

Ministry of Agriculture and Forestry

---

National Agriculture and Forestry Research Institute

**DRAFT**

Strategic Framework for the  
Center for Agriculture and Forestry Research  
Information (CAFRI)  
2009 – 2013

Version 1.3  
December 2, 2008

## Acronyms

---

AFITA	Asian Federation for Information Technology in Agriculture
AFPRC	Agriculture and Forestry Policy Research Centre
AIM	NAFRI-NAFES Working Group on Agriculture Information Management
ALMRC	Agriculture Land Management Research Center (previously the Soil Science and Land Classification Centre)
APAARI	Asia-Pacific Association of Agricultural Research Institutions
CAFRI	Center for Agriculture and Forestry Research Information
CIAT	International Centre for Tropical Agriculture
CIRAD	Agriculture Research for Developing Countries (CIRAD)
CLICK	Coalition for Lao Information and Knowledge
CRC	Coffee Research Centre
FRC	Forest Research Centre
GoL	Government of Laos
HRC	Horticulture Research Centre
ICRAF	International Centre for Research in Agroforestry
IMC	Information Management Centre
IMSPD	Information Management and Strategic Planning Division
IRD	International Research and Development Agency (French)
IRRI	International Rice Research Institute
IWMI	International Water Management Institute
JICA	Japanese International Cooperation Agency
LAD	Lao Agriculture Database
LaRReC	Living Aquatic Resources Research Centre
LEAP	Lao Extension for Agriculture Project (NAFES/SDC)
LRC	Livestock Research Centre
LSUAFRP	Lao Swedish Upland Agriculture and Forestry Research Programme
MAF	Ministry of Agriculture and Forestry
MSEC	Managing Soil Erosion Consortium
NAFES	National Agriculture and Forestry Extension Service
NAFReC	Northern Agriculture and Forestry Research Centre
NAFRI	National Agriculture and Forestry Research Institute
NALIS	National Agriculture Library Information System
NICE	National Information Centre for Extension
NOUL	National University of Laos
NRRP	National Rice Research Programme
NURIFAR	Northern Uplands Rice based Farming Systems Research Project (SDC funded)
PRONAE	National Programme for Agro-Ecology (CIRAD)
R&CCR	Rice and Cash Crops Research Centre (previously the Agriculture Research Centre)
ReMIS	Research Management Information System
RightS-LINK	Land Information and Knowledge Programme (VFI)
RMD	Research Management Division
SADU	Small-Scale Agro-Enterprise Development in the Uplands (CIAT)
SCV/DMC	Direct Mulch Based Cropping Systems
SDC	Swiss Agency for Development and Cooperation
SEU	Socio-Economic Unit/NAFRI
Sida	Swedish International Development Cooperation Agency
TABI	The Agrobiodiversity Initiative (TABI)
URDP	Upland Research and Capacity Development Programme
VFI	Village Focus International

# Table of Contents

ACRONYMS.....	I
FOREWORD.....	IV
<b>PART I: BACKGROUND, ACHIEVEMENTS &amp; LESSONS.....</b>	<b>1</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
1.1 <i>Focus and scope of the CAFRI Strategy.....</i>	1
1.2 <i>How this strategy was developed?.....</i>	2
<b>2. OVERVIEW OF CAFRI ACTIVITIES.....</b>	<b>2</b>
2.1 <i>Past information activities.....</i>	2
2.2 <i>NAFRI Research System.....</i>	4
2.3 <i>Role of CAFRI within the Lao AKIS.....</i>	5
<b>3. KEY ISSUES TO GUIDE THE STRATEGY.....</b>	<b>9</b>
<b>PART II: CAFRI STRATEGIC FRAMEWORK (2009-13).....</b>	<b>10</b>
<b>4. MANDATE, RESPONSIBILITIES AND FUNCTIONS OF CAFRI.....</b>	<b>10</b>
4.1 <i>Mandate and Responsibilities.....</i>	10
4.2 <i>Functions of the centre.....</i>	10
4.3 <i>How the CAFRI Framework supports the NAFRI Strategic Plan.....</i>	11
<b>5. VISION, MISSION, OBJECTIVES AND STAKEHOLDERS.....</b>	<b>12</b>
5.1 <i>Vision.....</i>	12
5.2 <i>Mission.....</i>	12
5.3 <i>Objectives.....</i>	12
5.4 <i>Stakeholders.....</i>	12
<b>6. WORKING APPROACHES.....</b>	<b>13</b>
6.1 <i>Partnerships and networking.....</i>	13
6.2 <i>Institutionalization of information and knowledge.....</i>	13
6.3 <i>Using strategic communication processes to plan, develop and monitor materials.....</i>	14
6.4 <i>Promote open access and open source systems.....</i>	15
6.5 <i>Cost recovery mechanisms and broadening support.....</i>	15
<b>7. CAFRI ACTIVITY AREAS.....</b>	<b>16</b>
7.1 <i>Information and knowledge management systems.....</i>	17
7.2 <i>Information Communication Technology.....</i>	20
7.3 <i>Production and Outreach.....</i>	23
7.4 <i>Method development and research-extension linkages.....</i>	26
<b>PART 3: IMPLEMENTATION ARRANGEMENTS.....</b>	<b>28</b>
<b>8. ORGANIZATIONAL STRUCTURE.....</b>	<b>28</b>
8.1 <i>Current and future organizational structure.....</i>	28
8.2 <i>Sections responsibilities and policies.....</i>	29
8.3 <i>CAFRI Management Systems.....</i>	29
8.4 <i>Linkages to NAFRI divisions and Centers.....</i>	30
<b>9. STAFFING AND HUMAN RESOURCE NEEDS.....</b>	<b>31</b>
9.1 <i>Staffing of units and sections.....</i>	31
9.2 <i>Assessment of current staff capacity and training needs.....</i>	32
9.3 <i>Strategies for improving capacity and hiring new staff.....</i>	33
<b>10. FUNDING STRATEGIES AND ARRANGEMENTS.....</b>	<b>33</b>
REFERENCES.....	34
ANNEX 1: LIST OF PRODUCTS AND SERVICES BY CAFRI (2003 – 2008).....	35
ANNEX 2: LIST OF PARTNERSHIPS.....	37
ANNEX 3: MAF FOUR GOALS AND 13 MEASURES.....	39
ANNEX 4: PROPOSED NAFRI REPORT SERIES.....	40
ANNEX 5: LIST CAFRI STAFF, CAPACITIES AND TRAINING NEEDS.....	41
ANNEX 6: RESPONSIBILITIES AND POLICIES TO DEVELOP FOR EACH SECTION.....	42

## Tables

<i>Table 1: achievements of information services division .....</i>	<i>2</i>
<i>Table 2: Status of information staff at centers .....</i>	<i>4</i>
<i>Table 3: Cooperation with projects and international research agencies.....</i>	<i>5</i>
<i>Table 4: CAFRI's engagement with key stakeholder groups .....</i>	<i>12</i>
<i>Table 5: CAFRI products and services which can be used by different projects.....</i>	<i>15</i>
<i>Table 6: Different information and communication systems in Laos.....</i>	<i>18</i>
<i>Table 7: Types of ICT training for NAFRI users and managers.....</i>	<i>21</i>
<i>Table 8: types of reporting mechanisms.....</i>	<i>30</i>
<i>Table 9: Role of CAFRI in relation to centers .....</i>	<i>30</i>
<i>Table 10: Potential activities between CAFRI and NAFRI Centers and divisions .....</i>	<i>31</i>
<i>Table 11: Current and future staffing at CAFRI .....</i>	<i>31</i>
<i>Table 12: Capacity needs of different sections .....</i>	<i>32</i>
<i>Table 13: Typology of funding arrangements for the center .....</i>	<i>34</i>

## Figures

<i>Figure 1: NAFRI Structure .....</i>	<i>4</i>
<i>Figure 2: Lao AKIS .....</i>	<i>6</i>
<i>Figure 3: CAFRI Functions.....</i>	<i>11</i>
<i>Figure 4: Strategic communication process (Source: Dougherty, 2007) .....</i>	<i>14</i>
<i>Figure 5: CAFRI activity areas.....</i>	<i>16</i>
<i>Figure 6: Research – extension continuum.....</i>	<i>24</i>
<i>Figure 7: Current CAFRI organizational structure .....</i>	<i>28</i>
<i>Figure 8: Future organizational structure of CAFRI .....</i>	<i>29</i>

## Boxes

<i>Box 1: Farmers communication preferences .....</i>	<i>7</i>
<i>Box 2: Think before you plant: developing appropriate extension materials for smallholder rubber planters .....</i>	<i>7</i>
<i>Box 3: What is knowledge Management? .....</i>	<i>14</i>

## Foreword

---

The Center for Agriculture and Forestry Research Information (CAFRI) was established in October 2007 by upgrading the Information Management and Strategic Planning Division into a NAFRI research center. This upgrade was based on the recognition that information and knowledge are becoming increasingly important agriculture inputs as farmers and other decision-makers need access to better quality information to make informed decisions.

This strategy has been developed to help guide the center in its initial start-up phase. The strategy builds upon the previous NAFRI Information Service Strategy (2004-2010), the activities that were carried out previously by the IMSPD and an analysis of the current opportunities and gaps within the agriculture and natural resource management sector.

It is also based and linked to the NAFRI Strategic Plan (2007 – 2012) and Research Plan (2007-2010) where information services is identified as a key support function. Information services can contribute to NAFRI's Strategy by:

- Strengthening individual researchers' ability to process (access, use and deliver) information to improve the quality of their research
- Improving the institutional capacity of NAFRI to organize, store, share and retrieve information needed to plan and carry out research effectively.
- Linking researchers to relevant information systems in Laos or globally.
- Improving the exchange of information and dissemination of research results and recommendations so key stakeholders can use at different levels.
- Supporting the development of appropriate information and communication systems within the Ministry of Agriculture and Forestry to improve the flow of information both vertically and horizontally.
- Carrying out research on local information, social networks and knowledge systems

This strategy is divided into three parts. The first part provides an assessment of CAFRI activities and capacities as well as analyses the current institutional set up within Laos and where CAFRI can best contribute both internally within NAFRI as well as within the Lao Agriculture Knowledge and Information System. Six key lessons and issues are identified to guide the development of the strategy.

The second chapter provides an overview of the strategic framework itself and how CAFRI intends to work over the coming year. This includes the identification of CAFRI's vision, mission overall goal and objectives as well as strategies and approaches that guide how CAFRI will work. In addition, the strategy outlines for major areas of work:

The final chapter provides an overview of the implementation arrangements for the strategy. This includes proposals for how the center will be structured in the future, the staffing and capacity needs, organizational needs as well as funding arrangements.

There are three main challenges that CAFRI faces over the coming years:

1. To develop information and communication systems to improve NAFRI ability to manage and use information
2. Strengthen information and communication systems within Laos so that farmers, extension agents, academics and policy makers have access to higher quality information to make better decisions
3. Develop management systems and partnerships for the long-term viability of the Information Center

This strategy is meant to be a starting point to initiate a dialogue on how CAFRI can best contribute to the NAFRI strategic plan as well as support improved information and communication systems in Laos.

# Part I: Background, achievements & lessons

## 1. Introduction

---

Laos is going through a period of unprecedented social and economic changes. This has been spurred by the keen interest of the Government of Lao PDR to take advantage of its central location in the region and use economic development as the engine to alleviate poverty and move beyond the category of Least Developed Country by 2020.

Information and communication systems and processes can play an important supporting function in this transition. In many sense, agricultural development depends to a great extent on how successfully knowledge is generated and applied (World Bank 2007). Farmers are increasingly demanding better information on market prices, appropriate agriculture techniques and information on land rights. Extension workers need better access to information and communication processes to build capacity of farmers to make informed decisions on their land use, while researchers need access to social and technical related information. Policymakers are also demanding better information to make more informed decisions on the costs and benefits of rapid economic development.

The National Socio-economic Development Plan (NESDP) recognizes the importance of information and communication as a necessary pre-requisite for sustainable development:

*"Informed participation of the people including the poor requires improvements in the two-way (top-down and bottom-up) flow of information and communication and education. The people will be provided with more information ... to increase their ability to participate in the socio-economic development of the country. The people's knowledge about their rights and obligations will be improved." (NSED, 2006)*

The National Agriculture and Forestry Research Institute (NAFRI) was established in 1999 and is the leading agency for agriculture and natural resource related research in Lao PDR. NAFRI aims to contribute to the goals of the Government of Laos by carrying out integrated 'research for development' to overcome specific problems limiting production and causing degradation of natural resources. NAFRI's mission statement places important emphasis on the need for better information and communication systems

*"... Finally, NAFRI will strengthen information and communication systems within Laos so that a range of actors have better access to information and knowledge to make informed decisions at different levels..." (NAFRI, 2008)*

### **1.1 Focus and scope of the CAFRI Strategy**

In 2007, NAFRI upgraded its Information Management and Strategic Planning Division to the Center for Agriculture and Forestry Research Information (CAFRI)(Ref No. 1062/MAF). This was based on the recognition that information and communication systems are a key support function within the NAFRI Strategy for 2008-2012. In addition, upgrading to a center allowed for more flexibility in how it implemented activities and provided opportunities staff to work with a broader range of actors.

The CAFRI Strategic Framework for 2008 – 2012 has been prepared to guide the overall functioning and activities of the center. It provides an overview of how the center will support the implementation of the NAFRI strategic plan and work with other actors within Laos to support the provision and delivery of information.

This strategy should not be seen as a blueprint but rather lays out a framework for the center will operate in the coming years and how it will cooperate with other partners in the coming years. It is also expected that this first draft strategy (November 2008) will spur further discussions on how best the center can proceed in order to become a leading information service provider in the Lao PDR. Based on comments and feedback, an implementation plan for the strategy will be produced to guide the development of new policies and procedures for the center, human resource development and writing of project proposals for different activities which support the strategic framework.

## 1.2 How this strategy was developed?

The strategy builds upon the original Information Services Strategy (2004 – 2010) prepared for Information Management Strategic Division of NAFRI and incorporates many of the lessons learned in implementing the strategy. In addition, the strategy is the culmination of different assessment and discussions in the past year, including:

- A baseline survey of the information management division carried out in June 2007
- Analysis of studies on local information and communication assessments
- National level workshops including: Linking the Last Mile (July 2007), Management of Digital Resources and Information (December 2007), AIM regional workshops to discuss provincial and district level information systems (2007), Marketing Information Systems workshops (2006)
- Internal planning meeting within CAFRI to develop the strategic framework based on staff's experiences as well as to develop a common understanding.
- Discussions with key stakeholders and a workshop to present the initial draft strategy for comments and feedback

In general, research information services cover a broad range of support systems which can help researchers gain better access to relevant information and communicate more widely (Vernon 2001). This requires not only good information management systems but also the skills to use and manage them. It also attempts to move beyond development of information products and services and identify ways it can contribute to agriculture innovation and to improving agriculture knowledge and information systems at different levels.

## 2. Overview of CAFRI activities

While CAFRI is a young organization, its activities are based upon the work carried out by the previous Information Management and Strategic Planning Division (IMSPD) of NAFRI. The IMSPD established a number of activities and its reputation for producing high quality information materials and being on the cutting edge of knowledge and information development is well recognized. In addition, the division developed linkages to national (NUOL, STEA, MAF, NAFES, and INGOs), regional and international organizations (Kasetsart University, FAO, AFITA, APAN, etc) ---see Annex 2 for list of partnerships.

The IMSPD was comprised of three units: 1) Information Services 2) GIS 3) Socio-economics. The GIS Unit was transferred to the Agriculture Land Research Center in June 2006 and the socio-economic unit was transformed into the Agriculture and Forestry Policy Research Center. Thus, GIS activities though an important component of NAFRI information systems is not explicitly dealt with in this strategy. In this strategy CAFRI will support the GIS unit/ALMRC and the AFPRC to develop their information systems but will not be directly involved in implementation of such systems.

This section provides an overview of the key information activities that have been established and identifies some key lessons to guide the strategy. For a more detailed assessment of past activities see the information service baseline (Information Service Component/URDP, 2007).

### 2.1 Past information activities

The activities identified in the first strategy are still the basis for much of what CAFRI does. Table 1 provides an overview of the key achievements of each component area.

**Table 1: achievements of information services division**

Component/ Activity Area	Key achievements (2003-2007)
Library	<ul style="list-style-type: none"> <li>• NAFRI HQ library established. As of 2008 more than 20,000 resources available</li> <li>• The National Agriculture and Forestry Library Information System (NALIS) established, the first on-line library system</li> <li>• Linkages to regional &amp; international sources of information established</li> <li>• Capacities of librarians upgraded</li> <li>• Awareness, promotion and training for researchers to use libraries</li> <li>• FAO handed over its whole library for NAFRI to manage and oversee</li> </ul>

Component/ Activity Area	Key achievements (2003-2007)
Lao Agriculture Database	<ul style="list-style-type: none"> <li>• The first on-line repository of Lao related agriculture and forestry documents with more than 1800 documents indexed and 500 available for download</li> <li>• AGROVOC (FAO agriculture thesaurus) translated into Lao.</li> <li>• Linkages established with other Agris providers in the region.</li> </ul>
Research Mngmnt Information System	<ul style="list-style-type: none"> <li>• Unified research management information system established at NAFRI</li> <li>• Human resource and research management components are operational</li> </ul>
ICT	<ul style="list-style-type: none"> <li>• Establishment of IT infrastructure at NAFRI Headquarters and a fiber optic link to STEA, MAF, NAFRI and the establishment of a "Server Farm" at NAFRI</li> <li>• Support to establishing IT services at NAFReC</li> <li>• Testing of system to link all NAFRI research centers in Vientiane to the internet</li> <li>• Email services provided for all staff including account administration, mail promotion and user training</li> <li>• NAFRI Intranet established for file sharing and information distribution.</li> <li>• NAFRI web site established and maintained along</li> <li>• Studies on local information and communication systems</li> </ul>
Information Production & Outreach	<ul style="list-style-type: none"> <li>• Production of main NAFRI publications including: Promotional material such as brochures, annual review books, calendar, etc.</li> <li>• Production of NAFRI newsletter and the NAFRI Agriculture and Forestry Journal</li> <li>• Support to production of publications from centers and projects at NAFRI</li> <li>• Establishment of a dissemination system (both hard and softy copy)</li> <li>• Production of the Lao NTFP Handbook and Lao Uplands Sourcebook</li> <li>• Organization of workshops on key themes</li> <li>• Establishment of the Agriculture Information Management Working Group (AIM)</li> </ul>

In terms of information management, the goal has been to develop common information tools for NAFRI and the Agriculture sector. The NAFRI library is considered the premier library for agriculture and natural resources and NAFRI has developed the first on-line document system for agriculture and forestry. A research management system has also been established to provide research managers with more accurate management information. The main lesson is the need to focus not only on system development but also on people (who will manage or use such systems) and processes (how information is collected or managed). Four common challenges have been identified

1. Assigning staff to have overall management and coordination
2. Responsibility of the systems rather than adding on to work.
3. Developing regular procedures and routines for inputting information
4. Engaging other organizations to use and further develop these systems.

In 2003 there were no "ICT activities" at NAFRI. Internet connection was through individual dial-up connections, there was no common email and there was no NAFRI website. Today NAFRI has a functioning ICT section with four staff members who can manage most routine activities as well as provide a range of services to NAFRI staff. There are a couple of lessons and challenges identified. First developing ICT capacity both among users and ICT staff is a long-term process. Second, a number of services have been developed such as LAD, NALIS, backup storage systems, and intranet services but they are not often used by staff. There is a need to make sure that people can use such systems and that they are meeting their needs. Finally, future investments in ICT activities should be pulled into a common resource among different donors and projects working at NAFRI.

For production and outreach activities, a range of products have been developed and workshops held to improve linkages between different actors. One issue that has been raised is the need to better target and package materials based on users needs and preferences. This implies understanding their needs, how they like to use and receive information and being able to analyze and package content from various sources. The second challenge concerns being able to use a wider range of media and mechanisms to disseminate information. For the most part the unit produces written materials. In a country like Laos, a range of medium are needed to be used other than print.

## 2.2 NAFRI Research System

NAFRI underwent a major restructuring in 2007 (see Figure 1). While commodity research remains an important part of NAFRI, the new structure recognizes that NAFRI carries out important *non-commodity based research* such as method development for land use planning, socio-economic and policy-based research and providing information services to a range of actors. In addition there has been an emphasis on decentralized research through the establishment of two regional centers in the North and South.

As part of the process of reorganization, NAFRI carried out a strategic planning exercise in 2007 and 2008 to better prioritize research as well as align its priorities to the goals of MAF. Information services figures prominently and is seen as an important support service to implement the strategy.

CAFRI oversees NAFRI information systems and works with the NAFRI centers and divisions on a range of activities (see Table 2). A couple issues have arisen in relation to collaboration with the centers. First is that there is a lack of staff assigned to information activities and their capacity remains low. For the most part staff work on information part-time. Once staff are trained, they are often transferred or assigned other duties. Second, it has been difficult to improve standardized systems for information sharing. On the one hand there has yet to be a solution to link all the centers to the internet. On the other the capacity (and incentives) for staff to contribute to common information systems remains low. Finally, common standards and formats for publishing NAFRI materials have not been developed

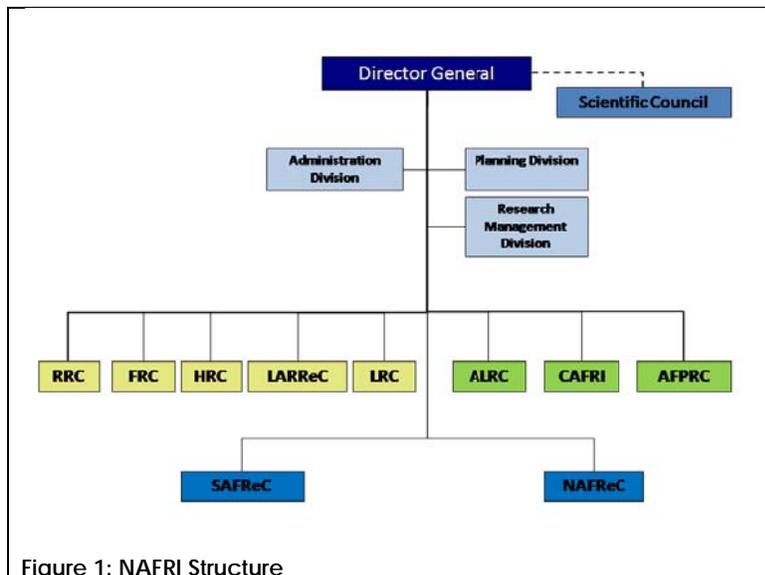


Table 2: Status of information staff at centers

Center	No. Staff	Infrastructure	Current collaborative activities	Other center specific information activities
R&CCRC	1 librarian	LAN and library, no internet	LAD and library management	Production of leaflets
FRC	1 librarian	LAN and library, no internet	LAD and library, production of materials	Production of materials such as books and pamphlets
HRC	1 librarian	LAN and library, no internet	LAD and library management	Production of posters and leaflets
LaRREC	1 librarian 1 production	LAN, Library, internet connect	LAD and library management	FAO fisheries database, GIS information, videos
LRC	1 librarian	LAN and library, no internet	LAD and library management	Production of posters and leaflets
SAFReC	None	Dialup connect library	-	-
NAFReC	3 IT 2 librarian	Internet, WIFI, library, GIS	Rural Communication, library and LAD,	
AFPRC	1 staff	LAN, internet, small library	Website development, publication support	Development of database, publication development
ALRC	None	LAN, internet	Server space for GIS	GIS and mapping
RMD	3	LAN, internet	Work on ReMIS	Unit set up for information and data analysis

There will be a need to rethink how information linkages with the centers and what type of support is necessary. Given the limited amount of human resources, it might be more efficient to have a strong centralized information service within Vientiane that could link up each center and focus support more to the districts and NAFReC.

### 2.2.1 Linkages to Projects and International Research Centers based at NAFRI

While Sida has provided the primary operational costs and technical support to, all projects and programmes at NAFRI have worked with or used different information services. Table 3 provides an overview of some of the partnerships with different research projects and organizations (see Annex 2 for other partnerships).

**Table 3: Cooperation with projects and international research agencies**

Agency	Type of activities
Sida (LSUAFRP/URDP)	<ul style="list-style-type: none"> <li>▪ Support to overall information activities at the division.</li> </ul>
CIAT/SADU	<ul style="list-style-type: none"> <li>▪ Collaboration/support to all major events and publications (sourcebook, uplands workshop, MIS, etc)</li> <li>▪ Support to developing materials (workshop CDs)</li> </ul>
IWMI/IRD	<ul style="list-style-type: none"> <li>▪ Collaboration/support to all major events and publications (sourcebook, uplands workshop, MIS, etc)</li> <li>▪ Supported special issue of Journal on watershed management</li> </ul>
CIRAD/PRONAE	<ul style="list-style-type: none"> <li>▪ Collaboration/support to all major events and publications (sourcebook, uplands workshop, MIS, etc)</li> <li>▪ CAFRI providing inputs into ORCATAD project</li> <li>▪ CAFRI support to video production</li> </ul>
IRD/CATCH-Up	<ul style="list-style-type: none"> <li>▪ Discussions on setting up a resource database for AFPRC</li> </ul>
IRRI/NRRP	<ul style="list-style-type: none"> <li>▪ Support to Rice Knowledge System</li> <li>▪ Provide space on web/server for the NRRP website</li> <li>▪ Discussions to develop sequel to Ban Na Pasouk Radio programme</li> </ul>
SNV	<ul style="list-style-type: none"> <li>▪ Support to the SNV/NAFRI NTFP e-letter</li> <li>▪ Support to producing and translating the NTFP Handbook</li> </ul>
FAO	<ul style="list-style-type: none"> <li>▪ Production of the MA&amp;D Manual</li> <li>▪ Agreement for NAFRI library to manage FAO publication catalogue</li> </ul>

Based on the previous activities some lessons have been identified. First, there is a need to broaden funding for the center over the long-term. Current funding for center activities are primarily provided by Sida while work with most of the projects has been on an informal basis with no clear proposals or formal agreements. There is an opportunity to have them support common information resources such as the NAFRI servers, website, journal, newsletter and other common activities. In addition, there is an opportunity to provide more (and better) services to different projects and international research centers based at NAFRI including production of materials and contributing to different systems developed such as LAD to NALIS

### 2.3 Role of CAFRI within the Lao AKIS

CAFRI, through its work with AIM has been using the Lao Agriculture and Knowledge Information System (Lao AKIS, figure 2) as a framework to analyze the major challenges and opportunities within Laos. An AKIS links people and institutions together to promote and enable mutual learning and generate, share and use agriculture-related technology, knowledge, skills and information. A useful way to think of such a system is through a network approach where different levels and areas connected through nodes – in the network model those with the most connections and contacts are seen as most powerful rather than those who ‘hold’ or wield the most information.

The AKIS framework also provides an opportunity to identify entry points to improve two-way flows of information at all levels. In general there is a need to look at how information flows between and among different levels, rather than seeing information and communication systems as a linear process.

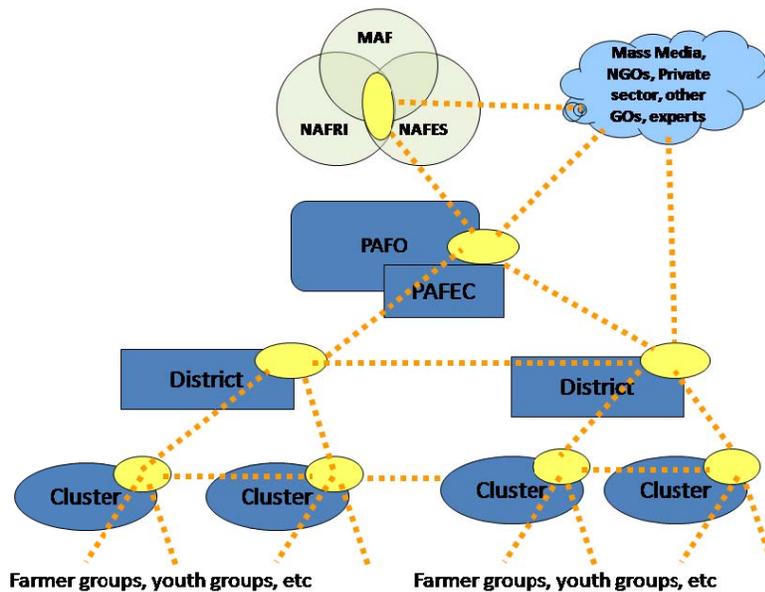


Figure 2: Lao AKIS

### 2.3.1 Key issues and opportunities within the Lao AKIS

Agriculture in Lao is changing. New players, relationships, and policies are influencing how smallholders access and use information and knowledge. Although this growing complexity suggests opportunities for Lao farmers, too little is known about how these opportunities can be effectively leveraged to promote pro-poor development through agriculture. Farmers are moving from a subsistence based economy with multiple livelihood sources to one which is more dependent on market forces. On the one hand farmers appreciate the new opportunities improved income and services pride. On the other, many have expressed anxiety and concern over how volatile market-based farming systems can be.

Compared to five years ago there are now a number of information providers and there is generally more openness and willingness to share information. NAFES has established the National Information Center for Extension (NICE), MAF has two emerging information sections unit (the MAF IT Center and an Outreach Unit). In addition, other ministries have setup different information centers and units (i.e. NLMA). Two notable initiatives that have improved communication between stakeholders are the discussions groups Lao FAB and Lao LINK. Laofab is the English language discussion group attached to the Agribusiness sub-working group of MAF, while Lao Link (established through AIM) is for Lao language.

Some of the key issues identified related to information and communication systems in different assessments and analysis include (AIM, 2007):

- Lack of coordination at different levels in developing information systems and materials and often there is overlapping information and duplication of efforts
- There are few mechanisms to disseminate technical information to provincial and district staff and answer problems that farmers are facing in their areas.
- Farmers have questions that extension staff cannot answer and there are no mechanisms in place to efficiently provide extension staff with answers to technical problems they encounter (pests, disease outbreaks, etc).
- Information is mostly produced based on the needs of projects, rather than on the needs of users (see box 1).
- Farmers are increasingly are interested in a range of information on different aspects of development. This not only includes technical information but also information on markets, marketing, contractual arrangements and land rights.
- Extension's role is changing from a top-down system to an advisory role and providing facilitation support and monitoring arrangements between farmers and markets.

**Box 1: Farmers communication preferences**

In 2006, the IMSPD carried out a survey of farmers information needs and communication preferences in two districts in Northern Laos (Namo, Oudomxay and Phonexay, Luang Prabang). In a ranking of communication preferences, it was found that face-to-face encounters (farmer exchanges, study visits, training in the field, etc) are the most preferred methods. Mass media comes in second and women preferred radio more than TV. Posters and technical sheets scored the lowest as many farmers could not read Lao language. In many senses the results are not surprising, but they do reinforce the notion that the materials most often produced by researchers and extension agents (posters, technical sheets and written materials) are the preferred channels of farmers.

### 2.3.2 Linkages to MAF goals and information activities

In 2006, a number of new policy directives from the MAF were issued to implement the overall workplan of the Eighth Party Congress. In addition, in May 2007, key positions within the Ministry were changed allowing for a restructuring of both different line-departments within MAF as well as for the restructuring of NAFRI (see section 2.2). MAF has four major goals and 13 measure as its operational framework (see Annex 3)

NAFRI has developed solid linkages to the information providers at MAF as well as other line agencies. NAFRI has established a high-speed fiber optic connection to MAF (and NAFES) to improve the flow of information. In addition, it has been working with MAF IT Center to develop information sharing policies and routines. Most recently, the permanent secretaries office has set up a 'public relations unit' to help improve get out information on different activities of MAF. They are liaising closely with the mass media.

### 2.3.3 Research-Extension Linkages

An important partnership developed has been the NAFRI-NAFES Agriculture Information Management Working Group (AIM). In 2003, there were few linkages to NAFES and there was no way to interact in terms of sharing and exchanging information. In 2006, the AIM working group was established based on initial collaboration in developing the sourcebook and Research-Extension linkage workshop. The overall purpose of the working group is to improve extension agents and farmers' access to information. The group is currently working on four areas: information management, joint material production, improving information systems at province and district level and develop feedback mechanisms to from farmers and village development cluster level (Kum Ban Pattana)

In 2007 and 2008 a number of activities were carried out including the development of groundbreaking materials to support farmers and extension agents make more informed decisions regarding rubber planting (see box 2).

**Box 2: Think before you plant: developing appropriate extension materials for smallholder rubber planters**

In 2007, the AIM working group carried out an exercise to produce rubber extension materials using a systematic communication process. The materials were produced in order to fill the gap in knowledge in rubber planting in Lao PDR. The purpose was *not* to promote rubber production, but to help farmers and extension staff make better decisions about if and how to produce rubber. Three inter-linked materials were developed: rubber decision pamphlet, radio spots on strengths, weaknesses, risks and alternatives in small holder rubber planting, and a rubber planting reference manual. It was found using the such a systematic process enable the group to produce more effective and relevant materials.

### 2.3.4 Linkages with other actors within the Lao AKIS

As the government encourages the opening of the economy, a number of other actors need to be engaged in the agriculture development. Given that the private sector is driving the transition in agriculture production, it is important to engage them more effectively in research activities. They can support dissemination of information (if in their interest) or be provided with relevant information on where to plant and what are their rights and obligations. In addition, civil society in Laos is slowly emerging. This includes local non-profit organizations as well as farmer groups (production and marketing groups or cooperatives).

There are opportunities to work with and through civil society actors to deliver information as well as get feedback on local level issues and concerns.

### 2.3.5 Working with the Kumban, Technical Service Centers and farmer groups

While it is not yet an official administration unit within the government system, the Kumban is becoming a central implementing mechanism for the government. MAF has put increasing emphasis on developing Technical Service Centers at the Kum Ban level. As stated in a recent Ministerial Directive (No. 216/08, 17.01.08), "The center is an important strategy of the agriculture and forestry sector in implementing the socio-economic development plan of the party and the government..."

However, within this mandate there is spectrum of approaches for how the kumban can be organized, developed and facilitated. At the recent NAFRI/NAFES/VFI workshop on "linking the last mile" it was recommended that further testing be carried out to use the kumban as a communication platform and build the capacities of the farmers and communities to share exchange information so that communication is flowing in multi-directions---horizontal, vertically, two-way.

Technical Service Centers (TSCs) are the main strategy promoted by the MAF to deliver better extension services at the kumban level. Some of the key lessons include (Foppes, 2008; Information Service Component, 2008):

- TSC bring staff closer to the farmers, but the main constraint is a lack of running budgets, both for kum ban plans to be implemented and for extension staff to be placed at centres and implement extension activities
- Staff are often young and inexperienced and have little training or support in terms of developing information or new ideas to farmers
- There needs to be balance in focusing on technical transfer and on marketing, facilitation, leadership training.
- A lot of resources have been spent establishing facilities and demonstration sites at the TSCs but less on extension systems to get staff out to farmers fields.
- Need to integrate research-extension activities more clearly at the kumban level as well as link Kumban phattana planning process to TSC activities
- Private sector is driving change and thus the role of TSCs is questioned in places where the market forces are strong.

### 2.3.6 The mass media

The mass media can play an important role in sustainable development. Indeed, most farmer prefer TV and radio to other forms of communication. Currently there are a number of government run media outlets which offer good opportunities (LNTV, Newspapers, and radio) to disseminate information to farmers. The recent enactment of a new media law will strengthen the capacity and hopefully the range of news sources and mass media outlets.

CAFRI has been working with the mass media in a range of activities including:

- Lao National TV: Development of special programmes on NAFRI work
- Lao National Radio: development of radio spots on rubber extension materials
- Lao STAR TV: Development of special programmes and participation in different NAFRI events and activities
- Newspapers: CAFRI has worked with and provided information to the different news outlets and many of the articles in the NAFRI newsletter are repackaged

One of the main issues with the mass media is coordinating different activities within MAF as many organizations are using TV as a way to disseminate information. It could be more effective in the long-run to link efforts and create focused programming rather than trying to compete with one another.

### 2.3.6 Partnerships with regional and international centers

CAFRI and NAFRI have engaged with a number of international and regional organizations in relation to communication and information management. Of particular note are partnerships

with FAO regional office as well as the Thai AGRIS Center based at Kasetsart University. NAFRI has also participated in the Asia Federation on Information Technology Association.

There are a number of regional and international associations and organizations focused on agriculture information and communication which CAFRI should engage. These can help provide new ideas and experiences as well as help in capacity building efforts (see Annex 2).

### **3. Key issues to guide the strategy**

---

Based on the analysis above, some of the key issues and lessons arising from the analysis are provided below.

For **internal** linkages within NAFRI, issues and lessons include:

1. *NAFRI still lacks information and communication standards for both how information is shared within NAFRI as well as how it is communicated.* While a number of new information systems have been, or are in process of being developed, there is a need to improve standardized approaches to sharing and exchanging information. This could be for standardizing how administrative and management information is stored or using the current IT systems to improve efficiency and effectiveness. Similarly, reporting formats and standards still need to be developed
2. *CAFRI will need to broaden the support and mechanisms for cost recovery in the medium to long-term.* CAFRI will develop a strategy for working with a broader range of organizations and actively seek different ways of funding activities. In addition, it will develop innovative cost recovery mechanisms to ensure long-term sustainability of NAFRI information systems.

**Externally**, some issues include:

3. *In order to improve different actors access to information there is a need to improve linkages between different actors within the Lao AKIS at all level.* CAFRI will work with and through different actors and support the development of improved information systems and linkages at different levels. This will also include engaging the private sector.
4. *Lack of understanding on local information and knowledge systems:* Knowledge and understanding on information and communication is still in its infancy. There is a need to carry out more research and gain deeper understanding of how farmers learn and what networks they are using to obtain information. It is only through such understanding that appropriate interventions can be made to improve farmers' access to information.
5. *In a fast changing economy the focus should be on strengthening farmers' capacity to make informed decisions and ensuring divers farming and livelihood strategies:* Farmers need to understand the markets and systems they are producing for and not just be provided with technical recommendations. The government's role needs to go beyond mere technical recommendations to play a facilitating and managing role within the transition. Thus, there is need to provide farmers with options and choices. This can help protect farmers from the uncertainty of the market.
6. *Technology recommendations need to be co-designed with farmers and extension agents rather than just disseminated.* There is still a tendency to promote 'one-size' fits all solutions for farmers often with little understanding of farmers needs or problems (Leeuwis 2004). This implies a need to contextualize both innovations, technologies and communication practices rather than have generalized technologies.

## Part II: CAFRI Strategic Framework (2009-13)

This Strategic Framework has been developed to guide the activities of CAFRI and has a dual purpose. The first is concerned with strengthening information and communication systems within NAFRI. The second is *concerned with establishing information and communication systems and linking to key actors within Laos in order to contribute to improved access to information by key stakeholders.*

### 4. Mandate, Responsibilities and Functions of CAFRI

---

#### 4.1 Mandate and Responsibilities

The Centre for Agriculture and Forestry Research Information (CAFRI) is a centre under the supervision of NAFRI. CAFRI is mandated to compile and disseminate agriculture and forestry research findings in line with the NAFRI's research strategy. It also has key role to play in collaborating with NAFES and other extension agencies to disseminate agriculture related information and support improved communications systems.

To achieve this, CAFRI has the role of being a technical hub for consolidating, summarizing and appropriately packaging scientific information, technologies and research findings from relevant actors. In addition, it will create and develop systems for information management and centralized information services in an appropriate manner for users.

The roles and responsibilities of the information center are to:

- Develop information bases and create systems for scientific information management on agriculture and forestry in a centralized manner for effective use
- Collect, consolidate, summarize, select and exchange scientific information on agriculture and forestry from all actors in order to create outreach materials in various forms and broadly disseminate agriculture and forestry research findings
- Provide scientific research information on agriculture and forestry according to the needs of society
- Coordinate directly with Divisions and Centres affiliated with NAFRI and other relevant actors to conduct studies and collect information from research
- Make proposals to NAFRI for issuing directives on information management, policy on information provision and services to organizations at each level
- Provide guidance on the implementation, management, monitoring and evaluation of Sections and Units under CAFRI
- Make budget plans, search, use and manage funds from domestic and international sources, in order to effectively achieve good results according to expectations

#### 4.2 Functions of the centre

Based on the roles and responsibilities as well as an analysis of the external and internal environments, four functions have been identified to guide the centre.

- Developing **Standards and guidelines** for information sharing, production and management for NAFRI
- Provision of **NAFRI information services** focused on data management, library services, production of materials and ICT services.
- **Networking and outreach** with key actors within the Lao AKIS.
- Develop **methods, approaches and materials to improve farmers, researchers and extension agents access to information**

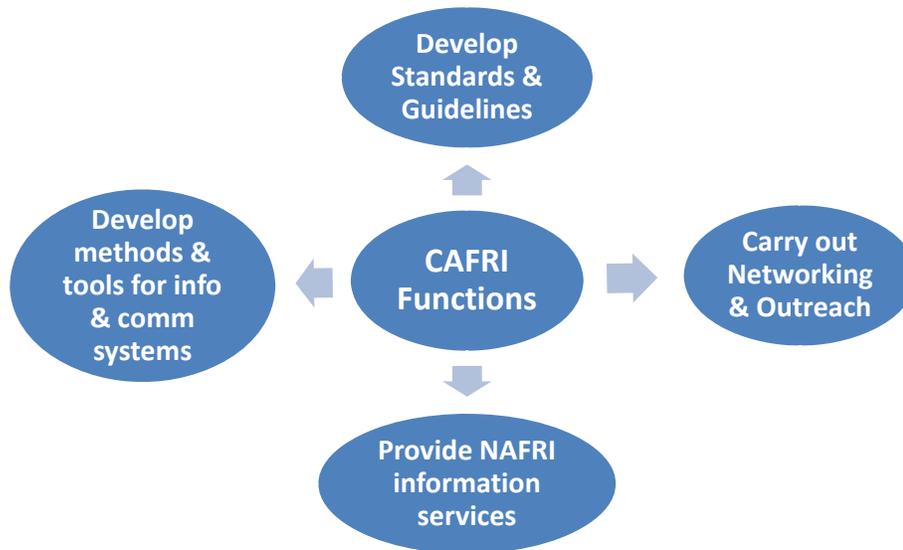


Figure 3: CAFRI Functions

### 4.3 How the CAFRI Framework supports the NAFRI Strategic Plan

Research for development implies a special concern for research *utilization* and there is a need to find ways to enhance the use of research outputs. Ineffective technology delivery to farmers is often attributed to poor information packaging and inadequate communication systems between farmers, researchers and extensionists. This is a task that must jointly be addressed by both the research and extension sectors.

The NAFRI strategy identifies information services as a key support activity to NAFRI. While the Information Center will not be involved directly in any of the key research thrusts, it has been assigned to work on one of the priority research topics for the next two years focused on “Understanding Local Agriculture and Knowledge Information Systems at the village and kumban levels”. The focus is on supporting the development of methods and communication tools to improved agriculture delivery systems at the kumban level.

Information services will support researchers to carry out research more effectively, improve communication mechanisms, and manage research information. Some key areas will information services will play a central role include:

- Continuing support to ICT to improve infrastructure at different centers, intranet and information sharing mechanisms using IT between centers and researchers.
- Support the organization of workshops, mini-seminars and other events to facilitate learning and sharing
- Support the research management, administration and finance and cooperation divisions to develop an integrated information management system.
- Building in cost recovery mechanisms and expanding support and collaboration with different research and donor partners.
- Support the development of standards for report writing, proposal writing and dissemination of research through a consistent image.
- Developing researcher’s capacity to better use, handle and be able to analyze multiple information sources as well as document research results.

## 5. Vision, Mission, Objectives and stakeholders

---

### 5.1 Vision

*The Center's Vision is to see Laos as an open society where farmers, communities, policy makers, researchers and extension agents are able to access to information to make better decisions regarding agriculture production.*

### 5.2 Mission

*CAFRI's mission is to become a center of excellence in the provision of agriculture and natural resource management information in Laos. It also seeks to improve farmers, extension agents, researchers and others access to information through strengthening linkages between different actors and levels.*

### 5.3 Objectives

- Objective 1: Improve the organizational capacity of NAFRI to organize, store, share and retrieve information needed to plan and carry out research effectively.
- Objective 2: Maintain and strengthen information communication technology capacity within NAFRI so as to improve how information is shared and exchanged both internally and externally.
- Objective 3: Facilitate the communication of research results and recommendations so key stakeholders can use at different levels.
- Objective 4: Test methods for improving information and communication processes at different levels
- Objective 5: Improve the capacity of researchers, managers and information services staff to use and deliver information

### 5.4 Stakeholders

CAFRI will work with a range of stakeholders. The term "stakeholders" is used rather than "target groups" to emphasize that all actors within the Lao AKIS work together have a legitimate and important role to play, rather than seeing anyone actor as passive recipients of information. The table below shows the type of information each stakeholder group needs as well as the mechanisms that CAFRI will use to communicate with them.

**Table 4: CAFRI's engagement with key stakeholder groups**

Stakeholder	Information needs	Mechanisms to communicate
Farmers	<ul style="list-style-type: none"> <li>• Technical advice on options and approaches to improve productivity</li> <li>• Feedback on immediate technical problems or marketing issues as they arise</li> <li>• Access to information on markets, traders and rights and responsibilities under contract farming</li> <li>• Understanding of their rights and responsibilities regarding land use</li> <li>• Access to information on inputs (seeds, credit, etc)</li> </ul>	<ul style="list-style-type: none"> <li>• Mass media (radio, video)</li> <li>• Help desk functions</li> <li>• Improved communication systems at kumban level</li> <li>• Development of materials in local languages</li> <li>• Farmer-to-farmer methods to exchange information</li> <li>• Directories of farmer experts</li> </ul>
Policy makers (national, provincial, local)	<ul style="list-style-type: none"> <li>• Information on regional and global markets</li> <li>• Information on regional trade agreements and their costs and benefits</li> <li>• Land use and capability maps to understand how to plan land use for longer term sustainability</li> </ul>	<ul style="list-style-type: none"> <li>• Access to up-to-date maps to visualize land use change</li> <li>• Policy briefs</li> <li>• Short-meetings to present issues and explain trade-offs</li> </ul>
Extension agents	<ul style="list-style-type: none"> <li>• Reference materials on different technical options to be repackaged as extension materials</li> <li>• Improved information on different aspects of marketing (contract farming, understanding</li> </ul>	<ul style="list-style-type: none"> <li>• Reference materials &amp; manuals</li> <li>• Fact sheets on how to carry out specific activities</li> </ul>

Stakeholder	Information needs	Mechanisms to communicate
	markets, and rights and responsibilities of actors <ul style="list-style-type: none"> <li>Improved methods for landuse planning, facilitation of farmer groups, and managing extension processes</li> </ul>	<ul style="list-style-type: none"> <li>Provincial, district and national workshops to share results and experiences</li> </ul>
Researchers	<ul style="list-style-type: none"> <li>Access to information on technical trials and options to build upon existing knowledge</li> <li>Improved understanding on markets and socio-economic issues to make sure technical interventions are appropriate</li> <li>Priorities and needs of farmers identified by extension system</li> </ul>	<ul style="list-style-type: none"> <li>Improved access to the internet</li> <li>Exchanges between research-extension</li> <li>Linkages to private sector</li> <li>Library services specific to each researcher</li> </ul>
Academics	<ul style="list-style-type: none"> <li>Understanding different aspects of agriculture and natural resource management</li> <li>Opportunities to carry out research and learn from field learning</li> </ul>	<ul style="list-style-type: none"> <li>Reference materials</li> <li>Case studies</li> <li>Sharing and exchange workshops</li> </ul>

## 6. Working approaches

---

### *6.1 Partnerships and networking*

A key principle is to work with and collaboration of others. Below are some examples of how the CAFRI would work in relation to others both within and outside of NAFRI.

#### 6.1.1 Networking among NAFRI centers

As centers are spread throughout the country, developing a network of information staff between each center will be a key entry point for improving communication and exchange of information. In this respect, a decentralized but coordinated approach would be used. Centers would drive the development of their own information needs, but could rely on support from other centers or NAFRI headquarters. However, decisions about common platforms and standards would be made centrally, with input from centers and other stakeholders, to ensure wider accessibility. This approach was used in the first five years and worked where there was a commitment by centers to invest in information services both in terms of staffing and infrastructure. Mechanisms for carrying this out will need to be further developed. Section 9.3 focuses on specific activities with different centers

#### 6.1.2 Expansion of AIM working group

The AIM working group is a good example of inter-agency collaboration and should be expanded to include other information providers within MAF. Already there has been discussions with MAF IT and the Information Production Unit of the Permanent Secretaries Office to collaborate on certain activities. AIM will also be used to develop partnerships with projects working at NAFRI or NAFES.

#### 6.1.3 National and regional partnerships

A “networking” approach will help improve information exchange and access to national and regional information sources. CAFRI will work on two fronts. First CAFRI will create a network of actors working in the agriculture and natural resource management sectors through the use of different communication mechanisms (NAFRI E-letter, workshops, newsletter, etc). Second it will form specific partnerships with different agencies and organizations through the development of MOUs or specific project proposals. It will also be important that CAFRI develop partnerships with different regional and international information providers.

### *6.2 Institutionalization of information and knowledge*

A key principle of CAFRI is to develop system and mechanisms to institutionalize information and knowledge produced by NAFRI and its partners. Often learning is lost once a project ends as the documentation and knowledge is not stored or even owned by local partners.

CAFRI has developed a number of systems which can be used to institutionalize learning and information generated from different projects or centers. This includes:

- Developing mechanisms to store data and information on the NAFRI server farm
- Ensuring that all materials produced by projects and organizations are stored at the NAFRI library or in LAD
- Using REMIS to store information on project monitoring and evaluation rather than using separate donor system.

The main principles are (CGIAR, 2008):

- **Availability:** research outputs should be available and stored in appropriate open formats using standardized metadata and be accessed widely through NAFRI systems.
- **Accessibility:** Research information systems and services follow accepted standards and encourage harvesting and sharing of the content and are in formats and systems that users find and gain value from.
- **Applicability:** Research outputs are open, free to use, reuse, and redistribute.

**Box 3: What is knowledge Management?**

Knowledge management, capitalization and linking policy to practice are all ‘buzzwords’ that have been used by many but not well understood. The basic concept for CAFRI’s purpose is that knowledge management is the act of connecting people to the best practices, knowledge, and expertise they need to create value - by supporting:

- the creation or acquisition of knowledge relevant to opportunities and constraints,
- the synthesis and learning from such knowledge,
- the sharing through better communication and networking, and
- the utilization through scaling-up and promotion of uptake by the right people at the right time in the right place.

### 6.3 Using strategic communication processes to plan, develop and monitor materials

NAFRI produces a range of information. However, much of this is not strategically developed or tested for understanding by the end users. In order for materials to be effectively produced and used by end users more systematic processes need to be incorporated into the production processes. This means that information products should be planned, identified, implemented and monitored in a more effective way.

The figure below demonstrates a simple process to ensure that communication materials are planned and developed in a systematic process. In such a process key stakeholders are involved in different stages of the material production process. This process can be used for a range of materials but emphasizes that materials need to be based on needs, planned effectively, tested and then monitored. The AIM Working Group tested this communication process and it was found that the materials produced were more effective and useful to end users than traditional materials.

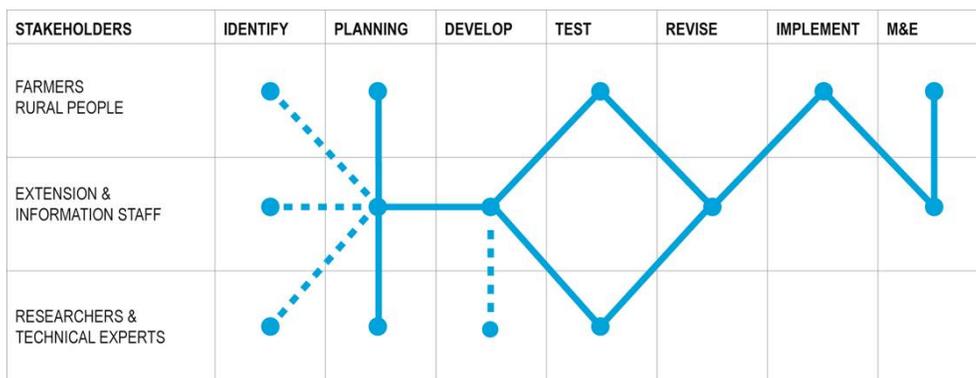


Figure 4: Strategic communication process (Source: Dougherty, 2007)

## 6.4 Promote open access and open source systems

As CAFRI is a public institution, it adheres to open source and open access principles in which research generated by NAFRI researchers and donor projects is widely available to the public. This does not mean that everything that NAFRI produces should be widely available. But research which has been approved by the scientific council should be made available to different channels. While CAFRI does charge for certain publications this is in order to cover costs of production and printing. Similarly, CAFRI has developed or used a number of systems which follow this principle including the NALIS, LAD, the content management system for its website (Joomla) and using Linux as its server platform.

CAFRI has also signed onto the Don Dok Statement on Access to Information for Development which encourages organizations to:

- Make information widely available in digital format
- Use of Lao language (and where appropriate the use of ethnic languages).
- Support the development, promotion and use of a set of standards that apply to the creation, cataloging, storing and sharing of digital documents
- strengthen, extend and link existing information systems and services, including libraries, publication programmes, websites, and mass media channels;
- Making sure that knowledge reaches poor and disadvantaged people.

## 6.5 Cost recovery mechanisms and broadening support

In order to ensure long-term sustainability, cost recovery mechanisms need to be strengthened and put into place. CAFRI already has a number of common resources that could be used by all projects and donors supporting/working with NAFRI.

Table 5 shows some of the current services and how these could be supported by others. Currently, services are provided on an adhoc basis. Some projects use the current systems but do not contribute to their upkeep/maintenance, others decide to develop their own systems. In addition to direct support, there other types of cost recovery mechanisms such as providing consultancies and training on information management or charging for publications or publication design. Some of these mechanisms are already in place but just need to be standardized.

CAFRI could seek alternative sources of funding such as getting companies to support the production of the newsletter or journal or developing separate proposals to foundations with other organizations to produce information. For instance, Kolao recently provided a large grant to the Alounmay Magazine and there are a number of foundations that work on supporting access to information and open source technology

**Table 5: CAFRI products and services which can be used by different projects**

Area	Products and services	Comments
IT	<ul style="list-style-type: none"> <li>• Internet connection</li> <li>• Antivirus software</li> <li>• Recommendations on computers and software</li> <li>• Use of services: email, website, file share, back up</li> </ul>	Proposal developed to improve internet Some projects already using services
Information Management	<ul style="list-style-type: none"> <li>• Library system</li> <li>• Lao Agriculture Database System</li> <li>• Support use and improvements to ReMIS</li> </ul>	Projects contribute by providing resources or financial support
Production and Dissemination	<ul style="list-style-type: none"> <li>• NAFRI Journal, NAFRI Newsletter</li> <li>• NAFRI Publication series</li> <li>• Support to design, produce and disseminate materials</li> </ul>	Projects contribute by providing resources or financial support

## 7. CAFRI Activity Areas

Activities are structured around three functional areas (information management, ICT and Production and Outreach), one support area (Administration and Management) and one area that all sections and units will be responsible for (Method development and research information). The five areas are complimentary and should be seen as different pieces to a puzzle whereby different parts have to contribute for the whole to be realized.

For instance there is often strong collaboration and cooperation between ICT and the library to develop and install LAD or solve problems related to these systems. The ICT section also works closely with the production and outreach to place NAFRI publications on the web. All sections to work on improving external systems, particularly through the AIM working group. Another key focus will be on capacity building both for managers of information as well as users to be able to handle, use and manipulate information or take advantage of new communication channels.

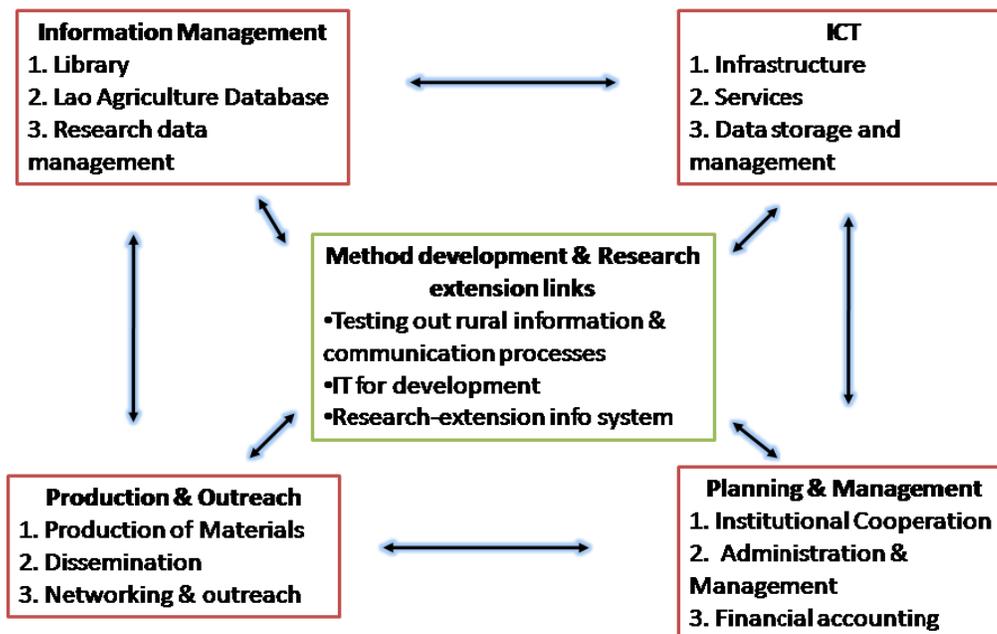


Figure 5: CAFRI activity areas

The following sections provide an overview of the four key activity areas while administration and management systems are described in Part 3 of the strategy. Each description consists of the description of the area and its scope, the potential activities and an indicative list of the outcomes it would like to achieve.

## ***7.1 Information and knowledge management systems***

The goal of CAFRI has been to develop a range of information systems which assist different actors to access information to make better decisions. Researchers need access to relevant data sources in formats which they can readily use while managers need up-to-date information on budgets, program activities and progress on on-going research activities. CAFRI has developed a range of common information tools ready for wider use (LAD, NaLIS and ReMIS).

The purpose of this activity area is to:

- Support the development of information systems within NAFRI which meet the needs of researchers and managers
- Develop a high-quality library and information system that is meeting the needs of extension agents, universities and other actors
- Improve capacity of information staff to manage and provide information to researchers and other users.

This area will initially focus on three systems and: 1) library 2) Lao Agriculture Database 3) ReMIS. Over the long-term, CAFRI will support NAFRI to develop 'knowledge base' on key information that is important to its strategic priorities. This can include the development of a system to collect research data so that it can be used more widely as well as the collection of information on key areas of NAFRI's work (particularly in terms of markets, trade, laws and agreements and related technical innovations).

### 7.1.1 Library Services

The NAFRI library has the most extensive collection of agriculture and forestry related information in Laos. The library currently holds more than 10,000 materials (books, magazines, reports, CDs, VDOs, etc). In the past five years, the library has been expanded, the collections have been put on-line and partnerships with different national, regional and international organizations made. The challenge is to move beyond daily routines to develop services to establish services and user access, this could include:

- Developing regular acquisition services by making contacts with libraries and organizations in the country and region. This could be complemented by a quarterly accession lists to let users know what has been received.
- Collecting and collating information on key themes or topics for researchers and other users. This could be done by collating materials already in the library (in Lao and English), searching the web, etc.
- Mining the web to find websites and information that will be of use to researchers. This could include developing a list of useful websites
- Training researchers in how to search and use the library
- Supporting development of libraries in provinces or other organizations.

### 7.2.2 Lao Agriculture Database and Lao AGROVOC

The Lao Agriculture Database was established to collect and disseminate agriculture and natural resource information in the country. There are currently more than 2,000 materials in the system with around 500 digital files. In addition, NAFRI translated the FAO AGROVOC, the common thesaurus or dictionary used by FAO for agriculture and forestry terminology. It contains more than 15,000 agricultural related terms. The focus should be moving from development of the systems to use and expansion, including:

- Developing a network of organizations who can provide regular inputs and materials for the system
- Creating a cadre of indexers at centers and organizations interested to contribute to the system.
- Training and promotion of the system to users at NAFRI, university and extension
- Working with provinces to be able to access information from the system

In terms of Lao AGROVOC NAFRI should work with other key actors (NUOL, NAFES, National Library and Ministry of Culture and Information) to update and refine the Lao AGROVOC so that terms are up-to-date and that it can be used more effectively by different actors.

### 7.2.3 Data and information management

ReMIS is an important tool not only for better collecting information to improve management processes but also is one impetus for improving management practices at NAFRI. Such a system is a long-term process and as much time and effort will need to be put into 1) collecting and inputting data regularly 2) providing useful reports 3) providing training to managers in how to use and take advantage of the system. There are now 6 systems to be designed, including:

1. Program Management Information System
2. Research Management Information System
3. Human Resource Information System
4. Asset Management Information System
5. Support Management Information System
6. Administrative Management Information System

Currently two systems are in use by NAFRI (Human resource and research management). The Research Analysis Unit has been established within the Research Management to division to collect, input and analyze information from ReMIS. This is an important step in terms of institutionalizing management information within NAFRI.

CAFRI will continue to support the development of ReMIS. In the long-term CAFRI will support NAFRI researchers to improve the storage of raw data and development of systems for which these systems can be used rather than having researchers constantly having to recollect data and information.

### 7.2.4 Partnerships to improve information sharing

In the last three years, there has been the establishment of a number of information centers and systems related to agriculture and forestry. CAFRI has been at the forefront in supporting shared systems and working with different actors to share the systems it has developed. The table below shows some of the current systems and how CAFRI can support or complement them. One observation is that there is emerging national information systems but few established for the provincial and district levels.

**Table 6: Different information and communication systems in Laos**

System	Focus	Linkages to CAFRI
Lao-link	Discussion group to improve information sharing in Lao language	NAFRI is one of the sponsors of Laolink through the AIM group
Lao-fab/lao fab repository	English language discussion group and digital document system	Focused on broader development issues with links to LAD
CLICK	Consortium of Lao institutions to network information related to rural development	CAFRI is one of founding members
NUOL Central Library	Library management system based on open source principles; huge repository of materials	Sharing of experiences, knowledge and capacity with NOUL central library
MAF Information System	MAF IT developing a management information system to collect information more efficiently for decision-making and monitoring & evaluation	Establishment of the fiber optic network for MAF-NAFES-NAFRI. Support to MAF MIS
INGO Website and data system	Focused on providing information on INGOs working in Laos	
Rights-LINK programme	Supporting the development of an information center on land rights and information	NAFRI founding partners and support to using unified systems
MRC	Library and information systems which have been established	
National Statistics Center	Key statistical data on different socio-economic indicators.	

### 7.1.5 Expected outcomes

Activity Area	2008 - 2010	2011-2012
<b>CAFRI Library</b>	<ul style="list-style-type: none"> <li>▪ Finalize cataloguing and indexing of current collection and input into NALIS</li> <li>▪ Develop web-service/portal for the library</li> <li>▪ Install NALIS at three NAFRI centers</li> <li>▪ Establish at least 2 improved services for library users at NAFRI</li> <li>▪ Develop small display area</li> <li>▪ Develop linkages with national and regional organizations to share and exchange information</li> <li>▪ Develop simple system for managing libraries at provincial and district levels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Establish mechanisms to monitor use of library and get feedback on its usefulness</li> <li>▪ Install NALIS at all NAFRI centers</li> <li>▪ Establish at least 2 improved services for library users at NAFRI</li> </ul>
<b>LAD &amp; Lao AGRVOC</b>	<ul style="list-style-type: none"> <li>▪ Continue upgrading and expanding LAD</li> <li>▪ Establish partnerships with different organizations and train them to input information</li> <li>▪ Establish mechanisms to monitor use of LAD and get feedback</li> <li>▪ Maintain linkage with Thai AGRIS and develop a joint portal</li> </ul>	<ul style="list-style-type: none"> <li>▪ Continue upgrading and expanding LAD</li> <li>▪ Apply to become a formal AGRIS center with FAO</li> <li>▪ Expand Lao AGROVOC and improve functionality</li> </ul>
<b>REMIS and other data systems</b>	<ul style="list-style-type: none"> <li>▪ REMIS finalized and used through the NAFRI server system</li> </ul>	<ul style="list-style-type: none"> <li>▪ System developed to improve use of raw data and statistics collected and used by NAFRI</li> </ul>
<b>Partnerships</b>	<ul style="list-style-type: none"> <li>▪ Meeting once a year to exchange experiences with key information providers</li> <li>▪ Support to other information systems that are being established in the country</li> </ul>	<ul style="list-style-type: none"> <li>▪</li> </ul>

## ***7.2 Information Communication Technology***

This section draws upon the ICT plan that was developed for 2008-2012. In addition, the NAFRI ICT policy has been updated. The purpose of this ICT policy is to enable the NAFRI ICT section to provide a better service and support for to the end users at NAFRI. The plan looks at how to establish a range of common standards and activities. This includes:

- A help desk function to solve problems in a more efficient manner
- Standard recommendations on appropriate computer hardware, software and servers types to use
- Use of different ICT services such as the website, files share and fixing of computers
- Improving connectivity at NAFRI and its research centers.

The objectives of the ICT area are to:

- Improve internal sharing of information between different centers and facilitate better communication between researchers
- Improve the capacities of all staff to be able use the internet as a means of communication and information sharing.
- Assist in developing common standards and storage point which improves accessibility of different information and data sets.

The objectives and intentionally kept very broad since the field of IT tends to change swiftly and also the conditions of IT development. ICT activities are divided into three main areas:

1. Infrastructure – this area covers hardware installations or upgrades for NAFRI
2. Services – this area covers services provided by NAFRI ICT such as websites, software or other services
3. Human capacity development – this area covers both training for the NAFRI users as well as capacity development for the NAFRI ICT staff

### 7.2.1 ICT Infrastructure

ICT infrastructure has improved vastly at NAFRI since ICT activities were first initiated in 2003. NAFRI now has a fiber optic backbone through the headquarters, a fiber optic connection to STEA as well as a functioning server farm. The challenge is to keep maintaining and upgrading such systems over time. ICT has also tried to set up and install internet connections at each of the commodity research centers based in Vientiane but has not been successful. This was due to a range of factors which should be looked at when further establishing connections (see baseline study for details).

This area will focus on the following activities:

1. Upgrading internet access at NAFRI HQ and having two links for more consistent use
2. Upgrading and utilizing the fiber network within Vientiane. This includes cooperation with actors such as NUoL, MAF, NAFES, DOF to name a few.
3. Testing out ways to connect commodity centers around Vientiane as well as in the North and South.
4. Managing and monitoring equipment and infrastructure. This should be done in a way where NAFRI ICT staff can automatically get information if a part of the network or services are not working properly. The system should also report how the infrastructure and ICT equipment is utilized so that NAFRI ICT are able to take actions and upgrade when necessary.
5. Maintaining of network equipment. Network equipment should be replaced when needed and is an ongoing process. The server park should be fully replaced by 2010, when it has served NAFRI for three years. It is important to purchase same models of servers to ease the acquirement of spare parts.

### 7.2.2 Services

A number of ICT services have been developed at NAFRI. These have greatly facilitated the improvements in communication including the greater use of email to communicate, the development of the NAFRI website to facilitate dissemination of information and the use of the internet to search for relevant information. ICT will build upon the services already developed as well as establish new ones particularly in relation to rural communication and using ICT as a tool for development. Some of the key areas include:

- *Testing out rural communication processes* and improving farmers and extension agents access to information (in collaboration with NAFES).
- *Developing a NAFRI intranet system.* The system should contain various tools such as internal websites, calendars for staff, discussion forums, contact databases etc.
- *Administrative reporting system:* Developing system to improve sharing of administrative documents between NAFRI centers (weekly reports, etc)
- *GIS file server and back-up system:* working with GIS/ALRC, ICT unit would develop a system to share GIS information over the network and back up information on regular basis
- *Document management system:* a system based on knowledge tree software has already been deployed at NAFRI and could be further tested and expanded
- *ICT helpdesk* to improve support to NAFRI users and minimize problems associated with the internet and computers.
- *Website development:* regularly update and maintain the NAFRI website and the related sites that are connected or a part of it. There is a need to have staff from different centers and projects contribute information to it as well.
- *Development of database and use of web 2.0 tools:* It is important that there is staff who can support NAFRI centers and projects in developing data systems or take advantage of web 2.0 technologies. In addition, NAFRI ICT have responsibility to support the library with demonstrations of the systems, installations, and distributions on removable media (CD, DVD, USB-memories, etc.) when appropriate.
- *Development of a public computer space* at NAFRI Headquarters
- *Anti-virus software and purchasing of other software in bulk:* ICT recently purchased bulk antivirus software (November 2008). ICT should explore the bulk purchasing of certain software and how this can be used by all at NAFRI.
- *Network authentication:* A system should be installed to use the NAFRI network. Each NAFRI user should be provided with a user name and password to connect to the NAFRI network.

### 7.2.3 Capacity development

The human capacity development is divided into three main groups; the NAFRI ICT staff, the NAFRI users, and the IT staff located at each center. These three groups demand different types of training as well as different instructors. Table 7 provides an overview of the different types of training necessary

**Table 7: Types of ICT training for NAFRI users and managers**

User type	Training needed	Timing
Managers	<ul style="list-style-type: none"> <li>▪ Using email, fileshare system and ReMIS</li> <li>▪ Using admin systems for reporting</li> </ul>	Short-courses and individual courses
Researchers	<ul style="list-style-type: none"> <li>▪ How to search the internet for relevant research</li> <li>▪ How to use the library and LAD to search for relevant info</li> <li>▪ General training on email and file share systems</li> </ul>	General courses 2 a year or for short-periods regularly
Center IT staff	<ul style="list-style-type: none"> <li>▪ Network problem solving, security, and various other help desk issues (which should be an ongoing process)</li> <li>▪ Website and content development</li> <li>▪ Use and updating of ReMIS</li> </ul>	General training 2 times a year, annual meeting to share problems
NAFRI IT staff	<ul style="list-style-type: none"> <li>▪ One more regional masters on database development and use of ICT communication tools</li> <li>▪ Regular refresher courses on system administration, website development, use of web 2.0 and help desk maintenance</li> </ul>	Regional and national level training courses (Laos, Vietnam, Thailand)

### 7.2.4 ICT Partnerships and networking

NAFRI ICT should continue to work in partnership with a range of actors in Laos and regionally given the level of capacity on ICT in general. It has already developed a good network and should expand on this by participating in or organizing different workshops and learning events. It should also keep on top of new changes in the IT sector and understand the implications for this for the agriculture and natural resource sector. Some partnerships could include:

- National level: STEA, National University, MRC, UNDP, Ministry of Telecommunications, private sector agencies such as Tango, ETL, PLANET, etc
- MAF: NAFES IT unit, MAF IT, DOF IT and other line agencies which develop
- Regional level: IT universities, companies providing training and regional and international initiatives on ICT 4 development.

### 7.2.5 Expected outcomes from ICT

Activity Area	2008 - 2010	2011-2012
<b>Infrastructure Development</b>	<ul style="list-style-type: none"> <li>▪ Backup Internet link for NAFRI HQ established</li> <li>▪ Network established between NAFRI and others</li> <li>▪ Commodity centers connected to Internet</li> <li>▪ NAFReC LAN and Internet established</li> <li>▪ Electricity upgrades of centers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Network equipment upgrades</li> <li>▪ SAFReC LAN and Internet connection</li> <li>▪ Network monitoring system</li> <li>▪ Servers replaced</li> <li>▪ Increased capacity of main Internet link</li> </ul>
<b>Services</b>	<ul style="list-style-type: none"> <li>▪ DMS deployed and used by staff</li> <li>▪ Use of IT for admin functions established</li> <li>▪ ICT helpdesk established</li> <li>▪ Website network established and updated on monthly basis</li> <li>▪ Extension of NAFRI databases</li> <li>▪ Anti-virus solution purchased and other software identified for bulk purchase</li> <li>▪ Network authentication system</li> <li>▪ Provide server space for GIS/ALRC</li> </ul>	<ul style="list-style-type: none"> <li>▪ District and provincial level communication systems tested</li> <li>▪ Intranet development and deployment</li> <li>▪ Custom database and web applications developed</li> <li>▪ Public computer spaces established</li> </ul>
<b>Capacity Development</b>	<ul style="list-style-type: none"> <li>▪ At least 2 training courses held each year for NAFRI managers</li> <li>▪ At least 2 training courses held each year for NAFRI researchers</li> <li>▪ Regular training for ICT staff on web development and content development, database and network administration</li> </ul>	<ul style="list-style-type: none"> <li>▪ One regional masters on database development and web 2.0 technologies</li> <li>▪ At least 2 training courses held each year for NAFRI managers</li> <li>▪ At least 2 training courses held each year for NAFRI researchers</li> <li>▪ Regular training for ICT staff on web development and network administration</li> </ul>
<b>Networking and partnerships</b>	<ul style="list-style-type: none"> <li>▪ Attend meetings and events related to ICT development in Laos</li> <li>▪ Attend meetings and events related to ICT for development in agriculture</li> <li>▪ Hold at least 1 meeting of ICT staff working in development in Laos</li> </ul>	<ul style="list-style-type: none"> <li>▪ Attend meetings and events related to ICT development in Laos</li> <li>▪ Attend meetings and events related to ICT for development in agriculture</li> <li>▪ Hold at least 1 meeting of ICT staff working in development in Laos</li> </ul>

### ***7.3 Production and Outreach***

In the past 4 years, NAFRI has been recognized as a leader in information production and knowledge exchange. NAFRI currently produces a range of information materials such as the NAFRI newsletter, Journal, Fact sheets, Manuals and reference materials). For the most part this has been focused on 'written publications'. In addition, the CAFRI has supported to create linkages with a range of organizations through the workshops and seminars to improve exchanging experiences.

The challenge in this area is to move beyond producing a limited number of publications to strategically communicate different information to key actors working with a range of media and organizations. It will also need to learn how to collect and appropriate package a range of materials. The main objectives of this area are to:

- Improve skills of researchers to document and communicate their research results to specific end users.
- Develop mechanisms to improve the production and dissemination of materials to key stakeholder groups
- Work with NAFES and other actors to produce appropriate information for extension agents and farmers
- Facilitate the exchange of experiences and knowledge between different actors

There are a number of functions staff will need to carry out that go beyond just laying and production of publications. This includes:

- Developing mechanisms to prioritize what information needs to be produced based on identified needs of farmers and extension agents.
- Collecting materials, reports and information from centers and projects and repackaging information from research produced
- Support to researchers in producing reports and materials
- Dissemination of materials---not only physical dissemination of materials but developing better linkages with other actors to materials are used.
- Working with other organizations to generate content based on NAFRI information (radio, TV, extension materials, etc)
- Facilitating workshops, seminars and other meetings to share and exchange lessons between different actors

#### 7.3.1 Production of NAFRI promotional and information materials

The production section has been responsible for developing most of NAFRI promotional and information materials. This area will focus on producing a range of materials on NAFRI and its activities. Some activities will include:

- Regular production of NAFRI promotion materials such as the calendar, brochures and directories
- Development of annual report on NAFRI research activities in collaboration with the research management division
- Further improvements and production of the NAFRI Newsletter and NAFRI Journal

#### 7.3.2 Production of NAFRI research information

CAFRI has assisted different centers and projects to produce a range of technical information (reference materials, technical sheets, proceedings, etc.). However, these are often produced in an ad-hoc fashion without using a proper communication process to ensure the materials are meeting the needs of the intended target audience. Thus, the focus in the coming strategic plan would be to develop materials in a more systematic and effective manner building upon the range of materials that have already been produced.

All of these materials would be developed in collaboration with NAFRI centers and divisions as well as NAFES and other actors. There has been discussion to develop a 'multi-media' unit within CAFRI but it has been decided to develop capacity in producing other materials (such as video, etc) for the long-term and work through partnerships in the short term. The rationale for this is that there is limited capacity within the center and there are already a number of organizations within MAF with capacity to produce materials using different media.

The following areas have been identified:

- *Support development of templates and standards for producing NAFRI information:* NAFRI to establish standard procedures and guidelines for report writing and a series to place NAFRI information. Annex 4 provides some examples of reports series.
- *Repackaging information produced by NAFRI:* NAFRI produces a range of technical and socio-economic recommendations which can be easily repackaged for different target groups. This can be done through writeshops to build capacity of researchers and other actors.
- *Support to researchers to improve how materials are developed and develop incentives for writing up research results:* Researchers still have difficulty writing up research results and lack incentives for documenting research.
- *Provide services on demand to projects and centers to produce information materials:* CAFRI already supports projects and centers to produce information materials and will continue to provide information production services. Through Sida a fund has also been established to support the repackaging of materials using the strategic communication process.
- *Improve dissemination of materials:* This includes updating and refining the NAFRI dissemination database, and developing partnerships to ensure information is spread widely (i.e. use of the NAFES wisdom bag)

### 7.3.3 Improving the development of extension materials through AIM

This will be done primarily with and through the AIM group and partnerships will be expanded to include other projects at NAFRI and NAFES. One lesson from previous AIM work is the need to develop a planning and prioritization process to define the types of materials that would be produced through AIM based on the needs of the extension system. As shown in the diagram below different materials require different skills or are at different stages of development. Sometimes there is a need to generate knowledge on a given topic whereas other times it might be extracting information from research and technical reports to produce reference materials and finally, there is a need to understand how to adapt reference guides to make extension materials specifically for farmers.

By developing a shared agenda and priorities it will be easier to identify what materials need to be produced and what is already available along the continuum of approaches. As learned from the development of rubber extension materials for smallholders, extension agents and smallholders are not only looking for technical information but information on socio-economic related issues as well (markets, land and labour requirements, or financing). Some of the main activities here would be focused on developing materials with AIM

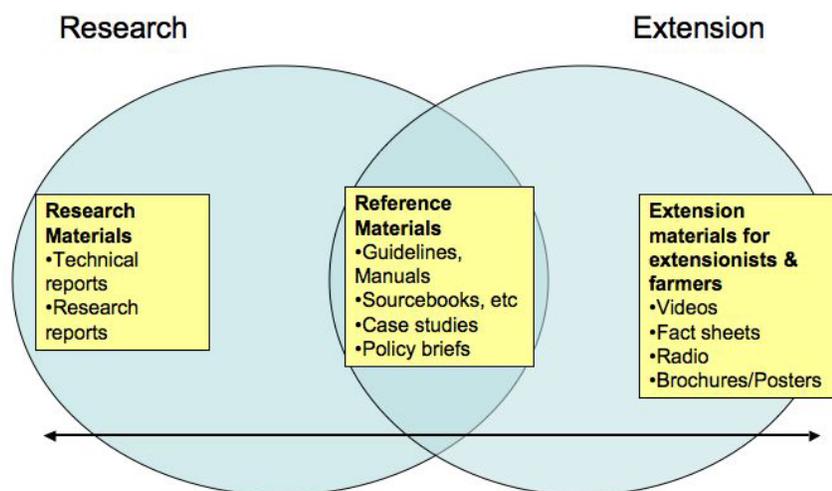


Figure 6: Research – extension continuum

### 7.3.4 Linkages and outreach

CAFRI has developed a wide ranging network of partnerships. The focus here is to further improve different partnerships to improve the exchange of information and experiences so that actors at different levels can make more informed decisions.

First the center will strengthen linkages to the mass media to spread experiences from NAFRI more widely to the public. The mass media has an important role to play in assisting farmers and providing them with a range of different information. Both the radio and TV are some of the preferred communication mechanisms for farmers. CAFRI has worked with the mass media on a sporadic basis and will develop specific partnerships with the media to improve spread of information. This will be coordinated with NAFES and MAF to ensure that there is not duplication of efforts.

CAFRI will also strengthen its current partnerships to produce and disseminate information more effectively. It has been found that dissemination needs to go beyond merely sending out materials but forging partnerships with different actors so they can use materials more effectively and that materials are based on the needs of different actors.

Finally, CAFRI has organized a number of important workshops on 'hot topics' to bring in new ideas on different developments in Laos (such as the small holder rubber workshop, Market Information Systems Workshop, Linking the last mile and the Uplands workshop in 2004). In addition, CAFRI has held a regular mini-seminar series internally for NAFRI to improve sharing and exchange of experiences from different projects. CAFRI will continue organizing such learning experiences in order to improve knowledge sharing within NAFRI and Laos.

### 7.3.4 Expected outcomes

Activity Area	2008 - 2010	2011-2012
<b>Production of NAFRI promotional materials</b>	<ul style="list-style-type: none"> <li>▪ Revise and update NAFRI journal and newsletter and seek alternative funding</li> <li>▪ Develop 2 Annual report on NAFRI research with research division</li> </ul>	<ul style="list-style-type: none"> <li>▪ Develop 2 Annual report on NAFRI research with research division</li> </ul>
<b>Production of NAFRI research materials</b>	<ul style="list-style-type: none"> <li>▪ Produce information materials for NAFRI 10<sup>th</sup> year anniversary</li> <li>▪ Establish a NAFRI report series and guidelines for NAFRI reports</li> <li>▪ Support the development of a policy brief series with the AFPRC</li> <li>▪ Support repackaging of materials on at least 2 topics</li> <li>• Revise and update current dissemination system</li> </ul>	<ul style="list-style-type: none"> <li>▪ Develop capacity to produce videos on different NAFRI activities and use alternative media to disseminate information</li> <li>▪ Develop incentive system to document research</li> <li>▪ Support repackaging of materials on at least 2 topics</li> </ul>
<b>Research-Extension Material development</b>	<ul style="list-style-type: none"> <li>▪ Support at least production of at least 2 materials through the AIM group</li> <li>▪ Develop system to support a help desk function to answer questions of farmers and extension agents</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support development of different materials through the AIM group</li> </ul>
<b>Linkages and outreach</b>	<ul style="list-style-type: none"> <li>▪ Support the implementation of the NAFRI 10<sup>th</sup> year anniversary celebrations</li> <li>• Develop partnership with mass media to regularly disseminate information</li> <li>▪ Organize at least 2 workshops on new topics in Laos with different partners</li> <li>▪ Continue to organize NAFRI mini-seminar series on key topics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support organizing NAFRI workshops with different partners</li> <li>▪ Continue to organize NAFRI mini-seminar series on key topics</li> </ul>

## ***7.4 Method development and research-extension linkages***

Understanding and developing improved information and communication systems for agriculture service delivery is still in its infancy within Laos. Given the diversity of ethnic groups and cultural practices in the country, one uniformed system cannot be put into place but will need to be refined to take into account need ethnic preference. Thus, there is a need to focus on understanding different local systems rather than imposing one type of system. Another important aspect will be a focus on partnerships with different actors and linking different levels within Lao AKIS to one another.

MAF is currently in the process of developing a number of information and communication systems and there is a need to develop processes and capacities to be able to handle, manage and adapt information to different needs. The focus is on three areas of work. The first is to carry out research and broaden understanding on different information and communication systems. The second is to carry out research and test out different communication methods to improve actors' access to information. The final focus would be to collate and harvest best practices so they can be more broadly used. Developing such systems cannot be done by NAFRI alone and thus many of the activities will be done in collaboration with others, particularly the NAFRI-NAFES AIM working group.

The objectives are to:

- Understand different types of knowledge systems and how they can improve delivery of information to farmers and different ethnic groups
- Support the development of improve information and communication systems to ensure multi-directional information flows between national, provincial, district and kumban levels
- Collect, collate and disseminate best practices in rural communication and knowledge systems.
- Develop capacity of information staff at different levels to improve information service delivery

Some of the key questions this type of action-based research will attempt to answer include:

- Who are the current stakeholders providing extension services at the Kumban, District and provincial level, what are their roles and responsibilities and how are they currently working together?
- What are the major constraints and opportunities to improving agriculture productivity and how can these be addressed by strengthening Technical Service Delivery systems?
- What are potential ways to improve the delivery of extension services and information provision to farmers and farmer groups?
- What methods and tools can be developed to improve communication and information flows between farmers within a particular Kumban, between Kumbans within a District and up to the provincial level?
- In addition to service delivery, what other needs for institutional support and how might these be integrated into Kumban/Technical Service Center models?

### 7.4.1 Research to understand local knowledge and communication systems

Without a sound understanding of local knowledge and information systems it will not be possible to identify local needs and preferences and develop appropriate interventions. Such studies will feed into the development of research communication strategies at the local level. In collaboration with the AFPRC and the NAFReC Socio-economic Unit, CAFRI carry out different studies to understand local knowledge and information systems.

### 7.4.2 Action research to test new approaches to rural communication and improving flow of information between different levels.

The main focus here is to test out systems to improve local information and communication systems, particularly at the kumban level. MAF has put increasing emphasis on developing

Technical Service Centers (TSCs) at the Kum Ban level. However, the roles and responsibilities are still not clear. There is a need to explore more broadly the range of roles that kumban and technical service centers might play in support of farmers and farmers groups---what mechanisms can be effective in ensuring multi-directional information flows and how can farmers provide feedback to service providers to ensure that farmers' needs are being met?

#### 7.4.3 Collation of best practices in rural information systems

Experience is just emerging in terms of engaging different types of communities and ethnic groups. As seen at the linking the last mile workshop in 2007 there is a number of interesting examples and interest by many actors to learn more about developing rural communication systems. In addition, extension staff and development workers have few resources and ideas for how to improve communication processes with farmers. Thus, the focus on this area would be to disseminate best practices in rural communication.

#### 7.4.4 Expected outcomes

<b>Activity Area</b>	<b>2008 - 2010</b>	<b>2011-2012</b>
<b>Support to kumban information systems</b>	<ul style="list-style-type: none"> <li>• Develop draft set of Technical Service Center roles and responsibilities and test out in selected districts</li> <li>• Test out different approaches to technical service provision</li> <li>• Test out improving information and communication systems in 1-2 provinces and districts</li> </ul>	<ul style="list-style-type: none"> <li>• Test out market information systems at the provincial and national level</li> </ul>
<b>Research on local knowledge systems</b>	<ul style="list-style-type: none"> <li>• Carry out studies and develop tools to understand local information and communication systems</li> <li>• Document local knowledge systems</li> </ul>	<ul style="list-style-type: none"> <li>• Studies on impacts and effectiveness of</li> </ul>
<b>Collation of best practices</b>	<ul style="list-style-type: none"> <li>• Support the sharing of best practices in rural communication at national, provincial and district level</li> <li>• Develop sourcebook for Technical Service Center Staff on tools and methods that can be used at Kumban level</li> </ul>	

# Part 3: Implementation arrangements

## 8. Organizational Structure

### 8.1 Current and future organizational structure

CAFRI has revised its organizational structure since it was established in 2007. For the most part, section and unit TORs have been developed but should be revised based on comments on the draft strategy. Figure 5 shows the current structure that has been revised and approved by NAFRI. There are three functional sections within the Center.

1. **Director's office:** comprises the Director of CAFRI as well as his two deputies. They are responsible for overseeing the overall operations of the center.
2. **Administration Section:** has been combined with the administration functions since there is a limit and staff and resources. It is expected that these functions will be separated in the future
3. **Information Management Section:** will focus on the library and LAD but also in developing further information standards and training different users
4. **ICT:** Given constraints in staffing there are only two units currently assigned but this should expand as staff capacity improves.

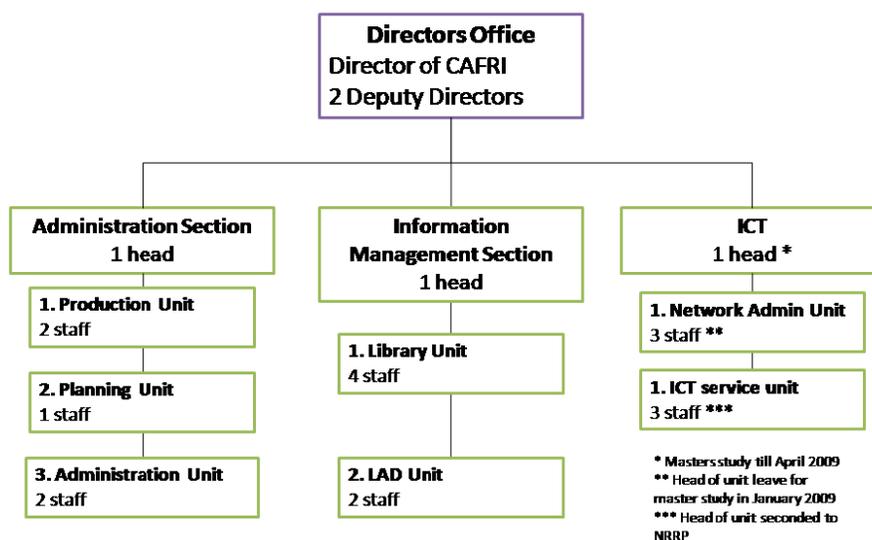


Figure 7: Current CAFRI organizational structure

In order to fulfill its mandate with limited human resources there is a need to have a high degree of team work and cooperation between the different sections. It will be also important that management foster principles of team work and focus on coordination between the different sections and units.

Figure 6 shows the proposed future set up of the division. This is based on the range of activities that are expected to be carried out by 2012 as well as the strengthening of staff capacity to carry out a range of more complex and integrated activities. In this set up the administration section has a dual function. First is to carry out administrative and management duties. Second the Production and outreach section would be responsible for all types of media development rather than focusing solely on printed materials. The Information Management Section would continue to focus on library and document management systems and could be expanded based on need. The ICT section would have more of a focus on developing and supporting the management of research data rather than focused just on hardware.

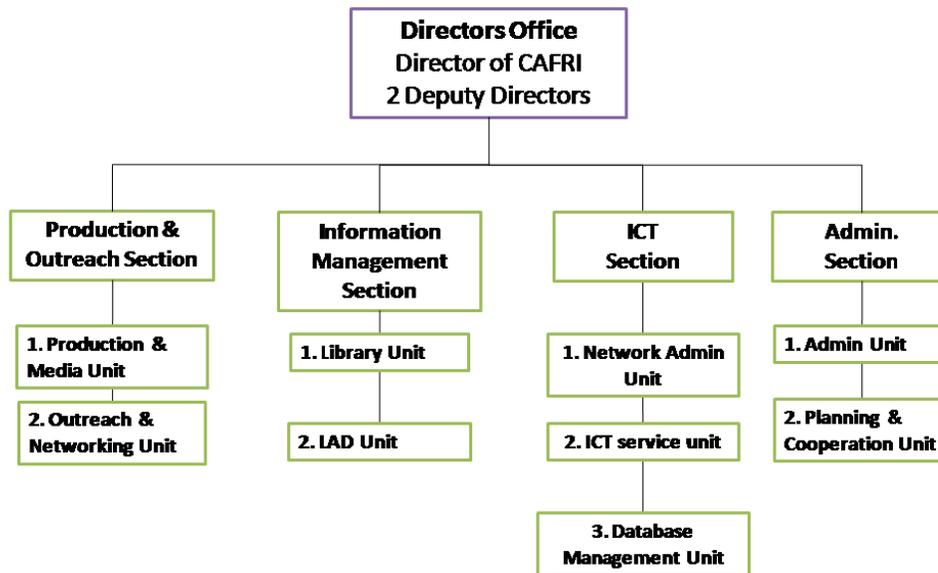


Figure 8: Future organizational structure of CAFRI

### ***8.2 Sections responsibilities and policies***

CAFRI still has to develop a number of policies and procedures for how it will work. This is both for administrative and activity based procedures. Annex 6 provides an overview of each unit's responsibilities and policies and procedures to be developed for the center. In general each section roles of each center are to develop common information and communication systems for NAFRI, provide services to NAFRI researchers and support the development of improved agricultural information systems within the Lao AKIS. In addition, a number of policies and procedures for each type of information system needs to be developed.

### ***8.3 CAFRI Management Systems***

As CAFRI is a young center, it is important that it develop effective management and team work routines within the centers. One set of high priority challenges for the Centre Management Team is to build and re-fine effective internal operational arrangements and mechanisms. There are three levels responsibilities within the center:

1. Directors Office
2. Center Management Team
3. Section and Unit Management

The Director's Office is responsible for overall operations of the center. The staff includes the Director and two Deputy Directors. One deputy has a responsibility for overseeing and supporting the technical sections of the Center, while the other has responsibility for developing administrative and management systems (since as when they were a division information staff did not do this previously). The Director's office is also responsible for approving and responding to all requests for projects, and all related coordination with NAFRI. This office also oversees the center's relationships with outside research partner institutions, and coordinates with NAFRI and other centers.

The Centre Management Team is led by the Director and includes the 2 Deputies and heads of each of the centre's sections. Members of the Senior Management Team collaborate in overall management and coordination of work conducted by the centre. They should meet at least once a week to coordinate and report on activities. Each section is overseen by the Section Head and each unit is assigned a head. They are responsible for overseeing all activities within the section and ensuring staff clear on their roles and responsibilities and agreed upon activities are carried out in a timely manner. The table below shows the types of meetings to be held to improve coordination.

**Table 8: types of reporting mechanisms**

Type of Process	Purpose/Timing	Who involved
Weekly Meeting of Center Management Team	Report on issues and plan (1 hour)	Directors Office Section Heads
Weekly Section Meetings	Report on issues and plan (1 hour)	Sections staff + deputy
Quarterly Meeting	Share lessons and experiences across center and plan for quarter (half a day)	All staff
Annual review and planning meetings	Develop annual plan and review past lessons (1-2 days)	All staf

A second set of centre management challenges focuses on developing arrangements and mechanisms for effectively managing the manner in which center operations interface with NAFRI, MAF and other key partners. Key objectives of such engagement would include:

- Effectively reporting on center progress and challenges to NAFRI
- Effectively engaging NAFRI management and centers to cooperate and collaborate on different activities and ensure they are using different systems
- Developing process to engage partners outside of NAFRI including other agencies within MAF, other ministries and international and local NGOs
- Developing processes to seek support from different sources of funding.

### ***8.4 Linkages to NAFRI divisions and Centers***

There are two aspects of linkages to the centers. The first is to be able to develop linkages to support the use of common information and communication systems. The table below provides an overview of the roles of CAFRI and the centers. The basic premise is that while each center can develop their own information services, there should be some standard procedures, templates and guidelines. In addition, CAFRI would provide services similar to the common systems it has developed including:

- NAFRI Website
- Library and document management systems, NALIS, LAD and knowledge tree
- Back up servers and file shares
- Email services
- NAFRI Newsletter and Journal

**Table 9: Role of CAFRI in relation to centers**

Activity Area	CAFRI	NAFRI Centers/Divisions
Library and LAD	<ul style="list-style-type: none"> <li>• Develop standards and systems for library</li> <li>• Training support</li> </ul>	<ul style="list-style-type: none"> <li>• Provide information</li> <li>• Develop own libraries and information areas</li> </ul>
ICT	<ul style="list-style-type: none"> <li>• Provide standards, training and technical support to centers</li> <li>• Support infrastructure development</li> <li>• Develop mechanisms to share information between centers</li> <li>• Develop standards for databanks that can be used by all NAFRI</li> <li>• Train centers in use of data systems and maintain systems</li> </ul>	<ul style="list-style-type: none"> <li>• Manage and maintain IT infrastructure</li> <li>• Have projects contribute to maintaince and costs</li> <li>• Provide input and advice in developing system</li> <li>• Use standardized systems</li> </ul>
Production & Dissemination	<ul style="list-style-type: none"> <li>• Develop guidelines, templates to use by all of NAFRI</li> <li>• Develop report series</li> <li>• Collect information on technologies and methods to provide to NAFES, LNTV and others for wider dissemination</li> <li>• Develop mechanisms to share experiences between NAFRI and others</li> </ul>	<ul style="list-style-type: none"> <li>• Produce information using guidelines</li> <li>• Send research reports, publications to ISC for inclusion in Library, LAD and cataloguing into series</li> <li>• Catalogue technologies</li> </ul>

A number of other services are planned. In addition, the information division has provided a number of training courses and support to each of the centers. A common issue was that

staff were trained only work part-time on information and thus see it as a secondary job or are trained and then assigned to somewhere else. Given some of the main elements of the strategy, it is envisaged the following functions would be carried out by information staff at the centers (if not already done):

- Library and information management and services
- Website updating and e-mail management for the center
- General computer trouble shooting and support
- Support communication between centers

Obviously, this is a full time job and probably more. Right now only LaRRec and NAFReC has an information unit which has the capacity to provide information services. Where no information staff have been assigned, center heads need to be consulted as to whether there is interest to assign staff to such a position or hire someone new. In addition, other resources, such as computers, cabinets and office space are needed. The second area of support is collaboration between different centers on specific activities. The table below provides some indicative activities which have been discussed.

**Table 10: Potential activities between CAFRI and NAFRI Centers and divisions**

Center	Types of Activities Identified or potential areas
<b>Commodity Centers (FRC, R&amp;CCRC, HRC, LaRReC, LRC)</b>	<ul style="list-style-type: none"> <li>▪ Use of NAFRI Library systems and LAD</li> <li>▪ Production, dissemination and sharing of materials on specific technical topics</li> <li>▪ Updating of web-page and databanks</li> </ul>
<b>SAFReC</b>	<ul style="list-style-type: none"> <li>▪ Use of NAFRI Library systems and LAD</li> <li>▪ Production, dissemination and sharing of materials on specific technical topics</li> <li>▪ Updating of web-page and databanks</li> </ul>
<b>NAFReC</b>	<ul style="list-style-type: none"> <li>▪ Use of NAFRI Library systems and LAD</li> <li>▪ Production of materials on specific technical topics</li> <li>▪ Updating of web-page and databanks</li> <li>▪ Support to developing district and kumban level activities</li> </ul>
<b>AFPRC</b>	<ul style="list-style-type: none"> <li>▪ Support to developing a knowledge base including the support to using LAD and Library</li> <li>▪ Support to developing policy briefs</li> <li>▪ Updating of web-page</li> </ul>
<b>ALRC</b>	<ul style="list-style-type: none"> <li>▪ Support to developing GIS back up and sharing system</li> <li>▪ Support to producing information on land use planning and zoning</li> </ul>
<b>RMD, Planning &amp; Cooperation Division, AMD</b>	<ul style="list-style-type: none"> <li>▪ Support to developing research management information system</li> <li>▪ Developing annual report on research that has been carried o</li> </ul>
<b>NAFRI Scientific Council</b>	<ul style="list-style-type: none"> <li>▪ Developing guidelines and standards to review development of materials and research recommendations</li> </ul>

## 9. Staffing and Human resource needs

### 9.1 Staffing of units and sections

The Table below shows the current staffing of different sections as well as potential future staffing needs to enable the center to fulfill the strategic framework. There are currently a total of 23 staff members 10 men/13 women.

**Table 11: Current and future staffing at CAFRI**

Section	Current	2010	2012
<b>Directors Office</b>	1 Director 2 Deputies	1 Director 2 Deputies	1 Director 2 Deputies
<b>Information Management</b>	1 Head of section 2 Cataloguers 1 Database manager 3 LAD staff	1 Head of section 2 Cataloguers 2 Database manager 3 LAD Staff	1 head of section 2 Cataloguers 2 Service staff 2 Database manager 3 LAD Staff

Section	Current	2010	2012
ICT	1 Head of section 3 Network administration 3 Services	1 Head of Section 3 network administration 2 Services 2 Database	1 Head of Section 3 network admin 3 Services 3 Database
Administration	1 Head of section 2 Publications 2 Administration 1 Planning	1 Head of section 2 Administration 2 Finance 2 Planning	1 Head of section 2 Administration 2 Finance 2 Planning
Production and Outreach		1 Head of section 2 Production Unit 1 Outreach and media 1 Content development 1 Communication	1 Head of section 2 Production Unit 2 Outreach and Media 2 Content development 2 Communication
Totals	23 staff	31 staff	36 staff

## 9.2 Assessment of current staff capacity and training needs

CAFRI is a new organization with very substantial needs for staff development in both the short and medium term. Annex 5 shows the current staff at CAFRI, their position and educational and skill set. Currently there are 23 staff at CAFRI. Ten are permanent government employees, while 13 are contract staff (12 men and 11 women).

A brief assessment has identified some of the needs for both short-term training and medium-term development of technical qualifications (see table below). This is based on the current experiences of staff as well as the skill set needed to implement the plan.

In general, senior management needs to be provided with leadership and management training since none have direct experience in leading a center or group of people of this size. There are emerging courses in Laos which could be taken advantage of. Technical staff will need training in specific skills sets outlined in the table below. This can be done through short-term training courses and on-the-job training. However, there is a need for three Masters in the skill sets that are most needed at the center, including:

- *Masters in Information and knowledge management:* no staff have a background in information and knowledge management principles. It is important to understand the latest concepts and information systems and this can only be acquired through a masters (this could be done at AIT, UPLB or universities in Singapore or Malaysia)
- *Masters in Communication for Development:* there is an urgent need for 1 staff member to be clearly understand communication principles, approaches and techniques geared for the development activities. This could be done at UPLB School of Communication which offers one of the best Masters in this topic
- *Masters in Database engineering and web technology:* this masters would complement the other two masters that staff will have in the IT department focused on network administration and IT management

Table 12: Capacity needs of different sections

Section/Area	Current number of staff/skills/experience	Skills and training needed	What type of training and long-term support
Directors Office	3 senior staff – none with background in information/communication	<ul style="list-style-type: none"> <li>▪ Leadership and Management training</li> <li>▪ IM/KM</li> </ul>	Short-term courses in Lao or region
Information Management	7 staff – Head librarian with extensive training, young staff with no formal training or experience	<ul style="list-style-type: none"> <li>▪ Knowledge Management</li> <li>▪ Library services</li> <li>▪ Data management &amp; database development</li> </ul>	1 Regional Masters in knowledge mangment Short-term courses in Laos and region
ICT	7 staff – Head receiving masters , Deputy start masters in 2010, 3 staff graduated from Computer college	<ul style="list-style-type: none"> <li>▪ System admin &amp; network</li> <li>▪ Web development</li> <li>▪ Database design</li> <li>▪ Computer maintenance</li> </ul>	1 Regional Masters in web and database design Short-term

Section/Area	Current number of staff/skills/experience	Skills and training needed	What type of training and long-term support
<b>Production &amp; Outreach</b>	4 staff -- none trained in communication principles but some trained in publication design and video	<ul style="list-style-type: none"> <li>▪ Facilitation skills</li> <li>▪ Communication methods</li> <li>▪ Media training (video, radio, etc)</li> <li>▪ Research skills on local knowledge systems</li> <li>▪ Writing skills, editing</li> </ul>	1 Regional Masters in comm. for development Short term courses on media & information production Carry out research with Socio-economics
<b>Administration</b>	3 staff – none trained in administration or finance	<ul style="list-style-type: none"> <li>▪ Administration</li> <li>▪ Finance</li> <li>▪ Planning &amp; monitoring</li> </ul>	Short-term courses in Laos

### ***9.3 Strategies for improving capacity and hiring new staff***

For the most part, staff are young and have just graduated from college or university. There are a couple of general issues that need to be considered when analyzing staff capacity and developing strategies to improve capacity:

- There is no technical or academic school/degree focused on information and communication systems. Thus, staff often come from the agriculture and forestry schools and only more recently have staff come from the computer college. In addition it is hard to find quality training courses here in Laos
- Staff are often requested to go on training that is not necessarily part of their every day work or have acquired some skill set (i.e. design) that is not necessarily part of their daily work. This is not a negative aspect and means that there needs to be a high level of flexibility and teamwork when it comes to developing work teams.
- Developing rural communication systems, particularly in relation to developing models for technical service center development are a high priority at the center but there is not one staff member with experience in extension or rural communication. This is one area where capacity has to be developed.

There are a number of ways that CAFRI has overcome these problems in the past and hopes to build on some of the strategies below to improve staff capacity:

1. *On-the-job training*: this is the most effective way to build skills as staff can learn as they go. This should be encouraged when consultants and short-term TA are hired to support capacity development
2. *Short-term training courses in Laos or region*: there are a number of courses on information (particularly IT) in the training
3. *Hire short-term Lao staff*: specialist short-term consultants would be hired to work on specific activities for a project where there is an identified gap – both to implement work and train NAFRI staff. These could be from six months to one year.
4. *Develop small projects where new tools and techniques can be tested*: this has proved valuable in terms of video production with CIRAD and in the development of rubber extension materials. Staff learn practical skills which they can apply to other work
5. *Actively explore foreign volunteers to assist in capacity building*: previously, CAFRI has worked with CUSO and has applied to have an AYAD posted at CAFRI with CIAT work. It is hoped that it can attract other volunteers to work at CAFRI
6. *Encourage local and foreign researchers to work at CAFRI*: this is a good way to expose staff to new research techniques and ideas
7. *Support promising students to carry out research or internships at CAFRI*: A number of current staff were identified through their student practical work and research. CAFRI should actively seek out students who are interested to carry out research on information and communication systems.

## **10. Funding strategies and arrangements**

---

For the most part CAFRI has been funded through the Sida support to NAFRI with other support being provided on an activity basis. The challenge for CAFRI will be to find funding for core activities and develop partnerships with other actors to implement project activities

that contribute to the strategic framework. It is expected to collaborate with donors and partners who are interested to work within the current strategic framework and on priorities identified jointly. In addition, CAFRI would like to see that projects and activities are based at the center rather than staff being seconded to other projects to support their information activities. When staff are seconded to other projects, valuable human resources are lost and capacity of the center is not directly built.

Table 13 shows a typology of funding arrangements and strategies are shown below and should be seen as guide to how the center can generate different funds. The expectation would be to have some core funding for daily activities (such as IT, library, production of NAFRI materials, etc) and the rest come

**Table 13: Typology of funding arrangements for the center**

Type of funding	Description	Examples
Core funding	Funding to overall functioning of the center and daily activities (Library, ICT, production)	Current Sida support
Project funding	Funding on a project jointly identified by an organization and CAFRI	NURIFAR, ORCATAD
Funding for specific activities	Funding for specific materials or information to be produced	NFTP Handbook, Sourcebook, Video production with CIRAD
Common pool funding	Funding from NAFRI partners to support common resources such as ICT	Internet Bandwidth improvement
Sale of services	Consultancies, sale of materials or renting of virtual and physical spaces	Sale of books, training courses provided on libraries

## References

---

- AIM. 2007. Agriculture Information Management Concept and plan for 2007-2008.: NAFRI/NAFES: Vientiane
- AIM. 2007a. Linking the last mile: best practices in rural communication to improve farmers' and communities' access to information, a report from a workshop from July 27-31. Vientiane: NAFRI&NAFES
- CGIAR. 2008. AGRIVISTA: Opening access to CGIAR research with the ICT-KM Triple-A Approach. CGIAR-IKM
- Dougherty, M. 2007. A NICE Communication Strategy. Vientiane: LEAP: Vientiane
- Foppes, J. 2008. Knowledge capitalization: Agriculture and Forestry Development at "Kum Ban" Village cluster level in Lao PDR. Consultancy Report. First draft. LEAP: Vientiane.
- GoL. 2004. National Growth and Poverty Eradication Strategy. GoL: Vientiane
- Information Management and Strategic Planning Division. 2004. Information Service Strategy 2004 – 2010. NAFRI: Vientiane
- Information Services Component. 2006. Information needs and communication assessment of local actors in Phonexay, Luang Prabang and Nam Oudomxay. Vientiane: LSUAFRP
- Information Service Component. 2007 Information Service Baseline. Vientiane: URDP
- Leeuwis, C. 2004. Communication for rural innovation, rethinking agriculture extension, third edition. CTA and Blackwell publishing: Oxford.
- NAFRI. 2008. NAFRI Strategic Plan for 2007 -2012 & Research Agenda for 2007 – 2010. Vientiane, Lao PDR.
- Vernon, R. 2001. Knowing Where You're Going: Information Systems for Agricultural Research Management. ISNAR: Hague
- World Bank. 2007. Enhancing Agricultural Innovation: How to Go Beyond the Strengthening of Research Systems. Washington: World Bank

## **Annex 1: List of products and services by CAFRI (2003 – 2008)**

### **Institutional Development**

- Initial information needs assessment of NAFRI. LSUAFRP, NAFRI. September 2002.
- Information Service Strategy. First draft, May 2003, final draft, May 2004
- Dissemination strategy for the LSUAFRP reports: process and issues (October 2003)
- Information Service Component Baseline Survey (2003-2007). June 2007
- Concept Note To Develop A MAF Management Information System (June 2006, update November 2007)
- Concept and Process for a Proposed Sub-Working Group on Agriculture Information and Knowledge Management (June 2006)

### **Information Management**

- Proposal to Develop Lao Agricultural Research Information System and NAFRI Library. September 2004.
- Proposal to Develop a Management Information System. November 2004
- System Analysis and Design of the Research Management Information System, ReMIS, Bounkong Phothisane. November 2005
- Final Mission report in LAD and Lao AGROVOC Follow up support, Aree Thunkijjankij and Thiranan Damrongson. November 2006
- Report on Lao WebAGRI System and Lao Agricultural Thesaurus Development Aree Thunkijjankij and Thiranan Damrongson. November 2006

### **ICT**

- ICT Policy and Plan. March 2004.
- ICT Policy and Plan. August 2008.
- Websites: [www.nafri.org.a](http://www.nafri.org.a) (nafri main site)
  - External - LAD: [lad.nafri.org.la](http://lad.nafri.org.la); NALIS: [nails.nafri.org.la](http://nails.nafri.org.la); NRRP: [nrrp.nafri.org.la](http://nrrp.nafri.org.la); ORCATAD: [www.nafri.org.la/ORCATAD/](http://www.nafri.org.la/ORCATAD/); Genetic Plan Resources data system: <http://www.pgrfa.org/gpa/lao>
  - Intranet - REMIS: [remis.nafri.org.la](http://remis.nafri.org.la); knowledge tree document management system: [fileshare.nafri.org.la](http://fileshare.nafri.org.la)

### **Production and dissemination**

- Regular production of NAFRI Newsletter
- Regular Production of Agriculture and Forestry Journal
- Lao Uplands Sourcebook for improving livelihoods (January 2006) – English and Lao
- Technical handbooks on new technologies produced by NAFRI and published in the NAFRI newsletter (Fish, Livestock, Forestry)
- How to plant a forest.
- NTFP Handbook, English. SNV/FAO/NAFRI. January 2007
- Farmer Technology Sheets – 12 (December 2005)
- AEA Handbook (June 2006)
- Student Studies on Information needs and Communication preference of local actors in Phonxay and Namong Districts (November 2006)
- Summary report of NAFRI uplands workshop and workshop CD-Rom (May 2004)
- Proceedings of workshop on Poverty Reduction and Shifting Cultivation Stabilization in the Uplands of Lao PDR: Technologies, approaches, and methods for improving upland livelihoods (March 2005)
- Workshop on Market Information Systems (MIS) for Agriculture and Forestry Products. July 5-6, 2005. Summary Report (July 2005)
- Rubber Workshop Information Booklet (May 2006) includes overview of workshop process, agenda, abstracts, key questions for each session and an overview of smallholder rubber development in Lao PDR
- Summary and recommendations from the Workshop on Rubber Development in Lao PDR: Exploring Improved Systems for Smallholder Production (May 2006)

- SSLWM Information Booklet includes overview of workshop process, agenda & abstracts
- Proceedings of an International Conference on Sustainable Land and Watershed Management, December 17-19, 2006.
- Reproduction and dissemination of all LSUAFRP and URDP publications and reports.

#### **CDs**

- LSUAFRP Information resource CD-Rom (October 2003, May 2004, October 2004, May 2005, March 2006, April 2007)
- Resource CD from workshop on Poverty Reduction and Shifting Cultivation Stabilization in the Uplands of Lao PDR: Technologies, approaches, and methods for improving upland livelihoods (March 2005)
- Resource CD from the Workshop on Rubber Development in Lao PDR: Exploring Improved Systems for Smallholder Production (May 2006)
- Resource CD from the international conference on Sustainable Sloping Lands and Watershed Management (December 2006)
- Regional Workshop on Conservation Agriculture Workshop CD (October 2008)

#### **Materials produced by the Agriculture Information Management Working Group**

- Mission report for Julian Gonsalves – on rural information systems (May 2005)
- NAFRI/NAFES Agriculture Information Management Working Group Concept and Plan for 2007 (March 2007)
- Linking the Last Mile: Best practices in Rural Communication for Agriculture and Natural Resource Management (September 2007)
- Strategic Communications Capacity Building for AIM. A Tool for Extension Material Design. Draft. (February 2008)
- Rubber Extension materials for Smallholders (Reference Manual, Radio Spots and Decision-making brochure)
- Workshop report on Developing agriculture network at the provincial and district level in Oudomxay, Phongsaly, Bokeo and Luang Namtha Provinces, June 26-27, 2007
- The Dongdok Statement on Access to Information for Development. Report from a workshop on digital Information management. 5-6 December 2007
- Rural communication meetings with key national stakeholders. September 2007

## Annex 2: List of partnerships

The list below provides an overview of the different partnerships and working relationships that CAFRI has cultivated and potential future collaboration

Organization	Current	Future activities
<b>NAFRI Centers and Research Projects and organizations</b>		
NAFRI Commodity centers	<ul style="list-style-type: none"> <li>▪ Support to producing information</li> <li>▪ Training and support to library management and LAD development</li> <li>▪ Support to setting up IT at centers</li> <li>▪ Support to NAFRI website</li> </ul>	<ul style="list-style-type: none"> <li>▪ Guidelines for information sharing and publication production</li> <li>▪ Further training and support to library, LAD, and IT</li> <li>▪ Updating of NAFRI website</li> <li>▪ Production of materials on demand</li> </ul>
Regional Centers	<ul style="list-style-type: none"> <li>▪ Support to producing information</li> <li>▪ Training and support to library management and LAD development</li> <li>▪ Support to setting up IT at centers</li> </ul>	<ul style="list-style-type: none"> <li>▪ Guidelines for information sharing and publication production</li> <li>▪ Further training and support to library, LAD, and IT</li> <li>▪ Production of materials on demand</li> <li>▪ Understanding how to improve information to kumban level</li> </ul>
AFPRC	<ul style="list-style-type: none"> <li>▪ Placing information and materials on NAFRI website</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to developing policy briefs</li> <li>▪ Support to data management</li> </ul>
ALMRC	<ul style="list-style-type: none"> <li>▪ Backing up GIS</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to improving GIS sharing between MAF and NAFRI</li> <li>▪ Backup servers for GIS</li> </ul>
Sida (LSUAFRP/URDP)	<ul style="list-style-type: none"> <li>▪ Support to overall information activities at the division.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide overall support</li> </ul>
SDC	<ul style="list-style-type: none"> <li>▪ Support to workshops and publications</li> <li>▪ Collaboration with other projects</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collaboration on NURIFAR project</li> <li>▪ Further discussions to support center</li> </ul>
CIAT/SADU	<ul style="list-style-type: none"> <li>▪ Collaboration/support to all major events and publications (sourcebook, uplands workshop, MIS, SSLWM)</li> <li>▪ Support to develop materials (workshop CDs)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to SADU through AIM</li> <li>▪ Support to disseminating materials</li> <li>▪ Collaboration on ICT</li> <li>▪ Webpage on activities with NAFRI</li> </ul>
IWMI/IRD	<ul style="list-style-type: none"> <li>▪ Collaboration/support to all major events and publications (sourcebook, uplands workshop, MIS, etc)</li> <li>▪ Supported special issue of Journal on watershed management and placing journals on the website</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provide support to disseminating materials</li> <li>▪ Collaboration on ICT</li> <li>▪ Webpage on activities with NAFRI</li> </ul>
CIRAD/PRONAE	<ul style="list-style-type: none"> <li>▪ Collaboration/support to all major events and publications (sourcebook, uplands workshop, MIS, SSLWM)</li> <li>▪ Providing inputs into ORCATAD project</li> <li>▪ CAFRI support to video production</li> </ul>	<ul style="list-style-type: none"> <li>▪ Develop materials on conservation agriculture</li> <li>▪ Understand r-e linkage</li> </ul>
IRD/CATCH-Up	<ul style="list-style-type: none"> <li>▪ Discussions on setting up a resource database for AFPRC</li> </ul>	<ul style="list-style-type: none"> <li>▪ Discussions on setting up a resource database for AFPRC</li> </ul>
IRRI/NRRP	<ul style="list-style-type: none"> <li>▪ Support to Rice Knowledge System</li> <li>▪ Provide space on server for the NRRP</li> <li>▪ Discussions to develop sequel to Ban Na Pasouk Radio programme</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collaboration on the NURIFRAR Project</li> </ul>
SNV	<ul style="list-style-type: none"> <li>▪ Support to the SNV/NAFRI NTFP e-letter</li> <li>▪ Support to producing and translating the NTFP Handbook</li> </ul>	<ul style="list-style-type: none"> <li>▪ Value Chain analysis</li> </ul>
FAO	<ul style="list-style-type: none"> <li>▪ Production of the MA&amp;D Manual</li> <li>▪ Agreement for NAFRI library to manage FAO publication catalogue</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support on information and knowledge management</li> </ul>
<b>MAF line agencies and projects</b>		
LEAP/NAFES	<ul style="list-style-type: none"> <li>▪ Production of the Uplands Sourcebook</li> <li>▪ Development of AIM working Group</li> </ul>	<ul style="list-style-type: none"> <li>▪ Further collaboration with AIM working group</li> </ul>

<b>Organization</b>	<b>Current</b>	<b>Future activities</b>
MAF IT	<ul style="list-style-type: none"> <li>▪ Informal information sharing IT network</li> <li>▪ Support to working on Knowledge tree and other open source software</li> </ul>	<ul style="list-style-type: none"> <li>▪ IT Information Sharing Network</li> </ul>
MAF Information Unit	<ul style="list-style-type: none"> <li>▪ Collaboration to document URDP activities with mass media</li> </ul>	<ul style="list-style-type: none"> <li>▪ Further support to developing information materials for MAF</li> </ul>
SUFORD	<ul style="list-style-type: none"> <li>▪ Support to production of MA&amp;D manual</li> <li>▪ Support to Workshop</li> </ul>	
Dept. of Forestry	<ul style="list-style-type: none"> <li>▪ Informal information sharing IT network</li> <li>▪ Support to working on Knowledge tree</li> </ul>	<ul style="list-style-type: none"> <li>▪ IT Information Sharing Network</li> </ul>
Smallholder project/ADB	<ul style="list-style-type: none"> <li>▪ SMS/Market information systems</li> </ul>	<ul style="list-style-type: none"> <li>▪ SMS/Market information systems</li> </ul>
<b>Other Ministries, Education &amp; development agencies</b>		
NLMA (land research center)	<ul style="list-style-type: none"> <li>▪ Support to organizing workshops on linking the last mile</li> <li>▪ Support to library and information sharing</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to developing materials through Righ-LINK</li> <li>▪ Collaboration on LAD/Library</li> </ul>
STEA	<ul style="list-style-type: none"> <li>▪ Collaboration on developing IT infrastructure in Laos (NAFRI fiber optic and training support)</li> </ul>	<ul style="list-style-type: none"> <li>▪ Further support internet connection</li> <li>▪ Experience sharing on IT</li> </ul>
NUOL/FF & FA & Faculty of engineering	<ul style="list-style-type: none"> <li>▪ Library network</li> <li>▪ Providing library resources to students</li> <li>▪ Documentation development and organization of workshops</li> <li>▪ Students interning at division/center</li> </ul>	<ul style="list-style-type: none"> <li>▪ Library network</li> <li>▪ Students using library</li> <li>▪ Documentation development and organization of workshops</li> <li>▪ Students interning at center</li> </ul>
NUOL ICT	<ul style="list-style-type: none"> <li>▪ Established fiber connection to STEA</li> <li>▪ Staff sharing of experience and knowledge</li> <li>▪ Development of web-based systems</li> <li>▪ Development of Lao Research – Education Network</li> </ul>	<ul style="list-style-type: none"> <li>▪ Further collaboration on Lao REN</li> <li>▪ Further improvements of information sharing using the fiber optic</li> </ul>
NUOL Central library	<ul style="list-style-type: none"> <li>▪ Library network</li> </ul>	<ul style="list-style-type: none"> <li>▪ Library network</li> </ul>
SAEDA/SAF	<ul style="list-style-type: none"> <li>▪ Participation in different workshops</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collaboration on LAD and library</li> <li>▪ Collaboration on material development</li> </ul>
IUCN	<ul style="list-style-type: none"> <li>▪ Support to translating Uplands proceedings</li> <li>▪ Support to various workshops</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collaboration on LAD and library development</li> </ul>
UNDP	<ul style="list-style-type: none"> <li>▪ Provision of information to Khoun radio</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to communication for empowerment project</li> </ul>
RDMA/GTZ	<ul style="list-style-type: none"> <li>▪ Support to organization of small holder rubber workshop</li> <li>▪ Support to Rubber extension materials</li> <li>▪ Support to Uplands Sourcebook</li> </ul>	<ul style="list-style-type: none"> <li>▪ Collaboration on LAD/Library</li> <li>▪ Support material production on demand</li> </ul>
TABI	<ul style="list-style-type: none"> <li>▪ Collaboration on rural communication</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to material production and knowledge management activities</li> </ul>
Village Focus International	<ul style="list-style-type: none"> <li>▪ Support to organizing workshops and exchange of information</li> </ul>	<ul style="list-style-type: none"> <li>▪ Partnership/collaboration with RIGHTS-LINK Programme</li> </ul>
<b>Regional and international Organizations</b>		
FAO Regional/Global	<ul style="list-style-type: none"> <li>▪ Support to developing AGRIS Systems</li> </ul>	<ul style="list-style-type: none"> <li>▪ Support to AGRIS system</li> <li>▪ Support to information management in Laos and NAFRI</li> </ul>
Thai AGRIS Center/KU	<ul style="list-style-type: none"> <li>▪ Support to developing LAD and Lao AGROVOC</li> </ul>	<ul style="list-style-type: none"> <li>▪ Further support to LAD and expanding Lao AGROVOC</li> </ul>
AFITA	<ul style="list-style-type: none"> <li>▪ Attendance at bi-annual conference</li> </ul>	<ul style="list-style-type: none"> <li>▪ Attendance at bi-annual conference</li> </ul>
APAARI	<ul style="list-style-type: none"> <li>▪ NAFRI a member since 2004</li> <li>▪ Information and experience sharing</li> </ul>	<ul style="list-style-type: none"> <li>▪ Information and experience sharing</li> </ul>
RECOFTC	<ul style="list-style-type: none"> <li>▪ Information and material exchange</li> <li>▪ Attending workshops</li> </ul>	<ul style="list-style-type: none"> <li>▪ Information exchange</li> </ul>
Mass Media	<ul style="list-style-type: none"> <li>▪ Development of TV and radio programs</li> <li>▪ Participation at workshops and provision of information</li> </ul>	<ul style="list-style-type: none"> <li>▪ Provision of information</li> <li>▪ Partnership to improve information dissemination through Mass media.</li> </ul>

## Annex 3: MAF Four Goals and 13 Measures

---

### **MAF's four major goals are:**

1. Ensuring production for food security
2. Commercialization of agricultural commodity production
3. Stabilizing shifting cultivation for poverty reduction
4. Sustainable forest management

### **13 measures for achieving the 4 goals of the agriculture & forestry sector**

- Measure 1: Improve cooperation and coordination in agriculture and forestry sector
- Measure 2: Survey and identify appropriate agriculture and forestry production zones
- Measure 3: Improve seed and breed availability
- Measure 4: Improve extension and technical services
- Measure 5: Establish village cluster development groups linked to sector
- Measure 6: Organize local production groups and cooperatives
- Measure 7: Improve irrigation to prevent droughts and floods
- Measure 8: Increase productivity through intensive use of technology
- Measure 9: Improve quality control and prevent animal and plant diseases
- Measure 10: Improve financial management mechanisms
- Measure 11: Achieve economies of scale by lowering production costs
- Measure 12: Improve implementation, monitoring and evaluation processes
- Measure 13: Improve decentralized management and public/private partnerships

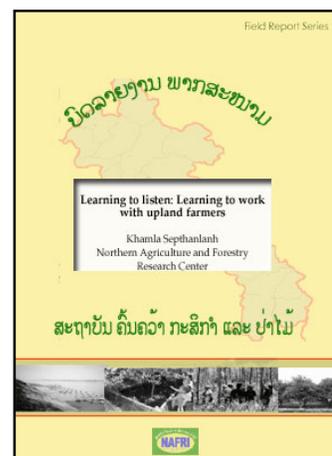
## Annex 4: Proposed NAFRI Report Series

One information need identified in discussions with NAFRI staff is that they would like to know what other centers within NAFRI are doing. Rather than try to create new products, one strategy could be to improve documentation and 'packaging of reports, materials and research results which are already being documented through the creation of a broad number of report series (in Lao and English).

The purpose would be improve the collection and dissemination of information already generated at NAFRI itself and provide opportunities for research findings to reach more people.

Some other benefits could include:

- *Improve institutional memory of NAFRI:* the cataloguing of materials is actually the first step in creating a unified information management system and better tracking what different centers, projects and researchers are doing. It would help those within and outside of NAFRI better know what research is being carried out or has been done.
- *Ensure sense of unity and strengthen NAFRI identity:* By consolidating its work into a number of report series, NAFRI can better communicate what it does, its role in development and what it can offer, through its work rather than trying to show this through fancy publications.
- *Create incentive for researchers to write up results or issues in on-going research:* Researchers have very few outlets to publish their results. The NAFRI journal offers one way but is for research that has been finalized. The report series would provide an opportunity for researchers to publish reports on on-going research.



### Potential type of categories for NAFRI series

Potential title of series	What it could include	Target group
<b>NAFRI Research agenda</b>	The purpose is to better catalogue and share annual research agenda within NAFRI and outside. This would include research projects carried out for a given year by centers and projects.	policymakers, donors, NAFRI
<b>Policy brief series</b>	Consolidate information on different research being carried out targeted to senior policy makers	Policymakers
<b>NAFRI Recommends</b>	These are technical and methodological recommendations for technical extension staff and can include recommendations on technologies or methods to use.	Researchers, projects, PAFO-DAFO, NAFES
<b>Research Reports</b>	These would be a list of research reports and finding produced by NAFRI.	Researchers, education, professionals
<b>Workshop proceedings</b>	Improve institutional memory within NAFRI. This could include: training courses workshop, proceedings project reports, etc	Centers, projects, managers
<b>Manuals/ Guidelines</b>	The purpose is to ensure materials developed by centers or projects are known to others within and outside NAFRI.	Researchers, projects, PAFO-DAFO, NAFES
<b>Strategy Papers</b>	The purpose is to ensure strategy papers are institutionalized and readily accessible. This could include of different units, centers and divisions strategy papers	NAFRI, polcymakers, donors

## Annex 5: List CAFRI Staff, capacities and training needs

	Name	Age	Sex	Section	Status	Education
1	Vayaphat Thatamanivong		M	Director	Permanent	Tape
2	Bandith Ramangkoun		M	Deputy Director	Permanent	Bachelor
3	Khamanee Khamphoumy		M	Deputy Director	Permanent	Bachelor
4	Phetsamone Xoumphonphackdy		F	Administration	Permanent	Tape
5	Khanthamaly Chanthalangsy		F	Administration	Permanent	Tape
6	Nalin Phanthavong		F	Administration	Contract	Tape
7	Pome Phanthavong		F	Information Management	Permanent	Tape
8	Khanhkham Ounoudom		M	Information Management	Permanent	Bachelor
9	Kaisone Syhachak		F	Information Management	Contract	Bachelor
10	Sadmany Phonphackdee		F	Information Management	Contract	Higher Diploma
11	Chanphoung Phengxaisavat		F	Information Management	Contract	Bachelor
12	Chandala Netthongsavanh		F	Information Management	Contract	Bachelor
13	Khemmalay Sondavanh		F	Information Management	Contract	Higher Diploma
14	Soulivong Kongmanyvong		M	Information Management	Contract	Higher Diploma
15	Viengxay Yajouton		M	Information Management	Contract	Higher Diploma
16	Phonepaseuth Vongsipasom***		M	ICT	Permanent	Bachelor
17	Douansavanh Phoungkhamso		M	ICT	Contract	Bachelor
18	Thongvin Syhachak		F	ICT	Contract	Bachelor
19	Olay Meunviseth		F	ICT	Contract	Bachelor
20	Alounngern Sintanou		F	ICT	Contract	Bachelor
21	Passanee Phoutavong		F	Information Management	Contract	Bachelor
22	Vilachith Phommasak*		M	ICT	Permanent	Bachelor
23	Manoluck Bountathilath**		M	ICT	Permanent	Masters

\* seconded to NRRP

\*\* on study leave

\*\*\* on study leave starting January 2009

## Annex 6: Responsibilities and policies to develop for each section

Section	Main responsibilities	Policies & Procedures to develop
Information Management	<ul style="list-style-type: none"> <li>• Manage the NAFRI library and all information resources</li> <li>• Develop standards for NAFRI libraries</li> <li>• Manage and maintain the LAD/Lao AGRIS system</li> <li>• Improve the Lao AGROVOC</li> <li>• Support the development of data banks and retrieval systems</li> <li>• Provide information to NAFRI researchers and other actors</li> <li>• Support the development of different libraries within MAF and Laos</li> </ul>	<ul style="list-style-type: none"> <li>• Update library user policies</li> <li>• Policy for other organizations to use NALIS</li> <li>• Policy for purchasing books for NAFRI Library and center libraries</li> </ul>
ICT	<ul style="list-style-type: none"> <li>• Manage and maintain all NAFRI IT resources (infrastructure, servers, data)</li> <li>• Develop systems and databanks to improve information sharing within NAFRI</li> <li>• Provide services to NAFRI users of the internet</li> <li>• Develop services for disseminating NAFRI information</li> <li>• Test out new methods for improving ICT to rural areas</li> </ul>	<ul style="list-style-type: none"> <li>• NAFRI ICT user policy</li> <li>• Policy for using the IT services (web, email, server space)</li> <li>• Policy for sharing internet bandwidth</li> </ul>
Production & Dissemination	<ul style="list-style-type: none"> <li>• Develop all NAFRI information materials</li> <li>• Establish standards and guidelines for NAFRI reports and publications</li> <li>• Support the production of materials by NAFRI projects and centers</li> <li>• Develop dissemination systems for NAFRI materials</li> <li>• Establish and maintain partnerships with mass media to disseminate information</li> <li>• Establish network of organizations and projects at different levels to exchange and share information</li> </ul>	<ul style="list-style-type: none"> <li>• NAFRI Publication Guidelines</li> <li>• Publication &amp; Material policy for charging</li> <li>• Dissemination policies</li> <li>• Policy for editing, writing and producing materials for projects</li> </ul>
Administration	<ul style="list-style-type: none"> <li>• Administer and manage all administrative and financial activities of the center</li> <li>• Prepare annual, quarterly, monthly workplans and share with NAFRI</li> <li>• Prepare annual quarterly and monthly reports and share with NAFRI</li> <li>• Develop human resource plans and procedures</li> </ul>	<ul style="list-style-type: none"> <li>• Accounting policies</li> <li>• Human resource policies</li> <li>• Planning and reporting policies.</li> <li>• Partnership policies</li> </ul>