

Nestlé Foundation for the Study of Problems of Nutrition in the World

Annual Report 2002

Homage to Dr. Beat Schürch, Director of the Nestlé Foundation

Dr. Beat Schürch, Director of the Nestlé Foundation, passed away, aged 62, on 6th September 2002 due to illness. For twenty-three years, Dr. Schürch greatly contributed to the international renown of the Nestlé Foundation. From 1979, he was the main artisan of the new orientations and activities of the Foundation. Created in 1966, the Nestlé Foundation concentrated its activities from 1967 to 1979 on nutritional research in Ivory Coast. After the nomination of Dr. Schürch, the Foundation's activities started to gain an international scope by initiating and financing nutritional research work in collaboration with scientists from developed and developing countries. This new policy is illustrated by the fact that more than 110 nutrition research projects, were carried out in thirty-five developing countries during the last ten years.

After studying medicine at the University of Berne, Dr. Schürch became interested in medical pedagogics and produced many documents, television programs and films for furthering medical education. He secured a doctorat in pedagogy and psychology at the University of Syracuse in the United States and was the Head of the Instructional Development and Evaluation Unit of the University of Texas Medical School at Houston from 1975 to 1979. After returning to Switzerland in 1979, he became the Director of the Nestlé Foundation. Dr. Schürch was also active in various international institutions. In particular, he was the Executive Secretary of the International Dietary Energy Consultative Group for fourteen years and as such organised many workshops and edited numerous supplements to international journals on subjects related to nutritional education, the effects of malnutrition on children's motor and cognitive development, the mechanisms responsible for children's growth retardation and the physiological consequences of chronic energy deficiency in adult man. One of the last topics was the causes and consequences of intrauterine growth retardation: an issue of particular importance to developing countries where many infants are born with low birth weight.

A field in which Dr. Schürch especially worked was the relationship between malnutrition and the motor and mental development of infants. He was very interested in studying the best nutritional strategies to counteract the delays in growth and mental development that are frequently found in undernourished children. The Nestlé Foundation funded a large trial in Indonesia, in which the relationships between nutrition, growth, motor and mental development of young children receiving two kinds of supplements were investigated. The study threw new insights into the mechanisms leading to the poor cognitive outcomes of undernourished children. Furthermore, the study showed that providing a supplement to these children had wide-ranging beneficial effects on their growth and physical activity, as well as on their motor and mental development.

Thanks to his medical background and his vast knowledge on human nutrition, Dr. Schürch enabled many researchers from developing countries to initiate and carry out research projects in human nutrition. He devoted a lot of time to help these researchers in all the different stages of a project, from the first ideas through to its fruition and the publication of the results in an international journal. Following the announcement of his death, we received a large number of messages of sympathy from people from many countries. These messages mention the generous and competent help that Dr. Schürch gave to these researchers; they show, better than we ever could have, the extraordinary international scope of Dr. Schürch and the huge network of international collaboration that he created and developed during his career.

Dr. Schürch leaves us with the memory of an upright scientist passionate about his work. Of a reserved temperament, he did not take centre-stage, but worked discreetly and efficiently to promote nutritional research in poor countries. His main aim was to help the disadvantaged and he did not spare any effort in bringing financial, scientific and also human support to a large number of colleagues. He was taken far too early following a serious illness accepted with exemplary courage. We keep a wonderful memory of a foremost scientist, a humanist, a connoisseur of modern art and a friend on whom all could rely. We send our sincere condolences to his wife Vinita and to his son Alex.

Eric Jéquier

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President's message

The Nestlé Foundation's mandate is to contribute to making the nutrition of populations in developing countries better. The main activities of the Foundation are the promoting and the financing of nutritional research, which in turn will make the necessary interventions as efficient as possible. The nutritional deficiencies which are brought to light are often region or country specific and they involve primarily young children, pregnant or breast-feeding women and old people. The aim of the research projects is to identify the causes of these nutritional deficiencies as well as the physiological and pathological mechanisms involved. On the basis of the information received, specific nutritional interventions are put in place with a precise evaluation of the results thereby obtained.

It would be preferable for developing countries to establish their own priorities regarding nutritional research with the help of trained and competent scientists. However, this is not the case in many of the countries in which people suffer from malnutrition: the human, scientific and technological resources are insufficiently developed. It is mostly universities or research institutes from developed countries that carry out research projects concerning developing country nutrition problems. These institutes propose projects in collaboration with developing country scientists, thus enabling the transfer of scientific and technological knowledge to the countries involved. It is of course necessary, as a first step, to improve the scientific and technological capacities of the institutes in developing countries, but we believe that this is not enough. The ideal goal for our Foundation would be to create conditions wherein the institutes of the countries involved could take care of their own nutritional research and apply the appropriate solutions.

It is with this in mind that the Nestlé Foundation invited 15 Nutrition Institute Directors from Africa, Asia and South America to a four-day workshop in Vevey in April 2002. The main issue of this meeting was to find out why scientists from developing countries seldom apply for a research grant from the Nestlé Foundation. This meeting was successful as shown by the several research projects conceived and conducted by scientists from Vietnam, Indonesia, China, Uganda and Senegal which were launched short after it. Moreover, two postgraduate training programmes in human nutrition are being studied and will be started at the Cheikh Anta Diop University (Senegal) and the Makerere University (Uganda). Following this initiative, the number of new research projects submitted to us has greatly increased. From 23 projects in 2000 and 26 in 2001, the amount shot up to 45 in 2002. Only the best projects that correspond to our criteria of scientific quality, public health relevance and capacity building, are considered by the Foundation's Council.

We were sad to lose the Director of the Foundation, Dr. Beat Schürch, who died on 6th September 2002 due to illness. For 23 years, Dr. Schürch greatly contributed to the international scope of the Nestlé Foundation as show the many messages of sympathy that we received from scientists around the world. An upright scientist, humanist and a great connoisseur of modern art, Dr. Schürch leaves us with the memory of a director and friend who worked tirelessly to help many developing country scientists improve the nutritional state of disadvantaged populations.

I would like to thank those who contributed to the success of the Foundation's activities last year : Dr. Elisabeth Müller, Assistant to the Director, the Council members and the Foundation's experts. I would also like to express my gratitude to Mr. Peter Brabeck, the Chief Executive of the founding company, to Mr. Luis Cantarell and to Prof. Wolf Endres for their encouragement and the personal interest that they have brought to the Foundation's activities.

E. Jéquier

General information on the Nestlé Foundation

1. Origin and nature

The Nestlé Foundation for the study of problems of nutrition in the world was established in 1966 by the Nestlé Company on the occasion of its centenary. It operates as an independent organization whose office is in Lausanne, Switzerland.

2. Purpose

The Nestlé Foundation initiates and supports research in human nutrition with public health relevance in low- and lower middle-income countries.

3. Current policy

At present the Foundation's work is primarily concerned with physiological and behavioral problems resulting from or affected by (1) macro- and micronutrient deficiencies and imbalances, (2) interactions between nutrition, immune defense and infection, (3) malnutrition and related factors during fetal life and infancy producing effects on various parameters of infant and child health, growth and development, as well as chronic diseases in adulthood, (4) malnutrition and genetic polymorphism. Studies in other areas of human nutrition research might also be considered, as long as they are dealing with problems of malnutrition in low- and lower middle-income countries according to recent World Bank classification, subsequently referred to as target countries. Funded projects are usually of one- to three-year duration.

One of the Foundation's main aims is the transfer of scientific and technological knowledge to target countries, and most Foundation-sponsored research projects are realized in collaboration with scientists at universities and research institutes in such countries. Research grant applications from high-income countries are only considered if they propose a project in a target country, with strong involvement of local scientists in all phases of the project.

The Foundation does not normally fund: (1) experiments *in vitro* and on animals; (2) research on food policy, food production and food technology; and (3) nutrition surveys.

4. Application procedures

Interested scientists should first submit a letter of intent in which they describe very briefly the kind of project they would like to undertake including an estimate of required funds. If that project is compatible with the Foundation's current funding policy, applicants will receive guidelines on how to submit a detailed proposal.

Research grant applications are evaluated twice a year by the Foundation's Council, a group of independent scientists. Decisions on funding are based on the scientific quality and practical importance of the project. Deadlines for submission are January 10 and May 10.

5. International Fellowship Program

This program is intended to develop and strengthen the research capacity of selected nutrition units in low-income countries. The Nestlé Foundation welcomes inquiries and/or applications from institutions wishing to benefit from this program. It currently does not accept spontaneous individual applications for scholarships, fellowships or travel grants.

Activities in 2002

1. Research projects

In 2002 the Council decided to fund 13 research projects which are described below:

1.1. Micronutrient deficiencies

1.1.1. The effects of an additional meal fortified with multiple micronutrients on the nutritional and micronutritional status of Vietnamese children

Nguyen Quang Dung & Nguyen Xuan Ninh
The National Institute of Nutrition, Hanoi (Vietnam)
USD 25,000

In developing countries, children suffer from global malnutrition, i.e. in micronutrients as well as in energy, that will impair growth as well as motor and psychological development. In this randomized study, the effects of cakes fortified with multiple micronutrients, on the nutritional status of young school children (aged 7), will be evaluated. The study has a school based approach, so that the additional meal (in form of a cake fortified with vitamin A, zinc and iron) will be given in the school, on every class day, during a period of 6 months. The effect of this additional meal on growth, anemia, as well as micronutrient status, will be evaluated.

1.1.2. Efficiency of multiple micronutrient supplementation in improving micronutrient status among anemic adolescent girls in Bangladesh

Faruk Ahmed, Rezaul Karim et al.
School of Population Health, University of Queensland (Australia) & Institute of Nutrition and Food Science, University of Dhaka (Bangladesh)
USD 116,000

In Bangladesh the prevalence of anemia amongst adolescent girls and women of reproductive age is very high. In view of the public health importance of (iron deficiency) anemia, the deficiencies of other micronutrients are often forgotten. However, it is well known that in most populations, single micronutrient deficiencies are rare and that usually multiple micronutrient deficiencies are present besides the classical iron deficiency. The risk for as well as the degree of iron deficiency anemia are increased in the presence of multiple micronutrient deficiencies. The present study will evaluate the efficacy of multiple micronutrient supplementation in improving the overall micronutrient status as well as hemoglobin levels in adolescent girls in Bangladesh. One additional goal is to evaluate the feasibility of multiple micronutrient supplementation under the supervision of school teachers as a delivery channel. In this study, the multiple micronutrient supplementation will be started before the onset of pregnancy, so that the micronutrient stores are more likely to be replenished at the start of the pregnancy.

1.1.3. Iron deficiency anemia among adolescent school girls and the relative importance of vitamin A and riboflavin

Drupadi Dillon & Clive E. West
Regional Centre for Community Nutrition (RCCN), University of Indonesia, Jakarta (Indonesia) & Division of Human Nutrition and Epidemiology, Wageningen University (The Netherlands)
EUR 67,500 (in-part funding)

Iron deficiency anemia still represents the major nutritional problem worldwide. Apart from iron, there is often a poor nutritional status of other micronutrients (especially vitamin A and riboflavin) at the same time. The aim of the proposed study is to evaluate the contribution of vitamin A and riboflavin in improving hematopoietic status and in reducing anemia among adolescent girls. It is of crucial importance that these young girls enter pregnancy with

adequate iron stores, as well as an adequate status of other micronutrients, to have an optimal nutritional status for a safe motherhood. Four groups of girls will be supplemented with different combinations of iron, vitamin A and/or riboflavin (all groups will receive iron). The effect of the different supplements on iron deficiency anemia will be studied.

1.1.4. Effect of vitamin A and B₂ supplementation added to iron on anemia of pregnant women in China

Ma Ai-guo et al

Institute of Human Nutrition, Qingdao University Medical College, Qingdao, China

USD 129,604

In 1999, the Council of the Nestlé Foundation decided to support a research project by Chen et al. Prof. Chen from the Institute of Nutrition and Food Hygiene in Beijing wanted to compare the micronutrient status of anemic and non-anemic pregnant women in four Chinese cities. Anemic pregnant women were shown to have a poorer vitamin A and vitamin B₂ nutrition status than the others.

Building on these results, Ma et al. propose to carry out a double-blind randomized controlled trial. About 376 anemic pregnant women living in rural communities around the town of Qingdao will receive supplements containing, in addition to iron and folic acid, either vitamin A or vitamin B₂, or vitamin A and vitamin B₂. The purpose of this study is to examine if supplementing these two vitamins further improves the iron status of the anemic women.

1.1.5. An examination of the relationship between low body mass index and micronutrient malnutrition and the risk of morbidity in adults aged 18 to 60 years in rural Vietnam

Tran Thanh Do et al.

National Institute of Nutrition, Hanoi (Vietnam) & Faculty of Health, University of Newcastle, Newcastle (Australia)

AUD 176,724

The National Nutrition Survey in Vietnam revealed that approximately 30% of the 18-60 year old Vietnamese have a body mass index (BMI) below 18.5 kg/m². The health implications of this low BMI remain unclear. However, cohort data from Vietnam reveal that individuals with a low BMI have a significantly increased risk of restricted days of illness with fever. This relationship persisted even after adjustment for other risk factors. It seems plausible that specific micronutrient deficiencies in adults with low BMI may lead to an increased susceptibility to morbidity and febrile illnesses. Accordingly, the present study wants to identify micronutrient deficiencies in adults with a low BMI. In addition, in this cohort study, the relationship between vitamin A, zinc and iron deficiency (measured by dietary intake as well as biochemical markers) and the risk of restricted days of illness will be evaluated. The study will provide an evaluation of the interaction between low BMI, micronutrient deficiencies and morbidity.

1.1.6. Effect of calcium supplementation to low calcium intake pregnant women on placental hemodynamic and fetal growth: a randomised clinical trial

Guillermo Carroli & Edgardo Abalos

Centro Rosarino de Estudios Perinatales, Rosario, Argentina

USD 182,000

In up to 10% of pregnancies, hypertension associated disorders occur and account for a substantial morbidity and mortality rate of the mother and the fetus. The pathogenesis of pregnancy associated hypertension is not known. Alterations in calcium metabolism have been found in women with pre-eclampsia and eclampsia and calcium supplementation has been found to reduce the risk of pregnancy associated hypertension. The aim of the present study is to evaluate the effect of calcium supplementation to women with a low calcium intake. The major specific aim is to evaluate whether the calcium supplementation would lead to a lower vascular resistance in the uteroplacental and fetoplacental vessels. Further, the effect on fetal growth as well as the development/growth of fetal tubular bones will be

measured. This study will provide important information for the pathophysiology and prevention of pre-eclampsia.

1. 2. Bone health

1.2.1. Genetic, pubertal and nutritional determinants of peak bone mass accretion in adolescence

Heather Greenfield

Faculty of Veterinary Science, University of Sydney, Australia

AUD 332,750

The knowledge of modifiable factors (such as nutrition) affecting the rates of accretion of bone mass in adolescent girls is of great importance, since a high peak bone mass represents a protection against osteoporosis and osteoporotic fractures in later life. In this study, growth and bone health will be assessed in a random sample of approximately 700 Chinese adolescent girls aged 14 and 15. Some of the girls completed a short-term school-based milk supplementation program and they will be compared to girls who did not participate in one (control group). This project evaluates how bone develops in adolescents consuming a low calcium, plant-based diet (control) and whether a short-term milk supplementation may be of benefit for bone health. The project will contribute to the understanding of growth and bone mineral accretion in adolescent girls and will lead to the elaboration of improved nutritional guidelines for bone health in adolescence, including school milk programs.

1.2.2. Determinants of nutrition-related rickets in Chinese children and associated health outcomes

Mark Strand & Li Sihan

University of Colorado, Denver (USA) & Department of Nutrition and Food Hygiene, Shanxi

Medical University, Taiyuan (Shanxi, PRC)

USD 23,760

In China, more than 26% of infants and more than 15% of children under the age of five suffer from nutrition-related rickets. Many factors such as ecological, cultural and dietary variables all contribute to this high prevalence of rickets in Chinese children. This study tries to determine the primary determinants of rickets in children and what health outcomes are found in children with rickets. In more than 300 children aged 6-24 months, anthropometric and biochemical variables will be assessed at two time-points. In addition, qualitative data in focus groups of mothers, maternal and child health workers, as well as Traditional Chinese Medicine doctors, will be collected. The latter will allow local people to describe their perceptions of rickets as a health problem, as well as explain their dietary and behavioral customs. This information will be useful in designing culturally appropriate interventions for the prevention of rickets in the future.

1.3. Infant and child nutrition

1.3.1. The impact of vegetable gardening, fishpond and animal husbandry on household food security and child nutritional status in some communes in Midland Vietnam

Phan Van Huan et al

The National Institute of Nutrition, Hanoi, Vietnam

USD 26,950

Vietnam is one of the most densely populated countries in Asia. Despite a considerable increase in food production during the last few years, more than 30% of all children under five are reported to be malnourished. Micro- and macronutrient deficiencies are especially prevalent in the rural areas, where about 70% of the population lives. In an attempt to improve the nutritional status of the population, the VAC farming system was promoted by

the Vietnamese government. VAC stands for the Vietnamese “*Vuon-Ao-Chan*” which means “garden – fishpond - animal husbandry”, a farming system which relies on these 3 pillars of farming. The present cross-sectional study will evaluate and assess the impact of the VAC farming system on household food security, income as well as nutritional status in children 2-8 years of age.

1.3.2. Rehabilitation of severely malnourished children in Senegal: use of a local solid food equivalent to WHO F100 with high energetic value

Salimata Wade & El Hadji Issakha Diop

Faculty of Sciences, Cheikh Anta Diop University, Dakar, Senegal

EUR 80,000

This study evaluates alternative strategies to rehabilitate severely malnourished children in the context of poverty and poor hygiene using a local high-density solid food (so called local “ready to use therapeutic food” or local RTUF) nutritionally equivalent to the reference WHO F100 formula. The technology to produce a local high-density solid food (copy of WHO F100) similar to the industrially prepared nutriset RTUF is not difficult. In this randomized trial, severely malnourished children will receive, after an initial standard therapy and treatment, either the industrially prepared RTUF, the WHO F100 or a locally produced RTUF. The acceptability and efficacy of the different strategies, as well as selected outcomes such as weight gain, successful rehabilitation or control of iron deficiency, will be evaluated.

1.4. Nutrition, immune defense and infection

1.4.1. Nutrition assessment of children orphaned from HIV/AIDS

Judith Ernst

Nutrition and Dietetics Program, Indiana University-Purdue University, Indianapolis (USA)

USD 11,000 (in-part funding)

More than 30 million children worldwide are left orphaned or vulnerable from AIDS and other causes. Almost all of these children live in resource poor areas of the world with no or only minimal access to health care as well as education. The major aim of this study is to initiate a program to build a science-based foundation, for the development of an intervention program for children, who are left orphaned and vulnerable because of HIV/AIDS. The program is integrating medical and nutritional support for these children in a “family-style” environment. The nutritional status, as well as fitness status, of HIV infected children in Constanta (Romania) and Kisumu (Kenya) will be assessed and critically evaluated. Based on this data, an intervention program will be elaborated, which can then be transferred to other areas of the world.

1.4.2. A randomized trial of micronutrient supplementation in HIV-infected Thai patients

Shabbar Jaffar et al

London School of Hygiene and Tropical Medicine, London (UK) & Siriraj Hospital, University of Mahidol Medical School, Bangkok (Thailand)

GBP 7,330

This is a follow-up study of a project which was funded by the Nestlé Foundation in 2001 (see also Annual Report 2001, page 27). The aim of the study was to determine the effect of regular micronutrient supplementation on CD4 count, HIV virus load, HIV-1 RNA virus shedding in semen and vaginal secretions, and the rate of new HIV-associated opportunistic infections among HIV-patients. The study showed that mortality among the patients randomized to micronutrients was lower (especially in patients with low CD4 counts). Interestingly, there was no effect of the micronutrient supplementation on CD4 counts or the plasma viral load suggesting that micronutrients lead to a protection by another mechanism. On completion of the trial, all patients were offered micronutrients.

Initially, it was planned to follow the patients for up to 12 months. This follow-up period has now been extended with the help of an additional grant from the Foundation. The major aim of this prolonged follow-up is to determine whether the patients who were on micronutrient supplements will continue to have a lower mortality rate and whether micronutrient supplementation would have any long term side effects. This extension of the follow-up is of great importance for designing future strategies of micronutrient supplementation in HIV patients. Despite these positive results the cornerstone of the therapy of HIV infected individuals - also in the developing world – continues to be based on antiretrovirals.

1.5. Epidemiologic transition

1.5.1. Validation of questionnaires examining inter-ethnic differences in socio-cultural and attitudinal factors associated with obesity in South African women and their daughters

Julia H. Goedecke et al.

University of Cape Town, Newslands (South Africa)

GBP 49,870

Obesity is the pandemic of the new millennium. More than 56% of all South African women may be considered overweight (BMI > 25 kg/m²). Women in urban areas show a higher prevalence than women in the rural areas (62% and 53% respectively). The pathogenesis of obesity is multifactorial and includes endogenous as well as exogenous factors ("circumstantial factors"). The identification of these circumstantial factors is not always easy, since there are not many culturally-specific validated questionnaires available. The aim of the proposed study is to validate questionnaires for the measurement of eating behaviours and attitudes, as well as body image and fatness beliefs, in primary school girls and their mothers.

2. International Fellowship Program

In 1991, the Foundation's former study grant program was replaced by the Nestlé Foundation International Fellowship Program in Human Nutrition Research. The aim of this new program is to strengthen the research capacity of nutrition units in low-income countries by offering training in nutrition research to several of their staff members.

In 2002/2003, Dr. Isabella Muvhudzi Nyambayo, from the Department of Biochemistry, University of Zimbabwe, Bulawayo received a fellowship to pursue a Master of Science in Human Nutrition and Metabolism at the University of Aberdeen.

In addition the Council decided to award fellowships to some of the staff members of the Department of Nutrition and Food Sciences, Abomey Calavi University, Cotonou (Benin). The candidate(s) for a fellowship will be recruited shortly.

3. Visit to the Research Institute of Child Nutrition in Pyongyang

In 2001, the Research Institute of Child Nutrition in Pyongyang, North Korea, submitted an institutional application to be included in the Foundation's International Fellowship Program and, in addition, two research grant applications. The Council decided that the best way to see if the Nestlé Foundation could offer meaningful assistance to this unit would be to visit this institute.

Prof. Jéquier and Dr. Schürch visited this institute from May 27 to June 1, 2002.

Scientists at the Research Institute of Child Nutrition devote a lot of time to the investigation of the health benefits of plant-derived supplements. Prof. Jéquier and Dr. Schürch identified three research areas in which a collaboration might be possible: 1) fortification of weaning food with iron and zinc and the effects of this on the prevention of anemia as well as the growth and development of infants; 2) reducing iodine deficiency by fortifying a vehicle other

than salt; 3) preventing rickets with vitamin D made from yeast as a by-product of beer production.

The president and the director of the Foundation explained thoroughly how a research project should be designed to stand a chance of being approved by the Foundation's Council and how a grant application should be completed.

In July 2002, the Nestlé Foundation received a proposal from the Research Institute of Child Nutrition entitled "Weaning food fortified with iron and zinc and its effect on prevention of anemia, and growth and development of children". Unfortunately the project did not meet the Foundation's requirements and therefore could not be funded.

We hope that we will be able to support the Research Institute of Child Nutrition in Pyongyang in some way in the foreseeable future.

4. Institutional Capacity Building Workshop (Vevey, April 10-13, 2002)

Workshop participants

- Dr. Eric-Alain Ategbo, Department of Nutrition and Food Sciences, Faculty of Agricultural Sciences, Abomey Calavi University, Cotonou, Bénin
- Dr. Visith Chavasit, Institute of Nutrition, Mahidol University, Nakhon Pathom, Thailand
- Dr. Drupadi H.S. Dillon, SEAMEO Tropmed Regional Center for Community Nutrition, University of Indonesia, Jakarta, Indonesia
- Dr. Cecilia Florencio, Department of Food Sciences and Nutrition, University of the Philippines, Quezon City, Philippines
- Prof. Laila Hussein, Nutrition Department, National Research Center, Giza, Dokki, Egypt
- Prof. Iqtidar A. Khan, Department of Paediatrics, Aga Khan University Medical Center, Karachi, Pakistan
- Prof. Ha Huy Khoi, National Institute of Nutrition, Hanoi, Vietnam
- Prof. Mohd Ismail Noor, Department of Nutrition and Dietetics, University Kebangsaan Malaysia, Kuala Lumpur, Malaysia
- Dr. Joyce Kikafunda, Department of Food Science and Technology, Makerere University, Kampala, Uganda
- Dr. Nguyen Thi Kim Hung, Nutrition Center of Ho Chi Minh City, Ho Chi Minh City, Vietnam
- Prof. Ma Aiguo, Institute of Human Nutrition, Qingdao University Medical College, Qingdao, P.R. China
- Dr. Mauro E Valencia, Centro de Investigacion en Alimentacion y Desarrollo, Sonora, Mexico
- Prof. H (Este) Vorster, Faculty of Health Sciences, Potchefstroom University for CHE, Potchefstroom, RSA
- Prof. Salimata Wade, Equipe de Nutrition, Faculté des Sciences et Techniques, Université Cheikh Anta Diop, Dakar, Senegal
- Prof. Xiaoguang Yang, Institute of Nutrition and Food Hygiene, Beijing, P.R. China

Nestlé Foundation's attendees

- Prof. Jehan-François Desjeux, Nestlé Foundation's Expert
- Prof. Jean-Pierre Flatt, Nestlé Foundation's Council Member
- Prof. Mehari Gebre-Medhin, Nestlé Foundation's Council Member
- Prof. Jo Hautvast, Nestlé Foundation's Council Member
- Mr. Angelo Hüslér, Workshop Moderator / Facilitator

- Prof. Eric Jéquier, Nestlé Foundation's President
- Dr. Elisabeth Müller, Nestlé Foundation's Administrative Assistant
- Dr. Beat Schürch, Nestlé Foundation's Director

4.1. Rationale

The Nestlé Foundation initiates and supports nutrition research in low-income countries. One of the Foundation's main aims is the transfer of scientific knowledge and technology to such countries.

One might therefore assume that nutrition research institutes and nutrition research units at universities in these countries predominate among the applicants for research grants from the Foundation. However, this is not the case. Most of the grant applications we receive, originate from universities and research institutes in industrialized countries, who propose to do collaborative research in a low-income country.

Faced with these facts we asked ourselves what were the obstacles that prevented nutrition research institutes in low-income countries from applying for research grants.

- Is it not sufficiently known that the Nestlé Foundation exists and awards research grants?
- Is the kind of biomedically oriented nutrition research that the Foundation has been funding, not seen as a high priority in low-income countries?
- Do employees of nutrition research institutes in low-income countries lack some of the knowledge and skills that are required to write acceptable grant applications and to carry out research?
- Are employees of nutrition research institutes in low-income countries not particularly motivated to apply for research grants or to carry out research beyond that which is mandated?

To try to answer these questions, the Nestlé Foundation decided to convene a workshop, bringing together directors of nutrition institutes and nutrition units from low- and middle-income countries.

4.2. Event outline

The workshop was held in Vevey, Switzerland, April 10-13, 2002. Fifteen directors of nutrition research institutes representing 13 different countries, as well as most of the members and experts of the Foundation's Council attended the meeting.

The agenda of the meeting was as follows:

- Presentation of the research institutes and units represented at the meeting
- Discussion of specific problems, at the present time, by areas
- Definition of the ideal nutrition research institute
- Factors favoring or inhibiting the attainment of the previously defined ideal
- General and institution specific recommendations to the Foundation's Council

The general recommendations will be reported in more detail in the next chapter.

During the workshop, members of the Nestlé Foundation's Council and experts had many opportunities to discuss with each director the needs and constraints of her/his institute in doing research. In addition, the participants could share their experiences and ideas with the others and establish closer and more personal relationships.

4.3. General recommendations to the Foundation's Council

The directors of the research institutes and units who attended the meeting thought that the Nestlé Foundation was not very well known to the scientific community in developing countries and that it was important to change this situation.

They felt that there was a need for the Nestlé Foundation to change its current funding priorities and policies, to better serve research institutes in developing countries. Their recommendations were as follows:

4.3.1. General recommendations

- Improve the visibility of the Foundation
- Initiate a regular call for proposals from institutes (councils, universities, professional organizations, etc.)

4.3.2. Strategy

- Expand the support to also include training programs (in addition to supporting research)
- Support more capacity building not necessarily related to a research project
- Assist in processes and activities clarifying national research agendas

4.3.3. Additional research project related recommendations

- Student fellowship/scholarship
- Technician training
- Equipment maintenance (during the lifetime of a project)
- Support dissemination of research results at a local level
- Support quality assurance for laboratory methodology

4.3.4. Non research project related recommendations

- Keep the Nestlé Foundation International Fellowship Program running (sandwich program).
- Support sabbaticals
- Initiate a postdoctoral program (enabling developing country institutes to invite postdoctoral fellows)
- Support exchange programs for research technicians
- Support workshops aimed at capacity building (e.g. leadership, proposal writing, scientific publication, research agenda, institutional networking)
- Facilitate access to Information and Communication Technology (ICT) and to the latest scientific information
- Support subscription to the leading nutrition journals via electronic media (5-10 journals)

The outcome would be increased research capacity in nutrition research institutes and as a result:

- more research proposals
- a higher quality of proposals
- more research publications
- publications in high quality journals
- more trained (Masters and Ph.D. levels) nutritionists in developing countries
- an increased impact on nutrition policies in developing countries

4.4. Follow-up

The members of the Nestlé Foundation's Council and experts will nurture the close relationships established during the workshop. The discussions, which took place during the workshop and the recommendations which were issued at the end of it, will be of great value to the Foundation when generating and implementing new initiatives.

In 2002, a large number of research scientists from institutes represented at the workshop submitted research grant proposals to the Foundation. Six of them succeeded in having their proposal funded. In addition, two of these units were awarded small scale institutional support and one unit will benefit from the Nestlé Foundation International Fellowship Program.

5. Recent publications of the Foundation

(available free of charge)

2002

371. Kurpad AV, Raj T, Regan MM, Vasudevan J, Caszo B, Nazareth D, Gnanou J, Young VR: Threonine requirements of healthy Indian men, measured by a 24-h indicator amino acid oxidation and balance technique. *Am. J. Clin. Nutr.*, 76, 789-797 (2002).
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