Food and Agriculture Organization of the United Nations

WORKSHOP REPORT

FAO Regional Initiative on Zero Hunger Challenge

Regional Inception Workshop for Regional TCP on Creating Enabling Environments for Nutrition-Sensitive Food and Agriculture to Address Malnutrition

In collaboration with ICARDA and ICRISAT

30 March 2017

FAO Regional Office for Asia and the Pacific
Bangkok, Thailand

Table of Contents

List of Acronyms

ADG/RR	Assistant Director-General and Regional Representative
CARD	Council for Agricultural and Rural Development
DAR	Department of Agricultural Research, Myanmar
FAO	Food and Agriculture Organization of the United Nations
FAOR	FAO Representative
FSF	Future Smart Food
GI	Geoinformatics
ICARDA	International Centre for Agricultural Research in the Dry Areas
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
MAFF	Ministry of Agriculture, Forestry and Fisheries, Cambodia
MoAD	Ministry of Agricultural Development, Nepal
MAF	Ministry of Agriculture and Forestry, Lao PDR
MoALI	Ministry of Agriculture, Livestock and Irrigation, Myanmar
NAFRI	National Agriculture and Forestry Research Institute, Lao PDR
NARC	Nepal Agriculture Research Council
NGO	Non-governmental organization
NPC	National Project Coordinator
NUS	Neglected and Underutilized Species
Q&A	Questions and Answers
PDR	People's Democratic Republic
RAP	Regional Office for Asia and the Pacific
R&D	Research and Development
RI-ZHC	Regional Initiative on Zero Hunger Challenge
TCP	Technical Cooperation Programme
IYP	International Year of Pulses
R&D	Research and Development
RI-ZHC	Regional Initiative on Zero Hunger Challenge
SDGs	Sustainable Development Goals
TCP	Technical Cooperation Programme

I. Background

a. About the Regional Inception Workshop

The Regional Inception Workshop was held on 30 March 2017 in Bangkok to launch the Regional TCP on Creating Enabling Environments for Nutrition-Sensitive Food and Agriculture to Address Malnutrition being implemented in four countries in South and Southeast Asia. It was organized in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and the International Centre for Agricultural Research in the Dry Areas (ICARDA). Eight National Focal Point on Zero Hunger Challenge/National Project Coordinators (NPCs) and national experts from Cambodia, Lao PDR, Myanmar and Nepal took part in the event, together with international experts and partners from ICRISAT, ICARDA and the Government of India, as well as FAO RAP colleagues.

The main objectives of the workshop were to brief the NPCs on the project's work plan, objective, expected results and methodology, to discuss their roles and responsibilities, to update on the status of four Country Scoping Studies on Future Smart Food that had been revised after the Regional Expert Consultation on Scoping, Prioritizing and Mapping of Neglected and Underutilized Crop Species in Asia, held in Bangkok in December 2016. Furthermore, the selection of suitable sites for a field survey were presented by the countries and a Questionnaire on Policy, Laws and Regulations was to be discussed. The Workshop was intended to have a brainstorming on the way forward on agriculture diversification with sustainable intensification by tapping potentials of Future Smart Food beyond project activities.

b. Concept Note of the Regional TCP

1.1. Relevance: Problems to be addressed

1 Reducing malnutrition is a major challenge in Asia, especially where low-income small-scale households in developing countries are concerned. Lao PDR, Myanmar, Nepal and Cambodia are countries with a high stunting rate among children –and it is well known that this has long-term negative implications for economic development.

2 The Governments of Lao PDR, Myanmar, Nepal and Cambodia have made strong commitments on Zero Hunger, and have formulated a series of national strategies and policies on agriculture and health policies. However, due to the intrinsic crosscutting nature of malnutrition and of its root cause, and co-existence of sector and sub-sector strategies from a food system perspective, it remains unclear regarding whether policy along the value chain are coordinated and conductive to nutrition-sensitive food and agriculture.

3 Starting from a food system perspective, a number of questions can be asked to identify the root causes of malnutrition. What are the main food consumption patterns and dietary patterns in the selected countries? What are the cropping characteristics? How can high prevalence of malnutrition be addressed through nutrition-sensitive agriculture interventions? What is the local potential to tap so as to promote various agriculture sectors for nutrition-sensitive agriculture? What kind of enabling environment is required for promoting nutrition-sensitive agriculture? What are the impediments to consuming nutritious food (consumption side), and what are the impediments to producing more nutritious food (food supply side)?

4 Dietary diversity and production diversity are recognized factors in strategies to improve nutrition and health. However, there are only few studies available on the correlation between malnutrition, dietary diversity and production diversity in specific countries and assessing the associated

nutritional impact of agricultural policies. Also, there is only limited empirical evidence on the role played by production diversification in nutrition improvement. Moreover, there are only few scientific results analysing the nutrient content of underutilized crops and how to promote them for dietary diversification.

5 Currently, agriculture has an over-reliance on a handful of major staple crops, which poses an inherent nutritional, agronomic, ecological and economic risks. Globally, only three crops—wheat, rice and maize—covered 555 million ha or 40% of all arable land globally in 2011, delivering more than 50% of the world's consumption of calories and protein. About 95% of the world's food needs are provided by just 30 species of plants, while at least 12,650 known plant species are considered edible. In Asia, rice continues to be the dominant food staple.

6 Agrobiodiversity are fundamental resources for agricultural diversification. Underutilized crops (sometimes called “neglected”, “underexploited”, “minor", "orphan", "promising" and "little-used") are an essential component of agrobiodiversity. Historically, underutilized crops have often been used for food and other uses on a large scale, and in some countries are still very common especially with small or marginal farmers. They have multiple values: their nutritional value is high, and they are often an essential source of vitamins, micronutrients and protein and thus help to attain nutritional security, for example, pulse. As vegetables, they can have considerable commercial value and therefore contribute to increasing household income. Because they are frequently adapted to marginal conditions, underutilized crops can make production systems more sustainable and climate-resilient. Wider use of today’s underutilized minor crops provide therefore provides opportunity to diversify into nutrition-rich crop production systems, thereby enhancing resilience to both biotic and abiotic stress.

7 Underutilized crops and wild food plants are abundant in most Asian countries, especially Lao PDR, Myanmar, Nepal and Cambodia. However, their potential nutritional and market value, as well as their suitability for climate-adaption are underexploited. Significant research and policy analysis required to create enabling environment to materialize the promising potentials on nutrition, climate adaptation, as well as commercialization. Given FAO’s existing knowledge on the food system approach and the importance of underutilized crops, it implies a huge potential that RAP can tap and make unique contribution.

8 This project intends to focus on creating an enabling environment for dietary and production diversification from a food system perspective, using agrobiodiversity as example. Lao PDR, Myanmar, Nepal and Cambodia are considered as selected countries under the project.

1.2. About the Project

9 Objective of the Project:

The project aims at reviewing national policy framework and fostering enabling policy environment for production diversification and dietary diversity, especially tapping the potential of highly nutritious and climate-sensitive underutilized crops to address malnutrition in selected countries.

10 Impact:

Better enabling environment to promote dietary and production diversity to address hunger and malnutrition at national level.

11 Outcome:

Relevant governments, within and beyond Ministries of Agriculture, have improved crop sector policies, which allow countries to tap potentials of agrobiodiversity to address malnutrition towards enhancing livelihoods, improving nutrition and generating income and promoting equitable economic growth.

12 Expected outputs and activities:

The expected outputs are:

a. National policy and strategy recommendations on multi-dimensional enabling environment for nutrition-sensitive food and agriculture from a food system perspective be developed;

b. Evidence-based study on crop diversity, dietary diversity and nutrition analysis in selected countries be conducted.

c. Regional policy advice based on lessons learnt from the country studies be provided.

To achieve the above-mentioned outputs, the following activities are proposed under each output.

1. Map and review national food security and nutrition strategies, policies, regulations, institutions that affect crop sector (staple and underutilized crops) from a food system perspective

    a. Map existing policies, regulations and institutions that cover underutilized crops from a food system perspective (i.e. not a cash crop);

    b. Review policies, regulations and institutions affecting underutilized crops, identifying critical policy issues and technical gaps that may exist in relation to supporting production and dietary diversity;

    c. Develop specific recommendations to address the policy and programmatic gaps which will foster the diversification of crops and diets that tap the potential of underutilized crops (based on activities listed under item 2 below);

    d. Organize national multi-stakeholders policy dialogues on challenges and options promoting pathways out of malnutrition, with a focus on underutilized crops, and assist governments in adopting new/revised policy frameworks.

2. Conduct evidence-based study on aspects of crop diversity related to dietary diversity and malnutrition in selected countries:

    a. Conduct targeted analysis on malnutrition, crop diversity and dietary/food consumption analyses in the target geographic area and populations according to the incidence and prevalence of malnutrition, identifying key features and main challenges;

    b. Identify 1-2 selected underutilized crop(s) that have a known high nutritious value and with a tradition for consumption at least at some level in the target areas, and with potential for expanding their role in the diet;

    c. Conduct value chain analysis, through field survey and interviewing relevant stakeholders including farmers, for the selected underutilized crop to identify policy, regulatory and institutional constraints and potential for production, consumption and market development;

    d. Conduct technical analysis on the productivity gaps and potential for selected underutilized crop(s) from field to market.

3. Provide regional policy recommendation based on lessons learnt from the country studies for the Asia and Pacific countries
    a. Provide a synthesis report based on lessons learnt from the country studies.
    b. Knowledge sharing of national studies at regional level.

II. Sessions

Session 1: Opening and Setting the Scene

Dr Kundhavi Kadiresan, Assistant Director-General and Regional Representative of the FAO Regional Office for Asia and the Pacific addressed the welcoming remarks to all participants at the workshop. She highlighted the importance of the Workshop in the context of achieving the Sustainable Development Goals (SDGs) and expressed her gratitude towards the participants on the joint effort of this important regional project. She pointed out that although hunger has been going down in the region, challenges still lie ahead of the countries and need to be addressed from different angles. She specified the dual challenge of malnutrition and climate change and encouraged to look at each country's specific context in order to make a change. She complimented on the good progress being made in India on integration of pulses in rice fallow launched by the Government of India and referred to the potential of experience sharing among the countries. She also strongly recommended to become more operational in project implementation by looking at well-functioning policy and governance structures. She stated that Future Smart Food (FSF) are exciting on both nutrition enhancement and climate resilience and that people's mind sets need to be changed to further encourage their consumption and production. In this regard, she stressed that it is up to the countries to shape the project and that the issues can only be tackled in a collective effort with a joint vision. At the end, she expressed her anticipation in view of the outcomes and summary of the Workshop and thanked all participants for their commitment. The full speech can be referred to in Annex 3.

After a round of introduction by all participants (see Annex 2), **Dr Xuan Li**, Senior Policy Officer and Delivery Manager of the Regional Initiative on Zero Hunger Challenge (RI-ZHC) in FAO RAP, gave a brief on the proceedings of the Workshop by presenting the Workshop agenda (Annex 1). The agenda covered five sessions with several plenary discussions, including discussion of the work plan and role of the National Project Coordinator, presentation and discussion of a Questionnaire on Policy, Laws and Regulations as well as a tentative National Policy Dialogue Plan, country presentations and discussions on the selection of sites for a field survey, as well as a concluding session on the next steps of project implementation.

After the brief, Dr Li set the scene by defining the concept and justification of the project within the bigger picture towards agricultural diversification and sustainable intensification to address the dual challenge of malnutrition and climate change. She gave an overview on the malnutrition status in target countries and listed low dietary as well as production diversity, partly due to a focus on staples, among the major underlying causes. She also highlighted the constraints caused by climate change, including water scarcity, low productivity, food price fluctuations and ultimately, food insecurity. To address the complexity of the disconnection between malnutrition, dietary diversity and production diversity, a holistic and cost-effective intervention needed to be sought. That is where FSF come into the picture. The Asia and Pacific region is rich in these crops that have a high nutrient content and are an essential source of micronutrients and supplementary protein. In light of climate change, their comparative advantage is to being adaptable to marginal conditions, plus an additional bonus of having high commercial value. Despite their high potential, FSF face several technical, policy and institutional constraints, including low investment by farmers, researchers and policy makers, lack of sufficient production knowledge and limited policy and market support. More high-potential FSF need to be identified and promoted, and their potential needs to be tapped by all stakeholders along the agriculture and food value chains in the region. As part of the Regional Expert Consultation in December 2016, project countries had come up with a list of prioritized crops that show potential in terms of nutrition, agricultural, ecological and socio-economic benefits. 39 crops from five food groups, eight countries/State (West Bengal, India) had been identified in a set of scoping studies that were prepared prior to the Consultation and have since then been undergoing a second round of revision and peer-review. In addition to this prioritization process, a set of key recommendations for policy makers was developed jointly by all participants of the Consultation. During the presentation, Dr Li also gave a foretaste of projected activities beyond the regional TCP that contributes to agriculture diversification and sustainable intensification to address malnutrition and climate change, among which are awareness campaigns, evidence-based knowledge sharing, climate vulnerability assessment, remote sensing, school meal programmes, pilots on Future Smart Food in rice-fallow systems, diversity assessment and genetic enhancement, and resource mobilization for scaling-up (see Figure 1, p. 16).

Dr Suhas P Wani, Research Programme Director for Asia at ICRISAT, presented on climate change vulnerability assessment in Asia and shared experiences from his organization. After giving an overview on climate change and its impacts, including water availability, CO_2 trends, temperature changes and extreme weather events, he stressed the importance of agricultural diversification for food security. ICRISAT's genebank offers a treasure of crop varieties, among which are many climate-smart FSF, such as pearl millet and early-maturing chickpea cultivars. He introduced some of the technologies, ICRISAT is researching on in India, among which are in-situ soil moisture conservation after rainfall and community-based rainwater harvesting. But he also disclosed that crops alone cannot secure food and nutrition security. They need to be accompanied by sustainable resource management, extension systems that consider social inclusion, as well as market, institutional and policy support. He highlighted that an integrated approach is needed to create a sustainable food future.

Dr Ashutosh Sarker, Coordinator of the South Asia Programme and Food Legume Breeder at ICARDA, delivered a presentation on "Integrating pulses into rice-based systems in Asia: Experience from ICARDA". He emphasized the importance of pulses as protein source in human, and especially Asian, diets, while their by-products can be used as animal feed. In light of the high prevalence of undernutrition in Asia, these crops are of high value. In farming system, pulses show many benefits, among which are the improvement of soil health through nitrogen fixation, prevention of soil erosion, as well as water use efficiency. ICARDA has a mandate on legume crop research and promotes their integration into agricultural systems to make them more diverse. Although pulses offer multiple benefits, they also face some constraints, including their stigma of being poor people's crops, yield instability, lack of supporting policies and low investment in research and development (R&D). ICARDA's research focuses on genetic improvement, trials on different cropping patterns, as well as better crop management to increase productivity. At the end of his presentation, he introduced the spineless cactus, which is used mainly as fodder crop and fruit, and can be planted in farmer's fields in India even under unfavourable conditions. Value added products made from this crop can also enhance marketing and income opportunities.

The third presentation on "Potentials of Geoinformatics application in mapping food and nutritional security" was kindly delivered by **Dr Yashpal Singh Saharawat**, Senior Agronomist and Country Manager of ICARDA in Afghanistan, who covered for his colleague, **Dr Chandrashekhar Biradar**, Head of the Geoinformatics Unit at ICARDA, being absent due to logistical complications. Dr Saharawat gave an overview on the context of Geoinformatics science, technology and application across different disciplines in integrated agro-ecosystems research, development and outreach towards ensuring nutritious food and environmental security for better livelihoods and rural welfare in the dry areas. He highlighted that farming systems can be re-designed with location-specific and ecologically sustainable crops based on agro-ecology and land capacity mapping. The technologies can be used to promote sustainable agriculture in terms of land use, water productivity, crop conservation and adaptation, and better agronomic practices. He touched on the potential of integrating legumes and other short duration crops into rice-fallow systems, and explained that crop- and variety-specific suitability analysis for prioritizing target regions can be done e.g. based on the length of fallows and residual moisture. He illustrated that since FSF are not yet produced on large scale, the nature of their growing regions are often mixed or found in integrated production with other crops, which makes their mapping quite complex.

Dr B Rajender, Joint Secretary of the Department of Agricultural Cooperation and Farmers Welfare in India, presented the Indian Government's perspective and initiatives on integration of FSF in rice-fallow in India. He mentioned that in 2015 and 2016 the production of pulses had been very low and crops had to be imported from outside. Prices had gone up and made pulses less affordable for poorer households. Although India's population is huge, the country has limited land available for growing crops. This is why the use of rice fallows for growing pulses has become a major step towards self-sufficiency. The first initiative being taken by the Government of India was to map potential areas for cultivation of pulses and oilseeds via remote sensing and suitability analysis, followed by improvement of irrigation infrastructure, introduction of better varieties and creation of seed hubs. In 2016, a scheme had been launched to make use of 3 million ha of rice fallow for cultivation of oilseeds and pulses in six States for a projected duration of three years. To move forward, Dr Rajender suggested to introduce enabling policies on markets, minimum support prices and warehousing, to promote intercropping, ensure input supply in critical times, build a strong seed supply system, facilitate credit, consolidate R&D, and strengthen capacity and awareness among farmers.

Session 2: Regional TCP Overview and Work Plan

In Session 2, a draft work plan of the Regional TCP implementation was presented by Dr Li. She also listed the responsibilities of the Governments and the role of the NPC in the implementation process. The agreed-upon work plan is attached as Annex 4.

In the subsequent discussion, participants asked questions on the draft work plan, the responsibilities of the NPC, Government and other stakeholders, and discussed general matters. Dr Bhattarai inquired on whom lies the responsibility of nominating national consultants as well as how to organize logistics during the field survey.

- It was clarified that recruitment of national consultants is to be done by the FAO Representatives in each country, but that the Governments are invited to propose most suitable candidates against the Terms of References for FAO consideration, in consultation with FAO Representatives.
- Four areas of expertise are expected for national consultants: genetic resources/seeds, policy/value chain, nutrition and natural resources. She urged the NPC to consider proposing the best, competent person with a preferable multidisciplinary expertise.
- If the candidate is from the Government or a governmental (research) agency, a separate arrangement with the Government is expected to be made as per established FAO rules and regulations.
- With regard to the field survey, the NPC will undertake main coordination responsibility and provide logistic support. The field survey would be undertaken by LTO, international experts and national experts, while the NPC would advise on selection of suitable locations, in consultation with national and international experts.

Furthermore, it was asked which role the national research institutes play. It was clarified that they continue to play as a stakeholder during the project implementation and facilitate research and analysis along the whole value chain, both upstream and downstream. The specific role of NARC (Nepal Agricultural Research Council), for example, would be to facilitate knowledge sharing of results from the Regional Expert Consultation to the TCP. Dr Oo, NPC from Myanmar, mentioned that other relevant FAO projects might already exist from which professional experience can be sought. She requested that recruitment of national consultants in all FAO's project should be done with the Ministry's consent. Dr Thein advised to issue a letter to the Ministry's Secretariat to request recruitment directly.

After queries were raised according to the approach of the project – if merely technical, policy-based or market-based – Dr Li elaborated that the project intends to create enabling environments, which are composed of three dimensions: policy, technical and institutional. The project would not only focus on the availability of FSF in technical terms, but also strongly consider malnutrition and climate change aspects. In addition to this, Dr Wani again emphasised that FSF be called Future Smart Food coherently and that priority crops be identified to not only focus on what is already there, but select crops that have the potential to address the underlying challenges on malnutrition and climate change. Dr Li explained that while the project is ambitious, the budget is narrow. She called the project's

budget "seed money" that will initiate first steps and help to mobilize additional support, while pursuing collaboration with partners who share the common vision and goal. Different partners have already expressed their readiness and interest to support. The Government as well as partners are encouraged to seek more contributions beyond the already established FSF network. To stimulate further potential, more intellectuals as well as potential donors need to be brought on board.

- It is up to the NPC to propose the most suitable candidate for national consultant. The choice will be made in consultation with FAO, while funding flow and administration will be managed by the FAOR.
- It was discussed that the seed sector needs to be strengthened and its position in the value chain established. Closing the gaps in the supply chain, especially input supply, need to be addressed by identifying the policies behind. Once these are identified, piloting for selected FSF crops can take place to further scale up.
- It was pointed out that from the prioritized 5-6 FSF in each country, the selection still needs to be narrowed down to 1-2 crops per field survey in one province/region. The selection of crops depends on each countries priorities.
- With regard to field survey selection, out of the prioritized regions (for instance, seven provinces in Lao PDR) only one will be considered for the field survey. Nevertheless, the other regions do not have to be eliminated, but can later be used by local Governments for replication and scaling up.

Session 3: Questionnaire on Policy, Laws and Regulations and National Policy Dialogue Plan

The third session covered presentation and discussion of a draft Questionnaire on Policy, Laws and Regulations as well as a tentative agenda for a National Policy Dialogue Plan to be held in each country at the end of the first national level part of the project. Dr Li presented both to the participants and then invited everyone for discussion. Some major observations that were raised during the discussion are listed below.

- It is difficult for countries to answer the questions on budget share as there are seldom targeted policies on staples or FSF existing and real figures are also difficult to find. Usually, policies apply to all (staple) crops.
- The capacity on policy analysis in Nepal is limited. A small policy division exists and it will be useful to bring them on board. (International experts from India offered their assistance in providing policy formulation support based on their experience in taking steps towards nutrition and food security.)
- It was observed that policy makers take nutrition into account in policies formulations and action plans, putting emphasis on diversified and nutritious food, and not only high-caloric food items to reduce hunger.
- In Myanmar, the Government wants to improve food security and nutrition as well as crop diversification. Sometimes, it is not clear where relevant information can be found in the documents, e.g. with regard to genetic resources.

- If some FSF are already receiving support, it will be important to identify existent gaps. Even if information on both staples and FSF is incomplete or non-existent, it should be mentioned in the questionnaire (e.g. 'not applicable'). The best knowledge should be provided to get a clear picture of the status and underlying reasons for e.g. malnutrition and food insecurity. Essential will be to find the right persons to answer the questions.
- It was emphasized that project ownership lies with the countries and the same applies to data collection. It was also highlighted that climate vulnerability and GIS mapping exercises were optional and can only be carried out if data are provided by the country.
- Quality data is important. Therefore, cautious data collection following the questionnaire, as well as the assembly of statistical and climate data is the basis for future work.
- In Cambodia, official data can be obtained from the National Institute for Statistics, while additional data collection from other referees can be commissioned by them as well.
- In the case of Nepal, collection of climate data can be very expensive. But sometimes, data, such as on climate or weather, might already have been procured. As we do not live in an era of isolation, partnership and building of synergies are achievable and can be applied by using already analysed data or published climate information.
- One practical suggestion was to consult a few institutions, e.g. national research institutes, who have expertise to collect information and data instead of having a consultant; and that it would be useful to involve this agent also in the implementation process.
- It was underlined that policies do not have to be reinvented, as a large number of people have already been addressed by such policies. Questions that need to be asked are: What policies have worked and which have not worked?
- Good experiences and results should be shared and replicated. An interactive meeting with policy makers in India, researchers, NGOs, State Governments and the central Government could help to facilitate such a knowledge exchange, raise awareness and consequently the sharing of costs and benefits.
- Countries are encouraged to distribute the questionnaire to many stakeholders to get the bigger picture, and afterwards select the most reliable sources and respondents among them. It would also be useful to strengthen the capacity of policy staff to understand and verify the collected information.
- Lao PDR requested the assistance to identify respondents among different stakeholders to facilitate the sharing of relevant parts for the questionnaire. It was also pointed out that the quality of data may suffer.
- The countries, especially Myanmar, expressed their wish that FAO should visit the country and meet the Minister. This would be regarded as a necessary and efficient action that will encourage to move forward. The NPC would facilitate this interaction and although the resources are limited, FAO would count it among one of its sincere obligation to serve countries.
- It was suggested to call for an inter-ministerial policy dialogue as various ministries to ensure a holistic approach.

Session 4: Identification of Site for Field Survey

In Session 4, Dr Li elucidated the objective of the field survey and the criteria for field survey site selection. A few clarifications were being made with regard to the different priorities by countries. Myanmar noted that the selected FSF crops need to be changed, as they are not suitable for being grown in the identified malnutrition-prevalent States.

It was re-emphasized that the first priority criteria is the status of malnutrition in the chosen site, right after which comes climate vulnerability, and that the selected FSF can be served as a medicine against these symptom. She advised the countries to revisit their site selection according to the criteria and find the best tailor-made solution. Cambodia proposed to include population density into the selection criteria which was agreed. Nepal pointed out that the first criteria "Malnutrition" and fourth criteria "Local Government Engagement" may contradict each other, and that the very local Governments are generally weak in terms of covering malnutrition analysis. With regard to implementation, it was advised that sites be prioritized according to the criteria in order in the presented table, taking into consideration of Governments' priorities and practicality where FSF can play its role appropriately. The table below lists the status of FSF selection in each country.

Table 1: Status of selected Future Smart Food (FSF) in the four project countries

Cambodia	**Lao PDR**
16 selected FSF to be further narrowed down to FSF	7 selected FSF: taro, purple yam, fancy yam, mung bean, rice bean, cowpea
Myanmar	**Nepal**
6 FSF to be updated	5 selected FSF: tartary buckwheat, grass pea, taro, drumstick, jackfruit

Session 5: Brainstorming on Way Forward towards Agricultural Diversification

The last session covered general matters on project implementation as well as the way forward. Next steps to be taken were discussed and agreed upon as follows:

1. Reports on FSF
    - As the scoping study on Future Smart Food from Cambodia has been pending, the NPC and national expert were encouraged to coordinate the finalization of the first draft and submit it for peer review as soon as possible.
    - For the other draft national reports, it was agreed that they be finalized by June 2017, including the revision after peer review and finalization. Dr Li urged the national experts to strictly follow the given outline as well as international expert's advice for further revision and editing. She also said that long/unnecessary parts should be shortened.
2. Field Survey
    - The participants were asked for their estimate on the required timeline for field survey site selection. It was underlined that the field survey per se does not cover interventions. It was jointly agreed that site identification would be finished by the end of June 2017.

- It was also agreed that it would be useful if the pilot project could be built based on the field survey with subsequent replication and scaling up in various agro-ecological zones in the country.

3. About the National Questionnaire on National Policy, Laws and Regulations
   - Final comments on the draft questionnaire are expected to provide by 30 April 2017 (Nepal will provide comments by mid-April; Laos and Myanmar will provide feedback by third week of April 2017, and Cambodia by the end of April).
   - A number of stakeholders to be filled will be advised on by FAO.
   - The questionnaire will be distributed in May 2017 and feedback from respondents are expected to be submitted by 31 May 2017
   - National consultants on policy are expected to be recruited prior to the data analysis.
   - Data analysis be conducted during June and July 2017.
4. About the Timeline for Field Survey
   Countries were invited to indicate the major holidays/events which would NOT be appropriate to conduct field survey according to the national calendar. FAO will coordinate NPC for suitable window for field survey by country accordingly. Table 2 contains the timeline regarding the major calendar/events at country levels that field survey should avoid.

Table 2: Notes on major calendar/events at country levels

Cambodia	• Mid-May to June 2017: municipal elections • July-August 2018: national elections
Lao PDR	• Water festival/new year in April
Myanmar	• Water festival/new year in April
Nepal	• May: elections • June-August: rainy season

5. Additional Activities:
   a. A study tour (e.g. to India) was proposed by the India Government and ICRISAT. It was welcomed by the participating countries and considered that it may be held between July-September 2017.
   b. Mapping of relevant programme and projects on staples and FSF in the countries should be conducted by the national policy consultants by the end of June 2017.
   c. Request for data collection on statistics, climate vulnerability and GIS mapping will be made by FAO to from the Ministries at high level respectively.
   d. School meal/feeding programme
      - A knowledge sharing event on existent school meal/school feeding programmes was proposed for the future. In the past, Brazil has been a good school meal example under the

country's Zero Hunger Challenge initiative. Myanmar' Ministry of Education and Ministry of Health has been planning to go to Brazil.

- In Cambodia, school gardens have been established. It would now be effective to know, how selected crops can be mainstreamed into these. A national ZHC action plan with 5 pillars has been developed and many ministries are involved. Now, they need to come up with concrete activities.

At the end of the workshop, Dr Li highlighted that one of the objective of this project is to hand over the fishing rod rather than giving fish. Recognizing that this project is serving as an essential step towards achieving a bigger target on fostering agricultural diversification and sustainable intensification to address dual challenge on malnutrition and climate change, it would be crucial to identify the most competent candidates preferable to have interdisciplinary background to participate in the implementation of this multidisciplinary project, with a view of engaging with related activities subsequently and replicating and scaling up in the future.

III. Summary of Outcomes and Way Forward

Addressing malnutrition in a changing climate have been set as the top priority by the countries under this project. Within an agricultural diversification and sustainable intensification strategy, Future Smart Food with a food system approach have been identified as a holistic and cost-effective intervention to address the dual challenge of malnutrition and climate change. The purpose of the Workshop was to launch the Regional TCP project, find an agreement on the projected work plan, and brainstorm/strategize major relevant activities to provide concerted support towards the common vision on Future Smart Food through resources mobilization and partnership building. As part of brainstorming, the following key components have been concluded at the Workshop:

a. Expand the network on FSF to facilitate exchange and application of **evidence-based knowledge**, policy support, technology, **genetic enhancement** and case study as well as **mobilize additional funding** to scale up FSF promotion in target countries.

b. Recognize, identify and promote the complementarities of "Future Smart Food (FSF)" with existing staple crops for nutrition enhancement, climate change resilience and diversification with sustainable intensification of cropping systems (e.g. **integration into rice-fallow systems**).

c. Assess the risk of climate change impacts and the potential of FSF to address them through **climate vulnerability assessment**.

d. Conduct **GIS analysis** using remote-sensing tools to map different farm typology, energy, water, irrigation, transportation in various agro-ecological zones, including rice fallow area; and map areas for high-potential FSF according to their geographical availability/prominence.

e. **Raise awareness** and convince policy-makers of the nutrition-sensitive and climate-resilient potential of FSF to address hunger, malnutrition and climate change.

f. Create an enabling environment by strengthening national institutional support for mainstreaming FSF into national policies and programmes, by means of appropriate incentives, procurement of FSF for **school meal programmes** to enhance national consumption, local production and facilitate marketing.

Figure 1 presents a few major activities about Future Smart Food contributing to addressing the dual challenge. Genetic enhancement was added upon request from the countries after the Workshop.

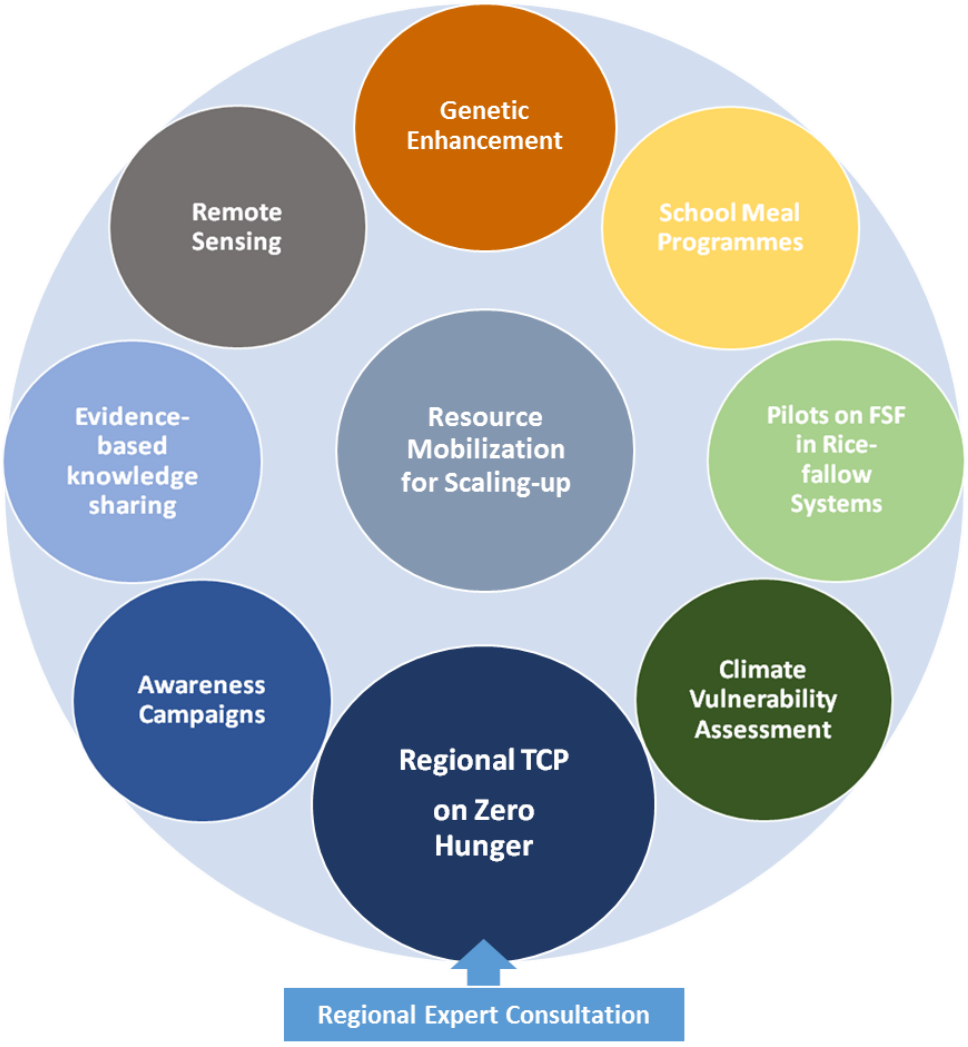

Figure 1: Way Forward on Agricultural Diversification – Regional TCP and additional projected interventions beyond

Annex 1 – Agenda

FAO Regional Initiative on Zero Hunger Challenge

Regional Inception Workshop for Regional TCP on Creating Enabling Environments for Nutrition-Sensitive Food and Agriculture to Address Malnutrition

Provisional Agenda and Timetable

30 March 2017

FAO Regional Office for Asia and the Pacific, Bangkok, Thailand

In collaboration with the International Centre for Agricultural Research in the Dry Areas (ICARDA) and the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)

Time	Topic	Presenter/ Discussant
08:30-09:00	Registration	
Session 1: Opening and Setting the Scene		
09:00-09:10	Welcoming remarks	Dr Kundhavi Kadiresan, ADG/RR, FAO RAP
09:10-09:20	Introduction of participants	Self-introduction
09:20-09:30	Brief on the proceedings of the Workshop	Dr Xuan Li, Senior Policy Officer & RI-Zero Hunger Challenge Delivery Manager, FAO RAP
09:30-09:40	Setting the Scene: Conceptualization and justification for agricultural diversification to address the dual challenge	Dr Xuan Li, FAO RAP
09:40-09:50	Assessing climate change vulnerability in Asia: Experience from ICRISAT	Dr Suhas P Wani, Research Programme Director, Asia, ICRISAT
09:50-10:00	Integrating pulses into rice-based systems in Asia: Experience from ICARDA	Dr Ashutosh Sarker, Coordinator - South Asia Programme and Food Legume Breeder, ICARDA
10:00-10:10	Applying remote sensing and geoinformatics (GI) to promote Future Smart Food	Dr Chandrashekhar Biradar, Head of Geoinformatics Unit, ICARDA
10:10-10:20	Indian Government's perspective and initiatives on integration of Future Smart Food in rice-fallow in India	Dr B Rajender, Joint Secretary, Department of Agricultural Cooperation and Farmers Welfare, India
10:20-10:40	Q&A	
10:40-11:00	Group Photo and coffee/tea break	

Session 2: Regional TCP Overview and Work Plan		
11:00-12:00	1. Background, objective, work plan, expected results, methodology of the regional TCP and roles and responsibilities of National Project Coordinator (NPC) 2. Discussions: a) Work plan b) Roles and responsibilities of NPC c) General matters	Dr Xuan Li, FAO RAP Plenary
Session 3: Questionnaire on Policy, Laws and Regulations and National Policy Dialogue Plan		
12:00-13:00	1. Presentation on draft National Questionnaire on Policy, Laws and Regulations related to staple food and FSF, and national policy dialogue plan 2. Discussions: a) Questionnaire on Policy, Laws and Regulations b) National policy dialogue preparation	Dr Xuan Li, FAO RAP Plenary
13:00-14:00	Lunch break	
Session 4: Identification of Site for Field Survey		
14:00-14:15	1. Brief on the role of field survey and proposed selection criteria for survey site 2. Comments on field survey site selection	Dr Xuan Li, FAO RAP Dr Wani and Dr Sarker
14:15-15:00	1. Presentation on selected FSF and preliminary proposed sites option for field survey: **Myanmar** 2. Guided discussion: identification of sites for field survey	Ms Khin Mar Oo, NPC, Director, Department of Planning, MoALI Plenary
15:00-15:45	1. Presentation on selected FSF and preliminary proposed sites option for field survey: **Nepal** 2. Guided discussion: identification of sites for field survey	Dr Bal Krishna Joshi Senior Scientist, National Genebank, NARC, Kathmandu Plenary
15:45-16:15	Coffee and tea break	
16:15-17:00	1. Presentation on selected FSF and preliminary proposed sites option for field survey: **Cambodia** 2. Guided discussion: identification of sites for field survey	Dr Sok Silo, NPC, Deputy Secretary General, CARD & Advisor to MAFF Plenary
17:00-17:45	1. Presentation on selected FSF and preliminary proposed sites option for field survey: **Lao PDR** 2. Guided discussion: identification of sites for field survey	Mr Savanh Hanephom, NPC, Deputy Director General of Department of Planning and Cooperation, MoAF Plenary
17:45-18:00	**Session 5: Brainstorming on Way Forward on Agricultural Diversification**	

Annex 2 – List of Participants

National Focal Points for Zero Hunger / National Project Coordinators and Experts

Cambodia

Dr Sok Silo, DBA (Mr)
Deputy Secretary General
Council for Agricultural and Rural Development (CARD)
Advisor to the Ministry of Agriculture, Forestry and Fisheries
Tel: +855 12 451 111
Fax: +855 23 211 203

Dr Orn Chhourn (Mr)
Senior Researcher of Plant Breeding Division
Cambodian Agricultural Research and Development Institute (CARDI)
Tel: +855 78 222 114
E-mail: chhourn_orn@yahoo.com

Lao PDR

Mr Savanh Hanephom
Deputy Director General
Ministry of Agriculture and Forestry
E-mail: hsavanh@gmail.com

Dr Siviengkhek Phommalath (Mr)
Legume Researcher
National Agriculture and Forestry Research Institute
E-mail: siviengkhek@yahoo.com

Myanmar

Ms Khin Mar Oo
Director
Ministry of Agriculture, Livestock and Irrigation
Tel: +95 67 410109
Mobile: +95 925 970 7966
E-mail: khinmaroo2007@gmail.com

Dr Minn San Thein (Mr)
Deputy Director and Head
Myanmar Seed Bank
Department of Agricultural Research
Tel: +95 09 49208124
E-mail: minsanthein@gmail.com

Nepal

Mr Binod Kumar Bhattarai (Mr)
Senior Agricultural Economist and Chief of Multilateral Foreign Aid and Investment Coordination Section, Policy and International Cooperation Coordination Division
Ministry of Agricultural Development
Tel: +977 1 4211940
Mobile: +977 9841154892
Email: binodbhattarai_69@yahoo.com

Dr Bal Krishna Joshi (Mr)
Senior Scientist
Genebank, Nepal Agricultural Research Council (NARC)
Tel: +977 1 5003 331
Mobile: +977 98 416296 83
Email: joshibalak@yahoo.com

International Experts

ICARDA

Dr Ashutosh Sarker (Mr)
Coordinator of South Asia Program and Food Legume Breeder, India
E-mail: a.sarker@cgiar.org

Dr Chandrashekhar Biradar (Mr)
Principal Scientist (Agro-ecosystems)
Head, Geoinformatics, Jordan
E-mail: c.biradar@cgiar.org

Dr Yashpal Singh Saharawat (Mr)
Senior Agronomist
Country Manager, Afghanistan
E-mail: y.saharawat@cgiar.org

ICRISAT

Dr Suhas P Wani (Mr)
Research Programme Director, Asia
Director of ICRISAT Development Centre, India
Tel: +91 040 30713466
Mobile: +91 9849005546
Fax: +91 040 30713074
E-mail: s.wani@cgiar.org

Dr Arabinda Kumar Padhee (Mr)
Director, Country Relations and Business Affairs, India
Tel: +91 11 25840294
Mobile: +91 9437015869
Fax: +91 11 25841294
E-mail: a.padhee@cgiar.org

India

Dr B Rajender (Mr)
Joint Secretary
Department of Agricultural Cooperation and Farmers Welfare
Tel: +91 11 23381176
Mobile: +91 9599428809
Fax: +91 11 23382417
E-mail: b.rajender@ias.nic.in

FAO RAP

Dr Kundhavi Kadiresan (Ms)
Assistant Director-General and Regional Representative
Tel: +66 2 6974310
E-mail: kundhavi.kadiresan@fao.org

Dr Xuan Li (Ms)
Senior Policy Officer
RI-Zero Hunger Challenge Delivery Manager
Tel: +66 6974145
Mobile:+66 632722143
E-mail: xuan.li@fao.org

Ms Isabell Piroth
Food Security and Nutrition Consultant
Tel: +66 2 6974154
Mobile: +66 617753503
E-mail: isabell.piroth@fao.org

Ms Amgalan Ariunbold
Plant Production Consultant
Tel: +66 2 6974290
E-Mail: ariunbold.amgalan@fao.org

Mr Rabi Rasaily
Food Systems Consultant (Post Production)
Tel: +66 2 6974176
E-Mail: rabi.rasaily@fao.org

Ms Tomomi Ishida
Social Protection Officer
Tel: +66 2 6974228
E-Mail: tomomi.ishida@fao.org

Mr Kenichi Shono
Forest Resources Officer
Tel: +66 2 6974259
E-Mail: kenichi.shono@fao.org

Annex 3 – Welcoming Remarks

FAO Regional Initiative on Zero Hunger Challenge

Regional Inception Workshop for Regional TCP on Creating Enabling Environments for Nutrition-Sensitive Food and Agriculture to Address Malnutrition

FAO Regional Office for Asia and the Pacific, Bangkok

30 March 2017

Kundhavi Kadiresan
Assistant Director-General and Regional Representative
Regional Office for Asia and the Pacific

Ladies and Gentlemen,

Good morning to you all!

It is my pleasure to welcome you all to this Regional Inception Workshop of the Regional TCP on Zero Hunger. I see many familiar faces among you experts and senior Government officials from Cambodia, Lao PDR, Myanmar and Nepal, and also our international partners from ICRISAT and ICARDA. After having met most of you at the Regional Expert Consultation in Bangkok last December, I am glad to welcome you in Bangkok again – this time at our home base in the FAO Regional Office.

As you know in the region, we are facing a dual challenge of malnutrition and climate change. All four countries participating today have a high incidence of malnutrition, especially stunting and micronutrient deficiency. The reasons for this lie in the foods that are available, but more importantly the foods that are not widely available.

Something is fundamentally wrong with our food and agriculture system because at present the diversity of nutritious foods is absent due to the absence of local production. For instance, rice is grown in almost 80 percent of arable land in Lao PDR yet the country has enormous biodiversity resources. Low production diversity, with a heavy reliance on just a handful of major staple crops, makes our food systems vulnerable to climate and environmental changes.

This is a serious matter because rice is so dominant in our region. It requires seasonal water inputs two or even three times higher than other cereals while water stress in Asia is increasingly severe. So much of our agriculture in this region continues to depend on these monocropping patterns and even genetically uniform crops. If this pattern continues, it will make it impossible to achieve the Zero Hunger goal, especially in the context of an accelerated changing climate.

Areas where there is a high consumption of rice in the diet, but not much else, tends to result in high levels of stunting and populations that are underweight. This is most evident in rural areas. So the challenge is how to achieve better nutrition when a country depends primarily on one starchy staple crop for its food and livelihood? The answer as we now know is diversifying crops.

Last year the regional consultation used the term Future Smart Foods (FSF) that can and should play a bigger part in achieving better nutrition. I am very pleased to learn that you have mapped these

Future Smart Foods and have prioritized them according to their potential on improving nutrition, their resilience to climate change and their economic viability to help small holders move away from monocropping – this is an excellent step. I am pleased to note that pulses, such as grass pea, cow pea, lentil, have been shortlisted by countries as Future Smart Foods.

Any big mission starts from a smaller by concrete step. This regional TCP is formulated to make this first concrete step. It is the first of several planned initiatives by the FAO regional office to promote agricultural diversification. It's an ambitious but also complex project and follows a systematic approach, multi-sectoral and multi-disciplinary by nature, including activities at national, district and village level. Xuan who is LTO of the project, will discuss with you all the details later.

For me, I am very pleased to see that your governments have taken strong ownership of this. I am also pleased to learn that we have most of our Zero Hunger Challenge Focal Points on board as National Project Coordinators for this project, which again shows the strong engagement and support from your governments. With all your commitment and continuous support, I am confident we´ll make significant advances towards zero hunger.

I wish you a successful meeting. I thank you all for your commitment and wish you a pleasant stay in Bangkok!

Annex 4 – Regional TCP Country Work Plan