Climate Change Adaptation-North Eastern Region

Terms of Reference
Nutritional Analysis of Few Selected Indigenous Food Crops of Nagaland

1. Background

Nutrition is a basic human need for a healthy life and health is one of the most critical contributory factors for human resource development. The core strategy envisaged under the National Nutrition Policy (NNP) of India is to tackle the problem of nutrition through direct nutrition interventions for vulnerable groups as well as through various development policy instruments which will improve access and create conditions for improved nutrition. One of the indirect interventions under the NNP is improvement of dietary patterns through production and demonstration of daily food consumed which will determine the health and nutritional status of a community. It is therefore essential to advocate nutrition in terms of foods rather than nutrients for obtaining the optimal nutritional status.

The project titled 'Climate Change Adaptation in North Eastern Region (CCA NER)', aims to improve the sustainable and climate resilient management of natural resources in five states of North Eastern Region of India. To achieve this objective, the project undertakes the following components:

- Capacity building at regional and state level
- Technical support in drafting state action policies on climate change and accessing National & International climate finance
- Demonstrating approaches to integrate CCA into planning process
- Knowledge Management

2. Scope and objective of the assignment

In Nagaland, rice is the staple food and about 86% of the cultivable area is under jhum and terrace rice cultivation systems. The biological diversity of rice in the state is remarkable with already 867 traditional land races identified by the State Agriculture Research Station (SARS) under Dept. of Agriculture, Govt. of Nagaland. These rice landraces are broadly categorized as glutinous rice, brown rice, aromatic rice. Some of the identified landraces exhibit tolerance to biotic and abiotic stresses, high yield which is at par with the national HYV and few landraces are known to have medicinal value. Apart from rice, the state is also very rich in other indigenous food crops like millets, job's tears, perilla, soyabean, Rice bean, Kholar, maize etc. Realizing the biological treasure the state has, Nagaland government with the active participation of the communities have initiated to revive the cultivation of these indigenous varieties of rice, millets which is known for its climate resilient features, perilla – an indigenous oilseeds as they are the best bet for adapting to changing climate.

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A project entitled "gene pool conservation of indigenous rice varieties under traditional integrated rotational farming system for promoting livelihood and food security as climate change adaptation strategy", under National Adaptation Fund on Climate Change is presently being undertaken by the government of Nagaland which aims for **comprehensive conservation, promotion and marketing of indigenous rice varieties and other food crops** for building climate resilience, enhancing livelihood, ensuring foods and nutritional security and promoting gender empowerment. In synergy with this project, GIZ CCA NER in collaboration with the State Agriculture Research Station (SARS), Dept. of Agriculture, Government of Nagaland, proposes to undertake nutritional profiling of few selected indigenous varieties that exhibit factors like climate resilience, high yield, aroma and marketability.

3. Tasks for the assignment

In this context, the selected agency/institute is expected to carry out following tasks:

- Provide methods for collecting and preparation of samples to State Agriculture Research Station (SARS), Dept. of Agriculture, Govt. of Nagaland who will be collecting the samples for dispatch
- Undertake nutrient profiling of 20 indigenous rice varieties/landraces, 2 types of millets, 2 varieties of Job's tears, 2 varieties of Perilla and 1 variety each of rice bean, soyabean and Rajma (Kholar)
- Parameters to be analyzed are Protein & amino acid, Starch, Crude fibre, Lipid, Minerals, Vitamins, Gylcemic index, Flavonoid & phenolic compounds, Phytic acid, Phytate, Zinc & Iron
- Provide the nutrient data in soft as well as hard format

4. **Deliverables:** The agency will undertake activities with the following deliverables/output: Nutrient profiled data with concise report

No.	Deliverables	Number of days
1	Providing methods of sample collection & preparation to SARS	5 days
2	Nutrient profiling tasks of the 30 indigenous crops	60 days
3	Nutrient data with concise report	15 days

5. **Duration of the Contract:** 80 person days over a period of 3 months (1st Nov. – 31st Jan. 2018)

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6. **Coordination:** The identified agency/institute will work in coordination with SARS, Dept. of Agriculture, Govt. of Nagaland.

7. **Required qualification/ experience for the consulting agency**

   a. **Agency *should have following experience in conducting the assignment:***

   The agency is required to submit detailed technical and financial proposal comprising a profile that contains the current CVs and summary of relevant professional experiences of both—organizational as well as individual experts.

- Experience in food crops nutrition profiling
- The agency should have the equipment and resources to undertake the task
- Excellent reporting and writing skills
- Prior experience of working with GIZ or other multi-lateral/ bilateral organizations would be preferred

   b. ***Agency should have following administrative and financial requirement in conducting the assignment:***

- Average annual turnover for the last three financial years should be at least 50,000 Euro
- Number of employees as at 31.12.2017 should be at least 20
- The technical assessment is only based on reference projects with a minimum commission value of 25,000 Euro

   c. **Profile of experts**

   Principle Investigator

- Advanced degree in Biochemistry/Chemistry/Food Technology/Food & Nutrition/or a related field
- Professional experience of 10 years in food nutrition research and analysis
- Knowledge & Experience in nutrient profiling of cereals, pulses & oilseeds
- Preferably having experience and understanding of North East Region and its crops

   Research Associates:

- Advanced degree in Biochemistry/Chemistry/Food Technology/Food & Nutrition/or a related field
- Professional experience of 3-5 years in food nutrition research and analysis
- Knowledge & Experience in nutrient profiling of cereals, pulses & oilseeds

   Project Assistant:

- Professional experience of 1-2 years in food nutrition research and analysis
- Experience in food crop nutrition profiling