VALUE CHAIN DESIGNING OF

Allo

OF PANCHASE PROTECTED FOREST AREA

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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. Its leaves are stalked, alternate, dentate, palmately divided with three distinct nerves running to three lobes. Size of its mature leaf measures 10-24cm by 7-18cm. Leaf blade and stalk contains long awl-shaped bristles and stinging hairs. Flowers of Allo are sessile, green to yellowish green in color and borne on axillary and terminal branched spikes. The female spikes may reach up to 40cm long whereas the male spikes are shorter and is more branched than the female spikes (Polunin and Stainton 1984, Manandhar 2002). Flowering occurs in July-August and fruiting from September to early November. Allo propagates from 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 the altitude of 1200-3000m in moist, forest areas with shade or semi shade, along the gorges, streams and tributaries and on the edges of cultivated land. The plant prefers all soil types, acidic, basic, neutral and can be found in light (sandy), medium (loamy) and heavy (clay) 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* (*Eugenia gardnerii*), *Nigalo* (*Drepanostachyum falcatum*), *Ban Silam* (*Elscholtziap.*), etc.

**Panchase Specific:** Allo is mostly found in Bhadaure Tamagi, Chitre and Ramja Deurali VDCs. Besides, it is also available in the moist areas of all the VDCs. 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 like jute and hemp.

Objectives

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

- Suggest present value chain constraints on 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 no form of Allo is traded in Panchase Area. Generally, in other areas, the trading of Allo starts with collection of its bark from forests and ends with its 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 while at the meso level, there are CFUGs, LFUGs and Allo cloth association. Similarly, the macro and policy level players involve 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:

![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 list of 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, they sell 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 training on ‘Allo processing’ to women residing in rural areas. Their products are mostly sold in the villages or in 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). Hence, they weave fine cloth and make different items such as coat, shawl, diary cover, bags, purses etc and sell in the retail market.

Exporters:
Exporters purchase fine products and sell 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 facilitatory and regulatory supports in Panchase area. Activities of enablers ranges 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.

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, Sankhuwasabha 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.
## SWOT Analysis of Allo

<table>
<thead>
<tr>
<th>Strength</th>
<th>Weakness</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Dried barks, coarse fibres, threads and clothes: all have market</td>
<td>- Market of Allo thread is low compared to that of coarse fibre despite requiring more effort for thread making.</td>
</tr>
<tr>
<td>- Good demand in national and international market</td>
<td>- The production of all fibre at local level is not cost effective</td>
</tr>
<tr>
<td>- Market of local product exists in local level</td>
<td>- Existing technologies are simple but time consuming and tedious; need improved technology to process fibre from dried bark</td>
</tr>
<tr>
<td>- Good attraction amongst tourist as souvenir products</td>
<td>- Inadequate quality control: Inconsistent quality of threads make it harder to fulfill the international demand, and at the same time, it is hard to compete with products of big cities</td>
</tr>
<tr>
<td>- Found abundantly in forests</td>
<td></td>
</tr>
<tr>
<td>- Rare infestation of diseases and pests</td>
<td></td>
</tr>
<tr>
<td>- Favorable geo-climatic condition and possibility of natural generation</td>
<td></td>
</tr>
<tr>
<td>- Immediate cash flow for pro poor from Allo based enterprises</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Threats</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Possibility of high value addition within the country</td>
<td>- Allo based enterprises are forfeiting Allo based work due to tedious work</td>
</tr>
<tr>
<td>- Increasing usage of Allo in carpet industries</td>
<td>- Dependent on import of chemical (dyes) from India</td>
</tr>
<tr>
<td>- Interest of various organizations in Allo promotion</td>
<td>- Might lead to deforestation due to increased demand for fuel wood to process Allo</td>
</tr>
<tr>
<td>- Income generation opportunities for women</td>
<td></td>
</tr>
<tr>
<td>- New technologies are being researched by various organizations in Allo processing</td>
<td></td>
</tr>
<tr>
<td>- Plenty of scope to manufacture high quality products (finer threads)</td>
<td></td>
</tr>
</tbody>
</table>

The market based solutions to identity weakness and threats, and to tap the existing opportunities are provided as a BDS strategy in the 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: Spiderogram that analyzing market demand and gaps](image)

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

a. Quality Allo fibre and thread production and its sale to exporter market in Kathmandu
b. Gap in technology transfer

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

a. Fibre making: still traditional practice in most part of Nepal
b. 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 enterprises to make thread from spinning industries.
c. Cloth making: Tan is used for making cloth from Allo, there are technology like power loom
d. Product making: various technologies are used to make specific products by mixing with others eg. Bags, wallets etc.

There is gap of 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 discussions with exporters, the most important product in Allo value chain has been identified as ALLO THREAD. The focus has to be in making this region as a 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:

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

Table: Product upgrading based on four parameters

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Present</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product</td>
<td>N.A</td>
<td>Allo bark</td>
<td>Focus on Allo fibre making on appropriate technology and Allo thread making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allo fibre</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allo thread</td>
<td></td>
</tr>
<tr>
<td>Price (based on present price)</td>
<td>N.A</td>
<td>Allo bark: Nrs. 50-60</td>
<td>Allo Fibre: Nrs. 600 (decrease in production cost by 20%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allo Fibre: Nrs. 600</td>
<td>Allo thread: Nrs., 800-1000 medium quality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Allo Thread: Nrs. 600</td>
<td></td>
</tr>
<tr>
<td>Place</td>
<td>N.A</td>
<td>End market district,</td>
<td>Allo fibre at district, Allo thread in Pokhara and Kathmandu</td>
</tr>
<tr>
<td>Promotion</td>
<td></td>
<td>Weak perception on present fibre and thread</td>
<td>Quality fibre and medium quality thread production</td>
</tr>
</tbody>
</table>
### Table: Process upgrading matrix

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

### Channel Upgrading

The current trade of Allo showed 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 Deurali-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 in 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

<table>
<thead>
<tr>
<th>Actors</th>
<th>Present Function</th>
<th>Upgraded Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collector</td>
<td>Collection from the wild</td>
<td>Wild Collection can be carried out by pro poor people</td>
</tr>
<tr>
<td>Fibre producer</td>
<td>Uses conventional method to extract fibre from bark</td>
<td>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</td>
</tr>
<tr>
<td>Cooperative</td>
<td>N.A.</td>
<td>Buy from collectors and farmers, produce Allo thread and sell it to Pokhara and Kathmandu Market</td>
</tr>
<tr>
<td>Spinning industries</td>
<td>Most industries involves poor women in spinning thread from fibre (conventional method)</td>
<td>Use of modern spinning machine (electric or charkha type) Cloth-making by modern machine to manufacture fine products</td>
</tr>
<tr>
<td>Exporter</td>
<td>Exporting fine Allo products</td>
<td>Exporter are interested in thread and make various product like carpet, Allo shawl etc. At Kathmandu level</td>
</tr>
</tbody>
</table>

### Transectoral Upgrading

Generally, Allo collection is carried out by women groups and they should be mobilized for Allo collection in Panchase area (after resource assessment). Along with Allo collection, these women can collect other MAPS like Chiraito, Timur, Kurilo etc. to support their livelihood.
Interfirm Upgrading

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

a. Alliance between farmers/collectors with existing or new cooperatives at VDC level.

b. 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 has also been considered taking in view of:

a. Categorization of business service demand from beneficiaries (value chain actors) in terms of very strong, strong, weak and very weak categories

b. Categorization of supply side of BDS providers in terms of very strong, strong, weak and very weak categories.

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 to poor household. This has been included as a promising value chain in this report due to its overall impact on livelihood of poor household. Stakeholders have to create an 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 the local level. Those diversified product are not able to cater to the demand of local/district market due to high price and quality on one hand and in the other hand, business to business linkages are not established due to higher transaction cost. For Allo value to be sustainable in this region, it is important to set its brand as “Quality Allo fibre and thread producer”.

Business Development and Financial Service Strengthening

Table: BDS and FS strengthening matrix

<table>
<thead>
<tr>
<th>SUPPLY SIDE OF BDS</th>
<th>Very strong</th>
<th>Strong</th>
<th>Cultivation of Allo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weak</td>
<td>Value Chain Financing</td>
<td>Entrepreneurship skills</td>
<td>Market requirement about quality and price, Group formation</td>
</tr>
<tr>
<td>Very weak</td>
<td>Sustainable business practices of Allo processing</td>
<td></td>
<td>Appropriate Technology Transfer Cost benefit analysis</td>
</tr>
<tr>
<td>Very weak</td>
<td>Weak</td>
<td>Strong</td>
<td>Very Strong</td>
</tr>
</tbody>
</table>

DEMAND OF SERVICES BY VALUE CHAIN ACTORS

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 to as:

Table: Business service strengthening strategy

<table>
<thead>
<tr>
<th>Services</th>
<th>Strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate market Information</td>
<td>- Provision of market information through linkages with Saugat Griha Pvt. Ltd., SABAHP Nepal and Fair trader Group organizations</td>
</tr>
<tr>
<td></td>
<td>- Coordination and linkage between village, district and regional level traders</td>
</tr>
<tr>
<td></td>
<td>- Enhanced use of multipurpose cooperatives to maintain the price list</td>
</tr>
<tr>
<td>Low access to market</td>
<td>- Alliance build up with Koseli Ghar, Saugat Griha, SABAHP Nepal and Fair Trade Group Nepal</td>
</tr>
<tr>
<td>Technology and Product Development</td>
<td>- Technology transfer for Allo fibre processing from Sankhuwasabha</td>
</tr>
<tr>
<td></td>
<td>- Technology transfer for Allo thread making from SABAHP Nepal</td>
</tr>
<tr>
<td></td>
<td>- Linkages between Allo fibre/ thread making to</td>
</tr>
<tr>
<td>Entrepreneurship skills, Business planning and cost benefit analysis</td>
<td>- Provision of entrepreneurship skills, business planning through BDS and CSIDB/ DCSI</td>
</tr>
</tbody>
</table>
ABBREVIATIONS

AEC  Agro Enterprise Centre
ANSAB  Asia Network for Sustainable Bio-resources
BDS  Business Development Services
BFIs  Banks and Financial Institutions
CBOs  Community Based Organisations
CFs  Community Forests
CFUGs  Community Forest User Groups
CSIDB  Cottage and Small Industries Development Board
DCCI  District Chamber of Commerce and Industry
DCSI  District Cottage and Small Industries Board
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
MoFSC  Ministry of Forests and Soil Conservation
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 Forestry 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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ANSAB 2010. Assessment of Allo Production and Enterprise Potential in Parbat District. ANSAB

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