CONCEPT NOTE

BENZOIN PRODUCTION (YARN)

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1. Goal:

The goal of this concept note is to increase upland community income generation and provide greater environmental sustainability of upland farming systems by means of the promotion of Benzoin Laos. This concept contributes to government efforts for "*Alternatives for Abolishing the Upland Slash and Burn Agriculture Practices, Increase the Canopy Rate of Production Forest Shelter" and contributes to "Rural Community Poverty Alleviation*"**.**

2. Introduction:

Benzoin Laos (*Styrax Tonkinensis*), is known in Laos as the "Ton Yarn". It is a deciduous fast-growing tree that can reach 15–20 meters in height and a diameter of 30 cm or more found in upland fallow systems 800-1,600 meters above sea level. Approximately 250 villages in three northern provinces of Laos (Phongsaly, Louang Prabang and Houaphanh) are involved in benzoin resin production on more than 10,000 hectares of rotational agriculture land mixed with a diversity of other plants and trees. Benzoin has considerable economic potential although a number of constraints need to be addressed for farmers to take full advantage of the opportunities.

3. Background:

Benzoin Laos is also known as Benzoin Siam, because, in the past, the gum passed through the Port of Bangkok. The tree naturally secretes resin to protect itself from parasitic attacks. For the benzoin to be used in perfumery, tappers manually make incisions to stimulate the tree's resin production. The mature trees aged 10 years or more are those that produce the most gum. The yield per tree totals about 400 to 600 grams per year. Benzoin oozing from the tree takes the form of white, brittle tears, and oxidation can cause them to turn shades ranging from yellowish-brown to ivory-beige. Benzoin Siam has a milky, vanilla-like smell, reminiscent of brown vanilla beans. While Benzoin tree species grow in other countries, Benzoin Laos has an exceptional scent, is the only species used in making

fine fragrances. Resin from other species is used to make incense.

Benzoin Laos trees have a lifespan of 20 years and are tapped for resin beginning in year 6. The main constraint on harvesting benzoin resin is the short length of the upland rice cultivation cycle, as most farmers clear and burn their Benzoin tree areas at a relatively young age so that land can be planted in rice, the main source of food for upland Lao communities. Long-term fallows could be a more sustainable system under a village forestry arrangement which would both enhance forest cover during a longer period and ensure greater maturity of Benzoin trees with a longer period of resin production. It would also create an opportunity for a longer fallow period before rice cultivation, with numerous environmental and social benefits. Such innovations in upland system management would ensure that Siam Benzoin forests maintain their rich ecological diversity as well as continue to supply the best aromatic resin used in approximately 70% in the perfumeries in France!

Benzoin resin is also used for medicine and incense, e.g. aromatherapy from benzoin resin makes use of the fragrant oils to calm and warm the body. It is also used for the protection or disinfection of wounds, provide relief from coughs, colds or bronchitis, increase the flow of urine and prevent the formation of gas in the body.

The total annual production in these three provinces is estimated to be about 70-90 tons, mainly from individually managed trees. Tapping involves making incisions in the bark and generally takes place when trees are 6 years old and continues until 15 years old. Yields vary with tree age but average yields are between 160 and 240 kg/ha (400 trees/ha). Tapping of trees takes place from September to November followed by the collection of the dried, fragile resin/gum during the cooler winter season in February-March. Tapping and harvesting is generally done by men while cleaning and sorting of the gum is done mainly done by women. It is then sold to traders (mainly to the Agroforex Company) for export as a raw product to Europe.

Farmgate prices vary between 110,000 and 150,000 Kip per kg depending on the year and quality. In 2018 in Luang Prabang (Phonthong district) 182 HHs from 4 villages were able to generate 766 million Kip income from 319 ha of benzoin tree areas from more than 300 plots. This is an average income of 4.5 million Kip/household (516 USD).

Benzoin resin has considerable income potential, however, there remain a number of constraints to increasing production and income:

1) The short fallow period does not allow for maximum production of resin from Benzoin trees as they are cut before maximum production is achieved;
2) Benzoin trees are often damaged by uncontrolled free-grazing livestock;
3) The raw benzoin market is controlled by only a few traders who can easily control prices;
4) Informal middle-man traders (operating without license) distort the markets, impact quality and encourage corruption;
5) Benzoin production could be threatened by labor constraints as a result of migration of youth to urban areas;

6) Expansion of cash crops plantations (rubber, coffee, tea, etc.) that limit rotational agriculture land needed for Benzoin production

4. Listing of key Activities:

In order to improve the economic returns from and long-term viability of Benzoin production the following activities are proposed:

- Upgrading farmer skills: Specific focus on Benzoin tree management including propagation techniques, tree spacing/density, fertilization and modern resin tapping techniques. Value added processing includes product handling to maintain quality, grading and packaging that increase the prices of the resin/gum demanded by traders and international buyers.
- Establishing farmer organizations: Establish a district-level farmer benzoin production organization with existing benzoin farmers that acts as a quality control mechanism, undertakes price negotiations with buyers, and expands linkages to additional markets and traders.
- Develop Benzoin cultivation focus in Village Land Use Planning. Facilitate community to expand Benzoin cultivation by means of revising existing FLUMZ plans or make LUP incorporating Benzoin cultivation. This will support efforts to reduce rotational upland rice cultivation with a higher return crop that has a positive impact to environment by means of increasing of natural forest cover, preventing soil erosion and being more resilient to climate change.
- Develop best practices for Benzoin cultivation: To assist farmer groups and local communities to capitalize on Benzoin cultivation, guidelines will be developed that provide clear guidance on all best management practices for Benzoin management. These will also be incorporated into regulations benzoin forest management and used in LUPs. and plantation groves in fallow lands, included product harvesting/tapping and value added via grading, packaging and marketing protocol in the direction of community business base management.

5. Expected Opportunity Results or Outputs:

- Natural and newly established Benzoin plantations zoned, protected, managed, registered and certified;
- New areas of benzoin tree plantations expanded and well managed with at least 90% of community members in target communities profitably managing their own benzoin plantations;
- Benzoin farmer management, harvest and value-added skills increased;
- Protocols (local customary rules incorporated into government regulations) developed, agreed upon and enforced for benzoin tree plantation and natural benzoin forest management, harvesting, value added processing and marketing.
- Farmer producer organizations established, supporting skill development of farmers and effectively negotiating with traders and buyers for equitable trade terms;
- Benzoin resin production increased by 70%;
- Benzoin resin prices increased.

Note: More detail can be provided if the organization/investor is interesting and Proposal Documentation can be developed for further consideration (if required).