

## Concept Note

### Regional Expert Consultation on Scoping, Prioritizing and Mapping of Neglected and Underutilized Crop Species in Asia

#### FAO Regional Initiative on Zero Hunger Challenge

Regional Office for Asia and the Pacific, FAO

Bangkok, Thailand, 3-5 December 2016

## 1 Background and Justification

### 1.1 Problems

Hunger, food insecurity and malnutrition is a major problem in Asia and the Pacific region. In 2014, around 490 million people are still undernourished in Asia and the Pacific (62 percent of the world's total), out of which 281 million in the Southern Asia sub-region. It is estimated that 93 million children under age of five are still stunted in the region, out of which 68 million are in the Southern Asia sub-region. The micronutrient deficiencies remain widespread in many countries in South-East Asia and South Asia.

Agriculture and nutrition are intrinsically linked. Most people in developing countries rely on agriculture for their employment, income and livelihoods. Poorly nourished people tend to lack the physical capacity to expand the agriculture production; poor households lack sufficient income access to adequate quantity and quality of diversified food to meet nutritional requirement. To achieve the overarching goal of reducing hunger and malnutrition, it is necessary to coordinate and integrate agriculture and nutrition actions to maximize impact. There is a need for better linkages between production, consumption and nutrition to tackle malnutrition and its causes. Dietary diversification is a cost-effective, affordable and sustainable means of strengthening local food systems and reducing hunger and malnutrition.

Recognizing the complex range of factors that contribute to hunger and malnutrition, recent reviews have also called attention to the need to focus on multisectoral approach to addressing malnutrition and to ensure that the agriculture production strategies lead to improving and diversifying diets through production diversification and promoting crops that have better nutritional qualities.

### 1.2 Gaps to Be Addressed

There is high prevalence of malnutrition accompanied by low dietary and production diversity in selected countries:

- Malnutrition – high prevalence of micronutrient deficiencies

The most recent data indicate that many countries have a high incidence of anaemia among pregnant women and children. For instance, among under five-year-olds 55 percent suffer from anemia in Cambodia, 51 percent in Nepal, 42 percent in Lao PDR and 40 percent in Myanmar. Not only anemia but also vitamin A and iodine deficiencies are high.

- Consumption – low dietary diversity

Dietary patterns in the selected countries show an overreliance on very few cereals (mainly rice) which represent 67 percent of the total daily dietary consumption in Myanmar, 72 percent in Nepal, 81 percent in Lao PDR and more than 75 percent in Cambodia. The consumption of vegetables and fruits also remain low. Thus the diet diversity indicators shows poor performance in selected counties.

- Production – low production diversity

75 percent of the total of agricultural households grow rice in Cambodia, 90 percent in Lao PDR and more than 50 percent in Nepal and Myanmar. Moreover, the recent growth of other cash crops such as sugar cane and cassava leading to low crop diversity in the farming systems.

In summary, high prevalence of malnutrition and low dietary and crop production diversity in these selected countries, reflects a common feature: disconnection on malnutrition, dietary diversity and production diversity, which requires a holistic and cost-effective intervention.

### **1.3 Justification: Potential of Crop-related Neglected and Underutilized Species**

Agrobiodiversity offers huge potentials in addressing malnutrition and agricultural sustainability. Globally, approximately 30,000 edible plant species have been identified, of which more than 7,000 crop species have been used for food in the history of humanity. However, only 150 crop species are commercially cultivated and, of these, just 103 crops provide up to 90 percent of the calories in the human diet. Rice, wheat, maize and potato alone account for 60 percent of human energy supply. Furthermore, an ever increasing loss of biodiversity threatens the strength of our global ecosystems.

Neglected and Underutilized Species (NUS) are rich in Asia. They represent a promising abundance of food resources and constitute the bedrock of the food system diversity. Crops among NUS have many benefits and offers huge potentials. As an essential source of vitamins, micronutrients and protein, their nutritional value is high and may thus contribute to attain food security in the region. Besides nutrition value, they contains considerable commercial potentials and therefore contribute to household income generation and livelihood improvements. Furthermore, NUS crops contribute to climate-resilient and more sustainable food systems as they are frequently adapted to marginal conditions. A wider use of today's minor NUS crops may therefore make a great contribution to address malnutrition.

However, it is yet to scope the availability of crop-related NUS, prioritize and identify NUS with high potentials, and map the selected NUS for further development.

### **1.4 Priority-Setting exercise: 3-phase process**

How to tap the high potentials of NUS that are widely available in selected countries? It needs to start with scoping, identification and prioritization of NUS. FAO, in collaboration with the University of Western Australia, ACIAR, ICARDA, ICRISAT, Bioversity International, MSSRF-LANSA, Mahidol University, CATAS-TCGRI, ICIMOD, CFF, TFNet, as well as national research institutes, intends to conduct an interdisciplinary priority-setting exercise that is composed of 3-phases:

#### **1) Stage 1: Scoping**

- Prepare a preliminary scoping report on the availability of NUS at national level (see Annex 1 and Annex 2)
- Share the preliminary scoping report for comment
- Review the report by international institutions (prior to the Expert Consultation)

#### **2) Stage 2: Expert Consultation**

- Validate the preliminary scoping report on NUS in the selected countries
- Rank high-potential NUS based on established priority criteria
- Identify 5-6 NUS crops per country

### 3) Stage 3: GIS Mapping

- Map high-potential NUS according to their geographical availability/prominence using GIS
- Prepare the GIS reports on selected crops per country

## 2 Objective of Expert Consultation

The objectives of the Regional Expert Consultation are to

- a) Validate the preliminary scoping report on crop-related NUS in the selected countries
- b) Rank and prioritize high-potential NUS based on established priority criteria
- c) Identify 5-6 crop-related NUS per country.
- d) Strategize to enhance productions and the utilisation of the selected crops in local diets.

## 3 Target food crops

It is proposed that target food crops focus on the following groups: cereals, roots and tubers, nuts and pulses, horticulture, and others.

## 4 Priority criteria

It is proposed that NUS be assessed according to the criteria as follows:

- a) Nutrition
  - Nutritional value and health benefits
- b) Production Practices
  - Local knowledge, availability and seasonality
  - Productivity, intercropping and competing from other crops
  - Processing
- c) Ecology
  - Agroecology
  - Adaptation to local climate and soil types
- d) Socio-Economic
  - Cultural acceptance and consumer preferences
  - Access to market and potential income generation

## 5 Partners & Contributors

- FAO
- Academia/International research institutes: The University of Western Australia, ACIAR, ICARDA, ICRISAT, Bioversity International, MSSRF-LANSA, Mahidol University, CATAS-TCGRI, ICIMOD, CFF, and TFNet
- NGO: The Akshaya Patra Foundation
- National research institutes in selected countries

## 6 Expected Outputs

- a) Scoping of the availability of crop-related NUS in selected countries has been validated.
- b) NUS crops have been assessed and prioritized according to a set of criteria.
- c) 5-6 crop-related NUS per country have been identified for GIS mapping.
- d) Strategies to enhance productions and the utilisation of the above selected crops in local diets has been discussed.