

# Think before you plant, think before you print: Building adaptive capacity within the Lao Agriculture Knowledge Information System

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## Abstract

As Laos makes the transition from a 'land-locked' to 'land-linked' country, it is also making tentative steps towards becoming a more open society. This is being spurred by regional interest to invest in the country and by the Government that is promoting the country as the 'garden and battery of asia'. In this situation, access to information is increasingly important for different stakeholders to make informed decisions. The answers are not necessarily of a technical nature, but centred around knowledge and power. Knowledge and information are important inputs to ensure farmers can cope with changes. As farmers are being exposed to the up and downs of industrial cash-cropping (i.e. unstable markets and increasing dependency on external inputs), there is a need to provide them with a range of options and information so they can make informed choices. The National Agriculture and Forestry Research Institute and the National Agriculture and Forestry Extension Service have formed an alliance (the Agriculture Information Management Working Group – AIM) to improve farmers and extension agents access to information. This paper explores the strategic communication process to develop extension related materials for farmers and extension agents on rubber planting. Rather than focus on technical message, the campaign was built around a simple concept of providing information that would help farmers make their own decision (i.e. 'think before you plant'). The main message of this paper is that communication processes need to be contextualized rather than seeing them as template or standards. In addition, there is a need to move beyond providing only technical and production related information to farmers but providing information that strengthens the adaptive capacity of farmers to cope with the rapid changes taking place.

## 1. Introduction and context

### 1.1 Background

Lao People's Democratic Republic (Lao PDR) is a land locked country located on the Indochinese peninsula, and is one of the poorest countries (in terms of GDP) in the world. While it is considered economically poor, it is a rich nation in terms of land, ethnic variation and biodiversity.

Since 1986 the Government of Laos has carried out its open-door policy known as "New Economic Mechanism" with a strategy to make both an economically liberal and socialist nation. Today, Laos is literally and figuratively at a crossroads. From a country where there was little to no foreign direct investment, it has increased in 2009 to more than 4.3 billion. Much of this foreign direct investment is being targeted in turning Laos' great natural resources (water, forests, agriculture land, minerals) into capital for export, particularly to its rapidly growing neighbours: China, Vietnam and Thailand.

Total population*:	5.6 million
Population density*	24 km <sup>2</sup>
No of Households *	952,386
Rural population*	77%
Official Number of ethnic groups	47
Total Land area*	23,680,000 ha
Total Agriculture land*	5,000,000 ha
Cultivated Land*	1,000,000 ha
Forest cover*	41%
Rubber planted	400,000ha***
Freedom of press (rank/no of countries)	**163/169
Source: * NSC 2005; ** Freedom house, *** Ministry of Planning and Investment	

In the commercial transition, potentially over a million hectares are changing from subsistence to cash crops under different investment schemes. Major commodities are replacing rice production and natural forests. The result is that entire communities are changing their livelihood strategies and becoming integrated into the growing market economy (WFP 2009).

In this situation, there are two challenges. The first is how to provide appropriate information to farmers so they can adapt to these changes. The second is how to meet the information needs of an ethnically diverse country.

## 1.2 Rubber situation in Laos

Rubber planting was introduced in the early 1900s by the French, but never achieved a great success. The current boom in rubber is being fueled by a demand from rubber markets (particularly China), investor interest and conducive government policies. The Government targeted 250,000 ha of rubber plantations by 2010 but it is now estimated that more than 400,000 ha has been planted.

In the North, the interest in rubber planting is coming from a number of directions. A number of communities and small-holders planted rubber in the early 1990s and their success has spurred other farmers to plant. Chinese investors are also promoting a contract farming arrangement whereby they provide investment, training and a secure market while the farmers provide the land and labor. Finally the government is promoting the planting of rubber as one alternative to shifting cultivation and poverty reduction.

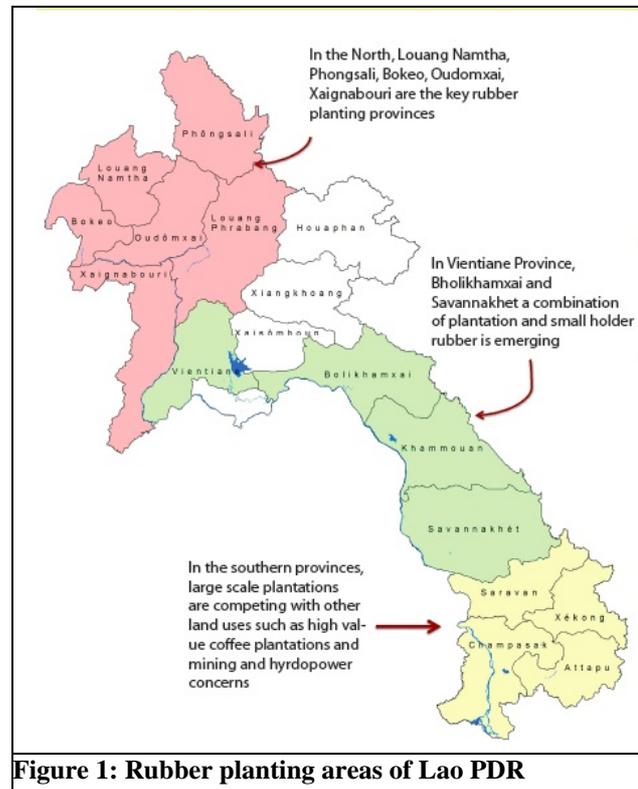
While the rubber boom started in 2004, there has been little reliable extension information for farmers on rubber planting. For the most part, farmers are learning either from other farmers who planted earlier or visiting relatives in China who planted generations ago, or getting assistance from the Chinese rubber companies. This has created a situation where many farmers are interested to plant but do not know what this would involve in practice, nor how rubber compares to alternative crops. Thus, a major concern among government and foreign experts is that – unless decisions are taken in a more informed and discriminating manner - the rubber boom will not make the desired contribution to the goals of poverty alleviation, stabilization of shifting cultivation and reforestation.

## 1.3 Communication in agriculture development: the need for new approaches

There are two concepts that underpin this paper: ‘communication for development’ and adaptive capacity.

### *Communication for development*

While there are a number of terms that refer to “Communication for development”, it is generally defined as “intentional strategies designed to benefit the public good, where in terms of material, political or social needs” (Wilkins 2008). There are also many elements that are common to these terms including: 1) centrality of power 2) the integration of top down and bottom up approaches 3) use of a ‘tool-kit’ approach for communication 4) the integration of interpersonal and mass communication methods 5) incorporation of personal and contextual factors (Waisbord 2005).



Communication for development is recognized a central element of the development process both internationally and in Laos. Kofi Annan has stated: "If information and knowledge are central to democracy, they are the conditions of development" (UN 2008). This in-line with the Lao Government that is putting increasing support to information and communication. The National Socio-Economic Development Plan (GoL, 2006) states: "*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.*"

Communication for development also recognizes the need to consider the use of alternative communication mechanisms. In Laos where farmers often cannot communicate effectively in the national language, there is a need to move beyond conventional media (printed materials, video, etc) and adapt materials to local languages and appropriate communication mechanisms (oral transmission, theatre, etc).

There is also a greater recognition that communication processes need to go beyond changing behavior to providing farmers and communities with information so as that they can make their own decisions. In the past, success was often measured in terms of 'adoption rates'. However, in the new market oriented economy, farmers need more than simple recommendations; telling them what to plant and how to plant it will not help them make the complex decisions that are required in a commercial farming system. New ways of approaching communications with farmers are needed. The strategic communication process can assist organizations working with farmers and extension agents to produce more effective and useful information (Doughtery 2009).

#### *Adaptive Capacity and the AKIS*

In a rapidly changing context like Laos, improving the adaptive capacity of farmer may be a more important goal than the adoption of any specific packages of technology. Adaptive Capacity is the ability of a system to adjust to change so as to limit potential damage, take advantage of opportunities, or otherwise cope with the consequences. The concept has gained widespread attention as part of the debate on climate change, but is equally relevant with respect to economic change.

Knowledge plays an important role in adaptive capacity. Generally, the more knowledge and information as decision-maker has, the greater their adaptive capacity (Engels, et al 2009). But the type of information that contributes to adaptive capacity may differ from the type of information that has often been delivered by agricultural systems. Instead of 'recommended practices', which are often dictated by political or commercial biases, the adaptable farmers need information about options, trends and risks.

Furthermore, if extension services are to help farmers improve their adaptive capacity, they need to facilitate learning processes, not simply deliver information. As noted by Kofinas and Chapin, "Adaptation occurs through social learning, experimenting, innovating, and networking to communicate and implement potential solutions"(Kofinas and Chapin, 2009).

The idea of farmers as active learners engaged in *knowledge generation*, rather than *knowledge utilization*, has long been a part of agricultural research and extension, although often outside mainstream practice. In the past two decades this idea has most often been implemented in the form of Farmer Field Schools (FFS) and Participatory Technology Development (PTD). The idea of 'farmers as experts' has rarely crossed over, however, into the production of communication materials; agriculture departments have continued to use print, radio and television to deliver 'messages' rather than stimulate decision-making. But with the emergence of resilience as a key objective for natural resource management, there is an urgent need for new approaches to agricultural communication that contribute to the adaptive capacity of farmers.

#### **1.4 Overview of the paper**

This paper explores the strategic communication process used to develop extension related materials on rubber planting. The materials were produced by the National Agriculture and Forestry Research Institute (NAFRI) and the National Agriculture and Forestry Extension Service (NAFES) through the Agriculture Information Management Working Group (see box 1).

Rather than focus on technical messages, the campaign was built around the concept of providing information to farmers to make their own decision (i.e. 'think before you plant'). The Lao experience shows that strategic communication can support empowerment through the systematic development

### Box 1: The Agriculture Information Management Working Group (AIM)

The AIM Working Group was established in 2007 by the information and communication units of NAFRI and NAFES. It was the first inter-institutional cooperation between the Research-Extension agencies. 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).

of materials that aim to change the ability of farmers to make informed choices. Success can be measured in terms of farmers' achievement of their own livelihood goals, rather than adoption rates.

## 2. The strategic communication process

### 2.1 Why a strategic communication process?

Extension materials in Laos are usually developed with little feedback and input from those who actually use them. The taskforce identified a number of problems in how materials are made:

**Materials are made in top-down fashion** – usually there is little input from the users in the design or development of materials. Decisions about materials are not based on needs of farmers but rather made because a senior official or decision-maker decides what is necessary.

**Materials are often promotional:** materials are usually designed to promote government policies and transfer specific technologies without consideration given to local relevance. They rarely provide educational information.

**Materials are disseminated with little understanding of how they are used:** Materials are often sent out to district staff with little instructions or support in how to use with farmers

**There is no monitoring or evaluation of materials:** The usefulness of materials is rarely evaluated. There is no link between materials developed, costs, efficiency or effectiveness.

As one task force member mentioned: “We usually jump to step four [produce and disseminate] without any testing or discussion. Sometimes we just disseminate without knowing if people use it or not. Many projects or government agencies do not see information and communication as important, or they see it as something to do it at the end. We do not evaluate but just ‘do’ activities.”

### 2.1 Overview of the communication process

In September 2007, the NAFRI and NAFES Agriculture Information Management Working Group formed a task force to develop a set of rubber materials. The group included: researchers (technical and social), national extension trainers, information specialists, provincial and district extension agents and farmers. A key element in producing these materials was to use a ‘strategic’ communication process (see figure 2) designed for the National Information Centre for Extension Communication

Strategy (Doughtery 2008). The process was deliberately kept flexible and draws upon a number of other strategic communication processes. The main steps are briefly described:

1. Identify communication needs with enough detail to develop a meaningful and effective intervention including use of surveys to inform the activity.
2. Create a plan describing what it will take to complete the work.
3. Develop, pre-test and adapt the messages and content for the product or event.
4. Produce and disseminate materials to end users
5. Monitor and evaluate and decide to continue, stop, modify, or expand.

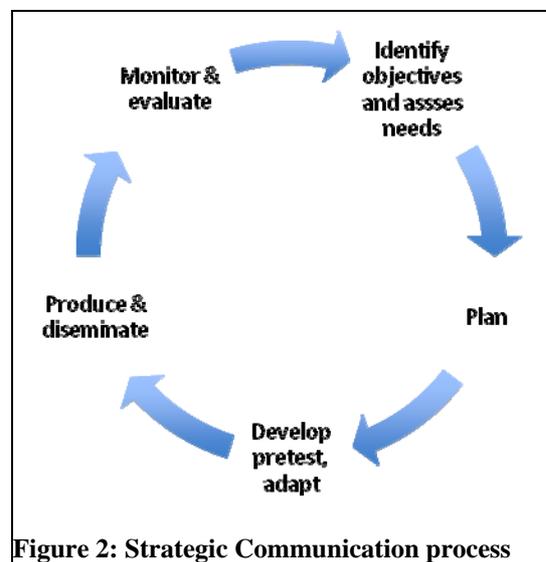


Figure 2: Strategic Communication process

Some of the key features of the process were:

- Materials were planned and targeted based on discussions within the rubber task force
- The three materials produced were decided upon after an assessment of key target groups
- Materials were pretested and refined based upon feedback
- Materials were presented to district staff through regional workshops rather than just disseminated through mail.

### 2.3 Objectives, target group and materials produced

The task force identified the target group as Northern Upland farmer who were considering to plant or had already planted. Secondary target groups were extension agents, projects and the private sector.

The development and communication objective were:

Development Objective: To provide relevant technical and socioeconomic information on rubber production, for smallholders and extension staff to review options and make decisions about planting rubber.

Communication Objective: By Dec. 2007, to provide small rubber holders and extension staff in the Northern part of Laos access to rubber information.

All together three types of materials were produced:

Three Radio spots that in four languages (Lao, Khamu, Hmong, Akha, Phunoy) focused on introducing the strengths and weaknesses, risks and factors for planting rubber.

A decision-making pamphlet to assist smallholders to understand if rubber is the appropriate option for their farming system

A rubber reference manual on small holder rubber production



Figure 2: Three materials that were developed

## 3. Findings and highlights from the process

This section highlights some of the main processes and issues in each step of the process.

### 3.1 Identification of objectives and needs assessment

The need for the technical information for small-holder rubber farmers was identified by AIM prior to the initiation of the communications process. It was clear that a boom in rubber planting was taking place in the northern provinces and that many farmers were planting without technical and economic knowledge, or considerations of other options that might be more appropriate to them.

This step was carried out in two parts. First, task force members analyzed from their own experience some of the problems and issues in small-holder rubber planting and developed tentative development and communication objectives. Based on these assumptions, the team then went out and did a small target group survey of farmers and extension agents through a Knowledge, Attitudes and Practices (KAP) study. While the KAP survey confirmed many of the assumptions that staff had, it also brought to light new insights and ideas, including:

- A boom mentality had clearly emerged which was leading to insufficient planning and questionable practices. Concerns over risks and awareness of alternatives ranked quite low, but it was surmised that inexperience may have led to an underestimation of potential risks.

- Farmers were learning from other farmers who had already planted and were learning by doing. Family and social networks played a particularly important role.
- Radio and village speaker systems, television, companies, projects, printed materials and study tours ranked as the top ten information source.
- The extension system was also identified as an information source but there were no standardized source materials on rubber that extension workers could draw on to advise farmers and help them make informed decisions.
- Limited access to appropriate information was seen to be leading to risky practice.

The issue of ethnic diversity also arose. In LuangNamtha province where much of the KAP survey took place there are 16 ethnic groups speaking distinct languages from the four major ethno-linguistic families in Laos. For the most part, upland farmers do not read Lao and have trouble communicating in Lao language. It was found in previous studies that farmers are much more apt to participate and communicate if information materials are presented in their own language.

### 3.2 Planning and production

The rubber materials employed a cross-channel approach using three integrated products: radio spots, a decision-making brochure and a reference manual.

To address the need for information on standardized techniques in rubber cultivation it was decided to produce a manual. It was conceived that this could be further developed over time to include topics such as sales and marketing. In addition it was envisaged that other materials could be developed out of this. The main channel for the manual was extension staff, village extension workers, projects and businesses. The manual in the end took longer than expected (see box 2)

To help break the boom mentality, alternatives to rubber were highlighted as well as the risks in rubber planting. This took the form of a checklist brochure that farmers could use to decide if rubber was right for them. If not, the brochure provided a list of alternative crops to consider. If so, farmers were urged to visit the extension service and consult the manual.

Last, there was a need to raise awareness of the issues and let the farming population know that further information – such as the brochure – was available. Because of the large area and variety of spoken languages, it was decided to create a series of radio spots in different languages to address this since most ethnic groups do not read Lao. It was also felt that the use of Audio materials in different languages would be more useful than printed materials or even video (which would take longer to make) since there is much more of an oral culture than written one in Laos. Audio also proved much more flexible since it could be played on radio, village speakers or even on people's CD players. The dissemination for the rubber materials was extensive. Radio spots were broadcast in a coordinated manner on national and provincial radio, and distributed on CD for use through village speaker systems. A massive effort was required to plan distribution of about 10,000 brochures in the six target northern provinces and an additional 5,000 throughout the rest of the country. The manual was simplest because of the smaller number needed and because the audience was already part of the extension distribution system.

**Box 2: Reference manual vs. Extension materials**  
During this stage it was decided to develop a full reference manual rather than a series of extension sheets on rubber planting because a reference manual was simply not available and research staff were interested to use this opportunity to finally develop one. A reference manual clearly takes much longer than other materials and at this stage either the time period of the objectives should have been revised or the manual reconceived to focus on specific subjects. The decision to go ahead with the reference manual had a number of impacts on the process that could have been addressed through revision of the objectives

### 3.3 Pre-testing

All three materials were tested for clarity, understanding and usefulness. The testing of the rubber brochure was particularly revealing. The brochure was conceived of as a decision tree where the farmer starts at the bottom and works through a series of branches to determine whether rubber might be a suitable crop for them. When the draft was shown to farmers they opened it up and started reading at the top left hand side of the page, which happened to be a box that said "rubber is right for

you”!. The pretest clearly demonstrated that the design was confusing and the brochure was subsequently modified as can be seen in the before and after images below.



Figure 3: Before and after pre-testing of decision making brochure

- A) it was found that when farmers opened the pamphlet they read from the top not the bottom
- B) Farmers found the information on land, land, labor and investment confusing and were not sure how to follow
- c) Farmers, unlike extension agents, do not like information in tables.

### 3.4 Dissemination

The dissemination of the rubber materials was particularly challenging because it involved coordinating delivery of different products to different audiences nation wide. It was even more challenging because of the cross channel strategy used in the messages, therefore making the timing of delivery even more critical.

For example the radio spots had to be delivered to provincial radio stations and to villages for playing on the village loudspeaker. The key message delivered in the radio spot was for farmers to seek more information at the district extension offices. This information was supplied through the brochure, which was backed up with more detailed technical information provided by the manual. Therefore the brochure and manual had to be delivered and available before the radio spots went on the air.

Once all of this was in place a national launch was organized in Vientiane and workshops were held in the provinces to coordinate dissemination to district offices and through projects and private sector companies as well as train extension staff in how to use the materials.

The launch of the rubber materials was particularly effective in ensuring dissemination of materials was integrated into the extension plans of the government and NGOs. The provincial level workshops helped secure commitments to translate and disseminate the radio spots in two additional languages, Akha and Phunoy. In addition, several provinces agreed to develop technical posters and fact sheets based on the rubber materials. Finally, projects and NGOs working in the North were able to incorporate the materials into their own training plans.

### 3.5 Monitoring and Evaluation

To evaluate the impact and usefulness of the materials, there was a need to understand if the information provided was useful in decision-making. Originally, it was suggested that about 50 extension workers, including NGOs, and 200 farmers be interviewed evenly across districts. In actuality 24 extension agents and 56 farmers were interviewed. District extension staff were interviewed in a number of districts across the 6 target provinces.

In terms of how farmers accessed the materials, it is interesting to note that an overwhelming majority of those interviewed had heard the radio spots (87%) but had not gained access to the pamphlet (71%) nor the manual (87%).

	Did see/hear	Didn't see/hear
Radio	48 (87%)	7 (13%)
Pamphlet	16 (29%)	39 (71%)
Manual	7 (13%)	48 (87%)
	55 respondents	

In terms of knowledge, farmers were asked if they could explain the strengths and weaknesses, options other than rubber and the conditions for planting rubber.

	Can explain	Cannot	Partially	No. of Response
Strengths/ Weaknesses	20	10	20	50
Condition for planting	9	11	30	50
Alternatives to rubber	28	12	9	49
Techniques for planting	9	11	30	50

In follow up questioning, farmers' responses can be summarized as follows. Many farmers saw the strengths of rubber in terms of potential revenue that could be generated. In addition, they also saw that it was an option to replace shifting cultivation and opium cultivation and provide a permanent occupation. In terms of weaknesses, farmers realized that there was a need for a lot of labor and investment. In addition, once they planted rubber they could not plant other crops. There was also concern over how much the Chinese would pay for latex.

In terms of reaching farmers, clearly radio was the best format to disseminate messages broadly. This is primarily because farmers have access to radios and listen frequently, where as it is unsure as to how extension agents actually used the pamphlet in extension related activities. Farmers who spoke ethnic languages also mentioned that they liked to hear information in their own language. Having the radio spots in digital format also allowed for flexible use by extension agents and NGOs. In one group meeting of Hmong women, the use of the radio spots empowered them to speak up and more actively participate in the discussion on rubber. Often when there are discussions in Lao language ethnic women have trouble in participating fully.

Another part of the questionnaire focused on how the materials assisted in decision-making.

	Helped	Didn't help	Helped a bit
Appropriateness of content	44	1	4
Assistance in making decisions	11	9	28

Interestingly around 8 of the 20 respondents indicated that the materials came out too late and could not help in their decision-making as they had already planted rubber. However, they mentioned that if the manual or further extension materials are made on tapping or management of the rubber plantation that the materials could be useful. One respondent mentioned that after reading the brochure he was concerned about the risks in planting rubber and decided to plant annual crops.

The final questions related to what other information and materials are needed. Most farmers responded that if materials are made again, strategies for actually reaching them need to be better thought out since pamphlets and manuals do not reach a broad audience. In relation to this, farmers mentioned they would like to see video films made about different aspects of rubber management, tapping and marketing.

#### 4. Lessons learned

*"When we developed materials we never really had an objective and then it was hard to evaluate. Its important to have an objective. We have a lot of assumptions and knowledge of what is needed, we but need to understand what farmers understand, know, and believe. This process helps to make sure that the farmers are part of the process. Communication is about learning from each other."* – Rubber task force member

Some of the main lessons learned include:

### **Benefits of working in a multi-disciplinary team**

There are clear benefits of working in a multidisciplinary team (extension agents, researcher and field staff, media) while we also have to state that there are still different working approaches. The production of the manual was certainly led by researchers' thinking.

### **Participation of farmers – beyond material production**

The involvement of farmers and field staff in the planning and testing of new materials and services should now be seen as essential feature of all future information activities of NAFES and NAFRI. The audience analysis and pretesting made a critical difference to the design of the rubber materials.

### **Producing materials in ethnic languages and using ethnic facilitators**

Feedback from the northern provinces was positive in terms of producing materials in ethnic languages. Nationally produced radio spots (in three languages) were complemented with translations done at the provincial level (two other languages). Feedback from farmers of different ethnic groups was very positive to information directly targeted at them. Many farmers felt empowered and more ready to participate in discussions when the information was presented in their own mother tongue.

### **Think before you plant!**

An important discovery through the process of planning the materials was the notion of: "Think before you Plant!". Rural people need information that will help them assess alternative livelihood strategies. Simple technical recommendations may not be helpful. It was also useful to make materials that provided farmers with information that supported decision-making rather than just purely technical recommendations. The message could be used across ethnic groups and farmers who were thinking of planting rubber.

There is also a need to "think before you print". In an ethnically diverse country such as Lao, there is a need to think of alternative communication mechanisms (not just written) so that messages can be developed into different languages. The use of radio allowed for flexible adaptation of materials into locally appropriate communication materials where the information could be conveyed effectively

## **5. Conclusion**

The production of a targeted campaign on small-holder rubber by a multi-disciplinary and multi-agency group was a first for the Ministry of Agriculture and Forests in Laos. In the past, materials were made a project-to-project basis and were usually technology focused with little understanding of the target group, their needs or preferences. The set of rubber materials produced were also unique in that they did not focus on 'changing behaviors' or promoting a specific technology but rather in providing information so that farmers can make more informed decisions. Such a type of communication campaign is increasingly needed in Laos where farmers are being provided with unprecedented opportunities along with associated risks that the market economy involves.

While farmers have learned to "think before you plant", the strategic communication process has also helped more and more government staff to "think before you print"! Staff from NAFES have used the same process to produce extension materials on other topics, including rattan and jatropha production. They are also providing advice to partner organizations, to encourage wider use of the same process and standards. At NAFRI, important lessons have been learned about the difference between research materials (technical reports, journal articles), reference materials (guidelines, manuals, case studies) and extension materials (posters, booklets, radio programs). Not only do these materials have a different audience and treatments, they also have a different process for planning and different responsibilities for approval. In the Province of LuangNamtha, at the epicenter of the rubber boom, the Provincial staff who participated in the strategic communication process adapted sections from the reference manual into a set of leaflets for field workers and literate farmers. They have also translated the rubber spots into other ethnic languages to ensure that the message of 'think before you plant' is reaching the widest possible audience.

A final consideration, the authors realize that information will not bring about empowerment on its own; if farmers are to make 'informed choices' they need information *and* the ability to make choices.

The provision of information without the ability to make a choice will lead to frustration. Farmers in Northern Laos are often not allowed to make decisions based 'purely' on good information. Often times they are trapped into planting rubber through contracts and/or pressure to put their land into rubber. Other times, they are being opportunistic and planting so they don't want to 'lose out'. Whatever the case, farmer's will need the 'right' to make their own decisions in how they want to run their farms and sustain their livelihoods. Only then will information be valuable input.

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