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The South-East Asia Nutrition Research-cum-Action Network

*Report of the Seventh Meeting
Male, Maldives, 18-20 June 2002*

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1. INTRODUCTION

The South-East Asia (SEA) Nutrition-Research-cum-Action Network was established in 1990 by the WHO Regional Office for South-East Asia with representatives from governments and nutrition institutions in the Member Countries and from the four regional WHO collaborative centres in nutrition: National Institute of Nutrition (NIN), Hyderabad, India; M S University, Baroda, India; Nutrition Research and Development Centre (NRDC), Bogor, Indonesia, and Institute of Nutrition, Mahidol University (INMU), Thailand. The primary objective of the Network is to optimise regional expertise for linking nutrition research to country programmes in order to address existing nutritional problems prevailing in the Region. The secretariat of the Network rotates among the collaborating centres, the current secretariat being housed at INMU, Thailand.

The seventh meeting was held at the Bandos Island Resort, Republic of Maldives from 18-20 June, 2002 to review the research work carried out and to prioritize future research activities in the areas of Infant and Young Child Feeding, Adolescent Nutrition, and Diet Related Noncommunicable Diseases (NCDs). Representatives from nine member countries participated in the meeting. The list of the participants and the programme of the meeting are at Annex 1 and 2.

The objectives of the meeting were as follows:

- (1) To review nutrition research undertaken by the nutrition collaborating centres and Member Countries especially in the areas of infant and young child feeding, adolescent nutrition and diet related noncommunicable diseases, and prepare recommendations for further research;
- (2) To propose recommendations to establish or to strengthen mechanisms to link nutrition research in these areas with national nutrition programmes, and

- (3) To develop an inventory of nutrition research conducted in the last six years, which has policy implications and use as advocacy material for future action.

Dr Songsak Srianujata, Director, Institute of Nutrition, Mahidol University, Thailand and Dr P Bhaskaram, Deputy Director (Senior Grade), National Institute of Nutrition, India were nominated as Chairperson and Rapporteur respectively.

2. INAUGURAL SESSION

In his opening address, Mr Ahmed Abdullah, Minister for Health, Republic of Maldives complimented the World Food Summit for its advocacy to improve the global food situation. Maternal and child nutrition has been a component of the Maldivian primary health care system and several large-scale vertical programmes such as iron supplementation of pregnant women, baby friendly hospitals, exclusive breastfeeding, growth monitoring of children under three years, promotion of iodized salt, mass deworming, vitamin A supplementation and feeding school children have been successfully implemented using a multi-sectoral approach and NGO participation. A large portion of national budget is allocated to health, providing impressive results. The Minister emphasized the importance of school health programmes and identified school children as ambassadors of nutrition in all developmental programmes. He expressed concern over the emerging problems of obesity and other diet related NCDs. He described Vision 2020 of Maldives which envisages creating health awareness among the Maldivians and providing quality medical care to all citizens.

Dr. E I Kubota, WHO Representative to Maldives read out the inaugural address of Dr Uton Muchtar Rafei, WHO Regional Director for South East Asia and commended the achievements of the Network in formulating policies with respect to iodine deficiency disorders and vitamin A deficiency. He identified infant and young child nutrition as one of the keys to achieve reduction of poverty and said that various programmes had resulted in raising awareness of the importance of good breast feeding practices. He stressed the need to check the increasing prevalence of NCDs and thus prevent morbidity and mortality. He stated that adolescents face a series of nutritional challenges which affect their growth and development and that a holistic approach

towards improvement of adolescent nutrition was recommended. He urged the Network to further accelerate its pace in the current decade and suggested possible collaboration with the WHO collaborating centres in other regions with similar interests.

Dr Rukhsana Haider, Regional Adviser, Nutrition for Health and Development & Food Safety, WHO-SEARO, New Delhi, welcomed all the participants, and explained the objectives of the meeting

3. PROCEEDINGS

3.1 Research Recommendations from Global Consultations and Priorities

The magnitude of global malnutrition, with particular reference to developing countries was reviewed and the profile of malnutrition among children under five years of age from the countries of the Region, presented by Dr Rukhsana Haider. The importance of appropriate breastfeeding and complementary feeding and maternal nutrition were stressed. The period between 6 and 18 months of a child's life is suggested as a window of opportunity to promote optimal growth and development. Improving access to safe and adequate complementary foods, evaluation of low cost methods of home and community processing, and storage to enhance safety of complementary foods and improving feeding practices are the research priorities identified by the WHO Global Consultation on Complementary Feeding held in Geneva in December 2001. The Joint WHO/FAO expert consultation on Diet, Nutrition and Prevention of Chronic Diseases held in Geneva from 28 January - 1 February 2002), made a general recommendation to support research for developing and testing culture specific interventions for promoting behaviour change towards healthy dietary preferences and practices and regular physical activity. The Regional Consultation on Adolescent and Maternal Nutrition 1997 opined that "Health related data of adolescents are conspicuous by their absence in all countries of the Region" and concluded that undernutrition, chronic energy deficiency, iron deficiency anaemia, iodine deficiency disorders are common and vitamin A deficiency is prevalent among adolescents.

3.2 Research Activities at the WHO Collaborating Centres

National Institute of Nutrition, Hyderabad, India

Dr P Bhaskaram briefly reviewed the activities of NIN during the past five years. Late initiation of breastfeeding, administration of prelacteal feeds, depriving the baby of colostrum feeding, and introduction of water/solids before the age of six months were identified as major problems in India.

Increasing trends of overweight and obesity among rural adults and urban school children in India were noted. High levels of circulating homocysteine are reported among Indian adults, in association with folate deficiency thus identifying folate deficiency as a risk factor for coronary heart disease. Certain foods like fenugreek seeds and curcumin were found to prevent or modulate the course of chronic diseases (NIDDM). Results of some ongoing studies testing the effects of vitamin A and PUFA supplementation on obesity and studies on gene-nutrition interactions were also presented.

Maternal malnutrition during the periconceptional period was significantly associated with retarded foetal growth and altered placental development. Further, maternal anaemia of moderate to severe degree and serum retinol < 0.7 µmol/L during the third trimester of pregnancy were found to increase the risk of LBW. Spirulina (a β-carotene rich blue green algae) and red palm oil supplementation during pregnancy demonstrated significant beneficial effects on maternal and neonatal vitamin A status and birth weight of the infant. Energy deficiency and anaemia were identified as widely prevalent nutritional problems of adolescents. Life cycle approach was described as the appropriate intervention to achieve optimal health and nutrition of the population. Vitamin A supplementation to preschool children through the national programme was found to have low coverage and minimal or no impact on vitamin A status, while administration of VA on NIDs was found to have high coverage and significant impact on serum retinol.

M S University, Baroda, India

The research carried out at the M S University of Baroda was summarized by Prof. U V Mani. The major research issues addressed by the Centre were colostrum feeding, exclusive breastfeeding for the first six months, timely and adequate complementary feeding and care practices. Timely counselling of

pregnant women had brought about a significant change in the practices of breastfeeding, prelacteal feeds, exclusive breastfeeding and administration of top milk and complementary feeding.

Iron folate administered as daily or weekly supplement to school and slum girls was found to significantly improve weight gain and haemoglobin levels. The impact was more marked in younger, than in older girls and in anaemic rather than non-anaemic girls. Daily supplements had better impact compared to weekly supplements. The prevalence of obesity was 7% in adolescents, 29% in young adult females and 7% in urban adults of Baroda. Glycemic indices for a number of foods like wheat bran (biscuits), curry leaves, sundakai powder (*solanum torvum*) tulsi leaves and diabetic mix which was a combination of cereals and pulses were determined, and their effects on blood sugar, lipid and glycated protein levels in adult NIDDM subjects were investigated. Supplementation of spirulina (a blue green algae) (2 g per day for two months) was found to significantly reduce blood sugar and glycated protein levels and improve the lipid profile. Dr Mani expressed the need for long term supplementation trials using spirulina in the prevention and management of diet related NCDs.

Nutrition Research and Development Centre, Bogor, Indonesia

Dr Sunarno reviewed the epidemiology of nutritional deficiencies in Indonesia and identified, PEM and sub-clinical vitamin A deficiency among preschool children, IDD among school children and nutritional anaemia among all age groups as major problems in the country. Due to demographic changes of the population and over eating, a significant increase in diet-related NCDs had also been registered. Energy dense and micronutrient enriched food supplements had impact on growth, motor development, mental development and behaviour of infants and toddlers. Addition of *tempeh* (traditional fermented soybean) to milk-carrot formula produced no additional benefits in malnourished children. Majority of the traditional weaning foods prepared using local materials at home industry scale, were found to be deficient in zinc, iron and vitamin A contents compared to CAC (Codex Alimentarius Commission) standards suggesting the need to add these micronutrients during preparation. Supplementary feeds given to malnourished infants and children were found to be qualitatively poor, used as substitutes and failed to improve the nutrient intakes. The other activities of the Centre included investigations

to explore the potential of galactomannan isolated from waste of coconut milk processing as a potential substance with lipid lowering effect and omega 3 fatty acid supplementation in the management of rheumatoid arthritis.

Institute of Nutrition, Mahidol University, Thailand

Dr Songsak Srianujata presented the research activities at INMU, Thailand. A multi country study on "National Infant and Young Child Feeding Assessment: Practices, Policies and Programmes" was conducted by WHO using a LINKAGES and Wellstart International (WSI) assessment tool. The tool was designed 1) to assist countries in assessing the strengths and weaknesses of their policies and programmes, 2) to promote, protect and support optimal feeding practices; and 3) to determine where improvements may be needed to meet the aims and objectives of Global Strategy for Infant and Young Child Feeding. The tool has been tested in four countries, namely, India, Indonesia, Sri Lanka and Thailand. Results of other research projects were: Insulin resistance was observed in obese children. School performance of obese school children was poor in higher classes. Development of prediction equation of body fat and lean body mass in Thai children and adolescents and determination of index of obesity in Thai population have been attempted. Iron status of adolescents was found to be significantly related to aerobic capacity and endurance while there was no correlation between iron status and cognitive ability. In a multi-centre study conducted in four cities in Asia supported by AFIC, overweight and obesity were observed in 29.4% in boys and 8.3% in girls based on Thai weight/height standards while the figures were 40% and 13% respectively when Cole's standards were used. A study assessing the KAP of eating habits and physical activity in 9-12 year old Thai children indicated gender differences related to perception in body image and physical activity. Validation and standardization of tools and indicators, investigations on nutrient metabolism in relation to genetic profiles, types and levels of physical activity, evolving appropriate counselling models and formulating policies for programme implementation and nutrition education were the highlights of research related to NCDs. Inadequate calcium intake was found to be a risk factor for development of osteoporosis. The effect of higher calcium intake on bone accretion was demonstrated in Thai children. Identification of dietary factors influencing calcium bioavailability from different foods and traditional Thai diets is an ongoing activity. Cardiovascular diseases account for 17% of the estimated

total deaths in Thailand. An international collaborative study was undertaken in Thailand and China to obtain estimates of levels of cardiovascular risk factors among the adult population of the two countries. The capacity of local health authorities to determine the public health and other related policies that may facilitate the establishment of intervention programmes at local level was developed with the support of WHO. Development of Healthy Thai foods and promotion of healthy eating habits among Thais through their traditional diets and development of suitable foods for specific diet-related NCDs such as high fibre foods, low calorie food products, development of imitated coconut milk, modification of lipid property in coconut milk, low sodium sauces and preserved foods are also some of the on going activities at INMU.

3.3 Country Presentations

Bangladesh

Dr Nasima Akhter summarized the country report of Bangladesh. Protein energy malnutrition, iron deficiency anaemia, and iodine deficiency disorders are the major problems of public health magnitude in Bangladesh while Vitamin A deficiency is not a problem of public health significance. Diversified home-based complementary foods were found to be more practical, beneficial as well as sustainable in promoting the growth of infants. A randomized community trial on the effect of vitamin A and multiple micronutrient supplementations during pregnancy and lactation on maternal, foetal and infant mortality was an ongoing project. The problem of malnutrition was being comprehensively addressed through the Bangladesh Integrated Nutrition Project (BINP) and was found to improve the knowledge related to childcare practices, mobilized communities and reduced severe malnutrition substantially in the intervention areas. Adolescent nutrition programme had been incorporated as an innovative approach. The National Nutrition Project (NNP) is a community based nutrition programme, covering all the key activities following the success achieved through BINP.

Bhutan

Mr Gyambo Sithey presented the nutrition programme of Bhutan. A nationwide survey carried out in the year 1999 indicated that 19% of children below five years were malnourished, 40% stunted and 2.6% wasted; these

figures showing significant decline from the prevalence rates observed in the year 1989. Iodine deficiency disorders declined from 65% in 1983 to 14% in 1996, following the introduction of salt iodization programme and regular monitoring through the Iodine Deficiency Disorder Control Programme (IDDCP). Iodized salt (> 15ppm) coverage was 82% and median urinary iodine excretion 230µg/L. A nationwide anaemia survey is proposed to determine Hb levels using hemocue method in children between 9 and 36 months of age and their parents. The country proposes to expand nutrition activities to adolescents, dietary assessment of the population and estimation of prevalence of diet related NCDs along with regular nutrition strategy for the under five children, pregnant and lactating mothers.

Learning from Member Countries' experiences, getting technical assistance from Member Countries, capacity building at the programme level and in research, were the needs expressed for Bhutan.

India

Dr B Sivakumar presented the micronutrient status among adolescent boys and girls, based on biochemical parameters. Over 90% of adolescents were deficient for riboflavin and folate while iron deficiency anaemia and pyridoxine deficiency were observed in about 60% of the adolescents. Evaluation of the stability of iodine in double fortified salt and wheat flour fortification with iron and folic acid are ongoing studies. A national facility at NIN for Vitamin A analysis from dried blood spots using HPLC is also an ongoing venture. In the area of diet related chronic diseases, mechanism of insulin resistance using the obese rat model is being investigated. Dr Sivakumar highlighted the initiative of the Indian Council of Medical Research (ICMR) Task Force to carry out multicentric studies on prevalence, aetiology and intervention for osteoporosis.

Maldives

Mrs Aminath Rasheeda presented the nutritional profile of the population and programmes implemented in Maldives. Malnutrition continues to be a significant problem in Maldives. Prevalence of undernutrition among <5 year old children was 30% while stunting and wasting were 25% and 13% respectively. About 24% of pregnant women were anaemic and 5% of children

had night blindness. The second National Nutrition Strategic Plan to be implemented during the period 2002-2006 addresses the key nutritional problems using a life cycle approach with the objectives of improving awareness of the population about exclusive breastfeeding, preparation of nutritious foods and importance of balanced diet, ensuring growth monitoring of children <5yrs, ensuring adequate quantities of iodized salt at consumer level, and improving hygienic practices including provision of safe drinking water. The programme also envisages building partnership with NGOs and the private sector and ensuring food security. Assessment of the relative importance of iron deficiency in Maldivian population; bringing out legislation for fortification of wheat flour with folic acid and universal use of iodised salt; enforcement of the Code of Marketing of Breastmilk Substitutes and ensuring food security and capacity building for nutrition research were identified as special and urgent needs of the country.

Myanmar

Dr Hla Kyi gave an overview of the nutritional problems in Myanmar. Prevalence of under weight among children was 35% in 2000. Prevalence of anaemia was 58% among pregnant women, 45% among non-pregnant women and 26% among adolescent students. Pregnant women were administered daily iron supplements. Biweekly iron supplementation for adolescent girls is planned. Exclusive breastfeeding rate is 15.8%, 25-30% of mothers start complementary feeding before four months while introduction of meat and vegetables is late. Dietary surveys indicated satisfactory intake of calorie, protein, vitamin A and iron and poor intake of vitamins B1, B2, niacin and calcium among adolescents. 5.3% of men and 9.7% of women were overweight, while 0.7% of men and 1.8% of women were obese. Small-scale community surveys and hospital-based data indicate that the incidence of diabetes mellitus, hypertension and ischemic heart disease is on the increase.

Prof Dr Paing Soe summarized the research activities from the Nutrition Research Division of the Department of Medical Research (Lower Myanmar). Goitre control programme was developed and implemented in the entire country as prevalence of IDD was reported from all over the country. Titration method of determining the salt iodine content replaced the kit method of estimation to improve accuracy and sensitivity. Assessment of nutrient intake among the different social strata of the population, development of energy and

nutrient dense complementary foods, assessment of food behaviour of adolescents, and identification of the glycemic indices of Myanmar foods have also been carried out recently. Assessment of prevalence and risk factors of diet-related noncommunicable diseases (obesity and diabetes) areas were being focussed at present.

Nepal

Dr Sharada Pandey presented the country report of Nepal. Breastfeeding is initiated within one hour of delivery by 69% of Nepali mothers with mean duration of 29 months. Protein energy malnutrition in children is still prevalent at rates of 48% underweight, 51% stunting and 9% wasting. Vitamin A and iodine status of the children have significantly improved. Nevertheless, prevalence of anaemia is 78% among children under five years and 90% among infants between 6-11 months. She described the nutrition programmes for children in Nepal. A school based deworming programme has been proposed to reduce anaemia. A school based health promotion and intervention study has recently been launched to improve micronutrient status among adolescent girls (IMSAG). These programmes also envisage utilizing schools and school-going adolescent girls as providers and as a source of support to community health. A Community Action Process (CAP) is proposed to enable community and families in assessing the situation of women and children. In the diet-related NCDs, obesity, smoking and alcoholism are found to be risk factors for Hypertension among the Nepalese.

Sri Lanka

Dr C G Gunaratne summarized the country report of Sri Lanka. Exclusive breast feeding was given to 55.1% of infants between 5 and 11 months of age. Goitre prevalence was 20.8% and median urinary iodine excretions ($\mu\text{g/L}$) was 145.3, with 49.5% of households receiving iodized salt. Adolescent nutrition has been focussed through school health programme, and school health reporting system. In a survey, 20% of adolescents were found to be suffering from IDA. An increasing trend of diet related NCDs has been observed during the last decade as per the registers of morbidity and mortality recorded in hospitals. Activities planned include mapping of diet related diseases, obesity prevalence, osteoporosis, nutritional risk factor survey for and nutrition of the elderly. The projected future needs of the country include vitamin A

supplementation programme and its impact and update on adolescent nutrition status.

Thailand

Dr Sangsom Sinawat presented the country report of Thailand. Nutritional problems are observed among all age groups of the Thais, PEM, micronutrient malnutrition, and diet-related diseases being the important conditions. Effectiveness of providing nutrition education, monitoring health and nutrition among all age groups of the population through nutrition development corners, day care centres, school health programmes, friend corner and nutrition clinics located in the departmental stores, through hot line and tele teaching programmes was demonstrated. Overnutrition prevention and control programmes through communication kits, and guidelines for school programmes are developed. Food based dietary guidelines are developed to prevent diet related diseases.

4. REPORT OF THE SECRETARIAT

Dr Jintana YyoungAree, INMU, Thailand, presented the report of the secretariat. The Network mechanism aims for close interaction among the rotating secretariat, and the four collaborating centres, the nine Member Countries of the South East Asian Region and the WHO clearing house (SEARO - Delhi and WHO Geneva), to achieve the objectives of identifying major regional nutrition problems, strengthening regional nutrition research-cum-action capabilities, promoting selected priority research projects and regional training programmes for nutrition research-cum-actions, exchanging experts, scientists and programme managers and information within the Region. One of the key mechanisms to achieve these objectives is to have regular meetings. So far, six network meetings have been held in various Member Countries since 1990, the seventh meeting being organized in Maldives. The main responsibilities of the Secretariat are maintaining information flow among network members; generating a Network liaison directory; promoting the objectives of the network through all available skills, and maintaining close collaborative working links with WHO/SEARO. The secretariat has been bringing out a newsletter twice a year.

Dr Rukhsana Haider requested suggestions from the participants for further improvement of the functioning of the Network and Secretariat which were collated and presented by Dr P Bhaskaram, the rapporteur.

5. RECOMMENDATIONS FOR STRENGTHENING THE NETWORK

Strengthening the Network and Secretariat

Research

- Standardized research protocols and methodologies should be developed.
- Multi-country studies on common problems in the three priority areas (of the 7th meeting) should be undertaken.
- Programme-oriented research based on country/regional priorities should be supported in Member Countries/collaborating centres.

Training/Technical assistance/Sharing knowledge and experience

- Exchange visits of active researchers between Member Countries should be facilitated.
- Training should be imparted to middle-level scientific/technical staff in the priority areas relevant to a given country's needs.
- Fellowships should be awarded to researchers possessing necessary expertise within the Region to update knowledge and research skills at collaborating centres or any other centre.

Information and communication

- Information on the genesis, objectives, and activities of the Network should be made available.
- Research information, innovative technologies, problems encountered and possible solutions evolved in research and implementing programmes among member countries should be shared.
- An Electronic database of publications/reports focussing country experiences should be created.

- An active communication network should be established between the secretariat, collaborative centres and Member Countries.
- The success stories of the Member Countries should be adequately publicized.
- Contributions of the collaborating centres during the past decade in the priority areas of nutrition research of the Region should be documented.
- The network newsletter should be circulated among the Member Countries regularly.
- A website should be created to disseminate information on the activities and achievements of the network countries and collaborating centres.

Coordination

- The WHO Regional Office should support and coordinate the activities of the network and communicate regularly with the secretariat.
- Appropriate mechanisms to support the national programmes of the Member Countries during situations of crisis should be evolved. (eg. Vitamin A supplementation programme in India).
- Network meetings should be organized at regular intervals of less than 24 months.
- The priorities and objectives of the network should be revised periodically according to changing needs.
- Arrange to have nutrition as agenda in the annual regional WHO/SEARO meetings.

Administration and finance

- The functioning of the various programmes should be evaluated periodically.
- Financial assistance should be provided to the collaborating centres to carry out programme-oriented research on problems relevant to the country and the Region.

- The objectives and priorities of the network should be revised and the terms and conditions of functioning of the secretariat clearly defined.
- The secretariat may be rotated periodically among the collaborative centres as defined in the original terms of functions of the secretariat.
- Adequate finances may be provided to the secretariat for the various activities of information dissemination and networking among Member Countries.
- Each collaborating centre should be carrying out at least one research project financed by the WHO/Regional Office.
- Methods should be evolved for better utilization of research findings, by supporting studies to assess the impact of programmes.

Follow up

- Measures should be undertaken to translate the recommendations made at the network meetings based on research results, into programmes.

6. PRIORITY AREAS FOR RESEARCH IN THE SEA REGION

The participants of the Member Countries met as three different groups to identify areas of research carried out during the past six years on priority issues in the Region having policy implications and define the agenda for future research in the three priority areas identified for the meeting.

Dr P Bhaskaram, Rapporteur, summarised the draft recommendations which received the endorsement of the participants.

Research Work having Programme Implications and Country/Countries where the Work has been Carried Out

Countries	Iron Supplement	Micronutrient Fortification	Iodine	Vitamin A	Diet	Nutrition Labelling
Bhutan	In school children		Tracking progress towards sustainable elimination of IDD			
Myanmar	Daily supplementation for pregnant mothers Twice a week supplementation for school children Weekly supplementation for school children		Salt distribution in highland areas		Assessment of glyceemic index of common foods used for control of DM and obesity using standard	
Sri Lanka	Twice a week supplementation for school children Weekly supplementation for school children		Quality assurance in salt plant	VA supplementation policy formulation and implementation		

Countries	Iron Supplement	Micronutrient Fortification	Iodine	Vitamin A	Diet	Nutrition Labelling
Thailand		Type and stability of fortificant and acceptability of fortified instant noodles Double fortification (Fe, I) of fish sauce	Instant urinary iodine kit		Food based dietary guidelines (Nutrition Flag): A tool for Nutrition Education Model of distribution of school milk programme and its impact	Defined recommended dietary intake NutriFact

- Spirulina supplementation to children, pregnant women and adults improved nutritional status with particular reference to vitamin A and iron status, and pregnancy outcome, in terms of improvement of birth weight and gestational age. Supplementation also modified the course of diet-related NCDs - India.
- Micronutrient status and impact of supplementing micronutrient assessment and energy rich food to adolescent girls in their growth and micronutrient status - India & Nepal.
- Preliminary studies assessed the efficacy of the stable preparation of double fortified salt on iron and iodine status - India.

Common regional priorities for future research (Programme oriented)

Infant and young child feeding :

- Definition of energy requirements of infants based on energy expenditure;
- Development of low cost complementary foods (home based, low cost energy dense foods, using the local indigenous resources) and test acceptability, and;
- Introduction of different intervention packages (for promotion and support in the community, to increase exclusive breastfeeding rates.

Adolescent Nutrition

- Assessment of the nutritional problems of adolescents and introduction of appropriate nutritional interventions to promote growth to improve micronutrient status and to determine the effects on work capacity.

Diet-related NCDs

- Assessment of the prevalence of NCDs in the population.
- Preparation of an inventory of phytochemical and antioxidant rich conventional and non-conventional foods among different regions of a given country.

The eighth meeting of the Network would be held during April-May 2004 in Bhutan. Nepal also offered to host the eighth meeting as an alternative venue.

Annex 1

LIST OF PARTICIPANTS

Regional Countries and collaborating centres

Bangladesh

Mr SM Zakir Hossain
Senior Assistant Secretary
Ministry of Health and Family Welfare
Bangladesh Secretariat, Dhaka
Phone: 88-02-8619728
Fax: 88-02-8619077
Email: zakhossain@yahoo.com

Dr Nasima Akhter
Assistant Director
Institute of Public Health Nutrition
Dhaka
Phone: 88-02-8821361
Fax: 88-02-8821361
Email: iphn@banqla.net

Bhutan

Mr Tshewang Rinzin
DHSSO
Samdrupjonkhar
Thimphu
Phone: 975-7-251204

Mr. Gyambo Sithey
Programme Officer, Nutrition Programme
Health Department, Ministry of Health &
Education, Thimphu
Phone: 975-2-322917
Email: gsithey@yahoo.com

India

Dr B Sivakumar
Officer-in-Charge
National Institute of Nutrition
Hyderabad
Phone: 91-40-7018083,
91-40-7008921 to 30 (10 lines)
Fax: 91-40-7019074
Email: dr_sivakumarb@yahoo.com

Prof U V Mani
Head, Department of Food and Nutrition
M.S University of Baroda
Vadodara 390 002
Phone: 0265-331961 (Res)
Phone: 0265-795526 (Office)
E-mail: uvmani@yahoo.com

Dr P Bhaskaram
Dy Director (Sr. Gr)
National Institute of Nutrition
Indian Council of Medical Research
Jamai-Osmania PO
Hyderabad 500 007
Phone: 91-40-7008921 to 30 (10 lines)
Fax: 91-40-7019074
E-mail: Pbhask@yahoo.com

Dr Chandrakant S Pandav
ICCIDD Regional Coordinator,
South Asia
C/o Centre for Community Medicine
All India Institute of Medical Sciences
New Delhi – 110 029
Phone/Fax: 011 6863522, 6553553
E-mail: cspandav@mantraonline.com
pandav@iccid.ernet.in

Indonesia

Dr Sunarno Ranu Widjojo
Director
Centre for Food and Nutrition Research
and Development
Bogor
Phone: 62-252-321763
62-251-313674
Fax: 62-251-326348
E-mail: p3gizi@indo.net.id

Dr Susilowati Herman
Researcher
Centre for Food and Nutrition Research and
Development, Bogor
Phone: 62-251-321763
Fax: 62-251-326348
E-mail: hermansu@indo.net.id

Dr Sandjaja
Researcher
Centre for Food and Nutrition Research and
Development
Bogor
Phone: 62-251-313674
Fax: 62-251-326348
E-mail: p3gizi@indo.net.id

Maldives

Ms Aminath Rasheeda
Director General, DPH
Ministry of Health
Male'
Phone: 960 32 4722
Fax: 960 31 4635
E-mail: rasheedha@dph.gov.mv

Dr Ahmed Razee
Medical Director
Ministry of Health
Male'
Phone: 960 77 1608
E-mail: drzazee@hotmail.com

Ms. Maimoona Aboobakuru
Health Information & Research Unit
Ministry of Health
Male'
Phone: 960 33 7911
E-mail: mime22@hotmail.com

Myanmar

Prof. Paing Soe
Director-General
Department of Medical Research
(Lower Myanmar)
Yangon
Phone: 095-01-284419
Fax: 095-01-251514
E-mail: dmrlowerm@mptmail.net.mm

Dr Hla Kyi
Deputy Director (Nutrition)
Department of Health
Yangon
Phone: 95-1-290891
95-1-290794
95-1-290247

Nepal

Dr B B Karki
Chief, Policy, Planning & International
Cooperation Division
Ministry of Health
Ramshahpath
Kathmandu
Phone: 262962
E-mail: bbkarki@mos.com.np

Dr Shah Hukum Deo
Director, Child Health Division
Department of Health Services
Teku, Kathumandu
Phone: 977-1-261660 (Office)
977-1-262263
Fax: 977-1-261463
E-mail: nutrition@chd.wlink.com.np

Mrs Sharada Pandey
Chief, Nutrition Section
Child Health Division
Department of Health Services
Teku, Kathumandu
Phone: 977-1-1261660 (Office)
Fax: 977-1-219218
E-mail: nutrition@chd.wlink.com.np
spandey@mail.com.np

Sri Lanka

Dr (Mrs) C D Gunaratne
Director, Nutrition
Department of Health Services
Colombo
Phone: 559250 (Office)
598140 (Res), 507607
E-mail: cdg@itmin.com

Dr Chandrani L Piyasena
Head, Nutrition Unit
Medical Research Institute
Colombo
Phone: 94-1-693532-4
Fax: 94-1-691495
E-mail: piyasena@slt.net.lk

Thailand

Dr Songsak Srianjata
Director,
Institute of Nutrition, Mahidol University,
Pathomonthon 4 Road, Salaya
Nakhon Pathom 73170
Thailand
Phone: 66-0-2441-9740 (ext 208)
Fax: 66-0-2441-9344
E-mail: directnu@mahidol.ac.th

Dr Sangsom Sinawat
Director, Nutrition Division
Department of Health
Nonthaburi 11000
Phone: 662-590-4328
Fax: 662-590-4339
Mobile: 661-846-4267
E-Mail: nutrition@health.moph.go.th

Dr Jintana Yhoung-Aree
Secretariat Office
SEA Nutrition Research-cum-Action Network
Institute of Nutrition,
Mahidol University
Puthamonthon 4 Road
Nakhon Pathom 73170
Phone: 66-0-28002380 ext: 307
Fax: 66-0-2441-9344
E-mail: nujya@mahidol.ac.th

Other UN Agencies

UNICEF

Mr Tom Bergmann –Harris
Assistant Representative
United Nations Children's Fund
Goalhi No. 14
Buruzu Magu
Male'

Mr. Mohamed Saeed
Project Officer, Health, Nutrition
Water & Environment Sanitation
United Nations Children's Fund
Goalhi No. 14.
Buruzu Magu
Male'

WHO Country Office

Dr Ei Kubota
WR Maldives
Phone: 960 322410
Fax: 960 324210
E-mail: eikubota@divehinet.net.mv

Ms Laila Ali
National Program Officer
Who, 5th Floor MTCC Tower, Male'
Phone: 960 32 2410
Fax: 960 32 4210
E-mail: laila@who.org.mv

WHO/SEARO - New Delhi

Dr Rukhsana Haider
Regional Advisor, Nutrition for
Health & Development & Food Safety
World Health Organisation
South-East Asia Regional Office
World Health House
IP Estate
New Delhi-11000
India
Phone: 91-11-337-0804
E-mail: haiderr@whosea.org

Annex 2

PROGRAMME

Tuesday, 18 June 2002

- 0900 - 0930 hrs Registration of participants
- 0930 - 1000 hrs Inaugural address by Dr. Uton Muchtar Rafei, Regional Director,
WHO, South East Asia Regional Office (WHO/SEARO)
- Introduction of participants
- Nomination of Chairperson and Rapporteur
- Announcements
- 1030 - 1230 hrs **Plenary Session I**
- Adoption of Provisional Agenda and Programme of Work
- Global Overview and Regional priorities by Dr Rukhsana Haider,
WHO/SEARO
- Follow up on the nutrition research -cum- action network by four
collaborating centres by focusing on three areas 1) update on nutrition
programmes in the area of IYCF, 2) adolescent nutrition, 3) diet related
non-communicable diseases.
- 1330 - 1500 hrs **Plenary Session II**
- Country presentations and discussions.
- 1530 - 1630 hrs **Plenary Session III**
- Country presentations and discussion (continued)

Wednesday, 19 June 2002

- 0900 - 1000 hrs **Plenary Session IV**
- Country presentations on nutrition programmes in the above three areas

- 1030 - 1230 hrs **Plenary Session V**
Country presentations continued
Mechanisms to link nutrition research to country programmes: case examples (technical requirements in the above three areas)
Draft a common plan of action for cooperative action
- 1330 - 1630 hrs **Plenary Session VI**
Group Work (identification of research conducted in the last six years having policy implications (countries to report) - 3 groups

Thursday, 20 June 2002

- 0900 - 1000 hrs **Plenary Session VII**
Working Group-final considerations
- 1030 - 1230 hrs **Plenary Session VIII**
Group Work presentation and recommendations
- 1330 - 1500 hrs **Plenary Session IX**
Finalization of Recommendations
- 1500 hrs Closing Session