

Organic Cotton Production in Lao PDR



A Pre-feasibility Study

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Contents

ACKNOWLEDGEMENTS	3
1. INTRODUCTION	4
1.1 Promoting Organic Farming and Marketing in Lao PDR	4
1.2 Objectives of the pre-feasibility study	4
1.3 Methodology.....	4
2. COTTON PRODUCTION IN LAOS	6
2.1 General information on cotton production in Laos	6
2.3 Processing of cotton	10
2.4 Constraints and challenges	11
3. POTENTIAL DEMAND FOR ORGANIC COTTON FROM LAOS	13
3.1 Global market for organic and fair-trade cotton.....	13
3.2 Demand from local textile sector	13
4. POSSIBLE OPTIONS FOR DEVELOPING ORGANIC COTTON IN LAO PDR	14
4.1 Launch of an organic cotton value chain project.....	14
4.2 Support to the GTZ-DED cotton initiative	15
4.3 General support to organic cotton initiatives	16
5. PRELIMINARY CONCLUSIONS FOR PROFIL	16
5.1 Short- and medium-term engagement	16
5.2 Possible engagement in the long-term	16
5.3 Need for further research and clarification	16
REFERENCES	17
ANNEXES	18
Annex 1: Programme of the mission	18
Annex 2: List of contacts.....	18
Annex 3: Analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT-Analysis).....	20
Annex 5: Profitability of different crops.....	22
Annex 6: Possible structure of an organic cotton value chain	22

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1. Introduction

1.1 Promoting Organic Farming and Marketing in Lao PDR

The Promoting Organic Farming and Marketing in Lao PDR project, also known as PROFIL, is an international cooperation project involving the Lao Department of Agriculture and Helvetas. The objectives of PROFIL Phase 1 included improving living conditions in rural areas of Lao PDR, ensuring the good health of consumers, encouraging the sustainable use of natural resources, and promoting economic growth through organic agriculture. The first phase of the project began in mid-2004 and ended in December 2007, with a focus on legal and institutional issues and on the value chain for organic vegetables in the Vientiane Capital region.

While the first phase of the project had many successes, a second phase of the project was planned to expand on the work done in the first phase. The second phase of the project will include more work on the legal and institutional aspects of organic production, and will develop multiple value chains using the *Participatory Market Chain Approach (PMCA)*. One of the first steps for the project is to select appropriate value chains for further development.

1.2 Objectives of the pre-feasibility study

The objectives of the pre-feasibility study were defined as follows (for details, see ToR):

- Assess the agro ecological and economical competitiveness of organic cotton in at least two different contexts of the Lao PDR (Sayabury and Savannakhet, evt. Luang Prabang).
- Identify stakeholders involved in the cotton value chain.
- Explore experience and interest of producers, traders, processors and government officials in cotton and assess the national and international market potential of organic cotton.
- Assess necessary resources required to develop the organic cotton value chain.
- Write a concise report with specific recommendations on whether or not Profil should invest in the development of an organic cotton value chain.

1.3 Methodology

The few literature and information on cotton cultivation in Laos available on the internet provided only a vague idea on the present situation. A discussion with Dr. Jean-Christoph Castella of NAFRI, who had worked on a cotton research project in Thailand and Laos in the early 1990s, contributed much to completing the picture.

At the beginning of the study, the study team identified in a brain-storming the main elements and key questions for setting up a possible organic cotton value chain given in Table 1.

Fields	• Are the agro-ecological conditions suitable for producing cotton? (climate, soils, pest and disease pressure)
	• Are suitable cotton varieties available? (yield, susceptibility, quality)
	• Would low-lands or up-lands be most suitable?
	• Can suitable crop rotations be established?
Farms	• Do farmers have sufficient know-how for producing cotton?
	• Is cotton production profitable compared to other crops (production costs, gross margins)?
	• Is cotton competitive concerning opportunity costs of labour?
	• Are cash-flow issues a limiting factor in cotton production?
Extension & Facilitation	• Who can provide the necessary extension services? (DAFEO? traders? companies?)
	• Does DAFEO has sufficient know-how on organic cotton production?
	• How can costs for extension services be covered?
	• Who can facilitate the development of organic cotton value chains? (Govt. agencies? GTZ-DED? PROFIL?)
	• How can organic certification be organized, if needed? (ICS-SU? Lao certification body? CertAlliance?)
Processing & Trade	• Is appropriate ginning equipment available? (manual/machine ginning? costs? quality? investment?)
	• Are appropriate spinning skills and equipment available? (manual/machine spinning? costs? quality?)
	• Are appropriate weaving skills and equipment available? (manual/machine weaving? costs? quality?)
	• Are appropriate manufacturing skills and equipment available? (manual/machine weaving? costs? quality?)
	• Do intermediary traders for cotton exist? Are their margins appropriate?
	• Is sufficient transport equipment and infrastructure available? (costs? need for investment?)
Markets	• Is there a demand for organic cotton fibre in / from Laos? (short/medium/brown? domestic? export?)
	• Is there a demand for hand-spun organic cotton yarn? (white/brown/dyed? domestic? export?)
	• Is there a demand for handicraft cotton textiles from Laos? (tourists/hotels/export? home textiles/garments?)

Table 1: Elements of a possible organic cotton value chain and related key questions to be addressed in the pre-feasibility study .

Subsequently, the evaluation team visited and interviewed the following stakeholders of the cotton sector (Table 2):

<ul style="list-style-type: none"> • Mr. Sulaphone, Mr. Khamnoun and Mr. Souliny Keoparavane, Provincial Agriculture and Forestry Offices (PAFO) in Savannakhet Province and Mr. Somjit Chanthavong, PAFO Sayaboury Province
<ul style="list-style-type: none"> • Mr. Bounyou, District Agriculture and Forestry Extension Office in Songkhon District, Savannakhet Province
<ul style="list-style-type: none"> • NAFRI, Dr. Jean-Christoph Castella, who has done extensive researching on the cotton sector in Thailand and Laos in the early 1990s
<ul style="list-style-type: none"> • Cotton farmers in five villages (Ban Nam Pakha, Songkhon District and Ban Muang Xay, Sayphouthong District Savannakhet Province, Ban Namthon, Ban Thong, Ngeun District, Sayaboury Province)
<ul style="list-style-type: none"> • Families involved in cotton spinning and / or weaving in three villages in Savannakhet, Luang Prabang and Sayaboury Provinces.
<ul style="list-style-type: none"> • Two handicraft textile companies specialised in natural cotton textiles from Laos (Ms. Songbandit Nyotmankhong of Thong Laha Sinh Company in Savannakhet and Isabel Drean of Kop Noï in Luang Prabang)
<ul style="list-style-type: none"> • Mr. Chanhom Souvanhone, Lao Cotton Company in Vientiane (industrial processing and handicraft)
<ul style="list-style-type: none"> • Two cotton traders (Mr. Vayo, owner of Luang Prabang Cotton Trading Enterprise, and Mr. Noynen, a cotton trader in Ngeun district, Xayaboury province.)
<ul style="list-style-type: none"> • Lao Handicraft Association, Luang Prabang, Mrs. Vandara Amphayphone (President)
<ul style="list-style-type: none"> • Veronika Utz, Rural Livelihoods Improvement Program (RLIP) GoL/IFAD and Rural Development of Mountainous Areas Program (RDMA) GTZ/DED in the five Northern districts of Sayaboury Province DED-GTZ cotton project in Ngeun District, Sayaboury Province (participation in presentation of the results of a gender analysis along the cotton handicraft value chain initiated by GTZ-DED)

Table 2: Stakeholders of the Lao cotton sector interviewed during the pre-feasibility study.

2. Cotton production in Laos

2.1 General information on cotton production in Laos

2.1.1. Agro-climatic conditions

Lao PDR is characterized by a monsoon climate with strong rains from June to beginning of October, with occasional rains in the remaining period. Annual precipitation in the provinces we looked at (Savannakhet, Luang Prabang, Sayaboury) is around 1300 in Savannakhet to 1700 mm in upland regions of Sayaboury. Temperatures range between 10-40° Celsius.

Due to the seasonally humid climate, insect pest and disease pressure (fungal diseases) is medium. The main pests of cotton are several types of bollworms (*Helicoverpa armigera*, *Earias* spp.), aphids, and cotton stainers (*Dysdercus* spp.). As cotton is not grown on a large scale, and the varieties grown are quite robust, pests usually do not cause much damage to

the cotton crop. While on the tour, we did not come across active pest management measures undertaken by farmers.¹

In general, agro-climatic conditions in Lao PDR seem suitable for cotton production, and suitable soils are available.

2.1.2. Cotton production areas and varieties

Cotton is produced in most provinces of Laos, though mostly on a small scale and for local consumption. It seems to be more common in less developed provinces such as Sayaboury (North-West), Luang Prabang (Central North) and Savannakhet, where some villages have ties with cotton traders or handicraft companies. Cotton is grown without irrigation, mainly in upland fields, and in some areas on riverbank slopes that are seasonally flooded. While most ethnic groups have traditionally grown some cotton, the Tai Lü are particularly known for their spinning and weaving skills.

There are no reliable statistics available on cotton production in Laos. The FAOStat figures (4000 tons seed cotton in 2005, 2000 tons of fibre) are definitely not correct. As part of the cotton is grown for home consumption without being traded, especially in tribal villages in the North where people are too isolated to buy clothes, the quantities of cotton traded are much smaller. Due to the support of RLIP/RDMA Program in establishing a cotton value chain the Ngeun district authorities considered a cotton production area of 100 ha in their 5-years socio economic plan. Due to the support of RLIP/RDMA Program in establishing a cotton value chain the Ngeun district authorities considered a cotton production area of 100 ha in their 5-years socio economic plan.

We came across three types of cotton grown by farmers:

- Fai Noy: short-fibre white cotton (ca. 18-22 mm), varieties of *Gossypium arboreum*²
- Fai Thun³: short-fibre brown or sable coloured cotton (ca. 15-20 mm SL), a variety of *Gossypium arboreum*
- Fai Niay: medium-staple (ca. 20-25 mm), varieties of *Gossypium hirsutum*

There seems to be some confusion concerning this classification and whether a specific type of cotton belongs to *G. arboreum* or *hirsutum*. We came across different interpretations, and we have seen very short-fibred cotton that resembled *G. hirsutum*. The farmers seem to classify Fai Noy and Fai Niay according to the length of the fibre, rather than the appearance of the plant. Probably under both types, there are different cotton varieties in use, some of them might have been introduced from Thailand or by the French project in the 1990s. It is also possible that varieties have split up due to the absence of maintenance breeding.

2.1.3. History of cotton production in Laos

Cotton has traditionally grown in Laos for centuries, mainly for direct consumption by the households who transform the fibre into cloth material and objects of daily use. Some com-

¹ except for one elderly man deterring water buffaloes with a sling shot

² According to Trebuil et al. (1993), Fay Noy is highly branched and extremely hairy, with short fruit bearing branches and small bolls that hang. The cotton we have seen and which was referred to as Fay Noy by the farmers, however, rather resembled *G. hirsutum* varieties.

³ Trebuil et al. (1993) refer to it as Fay Mouy.

munities like the Thai Lü are particularly renowned for their excellent skills and traditions in spinning, dyeing and weaving cotton.

French development cooperation tried to promote large scale cotton production with industrial processing in the 1980s and 1990s. They introduced varieties with longer fibres and higher yields, promoted the use of synthetic fertilizers and pesticides, and set up ginning facilities and a spinning mill. However, problems with insects developing resistance to pesticides, low yields, low world market prices for cotton, and high input costs brought the sector almost to a complete standstill by the end of the 1990s. Organizational shortcomings and a failed “privatization” at Lao Cotton further contributed to the decline of the cotton spinning industry, and most of the officially approved traders left the business, especially in southern Lao PDR. Farmers gave up cultivating cotton, production declined drastically and the processing equipment decayed.

Today, the small volumes of cotton still grown in Laos are mostly directly ginned and spun by hand in the villages where it is grown, or in villages that specialize on processing cotton. Only a small fraction, mostly Fai niay, is exported as seed cotton to Thailand. We met one trader who presently exports cotton, Mr. Noynen from Ngeun District, Sayaboury Province. He sold 8 tons of Fai niay to a Thai trader in 2007, but volumes are on the decline.

2.2 Cotton production systems

We came across three different types of cotton production systems:

- on river banks, cotton cultivated in combination with various food and dye plants
- in up-land (short rotation non-pioneering) shifting cultivation, cotton is intercropped with food crops
- in up-land (pioneering) shifting cultivation, cotton mono-culture

The three systems are briefly described in the following sections.

2.2.1. Mixed-cropping on river banks

In Nam Paka village in Sonkhon District of Savannakhet Province, Fai noy cotton is cultivated on sandy river slopes (photo 1). A farmer typically cultivates one cotton field of 0.05 - 0.1 ha. When the water retreats after the rainy season, cotton seeds are successively sown in the soft sand, without any prior preparation of the field.



Photo 1: left: mixed cultivation of cotton with maize, sweet potato, beans (middle) and indigo (right) on sloping banks of the Xebanhiang River in Nam Pakha village, Sonkhon District, Savannakhet.

Due to the flooding and the accumulation of fertile silt, there is no need to apply manure or for weeding. Cotton is intercropped with various crops like beans, sweet potato, maize and indigo. Pest damage is not a major issue, and farmers do not practice any active pest management (except for chasing away water buffaloes with a sling shot – a very effective and well targeted pest management method!).

In this system, farmers do not consider cotton cultivation as an important source of income (paddy has a much more important stand!), but rather as a side activity in order to get some raw material for the spinning and weaving activities of the women in the household. This is mostly because of the limited area of river bank available for cultivation, which is divided into many small family plots of 50-80 square meters. Awareness of yields and production costs is therefore very low, but yields are probably in the range of 500 – 700 kg seed cotton per ha.

2.2.2. Intercropping in upland shifting cultivation

In Muang Kay village in Say Phutong District of Savannakhet, farmers predominantly cultivate paddy rice in large, fertile plains with some access to irrigation. Dry season crops of sweet corn and grain maize are also grown. Cotton cultivation is limited to pockets of upland fields, where it is mainly intercropped with peanuts, or occasionally with castor (Photo 2).



Photo 2: left: Remains of cotton plants intercropped with peanuts and maize in a shifting cultivation field in Muang Kay village (Say Phutong District, Savannakhet); right: Fai noy (short-staple white) and Fai thun (short-staple brown) cotton.

Short fallow secondary forest and shrubs are cut, burnt, and the field is prepared with a hand tractor. No chemical fertilizers or pesticides are used (although it is not clear whether herbicides are used in some cases). After the harvest, cattle graze on the land. Plots are cultivated for 1-2 years, after which they are left fallow for ca. 3 years.

2.2.3. Mono-cropping in upland shifting cultivation

In the Provinces of Luang Prabang and Sayaboury, located further North of Vientiane, we only came across cotton cultivated in upland slash-and-burn systems as a monoculture crop. In many of these plots the land being cleared is primary forest or longer rotation secondary forest. Plots are mostly located on slopes, some of which are quite steep. Some small plots are occasionally located on flat land along small streams (Photo 3), but these are usually reserved for paddy rice or paper-mulberry cultivation. Cotton is only grown as a small scale

cash crop - the main crops cultivated on the slopes are upland rice for local consumption and maize and Jobs' tears⁴ for cash crops.



Photo 3: from left to right: Shifting cultivation (slash and burn), a cotton field (different cotton varieties) and cotton plants of Fai niay (medium staple) in Namthon village (NgeunDistrict, Sayaboury).

DED/GTZ started to promote cotton production and handicraft processing in 10 villages of Ngeun District in Sayaboury Province. They provide cotton seeds to the farmers (Fay noi and Fai thun), and link them with local traders who offer them a price that is 15-20% higher than the local market price (3500 kip/kg instead of 2500 – 3000 kip/kg seed cotton). These traders are able to offer a higher price because the end customer (Phaeng Mai Gallery) guarantees a premium price for handspun cotton yarn sold as part of the DED/GTZ value chain. After the successful start in Ngeun district, cotton activities spread out in the other four districts of the program area as well.

2.3 Processing of cotton

2.3.1. Handicraft sector

Most of the cotton produced in Laos is processed by hand, either by the farmers who grow it, or by communities specialized on spinning and weaving. Simple traditional equipment is used for ginning, fluffing, spinning and weaving (Photo 4). Some households also dye the cotton yarn with natural dyes based on local plants and minerals.



Photo 4: from left to right: manual spinning and weaving in Nam Pakha (Sonkhon District, Savannakhet); stitching in Laha Sin Company (Savannakhet).

⁴ Jobstears (*Coix lachryma-jobi* L.) is a cereal crop that is increasingly popular especially in China where it is valued for its dietary properties.

Several small- and medium-sized companies like Laha Sin in Savannakhet, Kop Noi and Ock Pop Tok in Luang Prabang and Phaeng Mai Gallery in Vientiane specialize on hand-craft cotton textiles made in Laos. They buy raw cotton or hand-spun yarn from farmers or intermediary traders, and arrange for further processing, either with women groups (spinning, weaving) or within their own workshops (dyeing, weaving, and manufacturing).

2.3.2. Industrial processing

Industrial cotton processing in Laos was introduced by a French project in the 1980s and 1990s, but has been in decline since then. Only three mechanical gins are still in use in Laos. Two of these gins are now run by the cotton trader Mr. Vayo Viseth of Luang Prabang Cotton Enterprise (photo 5). The only spinning unit in Laos, owned by the Lao Cotton State Enterprise in Vientiane has not been used since some years, and it is unlikely that it ever will be functional again. The power looms of the company – some of which have recently been replaced – use industrially spun yarn imported from Thailand (3.20 – 3.50 US\$/kg).



Photo 5: from left to right: Ginning in Luang Prabang Cotton Enterprise; spinning unit (not functional) and mechanical loom (weaving imported yarn) in Lao Cotton Company.

Lao Cotton Company also processes ca. 10 tons of local cotton fibre which it purchases from Luang Prabang Cotton Enterprise (at the rate of 15'000 kip/kg). This fibre is manually spun and woven in villages, and the fabric is manufactured into handcraft style products at the company's factory in Vientiane.

2.4 Constraints and challenges

The SWOT-Analysis in Annex 3 provides an overview of the most important Strengths, Weaknesses, Opportunities and Threats of the Lao cotton sector, with regard to launching an organic cotton project. The constraints at the farm and processing level are briefly described in the following sections.

2.4.1. Constraints at the farm level

Lao farmers generally do not consider cotton as a profitable cash crop. Their preferred choice for flat land usually is paddy rice, and once a field is prepared for paddy cultivation, which requires considerable investment, they rarely convert it into a field for other arable crops. In the South farmers with access to upland fields preferred to plant peanuts or fruit

and vegetables such as papaya and chilli. In the North upland rice, maize and Jobs' tears are usually considered more profitable crops than cotton.

Some farmers in the villages where GTZ/DED operates showed increased interest in cotton production due to the facilitation and higher prices offered by the project. Even with these favourable conditions, however, many farmers stopped growing cotton after one year, although these were replaced by other farmers. The cotton field we visited was only partly harvested, and the farmer said that he is not planning to pick the remaining cotton (ca. 10-20% of the total yield) as he was busy with other work (lack of labour and overlapping of the seasonal calendar with other crops). There has been no support from 'DAFO in the cotton production so far. It is difficult to say whether this is due to a lack of entrepreneurial spirit or, because cotton growing is not profitable compared to other sources of income, such as growing maize and jobsteers, which are mainly grown for cash flow reasons. These crops are heavily supported by the traders with investments like seeds, cash advance money and attractive awards like bicycles and celebrations. The profitability estimate in Annex 5, however, indicate that cotton cultivation can be more remunerative than maize. Given the low level of education available in the villages, it is possible that farmers are not able to estimate net revenues or gross margins from different crops.

Practically no inputs are used in cotton production, including natural ones. Pest pressure and depletion of nutrients are partly taken care of by shifting cultivation techniques. However, the slash-and-burn system is the main challenge to cotton production in line with organic principles. To produce recognizably "organic" cotton, the cropping system would need to include recycling of biomass instead of burning, sustainable soil fertility management including sufficient control of soil erosion, and refraining from clearing forests for agricultural production. Unless permanent cropping systems with suitable crop rotation patterns and measures to control soil erosion are established in the upland areas of Laos, cotton cultivation is not really a sustainable form of land management. As the head of a village where GTZ/DED is active summarized: "We would welcome a new cash crop which is more profitable than the ones we presently cultivate, but we would prefer if it is a crop that does not need to be grown in a shifting cultivation style - which is not sustainable."

2.4.2. Constraints at processing level

While manual spinning and weaving result in a product with unique properties, manual ginning does not add any value to the product compared to mechanical ginning. Ginning is not a very popular activity, and many women involved in handicraft cotton processing would prefer to skip it, if possible. Mechanical ginning, however, would require investment into equipment. Centralised ginning also adds to transport costs, as bulky seed cotton needs to be transported from remote villages to the ginnery, and the fibre needs go back to the households that do the spinning and weaving.

Re-launching industrial spinning is probably not a reasonable option in the near future. The mostly short-staple fibre produced in Lao PDR are ideal for manual spinning and weaving, but not for industrial processing. For medium-staple cotton production, Laos is unlikely to be competitive, unless the local handicraft sector demands sufficiently large volumes of locally processed industrial yarn. This would allow the handicrafts industry to produce garments of finer quality, but they end users would need to pay a higher price for locally produced yarn than they do for imported yarn. In addition, some people complained that the medium-staple Fai niay that is locally produced is difficult to spin by hand (stickiness) and does not absorb natural dyes very well.

3. Potential demand for organic cotton from Laos

3.1 Global market for organic and fair-trade cotton

The organic cotton sector is presently experiencing a strong increase in demand, with an expected volume of ca. 120'000 tons in 2008⁵. At the same time, production is rapidly increasing, especially in India, China, East- and West-Africa, so that supply could soon outpace demand.

A fair-trade minimum price (at farm gate) of approximately 0.40 EUR per kg seed cotton⁶ (around 5'500 kip/kg) is likely to be sufficiently interesting for Lao farmers to produce more cotton. However, it would be difficult for Laos to get fit for the general global organic cotton fibre market, as there is an obvious lack of suitable cultivated varieties, production know-how and processing infrastructure. Specialising in long-staple cotton varieties (*Gossypium barbadense*), for which a considerable demand exists, could in principal be an interesting option, but the identification and introduction of suitable varieties is not an easy task.

Internationally, there may be some demand from niche markets for brown cotton (Fai thun) which is produced in increasing quantities, especially in villages participating in the DED/GTZ project. Hand-spun cotton yarn may also have potential as an export product, and this could be worth further exploration. However, as demand from the local handicraft sector is stronger than the supply (see following section), the local market probably should be given priority over the export market.

3.2 Demand from local textile sector

There are no reliable figures concerning actual consumption and potential fibre demand available for Laos. Total cotton fibre consumption of the Lao handicraft textile sector⁷ is probably in the range of 50-100 tons (i.e. 200 – 400 tons seed cotton).

Table 3 provides an overview of processors, traders, approximate volumes and prices of cotton in 2007/08. Table 3 provides an overview of processors, traders, approximate volumes and prices of cotton in 2007/08.

⁵ Organic Exchange Marketplace Report 2007

⁶ Fairtrade prices for cotton from Laos have not yet been defined. Prices for other countries are in the range of 0.40 EUR/kg seed cotton, plus 0.05 EUR/kg for community development projects.

⁷ subsistence consumption at village level excluded

Processor / Trader	Quantity (fibre)	Type	Price paid (kip/kg)	Sources	Customers
Lao Cotton (Vientiane)	10 tons	short white	15'000 (fibre)	Mr. Vayo	Middle-class, tourists, export
Lahasin (Savannakhet)	7-8 tons	short white (yarn)	25-30'000 (yarn)	Mr. Vayo, villages in Savannakhet Province	Tourists, export
Phaeng May Gallery (Vientiane)	?	short white + brown (yarn)	42'000 (yarn)	villages in various provinces	Tourists, export
Kop noi (Luang Prabang)	(none in 2007)	short; interest in fine/soft yarn	?	villages in Luang Prabang Province	Tourists, export
Trader Mr. Vayo (Luang Prabang)	ca. 40 tons	long (60%), short white (20%) short brown (20%)	2'500 (seed cotton), 3'000 for brown cotton (exclusively for Lahasin)	villages in Xayaboury and Luang Prabang Province	Lao cotton, Lahasin, Phaeng Mai Gallery; material to Japanese clients
Trader Mr. Noynen (Hongsa)	10 tons (2008: 8 tons)	long	2'800	Ban Thong and Ban Namthon, Ngeun district, Sayaboury	Thai trader (export)

Table 3: Important processors and traders of cotton fibre in Laos (2007/08, interview data).

4. Possible options for developing organic cotton in Lao PDR

Based on the findings of the pre-feasibility study, three general options seem feasible, with different levels of engagement. They are briefly outlined in the following sections. For the short- and medium term, we propose a limited engagement for Helvetas, corresponding with option 2 (support to the GTZ-DED initiative).

4.1 Launch of an organic cotton value chain project

The launch of a full-fledged organic cotton value chain project is a feasible option, because of the following factors:

- there is sufficient demand for organically grown - or at least naturally produced – cotton from the Lao handicraft sector, with options to additionally develop niche markets for brown cotton fibre and/or hand-spun yarn;
- there are well-managed handicraft companies and an experienced cotton trader who are ready to enter into a private public development partnership project;
- there are farmers and traders who are interested in organic cotton production supported by a project;

- organic cotton production can be more profitable than other upland crops, provided the value chain is organized in an efficient way with guaranteed minimum prices for farmers;
- it would be possible to design permanent organic upland cotton production systems with suitable rotations (e.g. cotton – Jobs' tears – pulses), mulching and bunds for erosion control.

However, the design and introduction of a permanent cropping system is a major challenge that would take many years of work to establish. Several initiatives have tried – and mostly failed – to establish sustainable upland farming as an alternative to shifting cultivation. Although one could draw from experience (of Helvetas and others) in countries with somewhat comparable ecological conditions (e.g. Nepal, Bhutan), it will probably take more time until population pressure and land deterioration in Laos force people to change production systems. In addition, cotton is probably a fairly poor choice for sloping lands, as it does not protect the soil from erosion very well. However, if considerable progress in land management is made in Laos in the near future, launching an organic cotton project might become an interesting option for Helvetas.

4.2 Support to the GTZ-DED cotton initiative

The GTZ-DED initiative to promote (not necessarily organic!) cotton production and local processing in collaboration with farmer groups, women groups, traders and handicraft companies appears to be promising, especially with regard to income generation among women. However, several issues need to be addressed to ensure its relevance for poverty alleviation and its sustainability:

- Production sites: The selected villages are mostly located close to an international highway that is under construction and that will soon be used extensively for trade between Thailand, Laos, China and Vietnam. The new road will substantially change the livelihoods of local people, making them better-off than those who live in remoter areas. In this new situation, cotton production and processing will probably not be able to compete with new income-generating opportunities.
- Production system: The present slash-and-burn system practiced by the farmers to produce cotton is probably not sustainable in the long term. It would be advisable to introduce “real” organic farming practices, with crop rotation, use of compost and mulch, organic pest management etc. The price of 3500 kip/kg raw cotton offered by the traders associated with the project provides an important incentive for farmers to cultivate cotton. In order to make cotton really profitable compared to other crops, the price might need to be increased to approx. 4'000 kip/kg.
- Ginning and spinning: As the upland communities apparently have less know-how in cotton processing, the raw cotton is presently transported to (wealthier) villages in the plains that have a strong tradition in ginning, spinning and weaving. For the ginning and spinning, the women get 20'000 – 22'000 kip per kg yarn (not including the approx. 14'000 kip per kg raw cotton) – which is a very high rate compared to what is usually paid. Therefore, the main income generation happens in communities that don't really depend on it. If possible, the project should strive to introduce or revive ginning and spinning in the villages where the cotton is grown, in order to increase incomes of poor people, to ensure seed supply, and to reduce transportation costs.

PROFIL could actively support the GTZ-DED initiative by:

- Advising on organic farming system design and supporting participatory research to further develop the farming system;

- Offering training on organic farming to project / extension staff;
- Facilitating the development of an internal control system and preparing the project for organic certification, if and when a sustainable production system is developed;
- Providing advice and tools on how to efficiently organize and manage an organic and fair-trade cotton value chain;
- Facilitating the development of partnerships along the value chain;
- Support the project in identifying markets for cotton fibre, yarn, garments and rotation crops.

In this way, PROFIL could become a partner of GTZ-DED with specific tasks to further develop the organic cotton value chain project.

4.3 General support to organic cotton initiatives

The third – minimal - option would be that PROFIL only provides general information and advice to any initiative that explicitly focuses on organic production, which is its core objective and field of competence. This would mean the project would avoid getting involved in activities related to traditional cotton production and processing.

5. Preliminary conclusions for PROFIL

5.1 Short- and medium-term engagement

In our opinion, PROFIL should not take up organic cotton production as a new value chain project (option 1) in the short or medium term. It should rather link up with the GTZ-DED initiative and support them to further develop their traditional cotton production and processing initiative by providing expertise related to organic farming and value chain management (option 2).

5.2 Possible engagement in the long-term

Provided that the GTZ-DED initiative is able to solve the poverty and sustainability issues mentioned above, or that new initiatives come up which focus on replacing shifting cultivation with permanent organic farming systems, PROFIL could re-consider getting engaged in an organic cotton value chain project.

5.3 Need for further research and clarification

In order to further explore the potential of (organic) cotton production in Laos, the following issues should be further investigated:

- Calculate the gross margins for cotton, maize, Jobs' tears, and upland rice;
- Check for experience in other countries with sustainable cotton cultivation on sloping lands;

- Identify and test medium-staple cotton varieties that are suitable for hand spinning and natural dyeing and suitable for Lao conditions (possibly exchange of experience with Indian Khadi-sector and cotton research institutes⁸;))
- Explore the market for speciality organic cotton fibre (brown, short staple) and hand-spun yarn.

References

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- J.-C. Castella (1996) : La production cotonnière en Thaïlande. Histoire et leçons d'une crise.
- J.-C. Castella, D. Jourdain, G. Trébuil, B. Napompeth (1999) : A system approach to understanding obstacles to effective implementation of IPM in Thailand : key issues for the cotton industry. *Agriculture, Ecosystem and Environment* 72, 17-34.
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- Organic Exchange Marketplace Report 2007. Researching brands, retailers and businesses operating in the global organic cotton market. Organic Exchange, 2007. www.organicexchange.org.

⁸ Check with Khadi Village Industries Council (KVIC) and Central Institute for Cotton Research (CICR).

Annexes

Annex 1: Programme of the mission

Date	Activities
24/2/2008	Travel to Savannakhet
25/2/2008	Meeting with Savannakhet PAFO and DAFEO
	Travel to Songkhon District
	Visit farmers and weavers in two villages
	Travel back to Savannakhet city
26/2/2008	Meet Thong Lahasin company
	Travel back to Vientiane
27/2/2008	Meet Mr. Chanhom Souvanthone, Lao Cotton State Enterprise before flying to Luang Prabang
	Meet Isabel Drean, Kopnoi/Made in Laos
	Meet Ms Vandala Amphayphone
28/2/2008	Meet Mr Voyo, Cotton trader
	Visit cotton producing and processing village in Luang Prabang Province
	Leave for Xayabury
	Meet PAFO Xayabury
	Meet Veronika Utz from GTZ/DED in Hongsa
29/2/2008	Travel to Nguen District
01/3/2008	Participate in the de-briefing of the gender study of Maya Utz
	Meet district authorities and cotton trader
	Visit cotton processing families Visit villages where the GTZ/DED programme is promoting organic cotton production, organize focus group meetings with farmers
	SWOT-Analysis and value chain mapping with the GTZ team; de-briefing
02/3/2008	CE Travel back to Lunag Prabang
03/4/2008	CE Travel Back to Vientiane

Annex 2: List of contacts

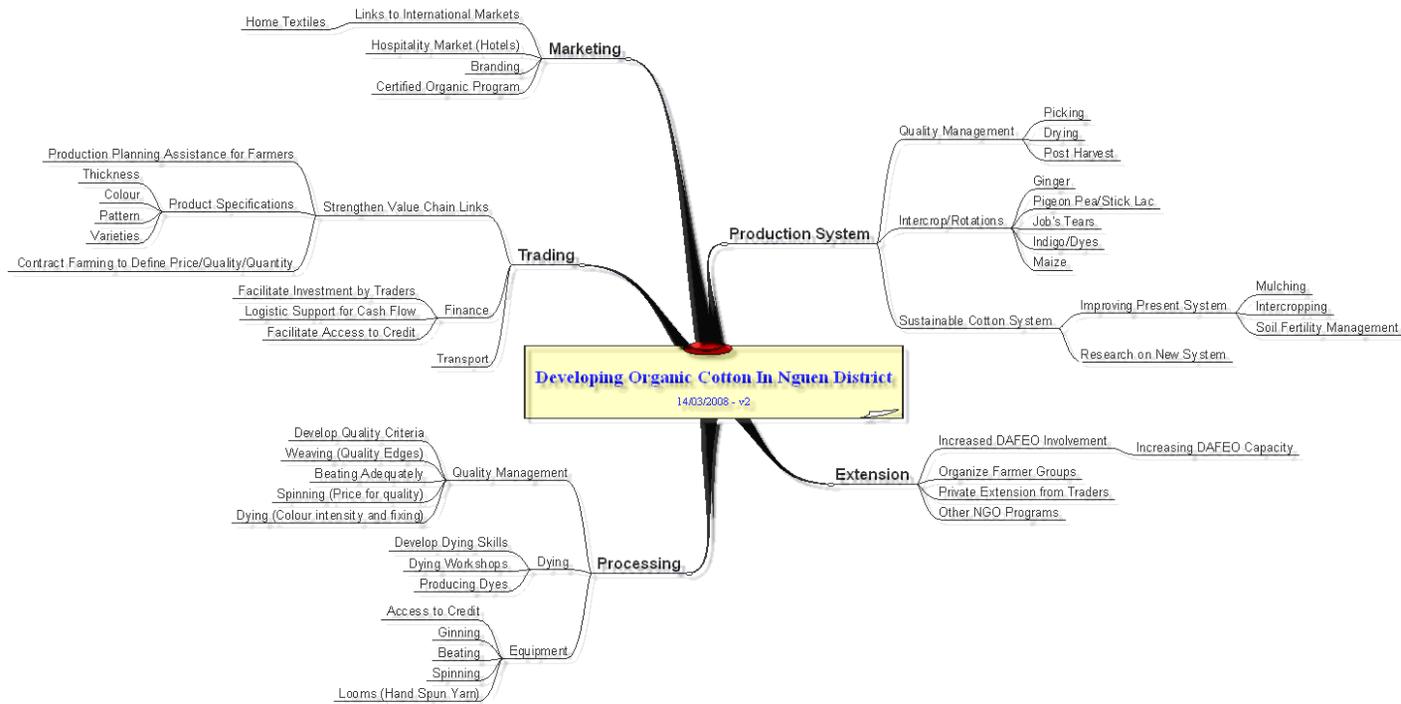
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Annex 3: Analysis of Strengths, Weaknesses, Opportunities and Threats (SWOT-Analysis)

<u>Strengths</u>					<u>Opportunities</u>
	Tradition of spinning and weaving cotton	Demand for hand-made and naturally dyed cotton material	Introducing permanent organic farming system with cotton?	Increasing pressure to shift to permanent cropping system	
Tradition in growing cotton, without chemicals	Local market demand for cotton fibre	Several linkages with handicraft companies established	Permanent cropping system might reduce production costs	Farmers would grow more cotton if prices increased	Handicraft companies ready to partner with farmer groups
Local authorities are interested in a cotton project	Laos is a popular tourist destination and has good image	GTZ-DED project to promote cotton cultivation	Tourism to Laos is increasing → opportunities for sales	Demand for organic crops that could be grown with cotton	Possible demand for speciality cotton (brown, hand-spun)
			Tourists could take handicraft classes	Combination with agro-ecotourism	Set-up of a Lao certification body / collaboration with CertAll
			Combination with producing / collecting natural dye plants	Possibility of branding / certificate of origin	Collaboration between PROFIL and DED-GTZ
<u>Weaknesses</u>					<u>Threats</u>
	Cotton is less profitable than other crops (e.g. Jobs' tears)	Cotton grown in unsustainable shifting cultivation systems	Increasing road access will open other income opportunities	Labour costs will probably increase	
Cotton growing and processing is mostly separated	Lack of suitable extension support and policies	No experience with sustainable organic cotton farming yet	Farmers might abandon cotton cultivation (grow maize etc.)	Possible use of chemicals when cotton prices go up	Trend towards agricultural intensification → with chemicals
Cotton is perceived as a declining industry in Laos	Tourists are little informed on real Lao origin of textiles	No functioning spinning mill in the country; only 2 gins	Quota system for trading cotton could limit options	Govt. involvement could have unwanted side-effects	Demand for handicraft cotton could be only a fashion
			Loss of soil fertility through soil erosion and burning biomass		

Annex 4: Mind-map for developing organic cotton in Lao PDR



Annex 5: Profitability of different crops

(rough estimate, to be verified!)

(per ha)	Cotton	Maize	Jobstears
Seed cost	30,000	504,000	84,000
Fertilizer cost	0	0	0
Pesticide cost	0	0	0
Herbicide cost	0	0	0
Hired labour cost	1,600,000	2,000,000	1,400,000
Direct production cost	1,630,000	2,504,000	1,484,000
Yield (kg/ha)	800	3,500	1,500
Price (kip/kg)	3,500	812	2,800
Revenue (kip/ha)	2,800,000	2,842,000	4,200,000
Gross margin (kip/ha)	1,170,000	338,000	2,716,000
Own man days (d/ha)	80	120	60
Rentability (kip/d)	14,625	2,817	45,267

Annex 6: Possible structure of an organic cotton value chain

