

Preventing and controlling micronutrient malnutrition through food-based actions in South Asian countries¹

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Worldwide, the largest numbers of people suffering from micronutrient malnutrition live in South Asia.

Micronutrient malnutrition, especially vitamin A deficiency (VAD), iodine deficiency disorders (IDD) and iron deficiency anaemia (IDA) are serious public health problems in these countries. It is estimated that about 123 million people in Southeast Asia are at risk of vitamin A deficiency and 1.7 million are affected by xerophthalmia; 486 million are at risk of iodine deficiency and 176 million are affected by goitre; and 616 million are affected by iron deficiency or anaemia (FAO, 1997). The situation in the region is thus grave and unacceptable considering that there are methods available to address these problems effectively.

Of the four methods available for the control of micronutrient malnutrition – diet diversification, food fortification, medicinal supplements and disease control – the first two are food based. Many of the current programmes for the prevention and control of micronutrient malnutrition in the countries of the South Asian Association for Regional Cooperation (SAARC) rely too heavily on health interventions and are not fully exploiting the potential of more sustainable food-based actions. There is now a strong realization that action is urgently needed to promote and strengthen food-based actions for the prevention and control of these deficiencies. The departments of agriculture in SAARC countries, together with other departments such as those concerned with trade and industry and with education, should play a vital part in promoting and implementing these actions along with those of the health sector.

The Food and Nutrition Division of FAO, in collaboration with the International Life Sciences Institute (ILSI), has produced a manual on food-based strategies to prevent micronutrient malnutrition (FAO and ILSI, 1997). It has also developed a popular manual entitled *Improving nutrition*

through home gardening (FAO, 1995). Both of these manuals advocate and promote food-based actions as sustainable and self-reliant ways of preventing micronutrient malnutrition. The manuals have been used in workshops and seminars to identify specific food-based actions to complement ongoing health activities. These actions should be promoted as the most sustainable method of preventing micronutrient malnutrition in the various regions of the world. Since the highest concentration of people with micronutrient malnutrition is in the SAARC countries, it was thought appropriate to start the promotional activities there.

WORKSHOP ON PREVENTION AND CONTROL OF MICRONUTRIENT MALNUTRITION

As a follow-up to the International Conference on Nutrition and the World Food Summit, the Workshop on Prevention and Control of Micronutrient Malnutrition Through Food-Based Actions in the SAARC Countries was held in Dhaka, Bangladesh from 17 to 20 November 1997. The conference was sponsored by FAO in collaboration with the Thrasher Research Fund and the Micronutrient Initiative and organized by the Bangladesh Agricultural Research Council. Official delegates from Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka participated, along with representatives of national and international agencies, non-governmental organizations (NGOs) and institutions. The workshop was inaugurated by the Minister for Agriculture and Food of Bangladesh, Matia Chowdhury. Dr C. Gopalan, President of the Nutrition Foundation of India, delivered the keynote address.

Objectives

The workshop participants reviewed the various components of food-based actions and exchanged information on current programmes for the control of micronutrient malnutrition. They suggested ways and means of harmonizing ongoing programmes in other sectors (particularly in health and education) with food-based actions. The lessons learned from

¹ Adapted from the report of the Workshop on Prevention and Control of Micronutrient Malnutrition Through Food-Based Actions in the SAARC Countries, Dhaka, Bangladesh, 17-20 November 1997.

the implementation of successful programmes in the region and from other countries in Asia were discussed, and the factors that facilitate or constrain successful implementation of food-based programmes were identified. Ways to improve programme implementation and delivery were discussed. The need to strengthen the capacity of the governments, local communities and the private sector to implement food-based actions was addressed. The participants recommended ways to facilitate Technical Cooperation among Developing Countries (TCDC) in the region for the control of micronutrient malnutrition, to gain support for food-based actions and to establish a network of institutions in the participating countries for future exchange of information and as a base for technical assistance.

Discussion

The workshop discussed ways to improve nutrition through food production at the household level, including home gardening, small animal production and aquaculture. Food processing and preservation, nutrition education and food fortification were taken up as ways to raise micronutrient levels in the diet. Assessment, monitoring, surveillance and evaluation of food-based actions were discussed. Representatives of the World Bank, the United States Agency for International Development (USAID), the Thrasher Research Fund, the Micronutrient Initiative, the Asian Development Bank and the Bangladesh NGOs BRAC (formerly the Bangladesh Rural Advancement Committee) and Proshika discussed ways to attract resources at the community level for food-based actions.

The workshop participants agreed that sustainable food-based solutions are available in the SAARC countries and that actions must be accelerated to ameliorate the serious situation. These efforts would be integral parts of the global programme for control of malnutrition.

Comprehensive approach. The participants agreed that a comprehensive developmental approach including elimination of poverty, increasing food production, improving literacy (particularly of women) and provision of basic services (specifically health, hygiene and welfare) to the vulnerable populations would be required to ameliorate the problem. The workshop participants further recognized that access to safe and nutritious food is a basic right of every human being, and that overall improvement of the total diet of the population should be the goal of any food-based action. Food-based actions are sustainable, cost-effective, income generating and culturally acceptable. They can promote self-reliance and community participation and create partnership among producers, consumers and the food industry.

Farms, not pharmacies. It was noted that the majority of the world's population consumes a wholesome diet and for that reason does not suffer from micronutrient deficiencies. The participants agreed that it is necessary to look to farms and not to pharmacies for the solution of nutritional problems. Food provides a variety of nutrients and related components and their metabolic effects are different from those of a single or multivitamin pill. No cocktail of synthetic nutrients can mimic the beneficial effects of an improved diet.

Multiple strategies. The participants noted that diet diversification, food fortification, medicinal supplementation and public health measures are necessary and may be used in certain situations. Specifically, the medicinal approach is a short-term measure to be used only to correct acute conditions. On the other hand, food-based actions should cover all situations, both acute and chronic. Classifying food-based actions under long-term actions creates a sense of complacency that should be avoided. Food-based actions should be taken at all times and in all situations and must be combined with the medicinal and public health approach when they are implemented. Where possible, actions should be combined to create a synergy between the various options for the control of micronutrient malnutrition in all SAARC countries.

Recommendations

The participants made a number of recommendations to the governments of SAARC countries, NGOs and international organizations working in the field of prevention and control of micronutrient malnutrition.

- Strong initiatives need to be taken to implement the food-based nutrition interventions identified in the National Plans of Action for Nutrition of the respective SAARC countries to improve the nutritional status of the population and to ameliorate micronutrient deficiencies.
- Nutrition improvement programmes should be developed as an integral part of national development plans, and an integrated, comprehensive and holistic approach should be used. Food, care and health should be the integrated components of the programme. These programmes should be implemented with the active participation of the people and should be addressed to specific target groups, reviewed periodically and modified to meet the needs of the community.
- The extent, type, prevalence and distribution of malnutrition in SAARC countries should be documented with periodic updates to determine trends and should be kept under continuous surveillance.
- The micronutrient composition of local foods, both raw

and cooked, should be determined, with special emphasis on identifying micronutrient-rich traditional foods.

- Institutions within the region that could provide training on various aspects of the problem of micronutrient malnutrition should be identified, and collaboration among institutions within the SAARC countries should be organized for exchange of staff for training in specialized fields.
- Each country should support and promote more initiatives to increase home-level production of micronutrient-rich fruits and vegetables, small animals and fish by the target groups and should support the development of marketing outlets for the sale of surplus production by the target households.
- Home gardening should be promoted more extensively. Efforts should be made to select fruits and vegetables rich in micronutrients. Target populations should have access to high-yielding seeds and other inputs. Governments should support the development of local infrastructure in order to promote home gardening.
- Processing of fruits and vegetables should be encouraged to add value to these products. Simple processing technologies should be adapted to enable women to earn extra income, thus improving their ability to purchase other micronutrient-rich foods. Processing would make it possible to use some of the surplus during the lean season.
- Governments should promote pre- and postharvest technologies and methods to prevent wastage of fruits and vegetables and should provide adequate transportation and marketing outlets for the sale of produce.
- Nutrition education should be an integral part of all nutrition improvement programmes. An integrated and coordinated approach should be employed in the development of nutrition education messages for the public to avoid creating confusion. All available media and methods should be used and messages should be addressed to all target groups – primary, secondary and tertiary – to create a nutrition movement in each country. National universities and institutions should be involved in innovative research, and adverse propaganda by vested interest groups should be neutralized. Dissemination of authentic information collected through systematic scientific studies should be encouraged.
- A directory of institutions working in nutrition in the region should be prepared, and national capacity building – particularly for universities and national institutions of research and information, education and communication (IEC) activities – should be enhanced.
- Training of trainers on IEC techniques and methodologies should be organized in reputable institutions in the SAARC region.
- Nutrition education should be introduced in school curricula as an integral part of instruction.
- The current programme of iron and folate tablet distribution should include deworming and should encourage the regular consumption of citrus fruits to help absorb iron.
- Food-based dietary guidelines should be prepared by all SAARC countries and should encourage the consumption of micronutrient-rich foods, particularly fruits and vegetables.
- All ongoing food-based programmes in SAARC countries should be continuously monitored and kept under surveillance. Success stories should be disseminated for adoption in other countries.
- Fortification of food commonly consumed by the people should be encouraged. Steps should be taken to keep the price of the fortified food within the purchasing capacity of the target groups.
- A regulatory body to enforce quality control of fortified food should be established to prevent fraudulent practices and to protect consumers.
- A subregional network on food-based actions for prevention and control of micronutrient malnutrition should be established to exchange information and technology among the countries. FAO was asked to consider this as a top priority for funding.
- Subregional workshops should be held every one or two years to assess progress in food-based actions in SAARC countries. FAO was asked to seek collaboration with donors for the holding of such workshops.
- A regional consultation on existing, promising or adaptable technologies in the field of food processing and food fortification should be organized in the near future. ♦

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Preventing and controlling micronutrient malnutrition through food-based actions in South Asian countries

Micronutrient malnutrition, especially vitamin A deficiency, iodine deficiency disorders and iron deficiency anaemia, is a serious public health problem in South Asia, affecting millions of people. Of the four methods used to reduce micronutrient malnutrition – diet diversification, food fortification, medicinal supplements and disease control – the first two are food based. Many micronutrient programmes rely too heavily on health interventions and do not fully exploit the potential of food-based actions.

The Workshop on Prevention and Control of Micronutrient Malnutrition was held in Dhaka, Bangladesh from 17 to 20 November 1997. Representatives from Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka participated in the meeting, along with national and international non-governmental organizations and donor institutions. The participants discussed ways to improve nutrition through home gardening, small animal production and aquaculture. Food processing and preservation, nutrition education and food fortification were considered as ways to raise micronutrient levels in the diet.

A comprehensive developmental approach including elimination of poverty, increasing food production, improving literacy (particularly among women) and provision of health, hygiene and welfare services to vulnerable populations will be required to ameliorate the micronutrient problem. Food-based actions are sustainable, cost-effective, income generating and culturally acceptable. They can promote self-reliance and community participation and create partnerships among producers, consumers and the food industry.

The metabolic effects of nutrients and related components from food are different from those of dietary supplements. Food-based actions should always be taken and must be combined with medical and public health approaches when they are implemented. Where possible, actions should be combined to create a synergy between the various strategies for the control of micronutrient malnutrition in all countries of the South Asian Association for Regional Cooperation (SAARC).

Strong initiatives are needed to implement food-based nutrition interventions to combat micronutrient deficiencies. The extent, type, prevalence and distribution of malnutrition in SAARC countries should be documented periodically to determine trends, and surveillance should be continuous. The micronutrient composition of local foods should be determined. Training on micronutrient malnutrition is needed. Each country should support initiatives to increase home production of micronutrient-rich fruits and vegetables, small animals and fish. Governments should promote pre- and postharvest techniques and methods to prevent wastage and for processing of fruits and vegetables. Nutrition education should be an integral part of all nutrition improvement programmes and school curricula. All SAARC countries should prepare food-based dietary guidelines, which should encourage the consumption of micronutrient-rich foods, particularly fruits and vegetables. Fortification of common foods should be encouraged, and a regulatory body should enforce quality control of fortified food.

Prévention et contrôle de la carence en oligoéléments par le biais d'initiatives fondées sur l'alimentation dans les pays d'Asie du Sud

La carence en oligoéléments, en particulier en vitamine A, les troubles de carence en iode et l'anémie ferriprive sont de graves problèmes de santé qui touchent des millions de personnes en Asie du Sud. Sur les quatre méthodes utilisées pour faire reculer la malnutrition en micronutriments – diversification du régime alimentaire, enrichissement des aliments, suppléments médicaux et lutte contre la maladie – les deux premières reposent sur l'alimentation. De nombreux programmes d'oligoéléments font trop largement appel aux interventions sanitaires et n'exploitent pas entièrement le potentiel des initiatives basées sur l'alimentation.

L'Atelier sur la prévention et le contrôle des carences en oligoéléments s'est tenu à Dhaka (Bangladesh) du 17 au 20 novembre 1997. Des représentants du Bangladesh, du Bhoutan, de l'Inde, des Maldives, du Népal, du Pakistan et du Sri Lanka, ainsi que des organisations non gouvernementales nationales et internationales et des institutions de donateurs ont participé à cet atelier. Les participants ont examiné des moyens d'améliorer la nutrition par le biais des jardins familiaux, de l'élevage de petits animaux et de l'aquaculture. La transformation et la conservation des aliments, l'éducation nutritionnelle et les aliments enrichis ont été considérés des moyens d'augmenter les niveaux d'oligoéléments dans le régime alimentaire.

Une démarche intégrée axée sur le développement, comprenant l'élimination de la pauvreté, l'accroissement de la production vivrière, l'amélioration du degré d'alphabétisation (en particulier chez les

femmes), et la fourniture de services de santé, d'hygiène et d'action sociale aux populations vulnérables, sera nécessaire pour améliorer le problème des micronutriments. Des actions basées sur l'alimentation sont durables, efficaces par rapport au coût, sources de revenus et acceptables sur le plan culturel. Elles peuvent encourager l'autosuffisance et la participation communautaire et créer des partenariats entre les producteurs, les consommateurs et l'industrie alimentaire.

Les effets métaboliques des éléments nutritifs et des composants apparentés des aliments sont différents de ceux des suppléments diététiques. Les actions reposant sur l'alimentation devraient toujours être entreprises, et devraient être associées à des approches médicales et de santé publique lorsqu'elles sont mises en application. Lorsque les circonstances le permettent, les actions devraient créer une synergie entre les diverses stratégies de lutte contre la carence en oligoéléments dans tous les pays de l'Association sud-asiatique de coopération régionale (ASACR).

Des initiatives vigoureuses sont nécessaires pour mettre en œuvre des interventions de nutrition fondées sur l'alimentation afin de lutter contre les carences en micronutriments. L'ampleur, le type, la fréquence et la répartition de la malnutrition dans les pays de l'ASACR devraient être documentés périodiquement pour définir des tendances, tandis que la surveillance devrait être continue. Il faudrait définir la composition des aliments locaux en micronutriments et organiser une formation sur les carences en oligoéléments. Chaque pays devrait appuyer des initiatives visant à accroître la production familiale de fruits et légumes riches en oligoéléments, de petits animaux et de poisson. Les gouvernements devraient promouvoir les techniques avant et après récolte et les méthodes de prévention des pertes, ainsi que de transformation des fruits et légumes. L'éducation nutritionnelle devrait être un élément indissociable de tous les programmes d'amélioration de la nutrition et des programmes scolaires. Tous les pays de l'ASACR devraient formuler des grandes lignes de diététique fondées sur l'alimentation et encourageant la consommation d'aliments riches en oligoéléments, en particulier de fruits et légumes. Il faudrait encourager l'enrichissement des aliments courants, et un organe de réglementation devrait veiller au contrôle de qualité de ces aliments enrichis.

**Prevención y
lucha contra la
malnutrición por
deficiencia de
micronutrientes
mediante
medidas
alimentarias en
países de Asia
meridional**

La malnutrición por deficiencia de micronutrientes, especialmente la avitaminosis A, los trastornos por falta de yodo y la anemia por carencia de hierro son problemas graves de salud pública en el Asia meridional pues afectan a millones de personas. De los cuatro métodos aplicados para reducir dicha malnutrición y que son: la diversificación de la dieta, el enriquecimiento de los alimentos, los complementos medicinales y la lucha contra las enfermedades, los dos primeros se basan en los alimentos. Muchos programas de micronutrientes guardan una dependencia demasiado fuerte de intervenciones sanitarias y no aprovechan de lleno las posibilidades de las medidas de carácter alimentario.

El seminario sobre prevención y lucha contra la malnutrición de micronutrientes tuvo lugar en Dhaka, Bangladesh del 17 al 20 de noviembre de 1997. En la reunión participaron representantes de Bangladesh, Bhután, la India, Maldivas, Nepal, Pakistán y Sri Lanka, y de organizaciones no gubernamentales nacionales e internacionales e instituciones donantes. Los participantes debatieron los modos de mejorar la nutrición mediante la horticultura doméstica, la producción de animales menores y la acuicultura. Como medios para elevar los niveles de micronutrientes en la dieta se consideraron la elaboración y conservación de los alimentos, la educación nutricional y el enriquecimiento de los alimentos.

Para combatir la carencia de micronutrientes hará falta un enfoque desarrollista que incluya la supresión de la pobreza, el aumento de la producción de alimentos, la mejora de la alfabetización, especialmente entre mujeres, y la prestación de servicios sanitarios, higiénicos y de bienestar a las poblaciones vulnerables. Las medidas que se basan en alimentos son, además de sostenibles, rentables económicamente, generadoras de ingresos y culturalmente aceptables. Pueden fomentar la autoconfianza y la participación comunitaria y crear un espíritu de colaboración entre productores, consumidores y la industria alimentaria.

Los alimentos aportan nutrientes y componentes afines cuyos efectos metabólicos son diferentes de los complementos alimentarios. Deben siempre tomarse medidas de base alimentaria, que han de conjugarse con enfoques de carácter médico y de sanidad pública. En lo posible, dichas medidas deben combinarse para

crear una sinergia entre las varias estrategias para el control de la malnutrición por carencia de micronutrientes en todos los países de la Asociación del Asia Meridional para la Cooperación Regional (SAARC).

Hacen falta iniciativas para aplicar intervenciones de nutrición de base alimentaria a fin de mejorar las deficiencias de micronutrientes. Deben comunicarse periódicamente el grado, el tipo, el predominio y la distribución de la malnutrición en los países de la SAARC para determinar las tendencias, debiendo ser constante la vigilancia practicada. Debe determinarse en micronutrientes la composición de los alimentos del lugar. Es necesario formar a la gente sobre la malnutrición por carencia de micronutrientes. Cada país debe apoyar iniciativas encaminadas a aumentar la producción doméstica de artículos ricos en micronutrientes, como frutas y hortalizas, animales menores y pescado. Los gobiernos deben fomentar las técnicas previas y posteriores a la cosecha y los métodos para impedir los desperdicios y elaborar las frutas y hortalizas. La educación nutricional debe formar parte integrante de todos los programas de mejora nutricional y de los planes de estudio de las escuelas. Habrán de prepararse directrices dietéticas de base alimentaria en todos los países SAARC, que a su vez deberán fomentar el consumo de alimentos ricos en micronutrientes, especialmente frutas y verduras. Habrá de fomentarse el enriquecimiento de alimentos comunes y debe haber un órgano regulador que haga cumplir el control de calidad de los alimentos enriquecidos. ♦