



VALUE CHAIN DESIGNING OF

# Allo

OF PANCHASE PROTECTED FOREST AREA



Implementing Agency

**Ministry of Forest and Soil  
Conservation, Department  
of Forests**



Implementing Partners



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# Allo

## Introduction

Allo (Botanical Name- *Girardinia diversifolia*; English name- Nettle, Himalayan Nettle, Stinging Nettle; locally known as Pua) is perennial shrub belonging to Urticaceae family. The stem bark of Allo contains fibres with unique strength, smoothness and silk like lustre. The fibre is used to make clothes since time immemorial. The fibre, thread and weaved clothes are commercially traded from few districts of Nepal.

## Habit (Characteristics)

Allo is a robust shrub reaching up to a height of 2m or more. Leaves are stalked, alternate, dentate, palmately divided with three distinct nerves running to three lobes. Size of mature leaf measures 10-24cm by 7-18cm. Leaf blade and stalk contains long awl-shaped bristles and stinging hairs. Flowers are sessile and borne on axillary and terminal branched spikes. Female spikes may reach up to 40cm long whereas male spike short but much branched (Polunin and Stainton 1984, Manandhar 2002). Flowers are green to yellowish green in colour, flowering occurs in July-August and fruiting from September to early November. Allo propagates by seeds, root offshoots (new plant arising from root of old plant) and root suckers (Pyakurel and Baniya 2011).



Pictures: Allo in wild habitat (left) and Allo thread (right)- All photographs by Dipesh Pyakurel

## Habitat and Distribution

**National Perspective:** Allo shows wide distribution on the southern belt of the Himalayas. It is distributed throughout Nepal at 1200-3000m in moist, forest areas with shade or semi shade, along the gorges, streams and tributaries and on the edge of the cultivated land. The plant prefers light (sandy), medium (loamy) and heavy (clay) soils. The plant prefers acid, neutral and basic soils (Pyakurel and Baniya 2011).

Allo is found in forests with Uttis (*Alnus nepalensis*), Guras (*Rhododendron arboreum*), Okhar (*Juglans regia*), Malo (*Viburnum mullaha*), Khasru/Banjh (*Quercus* spp.), Kafal (*Myrica esculenta*), Lauth salla (*Taxus wallichiana*), Pangra (*Aesculus india*), Sugandhakokila (*Cinnamomum glaucescens*) etc. Its associated shrub species are Dhatelo (*Princepia utilis*), Lokta (*Daphne* spp.), Argeli (*Edgeworthia gardneri*), Nigalo (*Drepanostachyum falcatum*), Ban Silam (*Elsholtzia* sp.) etc.

**Panchase Specific:** Allo is mostly found on Bhadaure Tamagi, Chitre and Ramja Deourali VDCs. However, it is available on all the VDCs in moist areas. The quantification, however, will be estimated by resource assessment.

## Uses of Allo

Residents of hilly areas and ethnic groups have for centuries extracted and spun these fibres to weave durable jackets, porter's head bands or straps, fishing nets, ropes, bags, mats, coarse clothing material, blanket, etc in the remote villages of Nepal. The specialty of Allo is its strength and durability. It is often lighter and more delicate-looking than its wild contemporaries, jute and hemp.

## Objectives

The major objective of this study is to prepare comprehensive value chain analysis report of Allo. Specific objectives are:

- Suggest present value chain constraints in Allo referring to other parts of Nepal
- Suggest business service provision gaps and how it can be fulfilled
- Suggest key business enabling environment constraints and opportunities
- Suggest sustainable business system of NTFPs from successful lessons learnt from different parts of Nepal

## Allo Supply Chain

At present any form of Allo is not traded in Panchase Area. The trading of Allo starts with collection of bark from forests and ends with export. There are three tiers of actors viz micro, meso and macro level players in the value chain. At the micro level, there are the collectors, thread and cloth makers, wholesalers and retailers. At the meso level there are CFUGs, LFUGs and Allo cloth association. At the macro and policy level, there are institutions such as the Department of Cottage and Small Scale Industries (DCSI), Department of Forests (DoF) and the Ministry of Industry, Commerce and Supplies (MoICS), which formulate and implement policy. A simplified supply chain for Allo thread and cloth making in Nepal is given below:

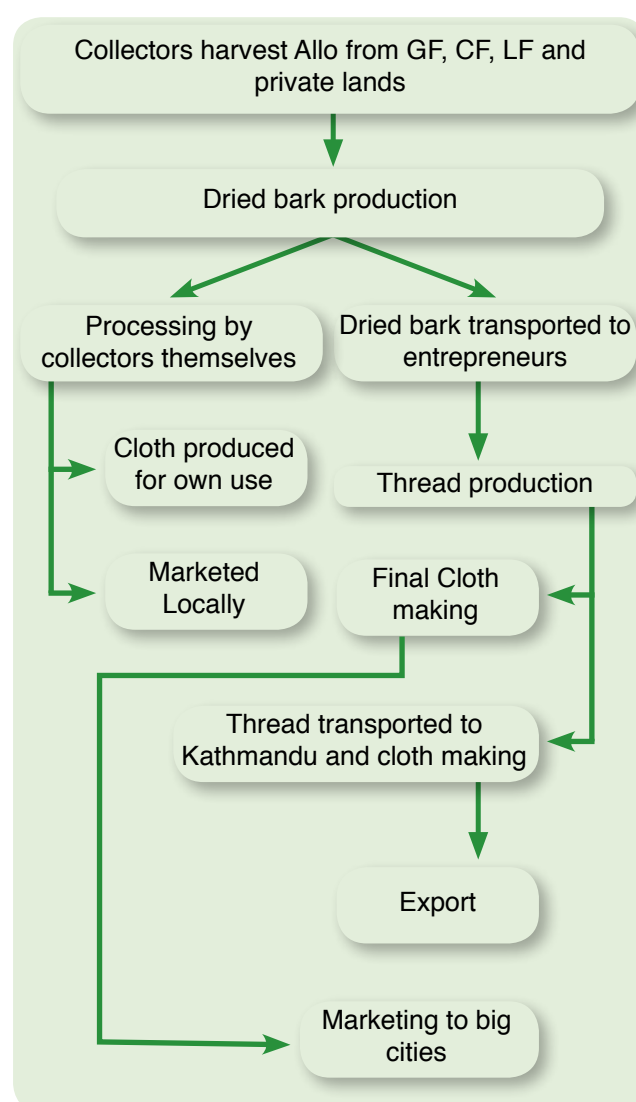


Figure: Supply Chain of Allo thread and cloth (Size of box does not represent the volume).



# Value Chain Map of Allo

The figure presents the value chain map of Allo in Nepal. The map shows the role and function of actors, their relationship and function of enablers. The function of actors is given in the left corner and area of intervention for enablers is given in the right corner.

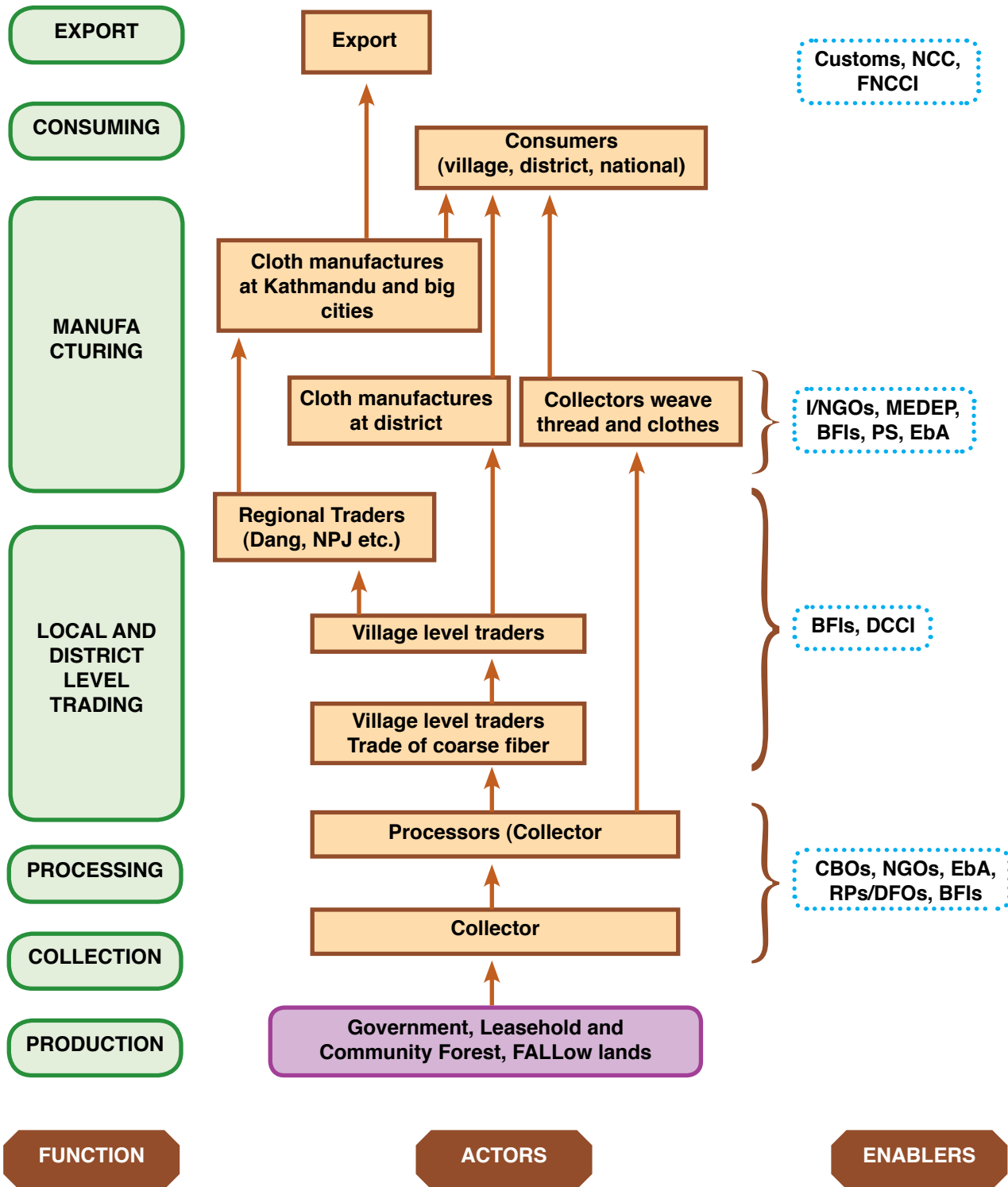


Figure: Value Chain Map of Allo (as evident from other parts of Nepal)

## Role and Function of Actors and their relationship

At present there are no actors involved in Allo value chain. The main actors missing are those who produce Allo fibres and Allo thread. Other actors involved are:

### District Level Traders:

District level traders purchase Allo bark in bulk and after receiving the transport permit from District Forest Office, sold the same to district regional traders.

### Regional Level Traders:

The regional traders purchase Allo fibre mostly from district level traders and sell mostly to manufacturers at Kathmandu.

### Manufacturers:

At district level, different INGOs, NGOs, bilateral aid agencies, MEDEP, CSIDB and DCSI are regularly providing Allo processing training to women residing in rural areas. Their products are mostly sold at village or at the district headquarter.

Manufacturers at Kathmandu prefer to buy coarse fibres as they weave the thread from their modern machine, which are finer than that weaved from hand (as shown in picture). Manufacturers at Kathmandu weave fine cloth and make different items such as coat, shawl, diary cover, bags, pursers etc and sold to retail market.

### Exporters:

Exporters purchase fine products and sold to third countries.



## Enablers

Enablers of "Allo value chain" in the present context are those who are likely to work for the value chain actors and provide facilitating and regulatory supports in Panchase area. Activities of enablers ranged from collection to end use, advocacy for simplifying trade policy and procedures, organizing groups and networks for reinforcement, and market information and linkages for better access. Regulating agencies are also working as a facilitator in many cases. The anticipated role of facilitating and regulating organisations for the proper functioning of value chain is given in the following table.

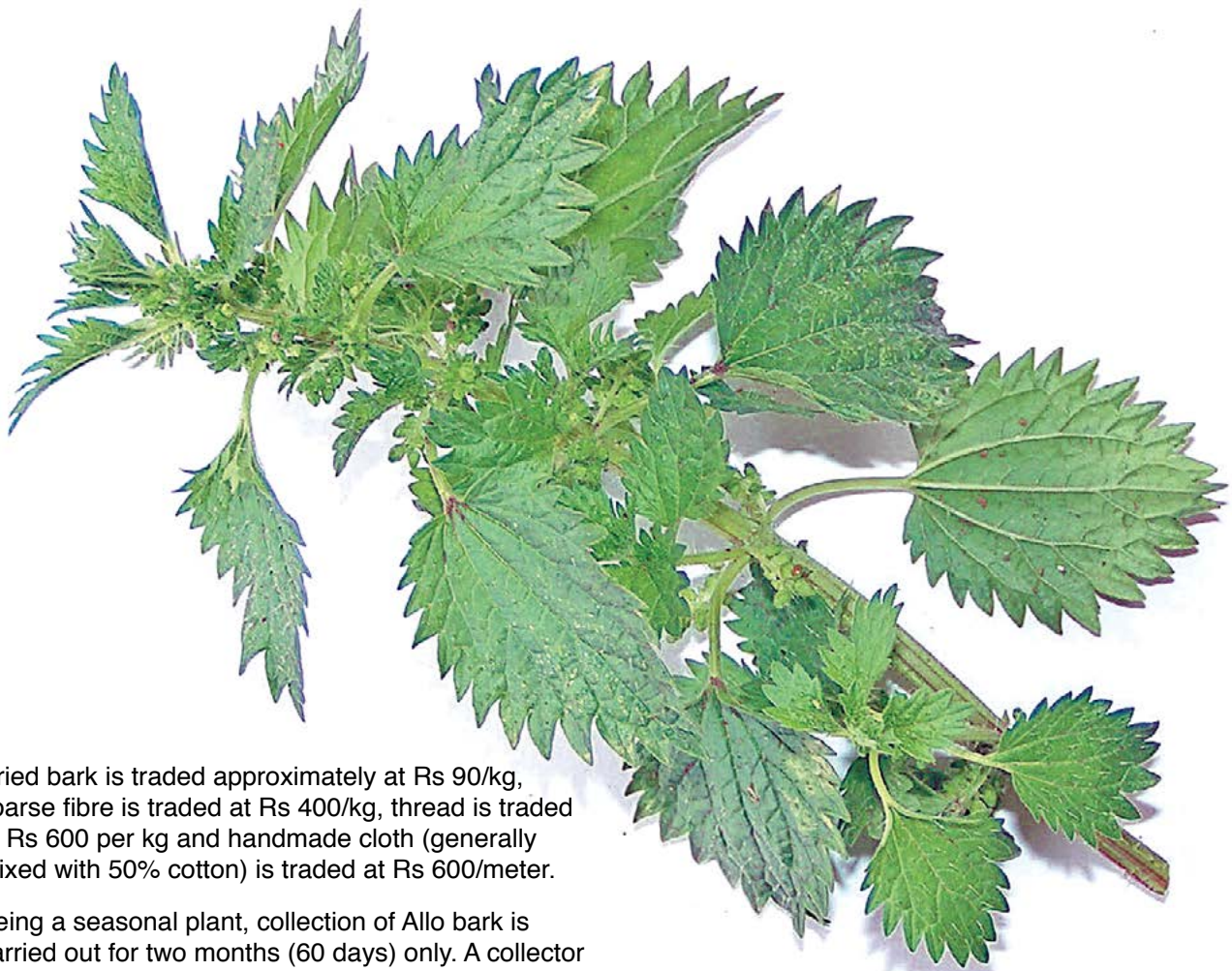
Table: Anticipated role of facilitating and regulating organisations to move Allo in the market chain

Major Activities	Facilitating Organizations (anticipated)	Regulating Organizations
Cultivation and Sustainable collection	MDO, EbA, Hariyo Ban, CFUGs	DFO, PPFMC
Processing	EbA, CBOs	
Resource Management	MDO, EbA, Hariyo Ban, CFUGs	PPFMC
Collection permit	MDO, EbA, Hariyo Ban	PPFMC
Harvesting	MDO, EbA, Hariyo Ban, CFUGs	DFO, CFUGs, PPFMC
Royalty Exemption (for collected/cultivated Allo)	MDO, EbA, Hariyo Ban	DFO, PPFMC
Transport/Export permit		DFO, PPFMC
Local Taxes		DDC, VDC
Market Information	ANSAB, AEC	

## Economic Analysis of Allo bark and fibre

### Costing

Yields of dried fibre are around 600kg per hectare (Pyakurel and Baniya 2011). Plant fibre is extracted in commercial scale in most of the hilly districts (Bajhang, Rolpa, Pyuthan, Rukum, Baglung, Sankhuasabha etc) of Nepal. Allo is traded either in raw (dry bark) or semi processed (coarse fibre) or processed (cloth) form.



Dried bark is traded approximately at Rs 90/kg, coarse fibre is traded at Rs 400/kg, thread is traded at Rs 600 per kg and handmade cloth (generally mixed with 50% cotton) is traded at Rs 600/meter.

Being a seasonal plant, collection of Allo bark is carried out for two months (60 days) only. A collector can collect about 25 kg of fresh bark per day (from 100 kg green plant) but the quantity of harvest depends upon the availability of the resource in the wild. The quantity is generally reduced to one fifth after sun drying therefore 5 kg of dried bark is collected per day, meaning that the maximum amount that can be collected by an individual per year (within a period of 60 days) is about 300 kg. Thus in an average, if a collector collects Allo bark throughout the season (60 days) and sell at the rate of Rs 90 per kg, then s/he may earn Rs 27,000 for two months (per day=Rs 450; per month=Rs 13500).

One man/day is required to produce 1.5 kg of fibre from dry bark. This includes soaking in water, cooking, washing, drying, beating and cleaning. If a person involves him/herself for 8 months (240 days) in fibre making, s/he can produce 360 kg fibre and earn Rs 144,000/year at the present rate of Rs 400/kg (per day= Rs 600; per month= Rs 18000).

About 2.5 man/days are required to produce 1 kg of thread from fibre. If a person involves him/herself for 8 months in thread making, s/he can produce 96 kg thread and can earn Rs. 57,600/year at the present rate of Rs 600/kg (per day=Rs 240; per month= Rs 7200). Knitting the Allo thread is therefore not an economically viable option and it is recommended for processors to sell the coarse fibre rather than selling the yarn or threads (ANSAB 2010, MEDEP 2010).

About 7 meters of cloth can be weaved from 1 kg of Allo thread and 0.9 kg of cotton thread. One person

can weave about 2 meters of such cloth per day. If a person works for 8 months, s/he can weave about 480 meter of cloth, requiring 69 kg of Allo thread. The cost of production (excluding the fixed costs) would be around Rs 44,000 (including cost for 69 kg Allo thread and 65 kg cotton thread) and selling price would be Rs 288000, a total profit of Rs 244,000 for period of eight months. (Rs 1000 per day; Rs 30,000 per month).

## Demand and Supply

**National Perspective:** The national production of Allo thread is around 1805 tons per year (MEDEP 2010). Half of the production is consumed within Nepal whereas half are exported to third countries. The demand of Allo weaved clothes is high in international market and it is a prime souvenir product of Nepal.

**Panchase Specific:** Panchase communities are till date not involved in any activities related to Allo (collection, processing, manufacturing etc). But the area has vast reservoir of Allo. Resource assessment is mandatory to assess the current stock, from which the supply volume can be estimated out.



# SWOT Analysis of Allo

Strength	Weakness
<ul style="list-style-type: none"> <li>- Dried barks, coarse fibres, threads and clothes all have market</li> <li>- Good demand in national and international market</li> <li>- Market of local product exists in local level</li> <li>- Good attraction amongst tourist as souvenir products</li> <li>- Found abundantly in forests</li> <li>- Rare infestation of diseases and pests</li> <li>- Favorable geo- climatic condition and possibility of natural generation</li> <li>- Immediate cash flow for pro poor from Allo based enterprises</li> </ul>	<ul style="list-style-type: none"> <li>- Market of Allo thread is low compared to that of coarse fibre despite thread making needs more effort</li> <li>- The production of all fibre at local level is not cost effective</li> <li>- Existing technologies are simple but time consuming and tedious, need improved technology to process fibre from dried bark</li> <li>- Inadequate quality control: Inconsistent quality of threads that finds hard to meet the international demand, and at the same time find hard to compete with products of big cities</li> </ul>
Opportunities	Threats
<ul style="list-style-type: none"> <li>- Possibility of high value addition within the country</li> <li>- Increasing usage of Allo in carpet industries</li> <li>- Interest of various organizations in Allo promotion</li> <li>- Income generation opportunities for women</li> <li>- New technologies are being researched by various organizations in each process of Allo processing</li> <li>- Plenty of scope to manufacture high quality products ( finer threads)</li> </ul>	<ul style="list-style-type: none"> <li>- Allo based enterprises are forfeiting Allo based work due to tedious work</li> <li>- Dependent on import of chemical (dyes) from India</li> <li>- Might lead to deforestation due to increased demand for fuel wood to process Allo</li> </ul>

The market based solutions to identified weakness and threats, and to tap the existing opportunities are provided as BDS strategy in next section as a part of Value Chain Upgrading Strategy.

## Value Chain Upgrading Strategy

### End Market Analysis

The end market analysis of Allo of Nepal has shown the following gaps. Panchase Area product can reduce these gaps and compete in the market.

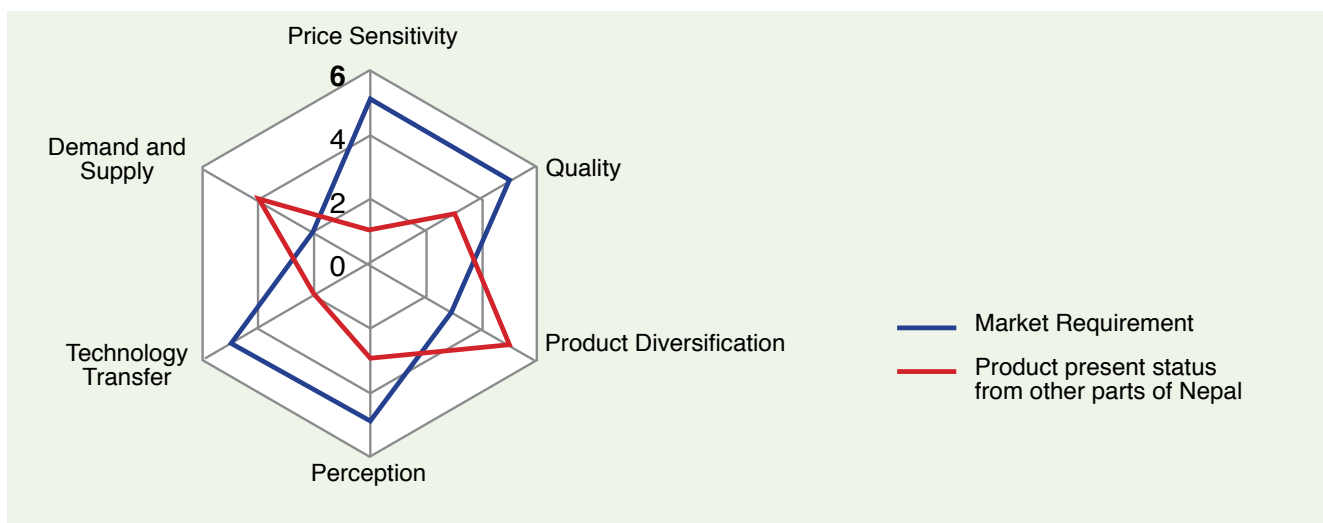


Figure: Spidergram that analyze market demand and gaps



The major gap in the market where Panchase Area Allo can compete is given as:

- Quality Allo fibre and thread production and sale to exporter market in Kathmandu
- Gap in technology transfer

The process flow from bark collection to finished products has seen lack of appropriate technology in

- Fibre making: still traditional practice in most part of Nepal
- Thread making: Traditional practice at local level, charkha at few places, electric charkha recently introduced in some parts of Nepal. There has been practice from some enterprise to make thread from spinning industries.
- Cloth making: *Tan* is used for making cloth from Allo, there are technology like power loom
- Product making: various technologies are used to make specific products by mixing with other eg. Bags, wallets etc.

There is gap is appropriate technology at all level. At present the focus has to be on appropriate technology for making fibre and thread.

## Firm Level Upgrading

### Product upgrading

After scanning the experiences of various organizations and in depth discussion with exporters, the most important product in Allo value chain has been identified as ALLO THREAD. The focus has to be increase brand image of this region as supplier of quality Allo thread. For this appropriate technology usage has to be carried out for fibre making and there are two options available for thread making:

- Appropriate technology transfer for thread making,
- Outsourcing thread-making to spinning industries.

Table: Product upgrading based on four parameters

Parameters	Present	Year 1	Year 2
Product	N.A	Allo bark Allo fibre Allo thread	Focus on Allo fibre making on appropriate technology and Allo thread making
Price (based on present price)	N.A	Allo bark: Nrs. 50-60 Allo Fibre: Nrs. 600 Allo Thread: Nrs. 600	Allo Fibre: Nr. 600 (decrease in production cost by 20%) Allo thread: Nrs.,. 800-1000 medium quality
Place	N.A	End market district,	Allo fibre at district, Allo thread in Pokhara and Kathmandu
Promotion		Weak perception on present fibre and thread	Quality fibre and medium quality thread production

## Process Upgrading

The process upgrading refers to the whole process from collection to fibre making, thread making, cloth making and product development.

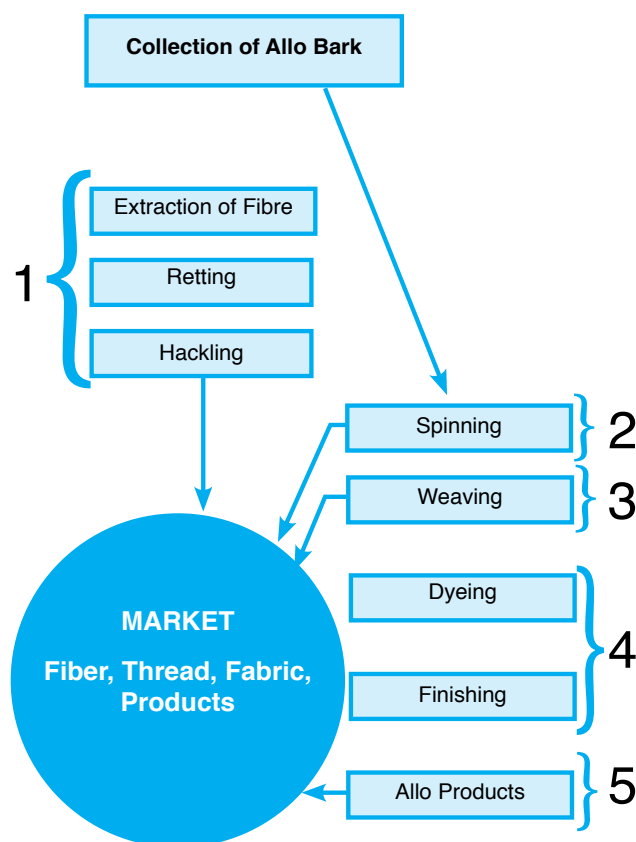


Figure: Major steps from collection to marketing of Allo

The figure shows that there are four major processes. The upgrading in each step is given in process upgrading matrix table.

Table: Process upgrading matrix

Process Upgrading	Existing practices	Recommended practices	Technical knowledge/Technology used and cost	Anticipated benefits
Upgrading 1: Allo fibre making	N.A	Appropriate technology has been found to be used in Sankhuwasabha for Allo fibre extraction	Rs 25,000- Rs 30,000 (information being sought from Sankhuwasabha)	Reduction in production cost
Upgrading 2: Thread making	N.A	Electric Charkha Outsourcing to spinning industries	Electric charkha: Nrs. 8000-10000 Spinning industries: Nrs. XX per kg of fibre	Increased quality
Upgrading 3: Weaving	N.A	Improved Taan Usage of power loom	Taan: Nrs. 10000- Nrs. 15000	Increased quality and efficiency
Upgrading 4: Dyeing	N.A	Usage of natural dye like Majitho, Turmeric etc.	Composition of Majitho, Turmeric etc. With other composition	Natural colour, premium prices
Upgrading 5: Product making	N.A.	We suggest not to focus on product making in three years and improve on quality of thread		

## Channel Upgrading

The current trade of Allo showed that regional centres like Pokhara, Nepalgunj, Surkhet and Kathmandu as export centres. Though Allo is not marketed from Panchase area, the possible routes would be as follows

- Bhadaure Tamagi-Kande-Pokhara
- Chitre-Dimwa-Pokhara
- Arther/Ramja Deourali-Syangja or Pokhara
- Syangja-either to Bharawaha via Butawal or to Pokhara
- Products from other VDC also follows the Pokhara or Syangja route

Once the product reaches Pokhara, the product will follow the Kathmandu route.

The study recommends Allo fibre sale to Pokhara, Parbat, Baglung, Myagdi districts in initial year and Allo thread sale to Pokhara and export market to Kathmandu.

## Functional Upgrading

The major actors in the Allo Value Chain are as follows and their function upgrading need to be carried out in the following ways.

Table: Function upgrading matrix

Actors	Present Function	Upgraded Function
Collector	Collection from the wild	Wild Collection can be carried out by pro poor people
Fibre producer	Uses conventional method to extract fibre from bark	Fibre production can be based at VDC level with employment generated for Poor people Use of chemical instead of ash; proper management of waste water
Cooperative	N.A	Buy from collectors and farmers, produce Allo thread and sale it to Pokhara and Kathmandu Market
Spinning industries	Most industries involves poor women in spinning thread from fibre (conventional method)	Use of modern spinning machine (electric or charkha type) Cloth making by modern machine to manufacture fine products
Exporter	Exporting fine Allo products	Exporter are interested in thread and make various product like carpet, Allo shawl etc. At Kathmandu level

## Transectoral Upgrading

Allo collection is carried out in forest and mostly women groups are mobilized for Allo collection. These women can work other collection of other NTFPs like Chiraito, Timur etc.

## Interfirm Upgrading

The interfirm upgrading has to be carried out in two ways:

- Alliance between farmers/ collectors with existing or new cooperatives at VDC level.
- Alliance between cooperative and exporters of Kathmandu for continuous supply of quality thread

### Business Development and Financial Service Strengthening

The assessment of Business Development Services and Financial services in this report also has been considered taking in view of:

- Categorization of business service demand from beneficiaries (value chain actors) in terms of Very strong, strong, weak and very weak categories
- Categorization of supply side of BDS provider's in terms of Very strong, strong, weak and very weak categories.

## Business Development and Financial Service Strengthening

Table: BDS and FS strengthening matrix

SUPPLY SIDE OF BDS	Very strong				
	Strong	Cultivation of Allo			
	Weak		Value Chain Financing	Entrepreneurship skills	Market requirement about quality and price, Group formation
	Very weak	Sustainable business practices of Allo processing			Appropriate Technology Transfer Cost benefit analysis
		Very weak	Weak	Strong	Very Strong
<b>DEMAND OF SERVICES BY VALUE CHAIN ACTORS</b>					

In Panchase Area, these services will be needed once the legal procedures for Allo sustainable business are carried out. The commercial viable business services for the above services requirement can be catered as:

Table: Business service strengthening strategy

Services	Strategy
Inadequate market Information	<ul style="list-style-type: none"> <li>Provision of market information through linkages with Saugat Griha Pvt. Ltd., SABAH Nepal and Fair trader Group organizations</li> <li>Coordination and linkage between village, district and regional level traders</li> <li>Enhanced use of multipurpose cooperatives to maintain the price list</li> </ul>
Low access to market	<ul style="list-style-type: none"> <li>Alliance build up with Koseli Ghar, Saugat Griha, SABAH Nepal and Fair Trade Group Nepal</li> </ul>
Technology and Product Development	<ul style="list-style-type: none"> <li>Technology transfer for Allo fibre processing from Sankhuwasabha</li> <li>Technology transfer for Allo thread making from SABAH Nepal</li> <li>Linkages between Allo fibre/ thread making to</li> </ul>
Entrepreneurship skills, Business planning and cost benefit analysis	<ul style="list-style-type: none"> <li>Provision of entrepreneurship skills, business planning through BDS and CSIDB/ DCSI</li> </ul>

## Strategy for Business Enabling Environment

The specific business enabling environment issues that need to be addressed are:

Allo is a remarkable product for income generation for poor household. This has been included as promising value chain in this report due to its overall impacts on livelihood of poor household. Stakeholders have to create enabling environment with all necessary steps for legalization of Allo sustainable business in Panchase Area.

## Sustainability Strategy

Allo promotion by various organizations all over Nepal has found varieties of Allo product in the market. Ironically this has excluded to meet high demand of Allo fibre and Allo thread as all the organizations are working in product diversification at local level. Those diversified product are not able to cater demand of local/ district market due to high price and quality in one hand in other business to business linkages are not established due to higher transaction cost. For Allo value to be sustainable in this region it is primary to set brand as "Quality Allo fibre and thread producer".



## ABBREVIATIONS

AEC	Agro Enterprise Centre
ANSAB	Asia Network for Sustainable Bio-resources
BDS	Business Development Services
BFI	Banks and Financial Institutions
CBOs	Community Based Organisations
CFs	Community Forests
CFUGs	Community Forest User Groups
DCCI	District Chamber of Commerce and Industry
DFO	District Forest Offices
DoF	Department of Forests
DPR	Department of Plant Resources
EbA	Ecosystem Based Adaptation
FNCCI	Federation of Nepalese Chamber of Commerce and Industries
GF	Government Forests
JABAN	Jadibuti Association of Nepal
LF	Leasehold Forests
MDO	Machhapuchre Development Organization
MEDEP	Micro Enterprise Development Programme
NA	Not Available
NCC	Nepal Chamber of Commerce
NEHHPA	Nepal Herbs and Herbal Products Association
NGOs	Non Governmental Organisations
NPQP	National Plant Quarantine Programme
NTFPs	Non-Timber Forest Products
PPFMC	Panchase Protected Forest Management Council
PS	Private Sectors
RP	Range Posts
SWOT	Strength, Weakness, Opportunities, Threats
VDC	Village Development Committee

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