simple trials are able stimulate interested farmers and district extension staff learning together. They can exchange experiences on forage planting and animal feeding, and the farmers believe district extension staff because they can see real impacts.

Staff ownership and individual motivation also influence effectiveness. If they are willing to work closely with farmers at different sites and are prepared to walk long distances to villages and stay overnight in remote areas, they are highly motivated. Some staff are not motivated and look for monetary gain only; they are less effective in the field. Using women district extension staff to work closely with women farmers is more appropriate for small animal groups such as raising pigs and chickens. Women and female ethnic minorities’ extension staff work best with women farmer groups.

Those interviewed elaborated on many ways to improve capacity building of extension staff. One way is to increase co-operation between government projects, donors and non-government organisation. Giving opportunities to district staff to work with government and NGO projects can help district extension staff gain knowledge, experience and confidence. District livestock extension staff should be a balance of male and female staff and from different ethnic groups, especially Hmong, Khamu, Akha and Muser ethnic groups. Building teamwork and using mentoring will also build the capacity of district livestock extension staff.
CHAPTER 6

DISCUSSION AND CONCLUSIONS

Introduction

This chapter focuses on the understandings emerging from the research as guided by the key research questions (chapter 1) and informed by literature on the role of capacity building in rural development and agricultural extension (chapter 2). Chapters 4 and 5 have described a range of capacity building methods being used in livestock extension, their effectiveness in achieving positive outcomes for extension staff and farmers, the factors influencing capacity building and ways to strengthen the capacity building of extension staff, all from the perspectives of those involved in delivering livestock development in Laos.

This chapter examines the implications of these findings for the Lao government as it strives to improve extension services for livestock farmers in the uplands (research question 5). Recommendations are given in the form of an overall strategy for capacity building based on the lessons learnt from this study. This strategy includes selecting representative staff who are motivated and committed, using a combination of capacity building methods at different stages, building teams, providing mentoring and forming good partnerships. The chapter concludes with a summary of the recommendations, areas needing further research, and implication for Lao government policy on livestock development and extension.

Selection of representative and motivated extension staff

This research has shown that effective extension requires competent and motivated extension staff who can assist farmers from different ethnic groups, varied wealth status and roles with the farming household. Capacity building can assist to develop competent extension staff but it does not overcome the lack of representation of women and ethnic groups identified as a key constraint in Chapter 5.
In this research, I found that the number of women and ethnic extension staff in each district is very limited. It is difficult to find young women who have completed high school to continue to study at agriculture colleges, because few young girls finish high schools. According to Squire (2003, p. 8) “… training women agricultural extension agents will improve their capacity to reach out to women farmers and to school girls with improved agricultural technologies and in the process, serve as role models.”

Empowerment of women extension staff is important because they can work easily with women farmer groups. According to Bartlett (2008, p. 527) the nature of empowerment “consists of three elements: mean, process and ends… the means of empowerment encompass a wide range of ‘enabling factors’, including right, resources, capacities, and opportunities…the process of empowerment is self-directed analysis, decision-making and action (agency)...the ends of empowerment are people taking greater control of their lives.” Hays, (2004, p. 9) mentioned that “Empowerment is the sharing of power, but it is also earned and fortified through an ongoing process involving skills-building, experience and opportunity, feedback and coaching, and reward and recognition”. Women and ethnic minority staff can play a major role in helping poor farmers to improve food security, reduce poverty and protect the environment in their communities.

Thus, selecting women and ethnic minority candidates and investing in building their capacity necessary. The Lao government needs to pursue an active program of staff selection based on gender, ethnicity, motivation and ability.

**Recommendations**

Lao government managers; PAFO, DAFEO heads, program and project managers, should establish contact with the provincial agricultural colleges and high schools. They should stimulate women and students from ethnic groups at high school level to pursue a career in agriculture and seek sponsorship for talented students to study at the agricultural colleges. They
should consider recruiting women and ethnic minority students who graduate from agricultural colleges to work within districts in upland areas.

**Designing and using a combination of capacity building methods**

The interviews revealed that multiple methods are needed for building capacity. Interviewees identified that they needed to use at least five different capacity building methods. Mixing of methods is required because no single method can be reliable to supply a comprehensive perspective on a project (Patton, 2002). All methods have strengths and weaknesses and deciding which method to use depends on when they are used and how.

The strengths of one method can compensate for the weaknesses of another method (Marshall and Rossman cited in Patton, 2002). Integration of methods has an impact, rather than individual and one-off events (Stephen et al. 2006). Combining or mixing of methods, including a ‘learning-by-doing’ approach, participatory (action) research methodologies, a diverse group of participants, regular peer review, flexible networking and strong personal organisational commitment can be successful for capacity building (Fajber & Vernooy, 2006).

Interviewees had learned from experience that the success of capacity building strategies for district livestock extension can be enhanced by combining a mix of five methods including workshop training, on-the-job learning, cross visits and study tours, mentoring and staff meetings.

**Workshop training**

Project managers provide workshop training at the beginning of project implementation in order to introduce the project’s concepts and main objectives, activities, budgets and projects sites to PAFO heads, DAFEO heads, district extension staff and others who are concerned. Technical workshops are structured for district extension staff and partners to improve knowledge and skills in livestock production (e.g. animal feed and feeding systems, animal health such as vaccination, treatment and control of
diseases). Workshops allow participants to learn and make decisions together, present outputs from their projects and receive constructive, critical feedback. Feedback illuminates concepts, improves outputs, and enhances the leaning process. Participants exchange knowledge, skills and experiences together, and develop good relationships.

Training is often used as the main capacity building method in developing countries or regions in Asia (Nelson, 2006 cited in Stephen et al. 2006). It is a direct way of developing knowledge and learning and is most appropriate for teaching standard systems or techniques and new concepts (Mullins & Constable, 2007). Training and workshops are important activities for capacity building in the field of agricultural research, extension and development (Harrison, 1994 cited in Horton, 2002). It provides the means of transferring technical and extension knowledge and skills about research methodologies to senior and younger district livestock extension staff.

Millar & Connell (2009) have found that providing workshops to development organisations including government and NGO sectors helps them to become interested in using the forage technology within their projects areas in the northern and southern provinces of Laos. Horton et al. (2003, p. 40) pointed out that “to ensure that training has an impact beyond the individual, procedures are needed to employ and share individuals’ knowledge, attitude, and skills within teams and with the organisation as a whole.” Stelling & Millar, (2009) have found that providing suitable training by experts for building the capacity of staff, especially the government district livestock extension field staff, has been effective. They gained knowledge and skills in both technical aspects and extension methodology and they were more confident to work with and support farmers.

However, NAFES (2005, p. 70) argued that training is not a solution for all problems relating to agricultural and forestry extension because of it's emphasis on theory only. Training cannot assist district staff gain skills without practice in the field with farmers. Thus, the program managers and
district heads allow the district extension staff to work directly with farmers in order to transfer new technologies and apply them with farmers. Training and mentoring are often used in combination, but as a general rule, the greater the person’s skill level in a particular field, the more coaching (mentoring) should be done when working in that field of expertise (Mullins & Constable, 2007).

**On-the-job learning**

This research has shown the value of on-the-job learning in building the capacity of district livestock extension staff. On-the-job learning is very important for gaining knowledge, skills and confidence in livestock management. According to NAFES (2005) extension staff and farmers gain knowledge and skills through on-the-job training, and are able to analyse problems and plan their own activities. District extension staff use theories, concepts and understanding (know-how) to transfer new technologies to target farmers by practicing implementation in the field. District extension teams work directly with farmers by creating plots demonstrating planting forages, forage management and fattening cattle. They learn from local people by sharing their ideas and experience, and, through this process, understand very clearly what farmers need. District staff can expand new technologies and the impacts of planting forage and fattening cattle to large areas very quickly.

However, the findings revealed that learning-by-doing alone cannot help district livestock extension staff gain enough ideas, skill and experience. Program managers and district heads need to allow them to attend cross visits and study tours in order to give opportunities to district staff to exchange experience with other district teams, experts and experienced farmers in other places.

**Cross visits and study tours**

District livestock extension staff not only learn from working closely with interested farmers in the field, but also gain knowledge by attending the cross visits and study tours provided by project managers. From this
research it is evident that organising cross visits provides ideas for extension staff and is a good way to encourage the spread of best practices, or to encourage experimentation. Participants can also see with their own eyes and hear and touch those activities. This method can help to stimulate discussion and awareness of participants (NAFES, 2005). Cross visits can be helpful for individuals and groups of people who wish to see new technologies themselves and allow them to learn about new technologies and share ideas with experienced farmers (Millar, Photakoun & Connell, 2005). However, interviewees also highlighted they cross visits and study tours cost a lot of money.

Project managers and district heads need to organise cross visits and study tours for district extension staff within Laos and outside the country. In-country cross visits provide district extension teams with good opportunities to see the real impact (e.g. planting forage, cut and carry to animals) and discuss with the host district teams about improving livestock feed and feeding, animal health and livestock marketing. Visitor teams can compare their activities with other teams and learned from farmers too. Cross visits outside the country allow staff to exchange experience with foreign experts and champion farmers. This method can give district extension new ideas in using new technologies and build confidence in working with farmers.

**Mentoring**

The role of the mentoring and coaching for building the capacity of district livestock extension staff has also emerged as an important finding. Hopkins-Thomson (2000, p. 29) asserted that “mentoring and coaching processes can serve to augment the succession planning and professional development of districts.” Nowadays, mentoring is commonly used to improve academic, job and personal development (Bierema & Hill, 2005). Millar & Connell (2009) found that that building the technical and extension skills of staff using experienced people as mentors is a key element of scaling out impacts in Laos.
The results show that mentoring has a positive impact on building the capacity of district livestock extension staff. Most interviewees agreed that mentors were crucial in the first year of project implementation. In the early stages the mentors are very important and necessary to help the newer district livestock extension staff. Mentors help new district extension staff to conduct livestock problem diagnoses, learn how to plant forages and demonstrate to farmers, how to use forage to feed animals and how to work with farmers. Mentoring is particularly important for building the capacity of new volunteer and contract staff who have even less experience with forage technologies and extension methodology. Mentors help the district extension workers resolve problems very quickly, because mentors have experience and they give true advice, linked with real situations. If donors stop supporting the project, districts staff can continue to expand the impacts of forage development by themselves with the help of mentors.

Recruiting mentors for district livestock extension staff who have less experience in the field of livestock production is needed. In the northern upland of Laos mentors who have experience in this field can give advice, facilitate, follow up and teach extension methodology to staff in the first and second year of the projects’ implementation. Mentors should be highly skilled in communicating, listening, analysing, providing feedback and negotiating with less experienced persons (Hopkins-Thomson, 2000).

The qualifications, trustworthiness and credibility of mentors for building the capacity of district livestock extension staff is important. A significant consideration is the selection of the right people to act as mentors. They need to have both theoretical knowledge and the ability to demonstrate activities on the ground with farmers, and to be good facilitators. The mentors should have a higher education level than the trainees or younger staff. If the mentor’s qualification is lower than the mentee, it is difficult for them to work together. However, mentors who have higher qualifications than provincial and district staff also need to be trustworthy. Thus, mentors have to have high qualification and trustworthiness or credibility giving advice to mentees or trainees in any field.
According to Abbott et al. (2006), organisations need mentors or coaches who have qualifications of at least master’s level, as well as evidence-based coach-specific training. Eade (2007, p. 637) summarised that “you can’t build capacities in others that you don’t have yourself. And if you can’t learn, you can’t teach either.”

**Staff meetings**

Staff meetings are an important component in the mix of capacity building methods. The findings show that staff meetings allow district livestock extension staff to not only review positive and negative points from the field, but also decide how to improve their outputs and work processes. Extension staff share ideas and exchange experiences with each other. They also resolve problems that occur with farmers, very quickly and on time (e.g. technical issues, extension approaches and farmers’ requirements). According to Stelling & Millar (2009) attending monthly meetings for both governments and NGO extension staff is important, because they can report progress, share information, discuss issues and plan together. Millar & Connell (2009) reported that attending monthly provincial coordination meeting allowed trainees or mentees to report progress of their activities, discuss problems they faced, share experiences, and make monthly plans with their provincial livestock coordination. Therefore, my recommendation is to have staff meetings on a regular basis, preferably every month.

**Recommendations for combining capacity building methods**

Project managers and DAFEO heads should combine at least five capacity building methods. Suitable method may link together as follows:

**Year 1**

Provide an initial workshop at the beginning of project implementation and then one every six months. Follow the initial workshop with specific topic training and then allow district staff to work directly with farmers. Regular mentoring and staff meetings are also important in the first year. Provide at least one cross visit or study tour.
Year 2

Provide workshops every six months. Allow district field staff to work most of their time in on-the-job learning. Use local mentors approximately every three months. Use national mentors every six months and allows them to attend the regular staff meetings within districts. Train staff in how to run cross visits based on farmer needs.

Years 3, 4 and 5

Continue workshop training every six months and on-the-job learning throughout each year. Allow district field staff to attend regular staff meetings every month and follow up using local mentoring, depending on activities. In this year the project managers should provide one study tour for district staff.

Table 20 below shows how to combine five methods for building the capacity of district staff

<table>
<thead>
<tr>
<th>Methods</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
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<tbody>
<tr>
<td>Workshop training</td>
<td>Q 1</td>
<td>Q 2</td>
<td>Q 3</td>
<td>Q 4</td>
<td>Q 1</td>
</tr>
<tr>
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<td>Q 3</td>
<td>Q 4</td>
<td>Q 1</td>
<td>Q 2</td>
</tr>
<tr>
<td>Mentoring</td>
<td>Q 3</td>
<td>Q 4</td>
<td>Q 1</td>
<td>Q 2</td>
<td>Q 3</td>
</tr>
<tr>
<td>Staff meeting</td>
<td>Q 4</td>
<td>Q 1</td>
<td>Q 2</td>
<td>Q 3</td>
<td>Q 4</td>
</tr>
<tr>
<td>Cross visits</td>
<td>Q 1</td>
<td>Q 2</td>
<td>Q 3</td>
<td>Q 4</td>
<td>Q 1</td>
</tr>
</tbody>
</table>

*Table 20* Quarterly implementation guide for Capacity Building Methods

Note: Q= Quarterly

The duration of each workshop could be three to five days. The cost estimate per person is approximately US $300-350. This amount includes training materials, coffee and tea for morning and afternoon, lunch each day, Perdiem money for participants and other activities.
It is recommended that DAFEO heads allow district staff to attend approximately 15-20 days per month of on-the-job learning. The exact times will depend on the activities and season of the work.

Mentoring should be conducted throughout the first year with local mentors, as new mentees become familiar with the district activities. Use mentors from the national level quarterly so that they can follow up local mentors and new mentees.

Provide regular monthly meetings within each district to allow extension staff to report to DAFEO heads and exchange ideas with other staff.

Cross visits should be conducted at least once a year. Timing of cross visits depends on the season and activities in the field that district extension staff need to learn.

**Building effective teams**

Teamwork is a learning process between two or more people. For Lao extension it involves sharing ideas and experiences in the office, meetings, workshops and field activities in order to achieve the same goals. Welbourn, (2001, p. 90) stated that a “… team is a small group of people cooperating for a common purpose.” The purpose of team building is to bring individual district extension staff to share knowledge, skills, experience and problems in the field of livestock production. Teamwork can consist of younger and senior, woman and men, and Lao majority and ethnic minority staff working together.

This study found that most interviewees agreed that building teamwork is necessary for building the capacity of district extension in the field of livestock production. According to Lewis (2002) people always need to be taught how to work in teams. Some individual district extension staff are still young and have just completed Agriculture College or university. They have high theoretical knowledge, but they are still weak in extension methodologies. Senior staff have experience in working with farmers but
they have limited knowledge of new theory. Senior and younger staff have advantages and disadvantages, so bringing them to work in teams is important, because they can help each other and resolve problems quickly. Teamwork is important in creating positive outcomes for building the capacity of district field staff, improving new technologies and extension knowledge in livestock production.

Building teamwork helps members develop their capacity to work effectively together. In this study I found that the number of teams depends on the district staff who work with projects, with each team consisting of at least two district extension staff. Some teams have one woman and one man and some teams have senior and younger staff or government and contract staff working together. Each team is responsible for at least two villages in the first year, which expands to four to six villages by the end of the project. They share knowledge of livestock production and mix skills in extension methodologies to support themselves and farmers. The team members have opportunities to discuss the projects and district activities.

Clarification of member skills and responsibilities within teams is needed. Members have different behaviours, skills and talent. For example, some people are good facilitators and others are good practitioners. District extension staff need to consider that building teamwork and managing teams successfully requires the provision of suitable activities to expand members’ abilities. For example, Maginn (2004) pointed out that members within teams are able to do things to build trust - activities and performance - that will lead people to be inclined to trust them. These types of activities can be facilitated through good management. Both senior and younger staff need to build trusting relationships and increase good communication within the team. According to Mullins and Constable (2007), members within teams need to believe in each other. Members need to help each other to do their respective work, to make work decisions, to solve problems, to make plans and manage change.

Effective teamwork can contribute to the achievement of project and district goals. The number of target farmers that the district extension field staff
service is increasing, so individual staff cannot work alone to resolve problems. Hunt (2007) pointed to the importance of members within teams respecting each other. Younger staff need to respect and listen to senior extension staff who have experience in working with farmers. However, senior staff should also listen to younger extension staff who may have higher qualifications. Lewis (2002) stated that cooperation is about listening to each other and helping each other, which is the essential ingredient of teamwork. The important advantage of teamwork is the power of cooperation, the secret of which is to open the door to ideas from other people (Maginn, 2004).

In conclusion, capacity building methods can be strengthened by working in teams of different ages, gender and ethnic origin. Successful team management includes selecting members who have good personalities, knowledge and skills. Members need to understand how to work in a team, have clear purposes or goals, good communication within the team, and avoid contradictions or conflicts.

**Recommendations for building teamwork**

My recommendations are that for building teamwork program managers, PAFO and DAFEO heads should consider the mix of staff within each team, the clarifications of roles within teams, and the mechanisms they will employ to resolve conflict.

In order to meet common goals and make teamwork successful the DAFEO heads can create teams that include: (a) senior and younger staff, (b) men and women, (c) ethnic minority and LaoLoum staff, and d) staff with complementary skills.

- **Senior and younger staff.** This combination will build capacity of new staff such as new volunteers and contract staff. The senior district staff will give advice to new staff. Younger staff need to be encouraged to respect senior staff despite their limited formal education, and listen to their advice.
- **Men mixed with women staff.** This team is particularly suited to working in the field with farmers. The men staff work closely with men farmers and women staff work with women farmer groups. They also look after each other when they travel to the field. For example, sometimes their motorbikes may break down, or they may have to walk to a village and stay overnight with farmers. Women staff can be responsible for close villages, while men staff can be responsible for villages that are far away from the office because they can more easily stay overnight.

- **Men and women from ethnic minorities mixed with women or men LaoLoum staff.** Working with ethnic group farmers requires district staff of the same gender and ethnic group. Men staff find it difficult to work with women farmers from ethnic groups due to cultural barriers. Women staff of the ethnic minority can work closely with the women farmers, and men with the men farmers. Ethnic minority staff can communicate with the farmers in remote areas because they use the same language.

- **Mix staff with good theory and good practice.**

  Some district extension staff have good communication skills or technical knowledge but they do not know how to apply these to real farmers’ situations in the field. On the other hand, some district staff are too shy to give recommendations or share ideas with groups but they have good practice with farmers. By mixing both people in one team they can learn from each other and use their skills in the appropriate situation.

- **Clarify roles and responsibilities in the team.**

  Team members need to be very clear about their responsibilities in order to avoid overlaps of activities. For example, member A is responsible for planning, budgeting and writing reports to DAFEO heads and project managers. Member B is responsible for providing technical materials and introducing them to
farmers. Before the team goes into the field, the team members need to discuss the objectives of the field visit with each other.

- **Managing conflicts in the team**
  DAFEO heads need to closely follow up teams. Members within teams should respect each other and understand very clearly about the team’s purpose. Major conflicts can occur within teams over different ideas, responsibility for project property and equipment, budgets, planning and reporting. For example, some individuals do not like to share ideas with other people. Providing equal opportunities to team members by DAFEO heads can contribute to reducing conflict within the team.

**Rewarding equally**
In this research, the DAFEO heads interviewed tried to support all district extension staff (contract, permanent staff, women and ethnic minorities) to attend several workshops. All project managers/donors provided in-country intensive training in Lao language for district extension staff. However, district extension staff who work or cooperate with projects have more opportunities than staff who are not involved with projects. Some projects supported a few district extension staff to attend technical training outside the country (e.g. Thailand and Vietnam). Project managers reported that their budgets would not allow all district staff to go abroad. According to NAFRI (2004, p. 29) “A serious problem is that under current MAF regulations non-permanent (contract) staff cannot go for training.” In addition, NAFRI (2004) mentioned that a major restriction for staff to benefit from international training opportunities is English language capacity.

Giving equal opportunities is one way to build the capacity of district extension staff. In this study I found that district staff want the PAFO heads to continue to support them to attend training, cross visits and study tours and also provide suitable positions which make good use of their skills. For
younger staff, who have the ability to study, they want PAFO and DAFEO heads to provide government and foreign scholarships to allow them to study at Bachelor and Masters level. For example, by providing scholarships for district staff to study for Bachelor degrees at the National University of Laos (Nabong Faculty of Agriculture), Souphanouvong University and the Southern University of Pakse.

In this study I found that district extension contract staff want to become the official government staff but the government quota system does not allow the DAFEO heads to employ them. The number of graduates that can be employed as extension officers has decreased due to limitations in Government budgets. However, the government is planning to expand the number of extension officers to sub-district levels and would like to employ more graduates in the future. At present, government extension offices are able to absorb perhaps 10 percent of the graduates of agricultural colleges each year (MAF, 2008, p. 13).

DAFEO heads support district staff who are studying part time at Souphanouvong University and other agricultural colleges by allowing them to use office motorbikes and gasoline. For other staff who are successful in their jobs the DAFEO heads give a small extra bonus.

**Recommendations**

1. That national, provincial and DAFEO heads encourage district staff to study, become permanent government staff, attend workshop training, cross visits and study tours, and give awards, extra bonuses and support motorbikes for district staff.
2. That DAFEO heads find government scholarships and foreign scholarships to support district and provincial staff to study both within and outside Laos.
3. That DAFEO heads select staff who are active and successful in their jobs to go and study.
4. That DAFEO heads consider long-serving district extension staff before more recent employees for rewards.
Forming partnerships

This research highlighted the importance of extension organisations working together to build the capacity of their extension staff. Partnerships are forming between government agencies and the non-government sector to embed beneficial technologies into rural development programs for the poor (Millar & Photakoun, 2008). Government projects have developed the best approaches for expanding technologies, but they do not have the budget required for extension staff to conduct activities in the field. On the other hand, NGOs have staff and budget but they need the best approaches to build capacity for staff in order to build the ability of local people to develop their communities.

According to Biradar, Sridhar & Balmatti, (2006) NGOs are good in the social dimension of the development effort but are poor in technical know-how. In contrast, Government extension sectors are strong in technical side of development. The development of the livestock sector in Laos requires a focus on priority poor districts as well as the development of partnerships between government agencies (researchers, extensionists), private organisations and NGOs to maximize efforts in remote upland areas (Millar & Photakoun, 2008).

A good relationship with other stakeholders (private companies, NGOs, and farmer groups) can create incentives (Hazell et al., 2007). Horton et al (2003, p. 50) mentioned that “more recently, collaborative projects have tended to emphasise joint learning and sharing of experiences.” Fajber and Vernooy (2006, p. 150) pointed out that “peer learning and exchange not only provided additional information and ideas, but also directly strengthened the confidence of researchers as they were able to comment on and give support to peers.” One of the partners working with Horton (1999, p. 168) surprised him by bluntly stating that “we are interesting in working with you …[but] we don’t want you to “help” or “train” us. We want to work together as colleagues, as equals.”

Increasingly, cooperation not only between the government project and NGOs but also other organisations under MAF is necessary. Researchers,
extension workers and farmers need to cooperate in order to develop new technologies and transfer those technologies to farmers and develop new useful innovations using participatory research and extension approaches.

According to NAFES and NAFRI (2005, p. 9) “all stakeholders, the government, the private sector and international organisations have the responsibility to assist and support production improvement based on the farmers’ needs.” In partnership, government and NGO staff can make plans for training and other activities in the field with interested farmers.

Working together, government and NGO district staff achieve high value and increased benefits. According to Stelling and Millar, (2009, p. 13) “There is the strength and impetus of working towards the shared goal of improving the lives of Lao villagers. There is the goodwill and willingness to help each other which comes from mutual understanding and closer contact.” Biradar et al. (2006) stated that the partnership between government scientists and non-government staff can help the scientists to become sensitized to real field problems and become focussed on developing need-based technologies.

In conclusion, collaborating between the government, donors, private sector organisations and NGOs can improve the knowledge and skills of district extension staff in local areas, and increase the number of households involved with projects. The government projects have new technologies and materials called ‘wisdom packages’ but not enough budget to expand the good impacts or scale out to large areas. By cooperating with NGOs and other stakeholders who work in the same communities, there is great potential to gain more benefits than by each working individually. District extension staff will gain more knowledge, skills and experience from working with government projects, NGOs, private sectors and other stakeholders. This in turn will strengthen the capacity and trustworthiness of district livestock extension field staff within the villages.
Recommendations

I recommend that the Lao government increase cooperation with non-government organisations and other stakeholders. To do this I recommend;

1. That DAFEO heads undertake to clearly understand the aims, objectives and operating philosophy of NGOs operating within their districts.
2. That DAFEO heads stimulate the involvement of NGOs, donors and private sector organisations as much as possible.

Conclusion

This thesis has examined the role of capacity building in improving livestock extension staff in Laos. The study sought to understand the capacity building methods being used, their effectiveness in achieving positive outcomes for staff and farmers, the factors influencing effectiveness and ways to strengthen the capacity building of district livestock extension staff. The following conclusions and recommendations address the issue of capacity building to develop sustainable district extension for livestock development in Laos.

The Lao government should always consider that capacity building is very important and is the heart of rural development and rural extension. The learning process for capacity building should be experiential, integrated, facilitated, interactive and ongoing. Capacity building methods have advantages and disadvantages, so designing and using a combination of capacity building methods works best. An example of an effective capacity building program may be workshops provided at project implementation and then every six months, followed by specific topic training according to staff and farmer needs, plus encouraging district staff to work directly with farmers. Mentoring and staff meetings are also important in the first year with at least one cross visit or study tour.

The Lao government must select the right district extension staff to work in remote areas and at Kumban level. More women and ethnic group
representatives are needed. Investment in district extension staff - women, ethnic minorities, younger and senior - who are active, enthusiastic and responsible is necessary as they return benefits to farmers quickly. DAFEO heads and project managers can build effective teamwork within districts by mixing staff together; senior and younger staff (volunteer, contract or government staff), men and women, ethnic minorities and Lao Loum. Using local, experienced mentors is more cost effective than using national or foreign mentors. Having good examples or demonstration plots within district also saves money in organising cross visits.

DAFEO heads should provide rewards equally to all district staff. These can include releasing them to attend workshop training, cross visits and study tours, allowing them to study at higher levels, promotion and selection to become permanent staff.

Increasing cooperation with stakeholders is very important in building the capacity of district staff. If DAFEO heads can link government and NGO staff together it will help district staff gain knowledge, skills and good attitudes. They can exchange ideas, share information in the meeting room and experience in the field, and plan to expand impact to large areas more quickly than with single projects.

PAFO, DAFEO heads and project managers are in an important position to facilitate information exchange between government, private and NGO district extension staff. It is recommended that they work together to devise processes for this suited to each provincial and district situation.

They can also stimulate student interest and understanding of agricultural extension by organising local facilitators and mentors with experience in extension to present to students in the province’s Agriculture Colleges. This provides an opportunity for students to exchange ideas about extension and other topics. Linkages between extension theory and real practice need strengthening. It is recommended that project managers increase funding to agriculture students for field practice in extension. This will increase their
skills to the extent that on graduation they are suited to apply for extension positions with DAFO, development organisations or the private sector.

Need for further research
This thesis has focussed on evaluation of capacity building for district livestock extension staff from the perspective of project and program managers, provincial and district heads and district livestock extension staff. Further research to expand our understanding of the impacts and feasibility of capacity building would assist with future planning. I believe that research is needed to:

1). Measure the impact of capacity building on staff over time (eg. over 5 years).

2). Measure the impact of capacity building on farmers, particularly ethnic minority women and poor farmers in the northern upland of Lao PDR.

3). Measure the cost and effectiveness of each capacity building method.
REFERENCES


# APPENDICES

## APPENDIX A

Projects participating in the research

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADP</td>
<td>Agriculture Development Project (under NAFES)</td>
</tr>
<tr>
<td>CBSLSP</td>
<td>Capacity Building for Smallholder Livestock Systems Project (DLF and CIAT)</td>
</tr>
<tr>
<td>CRWRC</td>
<td>Christian Reformed World Relief Committee (in Phongsaly)</td>
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<tr>
<td>FLSP</td>
<td>Forage and Livestock System Project (under NAFRI and CIAT)</td>
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<td>Lao-EU</td>
<td>Strengthening of Livestock Services and Extension Activities (under DLF)</td>
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<td>LFSP</td>
<td>Livestock Farmer Support Project (under DLF)</td>
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<td>LEAP</td>
<td>Lao Extension for Agriculture Project (under NAFES)</td>
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<td>L4PP</td>
<td>Forage Legumes for supplementing village pigs in Lao PDR, locally known as the Legume for Pig Project (under NAFRI and CIAT)</td>
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<tr>
<td>LDP</td>
<td>Livestock Development Project (under DLF)</td>
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<td>NRBDSP</td>
<td>Nam Ghum River Basin Development Sector Project (under NAFES)</td>
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<td>Programme National Agro-Ecologies</td>
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<td>SHDP</td>
<td>Small Holder Development Project (under NAFES)</td>
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<tr>
<td>SPFSP</td>
<td>Special Programme for Food Security and South- South Cooperation Project (under NAFES)</td>
</tr>
</tbody>
</table>
APPENDIX B

Pilot interview on Wednesday 27 February, 2008

1. Introduction of myself and background to my research project.

2. What role have you been played in capacity building of staff in NRM?

3. What methods have you used for capacity building?

4. What methods were most effective and why?

5. What have you learnt about the different methods for capacity building?

6. How can capacity building for staff be strengthened to improve the outcome of NRM?

7. How have approaches to NRM extension changed in Victoria?
APPENDIX C

Guide for interviews with program managers

1. Introduction of myself and start with preliminary background.

2. What role have you been played of capacity building in your project?

3. What methods have you used for capacity building? and

4. What methods were most effective and why?

5. What have you learnt about the different methods for capacity building?

6. How can capacity building of staff be strengthening to improve outcomes for your project?

7. How have approaches to Lao extension changed in Laos?
APPENDIX D

Guide for interviews with district managers and district extension staff

1. What roles have you been played of staff capacity building for livestock extension?
2. What capacity building strategies for livestock extension are used in your district?
3. What factors (positive and negative) affect capacity building of livestock extension staff?
4. How can staff capacity building for livestock be improved?
APPENDIX E

CONSENT FORM

Name of Research Project: Evaluation of capacity building for livestock extension in Lao PDR

Contact details:
Viengxay Photakoun
School of Environmental Sciences
Charles Sturt University
PO BOX 789
ALBURY NSW 2640
Ph +(61) 02 60519933
Fax +(61) 02 60519897

I understand that I am free to withdraw my participation in the research at any time.

The purpose of the research has been explained to me and I have been given the opportunity to ask questions about the research and received satisfactory answers.

I permit Viengxay to tape record my interview as part of this project.

I understand that any information or personal details gathered in the course of this research about me are confidential and that neither my name nor any other identifying information will be used or published without my written permission.

Charles Sturt University’s Ethics in Human Research Committee has approved this study.

I understand that if I have any complaints or concerns about this research I can contact:

Executive Officer
Ethics in Human Research Committee
Academic Secretariat
Charles Sturt University
Private Mail Bag 29
Bathurst NSW 2795
Ph: +61 2 6338 4628
Fax: +61 2 6338 4194

Signed by:

..........................................................

Date .....................................................
APPENDIX F

INFORMATION SHEET

Title of Research Project:
Evaluation of Capacity Building for Livestock Extension in Laos

Purpose of the research:
This study will evaluate the effectiveness of past and current capacity building approaches for livestock extension staff who are working across a range of livestock projects.

Research Questions
1. What capacity building strategies and methods have been used to support livestock extension staff in upland areas of Laos?
2. How effective have these strategies been in delivering positive outcomes?
3. What factors influence the effectiveness of different capacity building approaches for livestock extension staff?
4. How can the capacity building of livestock extension staff be strengthened?
5. What are the implications for livestock extension in Laos?

Methodology:
Semi-structured interviews with approximately 16 project managers, 10 DAFEO managers and 20 district extension staff involved in capacity building for livestock development Survey of 30 district livestock extension staff to rate of eight capacity building methods

Interviews:
Individual interviews will take approximately 1-2 hours. Your permission is sought to audio tape the interview for accuracy of data analysis only. You will remain completely anonymous in the analysis and writing of the research (unless you indicate otherwise). You are free to end the discussion at any time, and to withdraw involvement completely if you wish.

What happens to the information from the discussions?
As the principal investigator I am responsible for all data entry and analysis. The information provided is confidential and details about individuals will not be published. Anonymous direct quotes from the interviews may be included in reports and papers arising from this research. No names or other identifying information will accompany these quotes without any penalty or discriminatory treatment Transcripts and tapes of discussions will be shredded after analysis and writing up. Information from the interviews will be used to gain an understanding of the effectiveness of different capacity building methods for livestock development in Lao PDR. If anything about this is unclear, or you need more information please don’t hesitate to contact me or my supervisors:
**NOTE:** Charles Sturt University’s Ethics in Human Research Committee has approved this project. If you have any complaints or reservations about the ethical conduct of this project, you may contact the Committee through the Executive Officer:

The Executive Officer  
Ethics in Human Research Committee  
Academic Secretariat  
Private Mail Bag 29  
Charles Sturt University  
Bathurst NSW 2795  
Tel: (02) 6338 4628  
Fax: (02) 6338 4194

Any issues you raise will be treated in confidence and investigated fully and you will be informed of the outcome.

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<th>Supervisor</th>
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