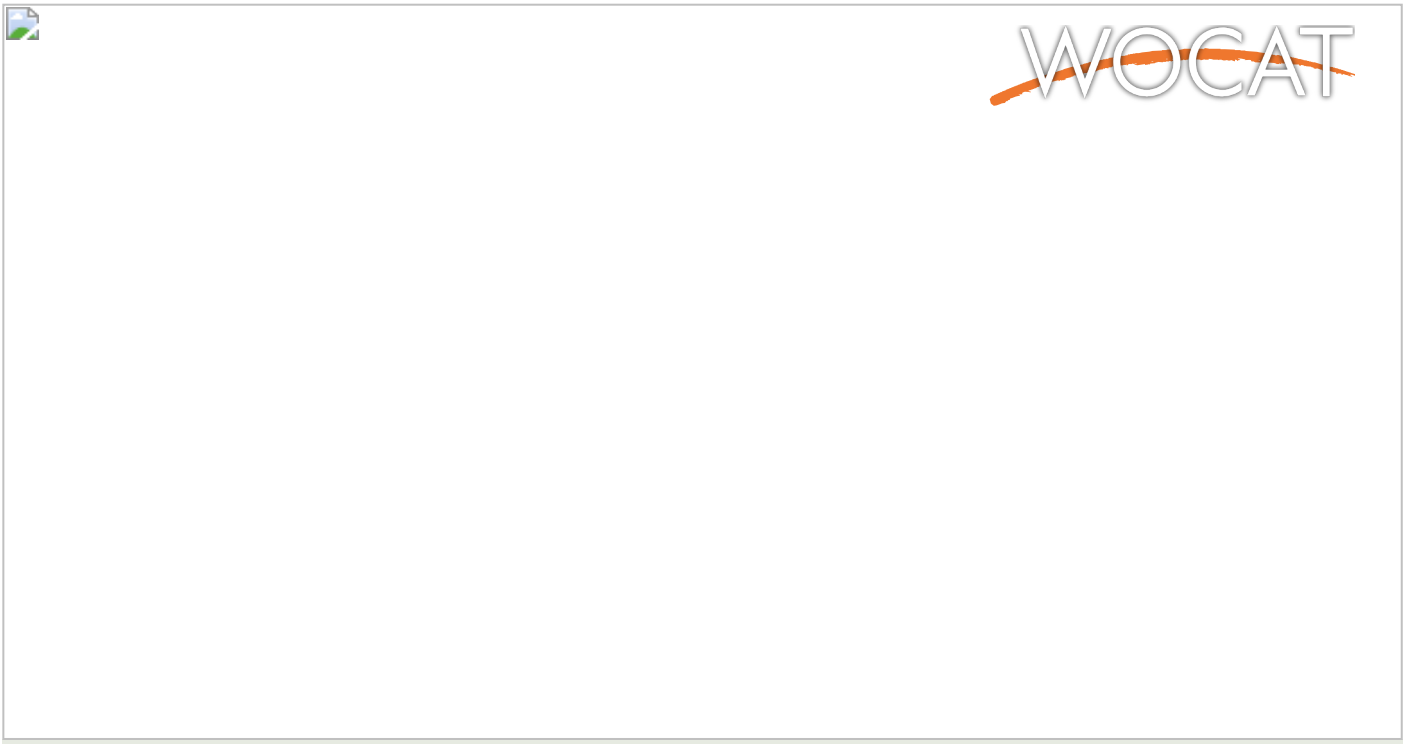


Mulberry plants after it's plants are given to the silkworm and cocoon. (Ekta Jayaswal (kavre))

Mulberry cultivation for silkworm (Nepal)

Resham kiro ko lagi kimbu khati

DESCRIPTION

The plantation of mulberry plants which are allowed to grow for the production of nutrients leaves for silkworm mulberry cultivation for silkworm.

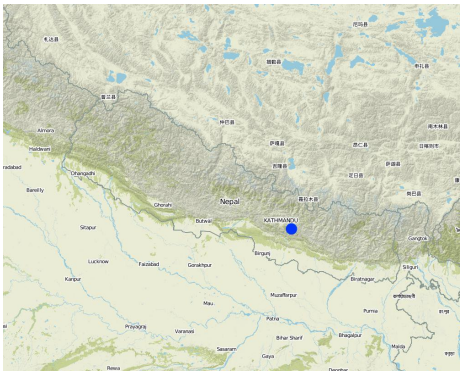
After the plantation of mulberry plants. They are ready to be eaten by silkworm. Firstly, silkworm eggs must be stay between 25 to 31 "C in tray or petric dish. In this area silkworm are brought from silkworm industry of khopasi. The larvae must be transfer to clean tray with freash food. A time came in larval stage when larvae eats huge amount of mulberry and grow more than 5cm long. After enough eating, larvae raise their heads as it shows sign for cocoon formation. Then, the worm is kept in another circular bamboo which will make cocoon more uniform in slope and easier to collect silkworm by contracting secrets from an opening under its mouth a steady stream of liquid silk coated with sericine which darkens on exposure. It takes 25 days to form cocon.

Purpose of the Technology: The main purpose of planting mulberry plant is for producing silkworm to increases economic condition of farmer.

Establishment / maintenance activities and inputs: For over two years people have been implementing these technology.They took training from the khopasi silkworm institution.They have get external inputs.While getting training,maintenance has been carried out when the plants are not grown enough.While producing the silkworm (larva to cocoon) maintenance is carried out as keeping them in clean environment without reaching another species around them.

Natural / human environment: The natural environment is tropical with temperature ranging from 20 to 25°C .The population density is sparse with the community relying heavily on agriculture.

LOCATION



Location: Kavre, Chamryang Besi, Nepal

No. of Technology sites analysed:

Geo-reference of selected sites
- 85.569, 27.52651

Spread of the Technology:

In a permanently protected area?:

Date of implementation: more than 50 years ago (traditional)

Type of introduction
- [ ] through land users' innovation
- [x] as part of a traditional system (> 50 years)
- [ ] during experiments/ research
- [ ] through projects/ external interventions

Mulberry plants after it's plants are given to the silkworm and cocoon. (Ekta Jayaswal (Kavre))

CLASSIFICATION OF THE TECHNOLOGY

Main purpose

- [ ] improve production
- [ ] reduce, prevent, restore land degradation
- [ ] conserve ecosystem
- [ ] protect a watershed/ downstream areas – in combination with other Technologies
- [ ] preserve/ improve biodiversity
- [ ] reduce risk of disasters
- [ ] adapt to climate change/ extremes and its impacts
- [ ] mitigate climate change and its impacts
- [x] create beneficial economic impact
- [ ] create beneficial social impact

Land use

Cropland

- Annual cropping: cereals - maize, vegetables - leafy vegetables (salads, cabbage, spinach, other), wheat, tomatoes
- Perennial (non-woody) cropping

Number of growing seasons per year: 2

Forest/ woodlands

- (Semi-)natural forests/ woodlands. Management: Shifting cultivation
- Tree plantation, afforestation

Water supply

- [ ] rainfed
- [x] mixed rainfed-irrigated
- [ ] full irrigation

Purpose related to land degradation

- [x] prevent land degradation
- [ ] reduce land degradation
- [ ] restore/ rehabilitate severely degraded land
- [ ] adapt to land degradation
- [ ] not applicable

Degradation addressed

biological degradation - Bc: reduction of vegetation cover

SLM group

- beekeeping, aquaculture, poultry, rabbit farming, silkworm farming, etc.

SLM measures

vegetative measures - V1: Tree and shrub cover

TECHNICAL DRAWING

Technical specifications

ESTABLISHMENT AND MAINTENANCE: ACTIVITIES, INPUTS AND COSTS

Calculation of inputs and costs

- Costs are calculated:
- Currency used for cost calculation: **USD**
- Exchange rate (to USD): 1 USD = n.a
- Average wage cost of hired labour per day: n.a

Most important factors affecting the costs

The most determinate factor affecting the cost is labour for bringing plants from khopasi, quality of mulberry leaves, quality of silkworm etc.

Establishment activities

1. Bringing plant from khopasi (Timing/ frequency: Early june/july)

Maintenance activities

1. Bringing silkworm in time of production (Timing/ frequency: late april)

Maintenance inputs and costs

Specify input	Unit	Quantity	Costs per Unit (USD)	Total costs per input (USD)	% of costs borne by land users
Equipment					
Bringing silkworm	silkworms	2000.0	0.01	20.0	100.0
Total costs for maintenance of the Technology				**20.0**	
Total costs for maintenance of the Technology in USD				*20.0*	

NATURAL ENVIRONMENT

Average annual rainfall
- ☐ < 250 mm
- ☐ 251-500 mm
- ☐ 501-750 mm
- ☐ 751-1,000 mm
- ☐ 1,001-1,500 mm
- ☐ 1,501-2,000 mm
- ☐ 2,001-3,000 mm
- ☐ 3,001-4,000 mm
- ☐ > 4,000 mm

Agro-climatic zone
- ☐ humid
- ☐ sub-humid
- ☐ semi-arid
- ☐ arid

Specifications on climate
n.a.

Slope
- ☐ flat (0-2%)
- ☐ gentle (3-5%)
- ☐ moderate (6-10%)
- ☐ rolling (11-15%)
- ☑ hilly (16-30%)
- ☑ steep (31-60%)
- ☐ very steep (>60%)

Landforms
- ☐ plateau/plains
- ☐ ridges
- ☐ mountain slopes
- ☐ hill slopes
- ☐ footslopes
- ☐ valley floors

Altitude
- ☐ 0-100 m a.s.l.
- ☐ 101-500 m a.s.l.
- ☐ 501-1,000 m a.s.l.
- ☐ 1,001-1,500 m a.s.l.
- ☐ 1,501-2,000 m a.s.l.
- ☐ 2,001-2,500 m a.s.l.
- ☐ 2,501-3,000 m a.s.l.
- ☐ 3,001-4,000 m a.s.l.
- ☐ > 4,000 m a.s.l.

Technology is applied in
- ☐ convex situations
- ☐ concave situations
- ☐ not relevant

Soil depth
- ☐ very shallow (0-20 cm)
- ☑ shallow (21-50 cm)
- ☐ moderately deep (51-80 cm)
- ☐ deep (81-120 cm)
- ☐ very deep (> 120 cm)

Soil texture (topsoil)
- ☐ coarse/ light (sandy)
- ☑ medium (loamy, silty)
- ☐ fine/ heavy (clay)

Soil texture (> 20 cm below surface)
- ☐ coarse/ light (sandy)
- ☐ medium (loamy, silty)
- ☐ fine/ heavy (clay)

Topsoil organic matter content
- ☑ high (>3%)
- ☐ medium (1-3%)
- ☐ low (<1%)

Groundwater table
- ☑ on surface
- ☐ < 5 m
- ☐ 5-50 m
- ☐ > 50 m

Availability of surface water
- ☑ excess
- ☐ good
- ☐ medium
- ☐ poor/ none

Water quality (untreated)
- ☐ good drinking water
- ☐ poor drinking water (treatment required)
- ☐ for agricultural use only (irrigation)
- ☑ unusable

Water quality refers to:

Is salinity a problem?
- ☐ Ja
- ☐ Nee

Occurrence of flooding
- ☐ Ja
- ☐ Nee

Species diversity
- ☐ high
- ☐ medium
- ☐ low

Habitat diversity
- ☐ high
- ☐ medium
- ☐ low

CHARACTERISTICS OF LAND USERS APPLYING THE TECHNOLOGY

Market orientation
- ☐ subsistence (self-supply)
- ☐ mixed (subsistence/ commercial)
- ☑ commercial/ market

Off-farm income
- ☐ less than 10% of all income
- ☐ 10-50% of all income
- ☐ > 50% of all income

Relative level of wealth
- ☐ very poor
- ☐ poor
- ☑ average
- ☐ rich
- ☐ very rich

Level of mechanization
- ☑ manual work
- ☑ animal traction
- ☐ mechanized/ motorized

Sedentary or nomadic
- ☐ Sedentary
- ☐ Semi-nomadic
- ☐ Nomadic

Individuals or groups
- ☑ individual/ household
- ☐ groups/ community
- ☐ cooperative
- ☐ employee (company, government)

Gender
- ☐ women
- ☐ men

Age
- ☐ children
- ☐ youth
- ☐ middle-aged
- ☐ elderly

Area used per household
- ☐ < 0.5 ha
- ☐ 0.5-1 ha
- ☑ 1-2 ha
- ☐ 2-5 ha
- ☐ 5-15 ha
- ☐ 15-50 ha

Scale
- ☑ small-scale
- ☐ medium-scale
- ☐ large-scale

Land ownership
- ☐ state
- ☐ company
- ☐ communal/ village
- ☐ group
- ☐ individual, not titled
- ☐ individual, titled

Land use rights
- ☐ open access (unorganized)
- ☐ communal (organized)
- ☐ leased
- ☐ individual

Water use rights

- 50-100 ha
- 100-500 ha
- 500-1,000 ha
- 1,000-10,000 ha
- > 10,000 ha

- open access (unorganized)
- communal (organized)
- leased
- individual

Access to services and infrastructure

health	poor ✓	good
education	poor ✓	good
technical assistance	poor ✓	good
employment (e.g. off-farm)	poor ✓	good
drinking water and sanitation	poor ✓	good
financial services	poor ✓	good

IMPACTS

Socio-economic impacts

Crop production	decreased	increased
fodder production	decreased	increased
wood production	decreased	increased
farm income	decreased	increased

Socio-cultural impacts

cultural opportunities (eg spiritual, aesthetic, others)	reduced	improved
conflict mitigation	worsened	improved

Ecological impacts

water quality	decreased	increased
surface runoff	increased	decreased
soil moisture	decreased	increased
soil cover	reduced	improved
soil loss	increased	decreased
nutrient cycling/ recharge	decreased	increased
soil organic matter/ below ground C	decreased	increased
hazard towards adverse events	improved	reduced

Off-site impacts

damage on neighbours' fields	increased	reduced

COST-BENEFIT ANALYSIS

Benefits compared with establishment costs

Long-term returns	very negative	very positive

Benefits compared with maintenance costs

Short-term returns	very negative	very positive

CLIMATE CHANGE

Gradual climate change

annual temperature increase	not well at all	very well

ADOPTION AND ADAPTATION

Percentage of land users in the area who have adopted the Technology

- single cases/ experimental
- 1-10%
- 11-50%
- > 50%

Of all those who have adopted the Technology, how many have done so without receiving material incentives?

- 0-10%
- 11-50%
- 51-90%
- 91-100%

Has the Technology been modified recently to adapt to changing conditions?

- Ja
- Nee

To which changing conditions?

- climatic change/ extremes
- changing markets
- labour availability (e.g. due to migration)

CONCLUSIONS AND LESSONS LEARNT

Strengths: land user's view
- Provide the facility of fodders for animals
- Waste product comes from the use as food for animals
- Increase water resources
- water product also serves as a good fertilizer
- Improve little economic status

Strengths: compiler's or other key resource person's view
- Increase the economic status of farmer
- Provided the facilities
- Decrease soil erosion
- wastes could we good fertilizer

Weaknesses/ disadvantages/ risks: land user's viewhow to overcome

Weaknesses/ disadvantages/ risks: compiler's or other key resource person's viewhow to overcome
- waste of time if larvae of silkworm cannot grow properly while keeping larva place should properly clean.
- Time taking process as cocoon formation takes around 25 days keep larva away from other inscers. It can be done covering the disk with net.

REFERENCES

Compiler
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Reviewer
David Streiff
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Sabita Aryal - SLM specialist
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Gangalal Singtang - land user

Full description in the WOCAT database
https://qcat.wocat.net/af/wocat/technologies/view/technologies_1226/

Linked SLM data
n.a.

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