

# Product wise action points

## Seabuckthorn, Leh, Jammu and Kashmir

A shrub of the Himalayas, every part of the Seabuckthorn plant – fruit, leaf, twig, root and thorn – has been traditionally used for medicine, nutritional supplements, firewood and building fences. Further, the Seabuckthorn berry is among the most nutritious of fruits. Concentration of pro-vitamins A, B2 and C, flavonoids and Omega oils in the berries is much higher than other fruits and vegetables. It is a hardy, drought resistant plant that is tolerant to extreme temperatures from – 43° C to + 40° C. The plant also has an extensive root system which can fix atmospheric nitrogen, making it ideal for controlling soil erosion and preventing desertification.

### Problems

1. *Seabuckthorn berry is a delicate and highly perishable one. It needs to be processed the same day of harvesting. There is also a problem when there a need for long distance transportation.*

### **Proposed Interventions**

- a. Primary processing facilities of fresh Seabuckthorn berry should established at the site of berry collection and various components such as the pulp, seed and hull are sold to firms located outside the region for further value addition.
  - b. Cold chain facilities can be developed in major Seabuckthorn processing areas. Berry can be kept in cold chain facilities to extend its time of processing and development of value-added products.
  - c. To solve the transportation problem, processors should be incentivized to use reefer vans (Refrigerated & Insulate Vans).
  - d. Plastic fiber bags with proper aeration for semi dried organic material should be used otherwise, rancidity may occur.
2. *Majority of the Seabuckthorn stand is on land under the executive control of Forest Department. Strict regulation is in force regarding time and method of berry collection.*

### **Proposed Interventions**

- a. Seabuckthorn is considered as a forest crop. The crop needs to be declared as a horticultural crop.
- b. Further, an organization/ association of producers of Seabuckthorn needs to be established so that collection can be managed in an efficient as well as environmentally friendly manner sustainable manner at a large scale.
  - a. The presence of any producers' association (FPOs), Gramin Agriculture Markets or village level cluster will also allow for regional economic development by strengthening competitiveness by increasing productivity, stimulating innovative

new partnerships, even among competitors, and presenting opportunities for entrepreneurial activity.

3. *Ladakh region of Jammu and Kashmir is largely barren with only 0.06% under forests and 11,692 ha utilized for agriculture. This scanty vegetation results in low efficiency in controlling the run-off water during the rainy season.*

#### **Proposed Interventions**

- a. Seabuckthorn according to published work is fast growing, can withstand not only a wide range of temperature and habitat conditions; but can be propagated through suckers and semi-hardwood cuttings.
  - b. Plantation of this species along the banks of rivers, on waste lands and hill slopes can not only increase the area under vegetation but also prevent landslides, reduce the run-off of water and help in checking erosion besides enriching the soil by fixing atmospheric Nitrogen.
  - c. Tie up with Israeli institutions for expansion of area under cultivation by utilizing barren land in Ladakh and adjoining districts.
4. *It is grown wild. Seabuckthorn is considered as forest crop. There are no policies or incentives to promote Seabuckthorn as horticultural crop.*

#### **Proposed Interventions**

- a. Seabuckthorn harvested in Ladakh are wild harvest. Efforts need to be made to certify Seabuckthorn of Ladakh as organic.
  - b. There is a need for GI tagging of Seabuckthorn of Ladakh origin.
  - c. Packaging should have name of village and district on it.
  - d. A clear and direct Govt. Policy to promote and enhance the Seabuckthorn industry in Leh will go a long way in validating the economic value of the crop. It will also be a boost to producers and entrepreneurs.
5. *Market linkage for Seabuckthorn is poor. There are many small players in the value chain. Local entrepreneurs focus only on selling the raw material. Their risks taking capacity is low, and are fully dependent on demand for raw material from outside the region.*

#### **Proposed Interventions**

- a. To strengthen the market linkages there is a need to set up a single window online system for providing information and services related to Seabuckthorn trade.
- b. Formation of 'Ladakh Seabuckthorn Cooperative Society' comprising of all the local entrepreneurs would strengthen their role in Seabuckthorn value chain.
- c. Tie up and Utilize services of startups like AgriBazaar, Crofarm, KrishiHaat, Ninja Kart to enhance supply chain and expand markets.

- d. Aggressively marketing it as ‘Superfood’ because of its nutritional value.
- e. Entering contract farming with companies like Unilever, Patanjali, Adani foods or food chains like Dominoes, Burger king

6. *Seabuckthorn berry harvesting is a tedious process. Currently, the berry is harvested by ‘beating the bush’ method.*

#### **Proposed Interventions**

- a. The harvesting tools at R&D stages need to be studied in field conditions.
- b. Alternative to ‘beating the bush’- cutting of the branches, freezing the branches with berries, shaking off the frozen berries. (Applicable only for Hero variety).
- c. Commonly used harvesters in other countries such as China, Russia and Canada need to be studied in conditions of Ladakh.
- d. Berry drying through processes such as sun drying, solar drying and expensive non-conventional methods such as microwave and freeze-drying. Also, non-conventional drying methods with a modified atmosphere should be used to obtain dried products with high nutritional and sensory attributes.

7. *There is also a major lack of knowledge on the economic benefits of Seabuckthorn cultivation in the region. Because of ignorance, natural forests of Seabuckthorn are burnt or cut down for stablishing crop fields, constructing houses for residential or commercial purposes, as picnic spots etc.*

#### **Proposed Interventions**

- a. Skill and capacity building needs to be undertaken along with awareness campaigns to fill the knowledge gap. (through NPTEL courses, SWAYAM courses)
- b. Aggressively marketing it as ‘Superfood’.
- c. This should be accompanied with economic incentives to go for Seabuckthorn cultivation such as Govt. Subsidies or grants. (eg ATUFS or interest subversion)
- d. Small schemes devised to help them financially in setting up small scale industries should also be initiated. This would also provide job opportunities as well.

8. *Export potential of the crop has not been tapped and it is currently reaching exporters in lesser amounts only through commission agents.*

#### **Proposed Interventions**

- a. Product diversification needs to be encouraged as there is a huge economic potential for the plant in terms of value-added products. Financial or infrastructural support for the same should be examined.

- a. Beverages with Seabuckthorn such as soft drinks, alcoholic drinks, tea, etc.; cosmetics such as hair shampoo, skin care creams, oils; medicines such as cough syrup; food products such as jellies, purees, sauces, etc. have a large market for Seabuckthorn in India and abroad.
  - b. Products made from Seabuckthorn have a huge scope and start-ups can take forward innovative ideas for value added products and learn from best practices. Sea buckthorn berries could be used as pizza topping, in burgers and other fast foods.
9. *There is no standard package of practices for large scale Seabuckthorn cultivation, and this has caused a large demand-supply gap for Seabuckthorn.*

**Proposed Interventions**

- a. There is a need to have a government policy for converting the dense Seabuckthorn forest into productive agroforestry sector.
- b. Government support is required for scientific cultivation of Seabuckthorn. Involvement of private players for large scale cultivation may also be considered.
- c. R&D on varietal development should be initiated. Commercial varieties available in China, Russia, Mongolia, and Canada need to be exploited for varietal trial.
- d. There is a need to undertake multi location trials of high yielding selections available at Defence Institute of High-Altitude Research, Leh and CSK HPKV Palampur.

10. *Crop is infested with Pest- Seabuckthorn fly*

**Proposed Interventions**

- a. Prevention strategies can be applied attract and kill strategies, mass trap, bio-control using entomopathogenic fungus (product Naturalist L), crop netting, use of nets for soil covering

Sr. No	Proposed solutions	Agency
1	Skill development & capacity building for farmers	Indian Council of Agricultural Research (ICAR), NPTEL
2	Establishment of a drying units that implementing improved scientific methods for best quality results	Ministry of Food Processing Industries
3	Partnerships and collaborations with innovative organisations in Agri startups.	Ministry of Commerce & Industry
4	Better quality assurance standards	Ministry of Food Processing Industries
5	Facilitating irrigation facilities	Ministry of Agriculture
6	Value Added Products - product diversification	Ministry of Commerce & Industry / Ministry of Food Processing Industries

7	R&D on varietal development and harvesting methods	Indian Council of Agricultural Research (ICAR)
8	Clear policy to promote Seabuckthorn as a horticultural crop	State Horticulture Department (J&K)
9	Single window online system for information – market linkage	Ministry of Electronics and Information Technology
10	GI application and tagging	Ministry of Commerce & Industry
11	Area expansion of Seabuckthorn cultivation	Ministry of Agriculture - State Horticulture Department (J&K)
12	Facilitating producers' organisations	Invest India, Ministry of Commerce & Industry / State Horticulture Department (J&K)
13	Estd. of primary processing facilities & cold chain facilities	Ministry of Food Processing Industries