

SUMMARY REPORT

Informal regional meeting of experts “Indicators to monitor and measure nutritional improvements”

25-26 September 2012, Bangkok, Thailand

Background

Agriculture remains the main source of income for approximately 2.5 billion people worldwide. While the rationale for the majority of agriculture-sector interventions is based on the common premise that agricultural interventions increase household income, the evidence of linkages between agriculture and consumption remains limited or in many cases poorly assessed.

There is a need to document the impact of the various programmes and interventions with nutritional outcome, capitalize on lessons learnt and refine recommendations to inform the design of future interventions. A significant obstacle to implementing comprehensive and sustainable interventions aimed at improving nutrition, specially food-based interventions is the limited evidence that is available on the effectiveness of such approaches. This lack of evidence makes it difficult to advocate for sustainable nutrition-sensitive programmes and food-based strategies to address undernutrition. Valid and timely nutrition assessment is the foundation on which effective interventions and programmes can be built to improve the food and nutrition situation of people. Standardized indicators are crucial for making cross-country comparisons and estimating trends.

In view of the above, an informal regional meeting of experts was conveyed by FAO Regional Office for Asia and the Pacific jointly with the Institute of Nutrition, University of Mahidol, to discuss suitable set of indicators for programme planers and implementers and provide recommendation on use of these indicators. The main objective was to look at various nutrition indicators to which have validity and reliability for better measuring the efficacy and effectiveness of various programmes on nutrition.

This two and half day meeting took place on 25-26 September 2012, at the meeting room of FAO Regional Office for Asia and the Pacific (FAORAP) in Bangkok, Thailand. Total of a ten experts dealing with assessment, nutrition surveillance and involved in the programmes related to food security and agriculture were invited to discuss and make recommendations on measurable indicators.

The experts reviewed some of available evidence for best practices of different interventions to date. The meeting updated and discussed the current knowledge, challenges and knowledge gaps in evaluating different interventions on nutrition. The recommendations for selection of indicators to be used across different scales of time and space within projects, including follow up were agreed by the experts.

Summary of discussions

The meeting was opened by remarks by Ms Shashi Sareen, Senior Food Safety and Nutrition Officer, FAORAP. It was followed by welcome address by Dr Visith Chavasit, Director, Institute of Nutrition, Mahidol University. The meeting was facilitated Dr Kraisd Tontisirin, Senior Adviser, Institute of Nutrition, Mahidol University, and supported by Mr Mr Ramasawmy, Food Security Statistician, FAORAP.

Dr Sara Wuehler, Micronutrient Initiative, was invited to discuss and contribute to the meeting. She discussed on importance of nutrition indicators to measuring the impact of interventions. Specially, she underscored the traditional measures of nutritional status:

- ✓ Anthropometry/Size/Growth:
 - ✓ Height/length for age
 - ✓ Weight for age
 - ✓ Weight for height/length
 - ✓ Body mass index
 - ✓ Mid upper arm circumference

- ✓ Micronutrient status
 - ✓ Clinical versus population assessments
- ✓ Dietary intakes
 - ✓ Diversity/frequency
- ✓ Knowledge
 - ✓ Such as Improved caregiver nutrition knowledge

She has provided an overview of the evidence: impact of agriculture interventions on nutrition and dietary quality. The setting reasonable goals and expectations for the effects of agriculture and food security programmes on nutritional outcomes were though important. In addition, the significance of duration and timing of interventions to improve nutritional outcomes and selecting nutrition indicators were highlighted. In all impact evaluations, process and intermediate outcome indicators that could show changes in variables along the pathway to nutritional impact will be useful, especially if sample sizes and duration of the intervention do not allow evaluation of changes in nutritional status. Indicators such as increased household access to and intake of nutrient-rich foods, improved diet quality, or positive changes in child feeding practices are useful in that respect and should be included. She highlighted the need to take into account when selecting nutrition indicators: i) its sensitivity/specificity of the indicator; ii) activity on pathways to target; iii) affordability; measurability; and iv) current accessibility.

Prof. Dr Kraisd Tonsirin, Senior Adviser, Institute of Nutrition, Mahidol University, discussed about the Community nutrition programmes in Thailand: how the success was measured. He emphasized the importance of involving communities and setting a good target at the initial design of programmes. The need for bringing different sector such as health, WASH and agriculture, to have a better impact was underscored. The traditional nutrition indicators were used such as stunting, wasting and underweight in children under age of five. He specially highlighted that though anthropometry is very useful in the assessment of food security interventions, since it is usually a late stage and non-specific indicator, the information it provides needs to be complemented with indicators that are more specific for food consumption and access to food. These include detailed methods for measuring or estimating actual food consumption (dietary intake) as well as simpler tools that measure dietary diversity and household's access to food.

Mr Talukder, Hellen Keller International, introduced the presentation on home vegetable gardens for better nutrition. He has highlighted that in addition to the indicator mentioned by previous speakers, the qualitative surveys (like key informant interviews, focus group discussions and direct observations) can provide an in-depth understanding of the livelihood context of the community which is very useful to interpret the quantitative results and to identify underlying causes of food insecurity and vulnerability.

Dr Lei, Cornell University, discussed about the importance of Biofortification of crops and their impact on nutritional status. He has specified that bio fortification increases staple crop nutrient concentration without sacrificing agronomic traits (i.e. yield, pest resistance, drought resistance). Special focus is given on iron, provitamin -A carotenoids, zinc.

Ms Dorothy Foote, Nutrition Specialist at UNICEF, discussed on Measuring Infant and Young Child Feeding (IYCF) practices and indicators to monitor and measure nutritional improvements. The lack of evidence and consensus on simple indicators of appropriate feeding practices in children 6–23 months of age - that is 548 days out of the 1000 - has hampered progress in measuring and improving feeding practices, thereby constraining improvements in infant and young child nutritional outcomes.

It is well established that nutritional outcomes in the first 1,000 days of life (from pregnancy to 23 months), strongly influence adult nutritional status. Most preventive nutrition programs focus on children during this period known as the “development window of opportunity” when children are growing most rapidly, are most vulnerable to growth faltering and are most responsive to nutrition interventions. Integrating simple nutrition messages including infant and young child feeding practices within agriculture based interventions can improve the quality of program outcomes. Nutrition education is shown to be important because even when the potential for an adequate amount and variety of foods exists, individuals may lack information about how to best use the resources which are available to improve their nutritional status.

In 2002 Guiding Principles for Complementary Feeding of the Breastfed Child were being developed, which addressed the multidimensionality of complementary feeding practices (5). A similar effort to develop guidance and rationale for feeding non-breastfed children 6–23 months of age was undertaken shortly thereafter, which resulted in a technical document (6) and a parallel set of Guiding Principles (7), recommendations and targets of the Global Strategy for Infant and Young Child Feeding.

8 Core Indicators:

- 1) Early initiation of breastfeeding;
- 2) Exclusive breastfeeding under 6 months;
- 3) Continued breastfeeding at 1 year;
- 4) Introduction of solid, semi-solid or soft foods;
- 5) Minimum dietary diversity;
- 6) Minimum meal frequency;
- 7) Minimum acceptable diet;
- 8) Consumption of iron-rich or iron-fortified foods

7 Optional Indicators:

- 1) Children ever breastfed
- 2) Continued breastfeeding at 2 years
- 3) Age-appropriate breastfeeding
- 4) Predominant breastfeeding under 6 months
- 5) Duration of breastfeeding
- 6) Bottle-feeding
- 7) Milk feeding frequency for non-breastfed children

The new Population-level indicators of infant and young child feeding practices are used primarily for:

- (1) assessment: to make national and sub-national comparisons and to describe trends over time;
- (2) targeting: to identify populations at risk, target interventions, and make policy decisions about resource allocation; and
- (3) monitoring and evaluation: to monitor progress in achieving goals and to evaluate the impact of interventions.

The indicators are mainly designed for use in large-scale surveys or national programs. Smaller local and regional programs may also find uses for these indicators, but this limited set of measures is not intended to meet all of the needs for program monitoring and evaluation at this level. Programs and projects should augment these with more specific indicators that reflect their own interventions, messages, and behavior change objectives.

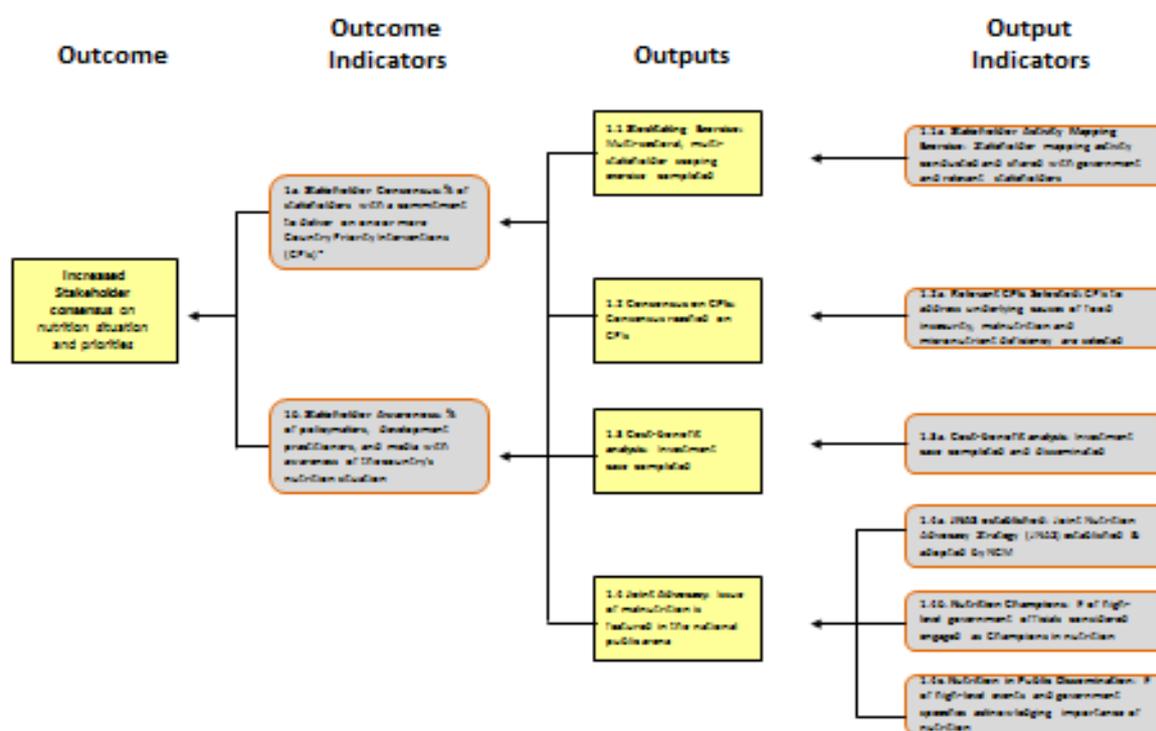
The presentation also discussed on the challenges in using these indicators. The IYCF indicators are mainly designed for use in large-scale surveys or national programs. Due to the extensive and detailed data required, it is time consuming and challenging to measuring the Complementary Feeding indicators on a frequent basis. The new IYCF indicators are not included in the MICS so far because it was too cumbersome to collect and to collect and analyze data and need to make sure people are well-trained. However, it is included in Demographic Health Survey. Some countries have tried/proposed to record IYCF practices (exclusive breastfeeding etc) in the HMIS: not recommended. IYCF practice indicators measure the outcome of policies, strategies and interventions aiming at IYCF behavior change. Monitoring of IYCF interventions should look at quality and bottlenecks of the implementing process. Thus, HMIS should focus on collecting data that is directly linked to measuring the functioning, coverage and quality of services provided by the facility. Keep the monitoring system simple, useful and cost-effective

Dr Jessica Fanzo, Nutrition Expert, REACH, was invited to the meeting. She made a presentation on Multi-sectoral actions in addressing child stunting: Lessons from both community interventions and national governance. She highlighted the importance of nutrition governance, the process of decision making; process by which decisions are implemented; structures through which those processes occur. Nutrition governance is concerned with the effective delivery of nutrition security to all members

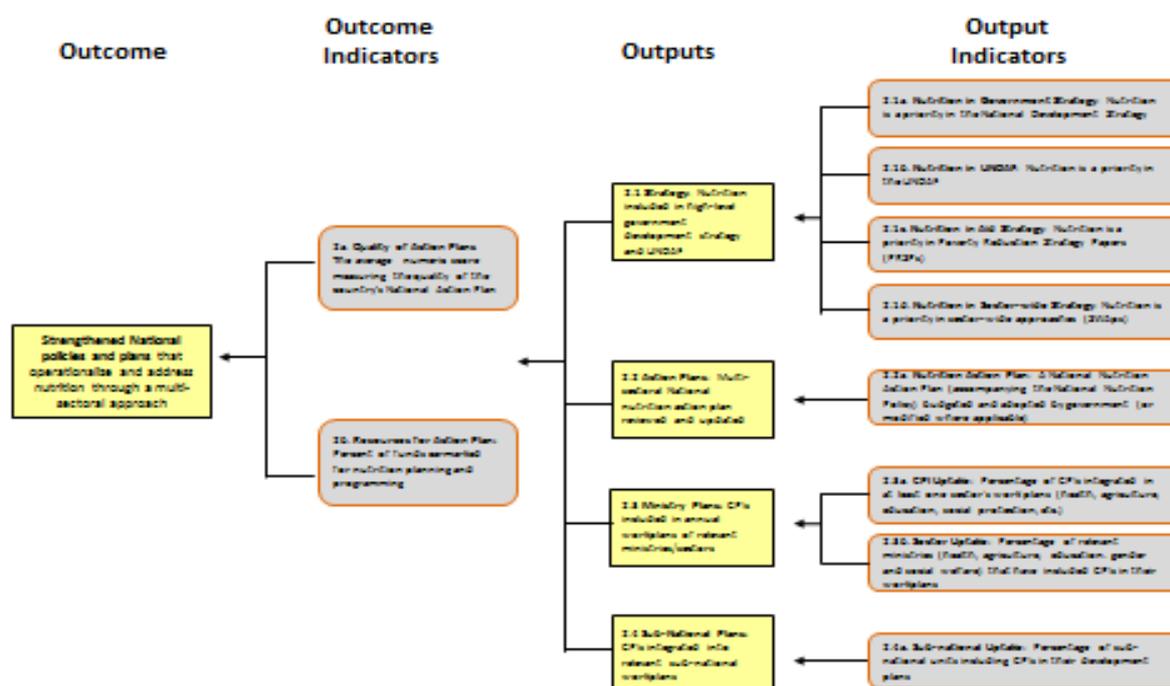
of society, especially the most vulnerable. Strong 'nutrition governance' countries are those who have recognize that they are responsible for ensuring that their citizens have a right to food and nutrition security. To that end, have committed to having a national nutrition action plan, which is also part of the national development strategy, on how to fulfil their commitment set up inter-sectoral coordinating committees. Establish multi-sectoral mechanisms to ensure effective participation allocated budget lines for nutrition strategies and plans, and conduct regular assessment and surveillance to ensure the plan has addressed the issues.

Currently there is no generally accepted framework or set of terminology for conceptualizing nutrition governance. The existing literature contains references to nebulous terms such as 'meaningful participation' and 'voice' in addition to more concrete notions like 'systematic planning' and financing for nutrition. Five key building blocks of effective nutrition governance and management are described in the literature. These are: political commitment; consensus building and coordination; financing; service delivery capacity; and transparency and accountability. Ms Fanzo introduced the country-led process output using the REACH work. She also underlined different indicators at outcome and output levels, as outline below.

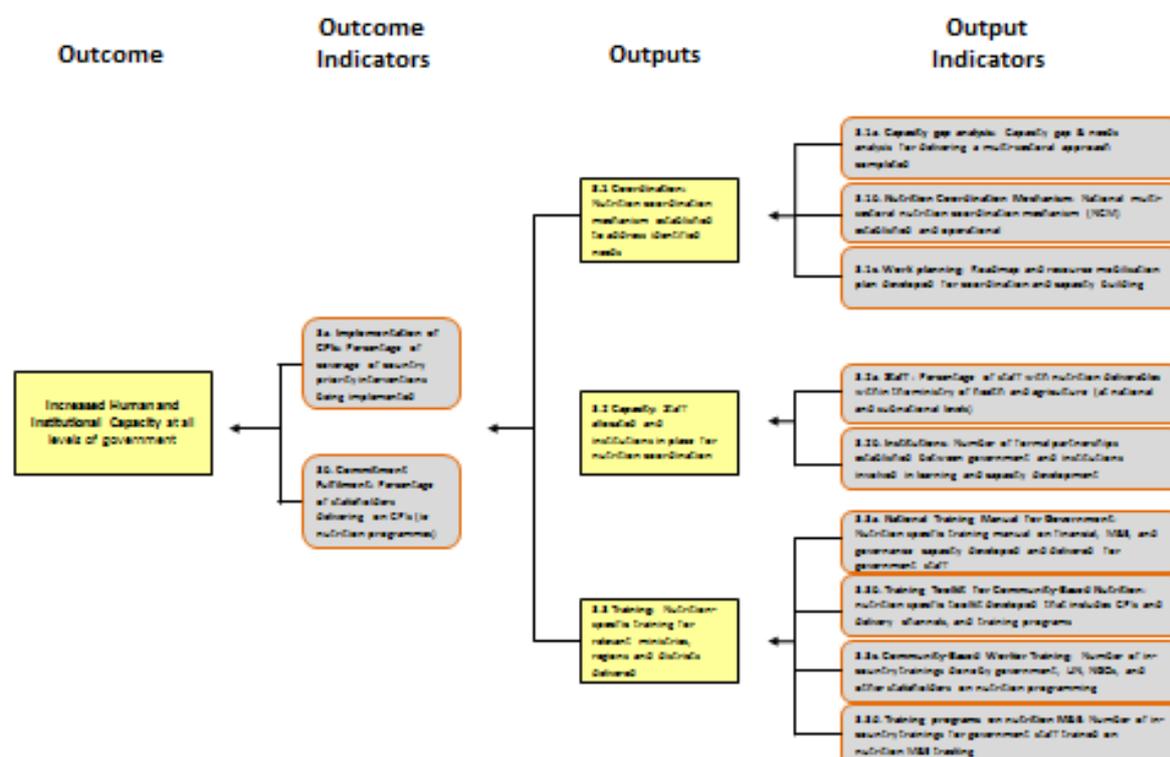
Outcome 1 *Increased Stakeholder Awareness and Consensus on Priorities*



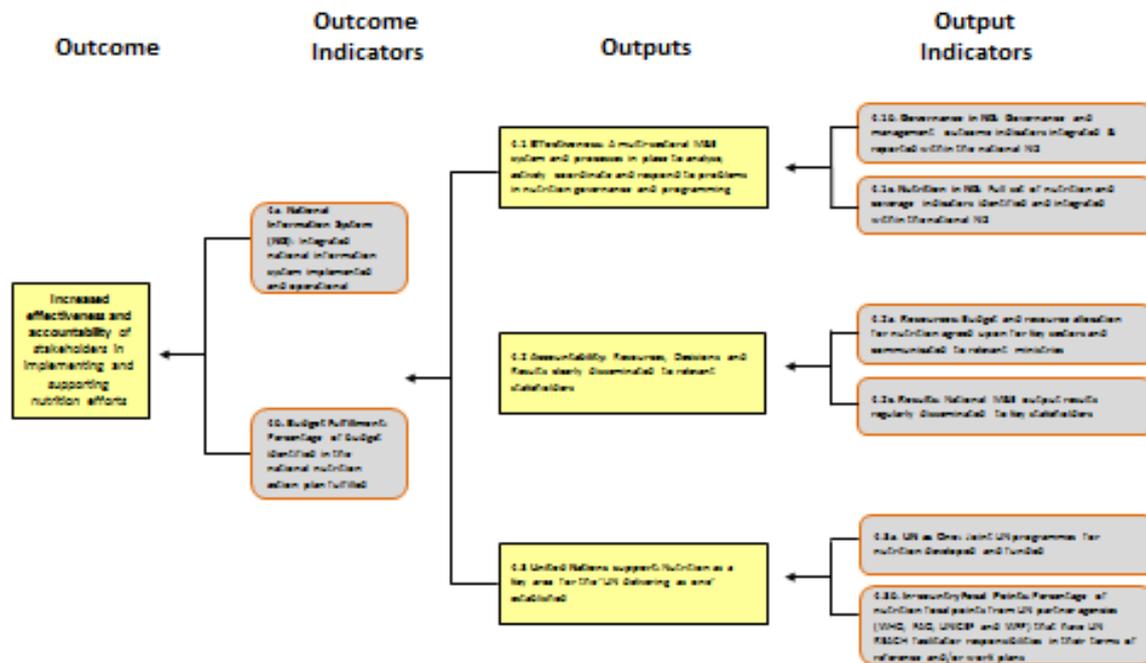
Outcome 2 Strengthened National Policies and Plans



Outcome 3 Increased Human and Institutional Capacity



Outcome 4 Increased Effectiveness and Accountability



Dr Tuazon, Professor, Institute of Human Nutrition and Food at UP Los Banos, has discussed on the Capacity-building for Food and nutrition security and tracking progress. She highlighted the importance of building the capacity and that the capacity-building needs to be promoted to develop a sustainable and proactive culture of accountability and good governance. The presentation focused on capacity building at various levels:

- Individual level
 - ✓ Development of conditions that allow individuals to enhance existing knowledge and skills
- Institutional level
 - ✓ Involves aiding pre-existing institutions to form sound policies , organizational structures and effective methods of program and financial management
- Societal level
 - ✓ Involves development of public administrators that are responsive and accountable

Dr Tuazon reviewed the monitoring and evaluation of capacity building on nutrition, using the accountability and measure learning to improve performance and concerned with quality and relevance of capacity building efforts and changes. She specially emphasized on performance based evaluation – impact assessment using indicators that should be simple, measurable, accurate, realistic and time bond. Different input and process indicators were also highlighted.

Dr Do Thi Phuong Ha, National Institute of Nutrition, Vietnam, complemented to the previous speakers and highlighted the process of the National Nutrition Programme and the challenges in measuring. She acknowledged that there is need of setting up good monitoring and evaluation system and strngthening the capacity of stakeholders to implement and monitor.

Dr Gombosuren, Director of National School Lunch Programme has presented an overview of Mongolia School Lunch programme and measuring school lunch programmes impact on nutrition. She highlighted that diet diversity and anthropometric indicators were the main indicators. However, sub-indicators such as improvement in education score of children and reduction of school drop outs were also used in assessing the impact of the programme.

Ms Gina Kennedy, Nutrition Consultant at FAO Headquarters, discussed on the importance of Dietary diversity: an indicator to monitor nutritional improvements in diets. Specially, she has underscored the relevance of the Guideline for measuring household and individual dietary diversity. The household dietary diversity score is meant to reflect the economic ability of household to access a variety of foods. She also explained that some studies shown that an increase in dietary diversity is associated with socio-economic status and household food security. The Individual dietary diversity scores aim to reflect nutrient adequacy and can show that the increase in individual dietary diversity score is related to increased nutrient adequacy of the diet in different age groups. Ms Kennedy has also explained about the simple use of standardized questionnaire of universal applicability from which various dietary scores can be calculated.

Dietary intake assessment generally involves three steps: 1) measuring food intakes 2) converting food intakes to nutrient intakes and 3) evaluating nutrient adequacy. Examples are 24 hour recall and 1 to 3 day food weighing methods from which nutrient intakes are calculated to derive the nutrient adequacy of the diet. Food intakes can be measured using quantitative or qualitative dietary assessment methods, depending on the study objectives. Whichever method is selected, consistency in using it throughout the project is important so that comparisons can be made.

Dietary diversity is defined as the number of food groups consumed over a given reference period. The tool uses a qualitative open recall method to gather information on all the foods and drinks consumed over the previous 24 hours, which are then classified into standard food groups. It can be administered either at the household or individual level. The dietary diversity tool is particularly useful for ensuring that agricultural development, food security and nutrition education programmes effectively lead to more nutritious diets. This tool, being easy to implement and analyze, is very relevant in countries for the national as well as the decentralized level (e.g. they can be used by extension workers).

The meeting noted the practicality of dietary diversity – measurement is a simple count of food items or, more commonly, food groups consumed over a fixed period of time (usually 24h) to assess diversity of the diet (but not frequency of consumption).

Mr Ramasawmy, Food Security Statistician, FAORAP, discussed about the assessment of macro and micronutrients availability at national and subnational levels for improved food policies and programmes. He has presented the work undertaken on Household Income and Expenditure Surveys (HCES). Understanding food consumption patterns and nutrient intakes is essential for informing evidence-based food and nutrition policies, yet there is a lack of accurate and reliable data. Household Consumption and Expenditure Surveys (HCES)—a collective term for multipurpose household surveys—provides an inexpensive and readily available source for filling this information gap.

Due to the ongoing changes in the expenditure, consumption and income patterns, this survey is conducted periodically and regularly. Most countries tend to conduct it every five years. However, sometimes the nature of the phase, a country is passing through, may require conducting the survey in less than five years due to rapid changes in the population structure resulting from sudden events such as wars, migrations and economic disasters and crises, all of which have an impact on the nature of the expenditure, consumption and income patterns of the population

Mr Ramasawmy highlighted that HCES may be a practical instrument for enacting national policies and identifying communities where nutrition interventions are highly needed. Combined with other tools, HCES can approximate nutrient intake patterns and the probable prevalence of inadequacies, assess diet quality and nutrient density, and measure dietary diversity at national and subnational levels.

Conclusions and recommendations

The meeting participants discussed the challenges in identifying appropriate and measurable indicators to assess impact of food security and agriculture programmes on nutrition. Though, the nutrition indicators at impact levels are clearly defined and should be considered in food security programmes, it was agreed that there is a need of deeper analysis of different indicators at intervention levels. Further research therefore would be required by the experts and further work is considered needed for defining suitable set of indicators.

Meantime, the participants recommended for further promoting specially the Household and Individual dietary diversity scores, which would require considerable efforts in building the capacity of national programme developer and implementers dealing with food security.

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PROGRAMME

Day 1	
08:00 – 09:00	Registration
09:00 – 10:00	Opening Session -Opening Speech by Ms Shashi Sareen, Senior Food Safety and Nutrition Officer, FAO -Welcome Address by Assoc. Prof. Dr. Visith Chavasit, Director, Institute of Nutrition, Mahidol University
10:00 – 10:30	- Introduction of the participants - Photograph
10:30 – 11:00	Tea Break
11:00 – 11:30	Nutrition indicators to measure the impact of interventions - Dr Sara Wuehler, Micronutrient Initiative
11:30 – 12:00	Community nutrition programmes in Thailand: how the success was measured?– Prof. Dr Kraisid Tonsirin, Senior Adviser, Institute of Nutrition, Mahidol University
11:40 - 12:00	Home vegetable gardens for better nutrition: which indicators to be used? – Mr Talukder, Hellen Keller International
12:00 – 13:30	Lunch
13:30 - 14:00	Biofortification of crops and their impact on nutritional status – Dr Lei, Cornell University
14:00 – 14:30	Diet diversity score for measuring impact of community interventions on nutritional status – Dr Gina Kennedy, FAO
14:30-15:00	Measuring Infant and Young Child Feeding practices – Dr Foote, UNICEF
15:00- 15:30	Coffee break
15:30 – 17:00	Open discussion based on presentations
18:00 – 21:00	Welcome Dinner at New Siam River Side Hotel
Day 2	
09:00 – 10:30	Multi-sectoral actions in addressing child stunting: Lessons from both community interventions and national governance - Dr Jessica Fanzo, REACH
10:30 - 11:00	Capacity building on nutrition and institutional setting and how to measure the progress – Dr Tuazon, World Bank
11:00 – 11:30	Tea and coffee break
11:00 – 11:30	Assessment of macro and micronutrients availability at national and subnational levels for improved food policies and programmes – Mr Ramasawmy, FAO
11:30 - 12:00	Discussion based on presentations
12:00 – 13:30	Lunch
13:30-14:00	Measuring school lunch programmes on nutrition: how and which indicators? – Dr Gombosuren, President of Nutrition Association, Mongolia
14:00-14:30	National Nutrition Programme and the challenges in measuring? - Dr Do Thi Phuong Ha, National Institute of Nutrition, Vietnam
14:30-15:00	Tea Break
15:00 – 16:00	Open discussion based on all presentations
16:00 – 16:30	Conclusions and Recommendations
17:00 – 21:00	Cocktail reception followed with dinner

List of Participants

Annex 2

Dr Jessica Fanzo Monitoring and Evaluation Expert REACH Initiative, Italy	Col. Assoc. Prof. Dr. Nantaporn Viravathana Biochemistry Department Phramongkutklao College of Medicine Thailand
Dr Sara Wuehler Senior Advisor Micronutrient Initiative Canada	Asst. Prof. Dr. Uraiporn Chittchang Institute of Nutrition, Mahidol University Thailand
Dr. Shakuntala Haraksingh Thilsted Senior Nutrition Adviser The WorldFish Center, CGIAR Bangladesh	Assoc. Prof. Dr. Pattanee Winichagoon Institute of Nutrition Mahidol University Thailand
Dr Gombosuren Enkhtaivan President The Nutrition Association of Mongolia Mongolia	Dr. Aphisit Pungporn Assistance Director Office of HRH Princess Maha Chakri Sirinhorn's Projects Thailand
Professor Mejeenov Purevjav, Ph.D Vice Director for School Lunch Programme Mongolian University of Science and Technology Mongolia	Ms Monique Beun International Expert UNICEF, Thailand
Mr Zaman Talukder Regional Food Security and Nutrition Advisor, Helen Keller International Cambodia	Ms Dorothy Foote Programme Coordinator UNICEF, Thailand
Ms. Nguyen Phuong Ha Head of Community Nutrition Department National Institute of Nutrition Vietnam	Mr Seevalingum Ramasawmy Food Security and Social Statistics Officer FAORAP, Thailand
Professor Dr Xingen Lei HarvestPlus, Cornell University USA	Ms Shashi Sareen Senior Food Safety and Nutrition Officer FAORAP, Thailand
Dr Kraisd Tontisirin Senior Advisor Institute of Nutrition, Mahidol University Thailand	Ms Nomindelger Bayasgalanbat Regional Nutrition Officer FAORAP, Thailand
Assoc. Prof. Dr. Visith Chavasit Director Institute of Nutrition, Mahidol University Thailand	Dr Gina Kennedy, Nutrition Specialist FAO Headquarters
	Dr. Kitti Sranacharoenpong Institute of Nutrition, Mahidol University Thailand

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Opening Remarks

By

Ms Shashi Sareen

Senior Food Safety and Nutrition Officer

Regional Office for Asia and the Pacific

Food and Agriculture Organization of the United Nations

Dear colleagues,

Good morning to all of you. On the behalf of the FAO Regional Office for Asia and the Pacific, I wish to welcome you all and wish to express my appreciation to you all for coming to join us, in this important meeting in Bangkok, Thailand.

I also wish to thank the Institute of Nutrition, University of Mahidol, for supporting the organization of this meeting. This meeting is indeed very timely and important.

Today, we are facing enormous challenges with stubborn number of undernutrition in many countries, in particular in Asia region. The recent studies of FAO and WHO inform us that currently in the world around 925 million people are undernourished, 2 billion people are affected by micronutrient malnutrition, 178 million children are stunted, 148 million children are underweight.

Likely, the international attention on nutrition is increasing. However, we are facing difficulties in providing evidence in order to scale up successful interventions. Many our stakeholders are looking for the effective and scalable promising interventions, including multi-sectoral approaches for achieving nutritional improvements. The programme developers and implementers are increasingly seeking for suitable indicators and methods, in particular, for dietary diversity and nutrition related outcomes, which can help the project teams to focus attention on issues to be addressed to reach the objectives. However, there are many challenges, these are lack of common understanding of the metrics and methods used by different sectors, lack of relevant, specific and internationally-agreed indicators and metrics for tracking progress and evaluating impact of interventions.

FAO advocates for nutrition-sensitive, food-based approaches that increase access, availability and consumption of a variety and diversity of safe, good quality foods, including food fortification, as a sustainable strategy for improving the nutritional status of populations.

Food and agriculture-based strategies focus on food as the primary tool for improving the quality of the diet and for addressing and preventing malnutrition and nutritional deficiencies. The approach stresses the multiple benefits derived from enjoying a variety of foods, recognising the nutritional value of food for good nutrition, and the importance and social significance of the food and agricultural sector for supporting rural livelihoods. It also supports the right-to-food approach in preventing hunger and ensuring health and well-being.

The approach empowers people to consider their total diet in relation to their preferences, individual lifestyle factors, physiological requirements and physical activity levels. Started early, this approach can contribute to physiological, mental and social development, enhance learning potential, reduce nutritional disorders and contribute to the prevention of diet-related diseases later in life.

The fact that malnutrition continues to be experienced in some countries despite apparently having adequate food supplies, highlights the need to overcome poverty, marginalization and neglect. We thus need to increase and scale up the interventions proved to be successful.

FAO pays close attention to the nutritional impact of its interventions, but guidelines for measuring that, including in emergency situations, are lacking. Specially, having indicators and methodologies for measuring our actions impact on communities nutritional status would be extremely useful. We hope that this meeting will help provide recommendations.

The purpose of this two day meeting is to identify major issues and challenges in measuring impact of nutrition programmes, and to discuss together various nutrition indicators, which have validity and reliability for better measuring the efficacy and effectiveness of various programmes on nutrition. This meeting is also hoped to pave the way for a large meeting on nutrition indicators, that is planned in 2013.

The meeting result will be used to further develop an enhanced framework for selecting indicators and methods being used by researchers and international development organizations involved in agriculture and food security and nutrition programmes.

I sincerely hope that this meeting will provide an opportunity for all of us to plan ways that we can harness your tremendous knowledge and experience with our willingness to collaborate and put end to under-nutrition.

Thank you.