Nutriview

2008/1

A quarterly newsletter on the role of micronutrients in nutrition and health for health-care professionals and science communicators

Editorial:
Save the children

In the movies, whenever a catastrophe is imminent, they usually try to save the women and children first. Why isn't it like that in real life as well? In many cultures, women and children take second place after the men. This often means that, when a family is poor, girls in particular are not given a proper education, and do not have enough nutritious food to eat. Malnourished girls with no schooling will almost certainly grow into malnourished young women, most likely become malnourished mothers, and have malnourished babies. It should therefore make sense to all of us that we can only break through this vicious circle and improve the health and economic capabilities of future generations if women enter pregnancy with an adequate nutritional status, and care for their infants properly.

As this knowledge has, so far, not resulted in the implementation of efficient action as required, it is a good sign that one of the world's leading medical journals, The Lancet, has given a group of nutrition scientists from North and South America, Europe, Africa and Asia (The Maternal and Child Undernutrition Study Group) an opportunity to draw greater attention to the problem. They call on countries' nutrition leaders to use their limited resources wisely, and to ensure that priority is given to interventions with a proven effect in pregnant women and children younger than two years of age. You can find more information about the Lancet Special Series in this issue of Nutriview.

Many organizations (including the WHO, WFP, UNICEF, CDC and MI) support staple food fortification as an efficient and low-cost measure to increase micronutrient intakes in populations. It has already been shown that food fortification is an effective way to increase folate levels in women of childbearing age before conception, and so reduce malformation risks in their infants. Following exclusive breastfeeding, fortified complementary foods can also help to improve nutritional status in infants older than six months, as shown in Ecuador. The deadline for reaching the Millennium Goals is approaching too fast for complacency. In the year 2008 it is essential that countries start more efficient efforts in nutrition to ensure global development.

A. Bowley

Introducing:
New Editorial Board Members

As announced in Nutriview 2007/4, the following distinguished scientists have joined the Editorial Board of Nutriview as of January 1, 2008.

Noel W. Solomons

Noel W. Solomons M.D. received his Medical Doctor degree from Harvard Medical School in 1970. He completed clinical residency training and specialty training in infectious diseases at the University of Pennsylvania in Philadelphia from 1970 to 1973, followed by a clinical fellowship in gastroenterology and clinical nutrition at the University of Chicago in 1973-74. He first took up residence in Guatemala in 1975, and this continues to be his professional base of operations to the present date.

He joined the Institute of Nutrition of Central America and Panama as an Affiliated Investigator in 1975. This appointment was coterminous with a term on the faculty of the Department of Nutrition and Food Science of the Massachusetts Institute of Technology. In 1985, he ended his INCAP and MIT affiliations and co-founded the Center for Studies of Sensory Impairment, Aging and Metabolism (CeSSIAM) in Guatemala. He continues as the Scientific Director of the Center to the present date.

He has participated internationally as a visiting professor, teaching nutritional biochemistry and nutrient requirements in three different decades for incipient community nutrition training programs. In the 1980s, the site was the Federal University of Rio de Janeiro in Brazil; in the 1990s, the University of Jakarta in Indonesia; and in the present decade, the National Agricultural University "La Molina" in Peru.

He is a member of the antecedent societies of what is now the American Society of Nutrition since 1974, and a member of the Latin American Nutrition Society (SLAN) since 1978. He has served on a number of committees and task forces of the International Union of Nutritional Sciences including those on Nutrition and Aging, Nutrition and Urbanization, and Diet, Nutrition and Long-term Health, serving as the chair of the latter two.

Dr Solomons' research interests include physiology of micronutrient metabolism, nutritional

status assessment, and public health and community nutrition. Vitamin A and trace elements (iron and zinc) are the micronutrients of interest. Interactions of nutrition with infection and through the lifespan, including aging and chronic disease, constitute the epidemiological and public health focus. He has over 500 scientific publications to his credit. This includes two books, 149 book chapters, and contributions to various supplements and compendiums

His honors include, among others, the Kellogg prize in International Nutrition (1996), the International Union of Nutrition Sciences Award (1997), and the Spanish Community Nutrition Award in International Nutrition (2006).

He brings to Nutriview the experience of participation on the editorial boards of Sight and Life Magazine, Nutrition Reviews and Nutrition Research Reviews, in addition to present or past editorial board membership of 12 scientific journals of original research.

Omar Dary

Omar Dary is a Guatemalan biologist who obtained his PhD degree in biochemistry from the University of California, Riverside, in 1989.

After returning to Guatemala in 1990, he joined the Institute of Nutrition of Central America and Panama (INCAP), where he was in charge of the nutritional biochemistry and food composition laboratories until 2002. Then, he moved to the United States to become the Food Fortification Specialist at the USAID-sponsored micronutrient program named MOST and its subsequent (current) project A2Z, as a staff member of the International Science and Technology Institute (ISTI) and the Academy for Educational Development (AED), respectively.

For the last 18 years, Dr Dary has been involved in the design, policy making, implementation, supervision and monitoring, and evaluation of nutritional initiatives aimed to prevent and reduce micronutrient deficiencies in developing countries. He has focused his attention in food fortification as a public health measure, always searching for creating positive complementary partnerships among the private, public, academic and consumer protection sectors for ensuring the programmatic success, safety and effectiveness of this strategy. He has also participated in devising and assessing new tools and procedures to measure the population and biological impact of several nutrition interventions, as well as to enforce food regulations under the limited resource conditions that are usual in developing countries.

He has provided technical assistance to food industries and governments in more than 30 countries. He contributed to the strengthening and reactivation of the salt iodization programs of Guatemala, Honduras, El Salvador and Nicaragua; the improvement and implementation of sugar fortification with vitamin A in the same countries plus Zambia; the introduction of cooking oil fortified with vitamin A in Uganda; and the optimization of wheat flour fortification with multiple micronutrients in the seven countries of the Central American isthmus, Jordan and Palestine (West Bank and Gaza). His practical knowledge and understanding in the area of food fortification has been requested by Bangladesh, Bolivia, Cambodia, Chile, Colombia, the Dominican Republic, Ecuador, Ethiopia, Guinea, India, Malawi, Mexico, Nepal, Nigeria, the Philippines, South Africa, Ukraine, Venezuela, Vietnam and ECSA (the East, Central and Southern Africa Health Community).

Dr Dary has served as a consultant and advisor on his areas of expertise for WHO, UNICEF, FAO, PAHO, CDC, GAIN, HKI, ILSI and the Micronutrient Initiative. He is a member of the Micronutrient Forum (previously known as the Steering Committee of the International Vitamin A Consultative Group, IVACG). He is also a member of the International Zinc Consultative Group (IZiNCG), the Latin American Nutrition Society (SLAN) and the American Society of Nutrition (ASN). He has summarized his experience in nutrition programs in several articles, manuals and book chapters, including key references in the field of public health nutrition such as WHO/FAO Guidelines on Food Fortification with Micronutrients; PAHO Nutrition and Active Life: From Knowledge to Action; and the Sight&Life book on Nutritional Anemia.

N. Solomons and O. Dary

Feature:

The Lancet calls for more nutrition efforts

On January 16, 2008, the medical journal The Lancet launched its special, five-part series on maternal and child undernutrition at the Science and Media Centre in London. The launch was chaired by The Lancet editor Dr Richard Horton and included short presentations on each of the papers.

In his opening comment, Dr Horton summarized the themes of the series, and called on agencies, donors and political leaders to step up to the challenge, saying that the reasons for neglecting maternal and infant nutrition may be understandable but are not justifiable. He reminded listeners that undernutrition is the largely preventable cause of over a third of all child deaths. Stunting, severe wasting and intrauterine growth restriction are among the most important problems. Corrective actions must be prioritized between conception and 2 years of age. Discussing interventions in the battle against undernutrition, such as breastfeeding counseling, vitamin A supplementation and zinc fortification, he noted that they still need additional programmatic experience about how to achieve full coverage.

He called for long-term investments in education, economic, social and political empowerment of women as full and equal citizens, saying that this is the only way to deliver sustainable improvements in maternal and child nutrition, and in the health of women and children more generally. According to Dr Horton, the compelling logic of the scientific evidence presented in the series is that governments need national plans to scale-up nutrition interventions, systems to monitor and evaluate those plans, and laws and policies to enhance the rights and status of women and children. He was adamant that, although complex and fraught with political disagreement, none of these solutions are separable from global treaties and negotiations over trade, agriculture, and poverty reduction.

In his closing remarks, Dr Horton said: "This latest Lancet series concludes, not surprisingly perhaps, that the international nutrition system is broken. Leadership is absent, resources are too few, capacity is fragile, and emergency response systems are urgently needed".

A massive mortality and disease burden

The authors of the first paper in the series [1] note that maternal and child undernutrition is highly prevalent in low-income and middle-income countries. It is responsible for more than one third of child deaths and 11% of the total disease burden worldwide. They estimate that, in 2005, stunting, severe wasting and intrauterine growth restriction were responsible for more than two million deaths and one fifth of disability-adjusted life years (DALY: approximately one lost year of "healthy" life) in children less than five years old; deficiencies of vitamin A and zinc were each responsible for 6% of DALY. Suboptimal breastfeeding was responsible for 1.4 million deaths and 10% of DALY in children less than five years of age.

They conclude that the high mortality and disease burden resulting from these nutritional factors make a compelling case for the urgent implementation of nutrition-related interventions. Key areas where further research is required include: assessment of nutritional status and its determinants; prevalence of micronutrient deficiencies in populations; consequences of nutritional deficiencies for mortality from HIV/AIDS, malaria, tuberculosis and other infectious diseases; consequences of nutritional deficiencies on immune systems, brain development and cognitive ability; overlap of micronutrients and their joint effects on mortality and disease; development of international fetal and newborn growth standards.

Huge negative consequences in later life

The authors of the second paper [2] analyzed the association between maternal and infant undernutrition with human capital and risk of adult diseases in low-income and middle-income countries, focusing on five long-standing studies in Brazil, Guatemala, India, the Philippines and South Africa. They showed that indicators of undernutrition (maternal height, birth weight, intrauterine growth restriction, and the child's weight, height, and body-mass index [BMI]) at age two years were related to adult outcomes (height, schooling, income/assets, offspring birth weight, BMI, glucose concentrations, blood pressure). The strongest associations with undernutrition were found for shorter adult height, lower levels of schooling, reduced economic productivity and, for women, lower offspring birth weight.

Further, the authors found that children who are undernourished in the first two years of life, and who put on weight rapidly later in childhood and in adolescence are at an increased risk of chronic diseases related to nutrition, such as high glucose concentrations, hypertension and elevated levels of harmful fats in the blood. But they found no evidence that rapid weight gain or height gain in the first two years of life increases

EVENTS:

First International Congress on Nutrition and Cancer, May 19-23, 2008, Antalya, Turkey.

Attendance at this conference will be an efficient way to keep current in a rapidly changing field. Sessions will be devoted to oxidative stress and inflammation; nutrition, physical activity and obesity; nutrigenomics; epigenetics; chemoprevention.

For more details please contact Kazim Sahin_Fırat Üniversitesi Veteriner Fakültesi_Elazı, Turkey (e-mail:nsahinkm@yahoo.com) or Omer Kucuk, Karmanos Cancer Institute, Wayne State University 4100 John R, 4-HWCRC Detroit, MI 48201 USA (e-mail:kucuko@karmanos.org).

4th International Conference on Trace Element Speciation in Biomedical, Nutritional and Environmental Sciences May 25–29, 2008, Munich, Germany

Despite advances in instrumentation, methods, standardization and legislation, there are still many problems in the field of chemical speciation that remain unsolved and many questions are still not answered. For example, molecular detection techniques greatly improved the reliability of species identification. However, matrix effects, low concentrations or the instability of element species are preventing the successful application of these techniques in many cases.

[continued on page 5]

the risk of chronic disease, even in children with poor fetal growth. Height for age at two years was the best predictor of the child's future economic productivity (human capital).

The authors conclude that nutritional damage incurred in infancy leads to life-long impairment, and might also affect future generations. Damage prevention will probably bring about important health, educational and economic benefits. At the same time as investments are made against undernutrition, middle-income countries undergoing the nutrition transition should also address the negative consequences of rapid weight gain, especially in later childhood.

Interventions could lower mortality

Implementation of appropriate nutrition-related interventions, such as breastfeeding promotion and vitamin A supplementation, could significantly lower infant mortality, say the authors of the third paper [3]. They reviewed support strategies to promote breastfeeding, complementary feeding, micronutrient supplementation, family and community nutrition, and reduction of disease burden. They found that breastfeeding has a significant impact on survival, complementary feeding interventions lead to significant improvements in height, and management of severe malnutrition using WHO guidelines can significantly reduce infant mortality.

Supplementation with iron and folate during pregnancy has increased blood hemoglobin levels at term; supplementation with multiple micronutrients reduced the risk of low birth weight at term by 16%. The authors recommend vitamin A supplementation in the neonatal and late infancy periods, preventive zinc supplements, iron supplements in non-malaria-endemic areas, and universal promotion of iodized salt.

They estimate that universal coverage with nutrition interventions in the 36 countries with the highest burden of undernutrition could prevent almost a quarter of deaths in children under 3 years of age, reduce stunting at 36 months by 36% and avert 60 million DALY. However, they add that, for the elimination of stunting, long-term investments to improve education, economic status, and empowerment of women are also needed.

They conclude that attention to the continuum of maternal and child undernutrition, prioritized globally and within countries, is essential for attainment of several of the Millennium Development Goals.

A crucial window of opportunity

The authors of the fourth paper [4] address seven key challenges for addressing undernutrition at a national level: getting nutrition on the list of priorities; keeping it there; doing the right things; not doing the wrong things; acting at scale; reaching those in need; evidence-based decision making; building strategic and operational capacity. They strongly recommend that countries should rapidly implement interventions with proven effectiveness at scale. The period from conception to 24 months of age is a crucial window of opportunity for reducing undernutrition and its adverse consequences. Program efforts, as well as monitoring and assessment, should focus on this segment of the continuum of care.

The paper looks at the situation in Latin America where some countries have experienced a large drop in stunting, underweight and wasting, and in China, where a multisectoral approach has seen rapid nutritional improvement. The authors caution that, in addition to health and nutrition interventions, countries should implement economic and social policies to address poverty, trade and agriculture that are associated with rapid improvements in nutritional status. There is a reservoir of important experience and expertise in individual countries about how to build commitment, develop and monitor nutrition programs, move toward acting at scale, reform or phase-out ineffective programs, and other challenges. This resource needs to be formalized, shared, and used as the basis for setting priorities in problem-solving research for nutrition.

Their conclusion: 80% of the world's undernourished children live in just 20 countries. With intensified nutrition action in these countries the first Millennium Development Goal could be achieved and the chances of achieving the fourth and fifth goals increased. The charge to countries' nutrition leaders is to review existing strategies and programs to ensure that priority is given to interventions with a proven effect in pregnant women and children younger than two years of age, and then to develop feasible strategies for increasing public demand for these interventions and delivering them at scale.

A system in need of reform

The international nutrition system, made up of international and donor organizations, academia, civil society and the private sector, is fragmented and dysfunctional, and needs reform, say the authors of the fifth and final paper [5]. Instead of being bound loosely together by financial, intellectual and personal linkages, as it is, the system should deliver in four functional areas: stewardship, mobilization of financial resources, direct provision of nutrition services at times of natural disaster or conflict, and human and institutional resource strengthening.

Recurrent themes in their analysis are fragmentation, lack of evidence for prioritized action, institutional inertia, and failure to join up with promising developments in parallel sectors. Many problems are systemic within

[*continued from page 4*]
The main aim of the conference is to initiate interdisciplinary discussions about novel research results, about current problems and needs, and about future developments.
For more information, please see the conference web site: http://www.helmholtz-muenchen.de/spec/ or contact Mrs T. Reile, INTERPLAN Congress, Meeting & Event Management AG, Albert-Rosshaupter-Strasse 65, D-81369 München, Germany. E-mail: speciation@interplan.de;

Advances in antioxidants: molecular mechanisms, nutritional and clinical aspects. The 5th international meeting on trace elements, vitamins and polyphenols, October 11–15, 2008, Monastir/ Sousse, Tunisia.

Organized by the Association Tunisienne d'Etude et de Recherche sur les Eléments Trace (ATERET), the Trace Element-Institute for UNESCO (Lyon), the Société Francophone d'Etude et de Recherche sur les Eléments Trace Essentiels (SFERETE) and the Federation of European Societies on Trace Elements and Minerals (FESTEM).
For further details please refer to the website: www.trace-element-tunisia.com (under construction) or contact the Chairman of the Organizing Committee Dr Abdelhamid Kerkeni (e-mail :ofabdelhamid.kerkeni@fmm.rnu.tn)

organizations in the field. The authors feel that the funding provided by international donors to combat undernutrition is grossly insufficient, poorly targeted, and inappropriately dominated by food aid and technical assistance as defined by the donor rather than jointly with the recipient. Much more investment is needed to develop human and institutional capacity for nutrition in low-income and middle-income countries.

They suggest five priority areas for action to create a much stronger international nutrition system (Table 1), and conclude that the moment is ripe for these reforms. Implementation would make undernutrition politically more prominent, and offer the chance of a better, more productive life to the 67 million children born each year in the countries most severely afflicted.

Table 1: Strengthening the international nutrition system

What is needed	How it can be done
A common vision and mission	Create an organizational structure that enhances cooperation and effectiveness
Concentration on priority actions	Make United Nations agencies accountable to the Standing Committee on Nutrition for what they do
Less duplication of interventions	Coordinate projects of parallel organizations
Capacity strengthening in high-burden countries	Commit realistic funds for training, technical assistance for institutional reform and budget support
Research leadership	Call on journal editors to develop an effective strategy, on major donors to clarify their goals, on researchers in high-income countries to help scaling up of projects

References

1. *Black RE, Allen LH, Bhutta ZA, et al. Maternal and child undernutrition: global and regional exposures and health consequences. Lancet 2008; 371: 243–260.*
2. *Victora CG, Adair L, Fall C, et al. Maternal and child undernutrition: consequences for adult health and human capital. Lancet 2008; 371: 340–357.*
3. *Bhutta ZA, Ahmad T, Black RE, et al. What works? Interventions for maternal and child undernutrition and survival. Lancet 2008; 371: 417–440.*
4. *Bryce J, Coitinho D, Darnton-Hill I, et al. Maternal and child undernutrition: effective action at national level.*
5. *Morris SS, Cogill B, Uauy R. Effective international action against undernutrition: why has it proven so difficult and what can be done to accelerate progress?*

This report is based on the text released by the press officer of The Lancet in January 2008. The papers in the Lancet series from the Maternal and Child Undernutrition Study Group were published on-line on January 17th 2008, and can be accessed at http://www.thelancet.com/online/focus/undernutrition

Feature:

Nutrition project for migrant workers' children launched in Beijing

On December 13, 2007, the Chinese Center for Disease Control and Prevention (Chinese CDC) officially launched the project "Nutrition Improvement for Migrant Workers' Children". The Nutrition Improvement Program (NIP) of DSM Nutritional Products Ltd and the China National Cereals, Oils & Foodstuffs Corporate (COFCO) also attended the launching ceremony at the Dandelion middle school in a southern suburb of Beijing.

Most of the Dandelion school students are from the south of China, where rice is the main staple. Because of this, DSM Nutritional Products, as a major supporter of the project, has donated 40 tons of enriched rice (NutriRice®) for the 8-month intervention. The project has received considerable attention and support from public and international organizations, and other companies

Students collect their school lunch with fortified rice

actively participate as partners, providing various kinds of enriched food free of charge.

A growing target group in cities

Between 1978 and 2004, the urban population in China increased from 170 million to 540 million. Now more than 40% of Chinese live in cities, and migrant workers have become an important sector of the urban population. Research has shown that the living conditions of migrant workers, and their children's education leave much to be desired. The problem continues to grow as more and more people leave their homes in rural areas to look for work in the cities. It has therefore become an urgent matter to improve nutrition in migrant workers' families.

Dandelion middle school (with around 600 students) is the only middle school for the children of migrant workers in Beijing. A baseline survey conducted in the school showed that micronutrient malnutrition is very common among students. Chinese CDC experts therefore encouraged the development of an intervention trial to find a sustainable way to resolve students' nutritional deficiencies. This led to the initiation of the project "Nutrition Improvement for Migrant Workers' Children".

A representative of the Chinese CDC told participants at the launching ceremony: "Improving the nutritional status of migrant workers and their children, and raising society's awareness about the issue of public nutrition is a long and arduous task. To reach a solution, we need more support from companies whose professional expertise and innovative products can help to foster the development of public nutrition and raise the nation's overall quality of life."

DSM Nutrition Improvement Program, China

NutriRice®: a revolutionary new technology

The enrichment of rice presents numerous technical problems. Micronutrients cannot simply be added to the kernels, because they do not stay where they are needed. The traditional soaking and rinsing of rice with water prior to cooking removes most of the added nutrients. In the past, addition of reconstituted, fortified rice kernels to normal rice has proved unsatisfactory, because consumers perceived the added kernels as a 'contamination', and removed them. Efforts to develop rice varieties with higher micronutrnt levels are still at an early stage.

To overcome the difficulties involved in rice enrichment, DSM and Buhler have developed NutriRice®. This innovative technology mixes encapsulated micronutrients with low-cost broken rice obtained as a by-product of milling, and reconstitutes rice kernels by hot extrusion. The fortified kernels look, taste and behave exactly like normal rice. The nutrients embedded in the kernel are efficiently protected from external influences during storage, washing and cooking, so that the cooked rice delivers up to 95% of the micronutrients added. Kernels can be made to customers' specific requirements of shape, color and nutrient content. To ensure that the enriched rice contains appropriate amounts of the vitamins and minerals needed for good health, NutriRice® kernels (1–2%) are mixed with ordinary rice. The result is a low-cost food of excellent nutritional value and physical stability that is indistinguishable from non-fortified rice.


Cooked fortified rice

News in brief:

Fortified complementary food in Ecuador highly effective

The National Food Nutrition Program (PANN 2000) in Ecuador, which includes a micronutrient-fortified, precooked complementary food, Mi Papilla, is administered by the Ministry of Public Health, and targeted at infants and young children living in poor communities, and receiving government health services. To evaluate the effect of the program, Lutter et al. [1] compared dietary intake, micronutrient status and growth over 11 months in a cohort of children from PANN 2000 catchment areas with same-aged children in nearby communities eligible to enter the program in the following year.

Children enrolled in the program when they were 9–14 months old (about 300 in each group). PANN 2000 children consumed significantly more energy, protein, fat, iron, zinc, vitamin A and calcium than control children as a result of eating the fortified food. Anemia fell from 76% to 27% in PANN 2000 children, but only to 44% in controls. The odds of being anemic for PANN 2000 children were 58% lower than for controls. Effects on linear growth and weight were limited to PANN 2000 children who were older than 12 months when the program began. They were significant for weight, and positive, but not significant, for length.

The authors conclude that a micronutrient-fortified complementary food, including ferrous sulfate, and delivered through public health services during a critical period of growth and development, is highly effective in improving weight and hemoglobin, and in reducing anemia.

1. Lutter CK, Rodriguez A, Fuenmayor G, et al. Growth and micronutrient status in children receiving a fortified complementary food. J Nutr 2008; 138: 379–388

Fortified maize meal improves refugees' nutrition status

Seal et al. [1] measured the effect of eating fortified maize meal in 118 women, 212 adolescents and 157 children less than five years of age, who lived in a refugee camp in Zambia. Observations indicated that maize meal contributed about two-thirds of dietary energy in participating households. The maize was milled at a central location in the camp and fortified with vitamin A, thiamin, riboflavin, niacin, vitamin B6, vitamin B12, folic acid, iron and zinc. Each participant received 400 g fortified meal twice a month as part of the routine food ration.

After six months' consumption, hemoglobin levels had increased significantly in children and adolescents, but not in women. A significant reduction in anemia prevalence was seen only in children. In adolescents, fortified maize meal reduced vitamin A deficiency by about 26%; it improved iron status without significantly reducing iron deficiency.

The authors conclude that centralized, camp-level milling and fortification of maize meal is a feasible and pertinent intervention in food aid operations.

1. *Seal A, Kafwembe E, Kassim IAR, et al. Maize meal fortification is associated with improved vitamin A and iron status in adolescents and reduced childhood anaemia in a food aid-dependent refugee population. Public Health Nutr 2007. Published online by Cambridge University Press 21 Dec 2007.*

Micronutrient Initiative moves Africa regional operations to Senegal

With the success of ongoing micronutrient programs in South Africa, the Micronutrient Initiative (MI) has decided to shift its Africa regional operations to Senegal, a country of increasing programmatic importance within the new MI strategic plan and direction. Following consultation and analysis, the MI Executive Management Committee has determined that the Africa regional operations will transition from Johannesburg, South Africa to Dakar, Senegal, beginning in March 2008. The current Africa regional office in Johannesburg will remain open until the end of April 2008 as part of a phased transition of program, finance and administrative functions.

The new office will be located at Cité Alima Sipres 2 No. 6, Face VDN, in Dakar. The new telephone information will be provided on the MI website at <www.micronutrient.org> before the Dakar office opens. The new MI Regional Director for Africa, John McCullough, will join MI in the Dakar office on March 4. He comes to MI with academic qualifications in economics and quality management, and a strong background in international development programs in health and education, strategic planning, partnerships, institution building and performance management. His last position was Managing Director of Liverpool Associates in Tropical Health Ltd (LATH) based in Liverpool, UK. John has previously lived and worked in Francophone West Africa and North Africa and was recently involved in projects in Kenya, Malawi, Mozambique and Nigeria.

From the new regional office in Dakar, MI will continue to work with its many highly valued partners throughout Africa.

Photos: DSM Nutritional Products, O. Dary; graphics: N. Solomons

Published by DSM Nutritional Products Ltd, Nutrition Improvement Program, Basel, Switzerland. Opinions expressed are those of the authors, and are not necessarily shared by the publisher. Unless otherwise stated, information published in Nutriview may be reproduced without permission provided that proper credit is given. Please send contributions and correspondence to the Editor, Anthony Bowley, La Vuardaz 56, CH-1473 Châtillon, Switzerland (Email: nutriview@bluewin.ch).
Scientific advisers: Dr Ricardo Uauy, Professor of Human Nutrition, Institute of Nutrition and Food Technology, University of Chile, Casilla 138-11, Santiago; Dr Noel W Solomons, Director, Center for Studies of Sensory Impairment, Aging and Metabolism (CeSSIAM), Guatemala City; Dr Omar Dary, Food Fortification Specialist, USAID Micronutrient and Child Blindness Project A2Z, Washington DC.
Coordinator: Hector Cori, Scientific and Technical Director, Nutrition Improvement Program, DSM Nutritional Products Ltd, Switzerland.
Internet: http://www.nutritionimprovement.com/nutriview.html

DSM