**Terms of Reference**

**Local consultants to identify models for regenerative production of Cinnamon cassia and star anise in Cao Bang, Vietnam**

1. Background

Regional Biotrade II is a four-year project (September 2020-August 2024) funded by the Government of Switzerland through the State Secretariat for Economic Affairs (SECO). The program follows a previous phase which ran from September 2016 to September 2020. The goal of the project is the conservation of biodiversity through sustainable trade of biodiversity products in a manner that integrates local exporters/producers into global value chains and increases income for the rural population women and men that depend on biodiversity resources for their livelihoods in the Mekong region.

The new phase of the program includes three country components covering the core target countries of Myanmar, Vietnam, and Laos, and a regional component covering light-touch intervention in Cambodia and partnerships with regional and international companies and organizations. HELVETAS Swiss Intercooperation has overall management responsibility, and directly manages the Laos, Myanmar, and Regional components, while Vietnamese NGO CRED manages the implementation of the Vietnam component.

The project is working with DACE company to promote sustainable cinnamon and star annis production in Cao Bang province. We have identified some risks to biodiversity that the current cultivation practices are posing. These are:

1. The invasion of low quality cinnamon and star annis variation to the province: Cao Bang cinnamon is different from cinnamon grown in the main production areas of Yen Bai and Lao Cai – primarily because Cao Bang cinnamon has smaller, narrow leaves. Whether it is a different species of Cinnamonum (possibly C. loureiroi) or simply a different variety of Cinnamonum cassia, careful testing has shown that it has very low levels of Coumarin – less than 0.001 mg/g as opposed to levels reaching 4 – 6 mg/g in regular C. cassia. This is significant due to health scares over the potentially carcinogenic properties of Coumarin, and makes Cao Bang cinnamon particularly attractive to European buyers, who aim to achieve full compliance to food. To obtain premium prices from the European market, it is important that farmers continue to grow local, narrow-leaved cinnamon. From the perspective of biodiversity, it is also important that this genetic variation is preserved.
2. Monoculture, high-density farming, and the practice of cutting down trees for harvesting are degrading soil, reducing genetic diversity, and plants’ natural resilience.
3. Pests are increasingly problematic with observations of star anise trees affected by diseases that reduce productivity.
4. Changing climatic conditions – higher temperatures and longer dry seasons – seem to impact plant health but there is no clear understanding of this.

We are expecting the local experts or organizations to support DACE company and the local producers to understand:

1. The importance of preserving Cao Bang cinnamon genetic variation
2. The causes behind the risks described above.
3. Which farming models can be promoted that contribute to overcoming the risks mentioned above and also have a positive impact on biodiversity regeneration.
4. Objective of the consultancy

The objective of this ToR is to provide technical support to DACE and small local producers to identify models for regenerative production of Cinnamon cassia, and star anise in Cao Bang province, Vietnam.

1. Deliverables

The experts will

1. Conduct field visits to Cao Bang to gather information to respond to the above question, mainly in Thach An district, Cao Bang province.
2. Support DACE in identifying native spices with strong roots that can adapt to the hard soil in the current cinnamon plantation forests in Thanh An district.
3. Identify the genetic varieties of cinamon and star annis in Cao Bang through AND testing
4. Identify some mother trees of cinamon and star annis for seedling certification
5. Write a short report in English where recommended production models are described in the way they could be implemented in the visited field, and pros and cons of each model are highlighted.
6. Support DACE in presenting the models to the local district and the producers.
7. Main Tasks

**Cinnamon cassia**

In the case of Cinnamon cassia, the core of the expert work would be to support UEBT local biodiversity staff in

1. Understanding the main varieties used in the fields and the most suitable combinations.
2. Identify native spices with strong roots that can adapt to the hard soil in the current cinnamon plantation forests in Thanh An district.
3. Exploring best locations for interplanting models of native spices into Cinnamon cassia forest considering changing climatic conditions among others
4. Exploring possible harvesting techniques that avoid bare soil or actions to compensate in case of no harvest alternative viable.
5. Explain the pros and cons of each of the models described below.
6. Cinnamon cassia is planted with other forest plants: it is planted under the canopy of natural forests, especially with timbers & bamboo. Cinnamon cassia is planted with a density of 2000-3000/ha. When Cinnamon cassia is 3-4 years old, people “slowly kill” the high trees to give space for Cinnamon cassia.
7. Cinnamon cassia is planted with agricultural crops (mainly hilly rice, corn, and cassava..). This model uses land & agricultural crops to shade young Cinnamon cassia.
8. Cinnamon cassia is planted in family gardens with fruit trees. In this model, Cinnamon cassia grows fast because it is provided with enough nutrients and care.
9. Cinnamon cassia is planted in a more “diversified landscape” where local tree species are planted along streams and ponds to provide shelter for birds and other important species.
10. Understanding which of the models would suit the reality of the farmers working with DACE most and increases the biodiversity on their farms but at the same time help to adapt the models to the contexts where those farmers work and keep their income stable.

**Star Anise**

In the case of star anise, the core of the expert work would be to support DACE staff in

1. Understanding the issues affecting star anise cultivation, root causes, and most suitable solution
2. Understanding the main varieties used in the fields and the most suitable combinations.
3. Exploring best locations for star anise fields considering changing climatic conditions among others
4. Understanding main farm management practices (e.g. seed selection and sourcing, sowing, soil, weed, and pest management, irrigation, harvest, etc.) and possible improvements.
5. Explaining the pros and cons of each of the models described below

a) monoculture under poor forests, recovering forests, or open space with regenerative timber trees.

b) agroforestry (with tea, ginger, turmeric…) on production forests.

c) scattering in family gardens, around the house, or intercropped with fruit trees

1. Understanding which of the models would suit the reality of the farmers working with DACE most and increase the biodiversity on their farms but at the same time help to adapt the models to the contexts where those farmers work and keep their income stable.
2. Working Methodology

For the implementation of the tasks both fieldwork and desk work are needed:

* **Fieldwork:** analysis of different production areas, the definition of observation sites per area, observation of Cinnamon cassia, star anise, and other vegetation (e.g. tree density per hectare, diameter class distribution, crown vitally, related vegetation: main species and description of densities & diameter per layer (understory, canopy, emerging trees) and photographic documentation; setting up & monitoring the model tests.
* **Desk work** – data digitalization, analysis, the conceptualization of biodiversity-friendly models, and reporting.
1. Time Frame and expected results

The assignment will be for the period from May 20, 2024, to July 20, 2024. The number of effort days is 15 days.

Expected results

* 2 Biodiversity Friendly Production Models defined, one per each of the following crops: Cinnamon cassia, Star Anise
* Present the two testing models to local authorities and producers in Cao Bang
1. Schedule

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|  | **Activity** | **Output** | **Location** | **Timeline** |
| 1 | Review on current Cinnamon cassia, and star anise practices | Identification of issues andrecommended practices | Desk | Mid May: 1 day |
| 2 | Two field visits &Select farmers to test the interplanting models | Identification of common modern and traditional practices and issues & collection of data | Cao Bang | Mid May – Mid June: 6 days |
| 3 | Identify the genetic variety of Cao Bang cinnamon and star annis | Samples tested  | Lab in Hanoi | Late June: 2 day |
| 4 | Prepare a draft report and make presentation of the models of Cinnamon cassia and star anise to DACE, local producers, authorities and RBT team | DACE, local authorities argree with the models | Workshop in Cao Bang | Late June: 3 days |
| 5 | Reporting | A report in English  |  Hanoi | Early July: 3 days. Lastest July 15, 2024 |

1. Logistics

The local experts will be responsible for all her/his own logistical arrangements. He/she together with the Biotrade team will discuss and share with the Regional Biotrade management team in Vietnam about her/his working schedules and field visits in Vietnam.

1. Reporting / Debriefing

The local experts will hold debriefing calls with the Regional Biotrade management team and DACE in Vietnam.

The experts will provide a report after defining the two models and an assessment report with Regional Biotrade team and DACE. These reports should contain a very brief review of activities but should primarily focus on learned lessons and recommendations for additional follow-up support that should be provided to DACE in the future. The final report should be submitted to Helvetas no later than July 20th, 2024.

**Proposal submission:**

The following documents are required:

1. Technical proposal

2. Financial proposal

3. CVs and relevant documents

Proposals should be sent to the following email: chi.nguyen@helvetas.org by May 20th, 2024.