

## **SCN News, Number 04**



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A periodic review of developments in international nutrition compiled from information available to the ACC/SCN

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## **SUPPLEMENT ON METHODS AND STATISTICS to the First Report on the World Nutrition Situation, December 1988**

This publication is a source of reference for methodology used in the First Report on the World Nutrition Situation, giving sources of data, assumptions and analytical methods as well as the basic data used for that report.

## **WOMEN'S ROLE IN FOOD CHAIN ACTIVITIES AND THEIR IMPLICATIONS FOR NUTRITION by Gerd Holmboe-Ottesen, Ophelia Mascarenhas and Margareta Wandel.**

ACC/SCN State-of-the-Art series. Nutrition Policy Discussion Paper No. 4, May, 1989.

## **MALNUTRITION AND INFECTION – A REVIEW by A. Tomkins and F. Watson with discussion by N.S. Scrimshaw and an introduction by the ACC/SCN Secretariat.**

ACC/SCN State-of-the-Art series. Nutrition Policy Discussion Paper No. 5, October, 1989.  
(A Charge of \$15 per copy will be made for 'Malnutrition and Infection' to those requesting from Europe and the U.S., to help cover costs).

**Copies of these publications can be obtained by writing to the ACC/SCN Secretariat.**

SCN News is issued twice yearly by the Secretariat of the UN ACC/Sub-Committee on Nutrition. A description of the ACC/SCN is given on the back cover.

Your contribution to future issues would be welcome. Please send us items for inclusion in "News and Views", "Programme News" and/or "Publications". Letters to the Editor for possible publication in future issues are also most welcome. SCN News aims to help the sharing of experience in nutrition.

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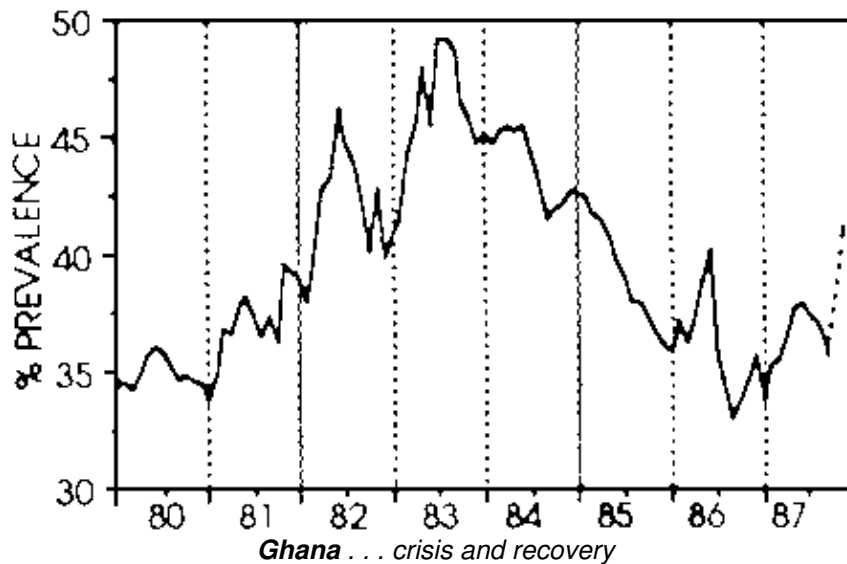
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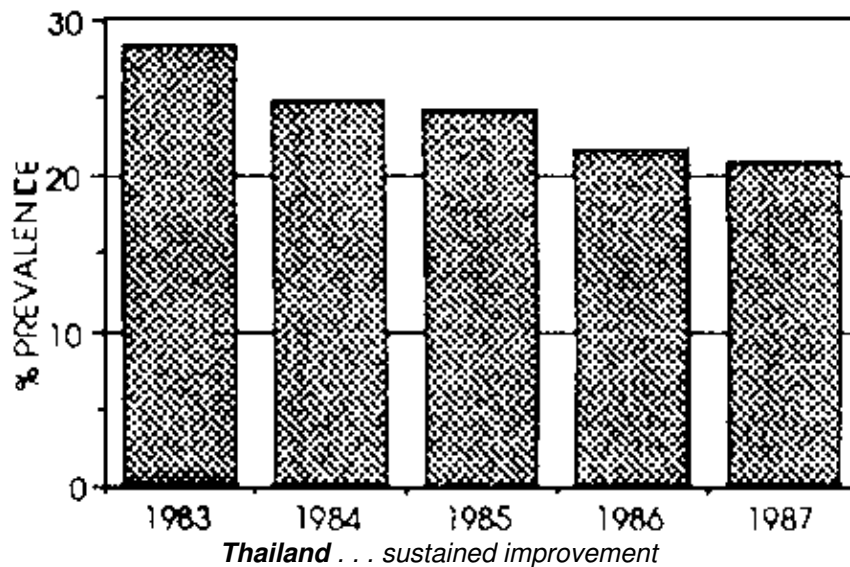
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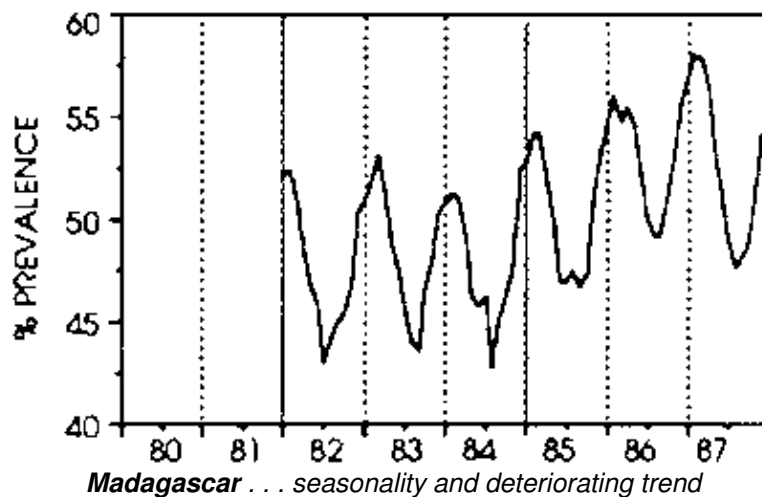
## NUTRITIONAL TRENDS



Prevalence of underweight (<80% Wt/Age) children aged 7–42 months. Health Centre data.



Prevalence of underweight (Wt/Age, Thai Standards) in children aged under 5 years. Gomez Grade I National Weighing Programme.



Prevalence of underweight (<80% Wt/Age) children aged under 5 years. Health Centre data

## FEATURES

### Update on the Nutrition Situation

Latest data from 33 countries show diverse trends.

Drought and debt crises regularly hit the headlines. Success stories have a poorer press. What is actually happening to nutrition in countries in the developing world? Is the "silent emergency" becoming "silent genocide"?

One way to assess the realities of human conditions in the 80's is to track nutritional trends. Nutrition is central to human well-being, and responsive to environment in the most vulnerable people: young children in poor countries. What is happening to them? The answer – like much in the world – is that it depends on where you look. As illustrated on the front cover, there are countries where steady improvement seems to be taking root – Thailand for instance. In others, such as Madagascar, it looks like an underlying worsening trend may be setting in. In further countries, the effects of crises coming and going can be seen: in Ghana percentages of children underweight nearly doubled at the height of the economic crisis in 1983–4, coming down again as the situation was brought under control.

Data such as these bring a new focus. The broad global picture (see SCN News No 2) is of a tendency toward improvement in Asia, long-term deterioration in Africa, and stagnation or some worsening in Latin America. But countries and people are diverse, and averages can hide important differences. We need examples from within countries to get a balanced picture. Information from 33 countries was recently published in the SCN's "Update on the Nutrition Situation", and discussed at the SCN 15th Session, hosted by UNICEF New York in February 1989. The "Update" Report gives indicators of child nutrition, set alongside economic and food access indicators, prices, indications of indebtedness, as well as giving examples of seasonal effects and trends in certain localized areas.

#### Where is Nutrition Improving or Worsening?

Which countries have a high or low level of underweight children – as an indicator of malnutrition – and where the trend is rising (worsening) or falling? Some examples are shown in the box. Because the countries for which there is data are not a random sample, no firm conclusions can be drawn to apply to the developing world as a whole. Nonetheless, enough countries are represented to show the wide range of conditions and to begin to think about such questions as why some situations are better than others, and what these trends might mean for the future.

ACC/1989/PG/2 English Page 11 B. <u>Update on the nutrition situation</u>			
34. Results, showing trends in the prevalence of underweight children, were summarized for the purposes of the meeting in the table below.			
Prevalence of underweight children			
Recent trend	High (20% and over)	Moderate (10%–19%)	Low (under 10%)
Rising or static	Bangladesh, Benin, Ethiopia, Gambia, Madagascar, Mauritania, Niger, Philippines, Rwanda, Sudan	Jamaica, Nicaragua, Peru	Chile, Cuba, Venezuela
Falling	Botswana, Burkina Faso, Ghana, Guatemala, Indonesia, Sri Lanka, Thailand, Togo	Bolivia, China	Colombia, Costa Rica, Uruguay

The countries for which data were available are divided, first, into those estimated to have high, moderate or low *prevalences* of underweight children – this forms the columns in the box. (The classification is taken from data in the SCN's "Supplement on Methods and Statistics" to the First Report on the World Nutrition Situation). The countries with the highest prevalence are generally the poorest, measured in terms of per

capita income, access to productive resources, services, etc. Added to this, it is known that countries in South Asia have a higher prevalence of underweight than would be expected from factors such as income, or child mortality; this is thought to be due to other effects of diet and perhaps disease, as well as an inter-generational carry-over such that low birth weight leads to small mothers having small babies. At the other end of the scale, those developing countries that have established a low rate of malnutrition, in some cases as low as that in industrialized countries, have a long record of sustained attention to health and social services. Chile, Costa Rica and Cuba are examples. It is worth noting in passing that some of the countries with the highest debt also have the best nutritional situation – for example, of the countries in Latin America listed, Costa Rica, Venezuela, Chile, and Uruguay have about twice the debt per caput of the others (Update Report, page 27).

The new information, though, concerns the recent *trends*, shown in the rows in the box. The period refers to around 1984 to 87. Countries were approximately classified, from data in the Update Report, into those with a rising or static trend in proportions of underweight children, and those where the best judgement was that it was falling. Factors associated with a deteriorating trend included economic stress, instability and internal conflict, and drought. But this was not the full story: a number of countries in the "falling" category had faced similar problems. A missing factor seems likely to be the priority given to the use of available resources to protect nutrition – that is to policies favourable to nutrition.

Where the nutrition situation is judged to be relatively bad and worsening (top left-hand cell in the box), often some of the factors are well known. Bangladesh is reckoned to have one of the highest levels of underweight children in the world, and indications are that this is not improving: economic difficulties (80% of the population are under the poverty line), the most crowded population density anywhere in the developing world with half the rural population landless, and extreme vulnerability to flooding, are at least some of the causes. In the Philippines, political upheavals coincided with a small but noticeable peak in child malnutrition. Most of the countries in Africa in this category have suffered from the vicious combination of economic recession and drought. In Madagascar, for instance, an already difficult situation worsened from 1985 on, with sharply rising prices, unrest, and drought: this is reflected in a jump in the underlying rate of malnutrition – seen superimposed on the marked seasonal pattern in the diagram on the front cover.

But in some situations, there are signs that the effects of drought and economic stress have been effectively contained. Ghana's struggle with debt and drought has been widely reported – now it looks like the nutrition situation itself, which dramatically deteriorated during the crisis of 1983–1984, has at least returned to the pre-crisis level (see front cover). In Botswana sustained programmes for employment and food distribution in drought-affected areas prevented malnutrition from rising much during the prolonged drought of 1982–1987, and the trend in prevalence may well now be downwards.

### **Investments pay off.**

Long-term investment in health, nutrition, and other social services seems to be paying off in, for example, Indonesia and Thailand. In Thailand particularly underweight prevalences fell steadily from 1983 to 1987, as seen in the figure on the front cover. If this improvement, of about two percentage points prevalence per year, were maintained – and the current rapid increase in GNP is no doubt crucial – elimination of malnutrition could indeed be seen here in the 1990's. But the rate of improvement in Thailand is around the fastest seen anywhere.

A similar picture emerges among the countries only moderately affected by malnutrition. Economic and other crises have taken their toll, in Jamaica, Nicaragua and Peru. The situation in China is of particular significance: data indicate that malnutrition was nearly eliminated between the 1950's and 1980's in urban areas. For example, the average height of seven year old girls had increased from 115 cms in 1950 to 125 cms by 1975–1980 (125 cms is equivalent to international standards, so no further increase is likely).

### **Price Hikes predict Malnutrition.**

One surprising spin-off of the study concerned a striking parallel between food price changes and malnutrition rates. This is illustrated in figure 1. Information on these two factors came from totally separate sources – prices from government statistics via the International Labour Organization (ILO), child underweight rates from Catholic Relief Services in Ghana. The graphs were printed one above the other in preparing the Update Report, as shown in the figure. This was almost certainly the first time that these have ever been viewed in this way. Not only was the parallel immediately striking, but a lag could even be seen: food price changes *preceded* malnutrition rate changes, by around three months. The implications for early warning were clear. Further analysis on data for Ghana and other countries has been done by SCN and ILO, and results are now



being used to suggest some additional procedures in early warning systems.

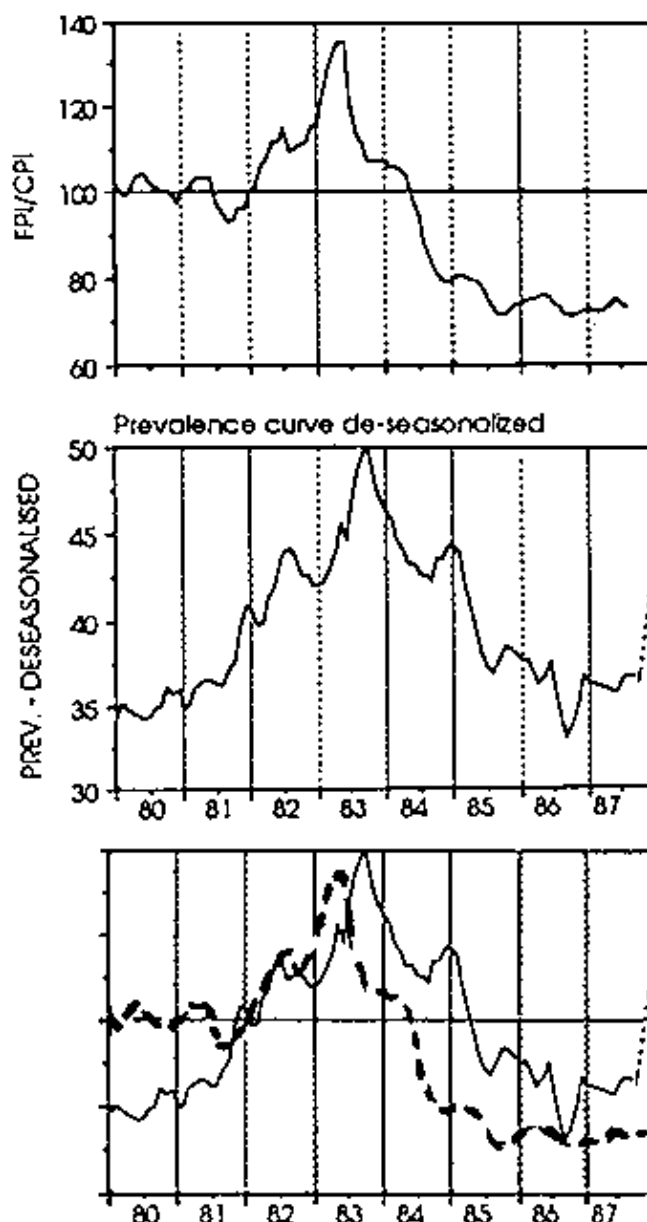


Figure 1. Ghana: relative price of food (FPI/CPI) and prevalences of underweight children (from clinics), 1980–87, seasonal factors being removed. In the lower graph these are superimposed (---- is FPI/CPI), showing that food price changes appear to precede malnutrition changes.

**Patterns of change.**

Three patterns of change in nutrition are happening, it was proposed at the SCN 15th Session. On a time scale viewed in decades, the trend in child nutrition seems of gradual improvement if undisturbed by crisis (political, economic or drought). In Africa per capita incomes and food production have declined in the last 20 years: although a slight improvement in nutrition was detected in the 1970's, this was reversed in the 1980's. Nutrition is deteriorating as a result. Elsewhere, long-term increases in income, education, food availability, and health services have improved welfare (except where interrupted by such factors as economic recession); and nutrition has improved. Long-term development, in the same way that it contributes to lowered infant and child deaths, can drive malnutrition downwards.

Taking a shorter perspective, of within-decade changes, the disrupting effect of crises can be seen in country after country. A severe crisis may affect levels of living and nutrition for several years. One can see retrospectively that crises pass and malnutrition may fall. Quicker and more effective measures are needed during crises to protect health and lives: to prevent peaks of malnutrition, no doubt associated with increased mortality, occurring. The response of malnutrition to drought, food shortage, price inflation, and the like appears to be rapid – possibly with a lag of a few months – and effects may linger.

Finally, the marked effect of season is brought out, Madagascar again (see front cover) providing a vivid example. Here, rates of child malnutrition climb rapidly during the pre-harvest time (harvest is April–May) and fall with the post-harvest recovery. The change is as much as ten percentage points of prevalence. This pattern, which is seen in most African countries where the data are available, directs attention to targeting nutrition interventions in time as well as by area: programmes that mitigate seasonal shortages of money and food, knocking off the peaks of malnutrition, could be important in bringing long-term improvement. Nonetheless, the seasonal effects—should be seen in relation to the high underlying prevalences. The ten percentage point seasonal increase adds to an already high underlying level of nearly 50% in the children attending clinics where the data came from.

### **Optimism and worrying trends.**

A balanced view of the nutrition situation in developing countries is therefore, as expected, mixed. It is generally true that where conditions are improving, this leads to improved nutrition; relatively this optimistic picture is seen particularly in a number of African countries. Most worrying is the static situation in a number of countries, notably in Latin America, and the continuing decline in living standards, which we can see in malnutrition rates, in Africa. Information such as this serves to highlight the need for action, can help direct that action to people most in need, and can measure success.

The constant toll of malnutrition and disease is unquestionably a continuing tragedy. Child death rates in developing countries are around 15 million per year and numbers of malnourished children persistently rise – reaching about 150 million underweight children by our most recent estimates. In most countries, there is a race between population growth and development; in others, mainly in Latin America and Africa, even the proportion of the population malnourished is increasing. Nonetheless, we can see that progress is possible, even in difficult circumstances. The challenge is to improve the circumstances and learn the lessons.

– J.B.M.

### **Women and Nutrition**

Multiplicity of tasks, conflicts and trade-offs women must face are part of the lifestyle in many poor countries.

Women's role and position in development is increasingly seen as both a key to social and economic progress, and as a major objective of development efforts. Within this overall concern, two issues are seen as increasingly urgent: women's coping strategies in regard to household nutrition and the nutritional status of women in its own right.

The ACC/SCN's annual symposium, in February 1989 at UNICEF headquarters, New York, was on the topic of "Women and Nutrition". The proceedings are being published by the ACC/SCN: this article introduces the subject. The several background papers commissioned for the Symposium were carefully structured to deal with the kaleidoscopic nature of women's overlapping commitments. In particular, women's "invisible work" was given statistical and economic reality.

Current measurements such as GNP give an unsatisfactory index of economic productivity, since "do it yourself" work has no market price. Women's "invisible work" is largely unreported, and earns no recognition in economic terms. If women's unpaid household labour were quantified and given economic value, it would add up to an additional one-third to one-half of the world's GNP. Gender disaggregated data on agricultural productivity reveal that women (who form up to 40% of the agricultural force, grow half the world's food, and own 1/100 of the world's land), produce non-tradeables (food for home consumption) for a low rate of return in comparison to males who receive a high rate of return for tradeables in the form of wage employment, and non-food crops.

Measurement of women's work output is crucial to the understanding of women's vulnerability to disease and death by virtue of gender. An analysis of women's time and energy expenditure is essential for any quantification of unpaid domestic and agricultural labour. An operations research catch phrase, "the zero sum game" is a mathematical "pie" which denominates the cancellations, adjustments and trade-offs of time and energy required for the production of food, water and fuel which comprise the primary work obligation of women. This concept of "zero sum game" – which provided the working title for the main background paper by J McGuire and B Popkin – is meant to encapsulate the conflicts and trade-offs most poor women cope

with daily. And many barely cope: as the symposium heard, many women are on the edge of being burnt-out by the overburden of family care, productive work, and biological demands – often not helped by cultural expectations.



In the "zero sum game" equation, women's work output radically depletes her time and energy stores. Time is a fixed and limited dimension; while the energy required for the cultivation and processing of food, and the collection of water and fuel, is an elastic, transferrable, but finite resource. The result? Women must work more hours and expend more energy than men while performing their multiplicity of tasks. Food intake is not always commensurate with this demand, and women bear a disproportionate burden of calorie deficit in relation to energy expenditure. The synergism of gender, poverty, and negative nutritional status translate into the grim mathematics of maternal morbidity and mortality. Task selection and time allocation have a crucial bearing on family nutrition and on women's own nutritional status.

Women's simultaneously exercise roles in economic production, home production and reproduction. During forty percent (40%) of a woman's life on average, she is pregnant and/or breast feeding – time is

pre-committed and many other activities precluded. Reproduction, for poorer women, is a social obligation with a built-in physiological disadvantage. Why? Inherent within women's roles, during child-bearing years but affecting the life span, are predictable conflicts in which biological, cultural, and economic forces intersect to drain women's energy and time. Take biology versus culture, for example. Cultural forces which demand repeated pregnancies conflict with common-sense reproductive biology (limit pregnancies, anaemias and maternal deaths). Take economics-versus culture: the social mythology which demands numerous children restricts women's ability to engage in paid work. Take biology versus economics: the physical energy needed for reproduction reduces energy available for other productive work. Food preparation may take two to three hours; fuel and water collection may take one to six hours. Time and energy allocations are strained by a heavy domestic and agricultural workload. The correlation between workload and failure to gain weight during pregnancy becomes obvious. Women's nutritional status and these roles are inseparable in terms of cause and effect. These factors converge to establish the patterns of systematic discrimination against females which lead to preventable morbidity, depletion and death. Statistics analyzed by sex effectively prove that gender is a significant determinant of nutritional status. A mapping of nutritional differentials between males and females according to socio-economic status, indicates that this nutritional deprivation is economically as well as culturally mediated, and the varying social and economic value ascribed to women may be a crucial factor in their access to food. Where females have high economic value, they receive larger shares of food and health resources; where their perceived value is lower, their consumption of food is substantially less.

If there were ways to circumvent women's legal and economic powerlessness, by providing better access to resources for poor women, would they work? Yes. As an example, the Grameen Bank in Bangladesh, initiated in 1976, has proved to be a successful combination of original interventions for the economic empowerment of women. Within the banking service, which provides credit to the landless poor, is a development component which is designed to improve the socio-economic status of women by providing credit services in the form of small loans for income earning activities (such as kitchen garden plots and crops). Women move from a negligible income status to a position where they contribute an extra one-third income to their households. They are taught a loan repayment discipline: weekly installments of two percent of the amount of the loan. It is no surprise to find that women form more than 70% of the bank's members and repay more than 90% of their loans on time. Income generation support of this sort provides an original and workable solution which enables women to market a portion of their food resources and control a measure of income.

Women's coping strategies to produce adequate nutrition for themselves and their families, therefore, can be bolstered by empowerment – across the board. Access to credit facilities and income generation techniques translates into women's economic self-respect. Access to public services such as piped water, fuel, and convenience foods converts into a time and energy bonus for women. Access to female-oriented agricultural extension programmes designed to teach women cultivation techniques and food cycle technologies, reduces weeding time, increases crop yields and protects against losses to insects and rodents.

Child care burdens can be eased by mobile creches or co-ops which improve children's nutrition and reduce the mother's workload. Educating women to overcome their cultural norms of self denial and to stand up for their health rights, independently of their husband's or mother-in-law's "permission" to use health services, pays dividends in a reduction in maternal mortality figures. Access to health clinics improves women's nutrition directly, by food supplementation, control of anaemia and dietary deficiencies and, indirectly, via immunization programmes and the prevention of her children's sickness.

Taking an inventory of the work which poor women perform as their duty gives visibility to a situation where the occupation "mother" is synonymous with "dangerous to your health". This synonym should be eliminated by identifying radical interventions and creative innovations to be incorporated in future development strategies.

– Rosemary Kevany

## **Malnutrition and Infection (part 1)**

Operational implications of current knowledge: diarrhoea and malnutrition; measles, vitamin A and protein-energy malnutrition.

The ACC/SCN has just published "Malnutrition and Infection" as the fifth in the State-of-the Art series. The major part is a review by A. Tomkins and F. Watson, of the London School of Hygiene and Tropical Medicine. This review provided the basis for considering operational implications for health and nutrition programmes,

which were summarized for the introductory section of the paper, as a result of consultations with scientists in the field, the SCN's Advisory Group, and WHO programme staff. SCN News is publishing extracts from this section, in two parts. In this issue, some background is given, then the sections concerning nutrition and diarrhoea, and measles, are reproduced. Meanwhile, WHO has published estimates of the major causes of death in developing countries, which are shown in the box (below) to show the extent of infectious diseases.

Each year about 13 million infants and children die in the developing countries<sup>(1)</sup>. The majority of these deaths are due to infections and parasitic diseases, and many if not most of the children die malnourished. The precise contribution of malnutrition as an immediate cause of death is not known, nor would it be the only relevant figure, for in poor countries children from birth or soon after are caught in a cycle of malnutrition and infection, which many do not survive<sup>(2)</sup>. In Africa, for example, more than 20% – on *average* – do not reach their fifth birthday<sup>(3)</sup>. **The "malnutrition–infection" complex remains the most prevalent public health problem in the world today.** Nutrition and health are closely linked, but advances in nutritional knowledge remain to be applied to the same extent as those in the field of health.

In the more than twenty years since the landmark publication by Scrimshaw *et al* (1968)<sup>(4)</sup> on "Interactions of Nutrition and Infection", knowledge of this subject has become well–established. The mechanisms of many of these interactions have been elucidated, and the relative importance of such interactions in different circumstances has been clarified. The same period has seen enormous advances in methods for preventing and managing infections. Immunization coverage for major childhood diseases has now reached over 65% of children. Improvements in environmental sanitation, education and literacy which help to improve child rearing and health practices, and a whole range of new and increasingly affordable antibiotics and anthelmintics are having effects not imagined 20 years' ago.

<b>THE SILENT KILLERS</b>	
<b>Illness</b>	
<b>Vaccine–Preventable diseases</b> (Polio, Tetanus, Measles, Diphtheria, Pertussis, Tuberculosis)	46 million not fully immunized, annually (infants) 2.8 million die annually (Children) 3 million disabled annually (Children)
<b>Diarrheal diseases</b>	At least 750 million [episodes] annually (Children) 4 million die annually (Children)
<b>Acute Respiratory Infections</b>	4 million die annually (Children)
<b>Tuberculosis</b>	1.6 billion carry the bacteria 10 million new cases annually 3 million die annually
<b>Sexually–Transmitted Diseases</b>	1 out of 20 teens and young adults contract annually 5–10 million infected with AIDS virus
<b>Malaria</b>	100 million cases annually Almost half of the world's population live in malarious areas

<b>Schistosomiasis</b>	200 million cases
<i>Source: Report on World Health, WHO Features, Sept. 1989, No. 136</i>	

On the other hand, although understanding of protein–energy and micronutrient deficiencies is now well advanced, preventing these deficiencies appears still to be problematic. Protein–energy malnutrition is related to poverty and long–term progress is linked to development, although in the interim effective programmes can be undertaken. Micronutrient deficiencies are more susceptible to direct control, and wider application of effective programmes is feasible. Although globally the proportion of people undernourished fell somewhat during the 70's, probably less so during the 80's – and actually increased in Africa –the total numbers of people undernourished continue to rise with population growth<sup>(5)</sup>. Along with this, the total numbers of children underweight – due to malnutrition and infection – are still increasing<sup>(6)</sup>.

That nutrition influences infection and the causes and outcomes of episodes of disease is becoming part of conventional wisdom. Protein–energy malnutrition is known to have a depressing effect on the immune system; moreover effects on different elements of the immune system can be distinguished. Hence, growth failure is associated with lowered immunity. Indeed, it seems that even mild degrees of malnutrition begin to adversely affect immunocompetence, hence morbidity and mortality, which shifts attention to mild–moderate as well as severe protein–energy malnutrition.

Looked at the other way round, the mechanisms whereby infections lead to growth failure and clinical malnutrition are becoming better understood. They operate through anorexia, changes in metabolism, malabsorption, as well as behavioural changes affecting feeding practices; and lead to malnutrition in the context of limited nutritional reserves.

The interactions of nutrition and infection with regard to individual infections and defined nutrients are now better known. For example, we know that PEM increases the duration of episodes of diarrhoea. The importance of interactions between vitamin A deficiency and a number of infectious diseases (notably, but not confined to, measles) are now becoming clear. For instance, vitamin A deficiency affects epithelial membranes, and thus relates to respiratory tract infections and diarrhoea. Deficiencies of other micro–nutrients, even when clinical signs are not present, exert an influence through such routes as immunocompetence and integrity of epithelial tissues. One effect of iron deficiency is through depressing immunity, but the implications of this can be complicated by, for example, iron stimulating pathogen growth, as discussed in part II, in the next issue of SCN News. Zinc, it is emerging, may have a general effect on infectious disease, again at least partly through the immune system. Much of the attention to iodine deficiency disorders has related to effects of the deficiency itself, such as on brain development, but this deficiency may also have some effect on immunity. However, research on iodine deficiency in relation to infectious disease is limited, and it was felt that insufficient data were available to include this topic in the review.

These interactions are cyclic, and closely linked, and it is relevant to talk about a malnutrition–infection complex. A diagram is shown in Figure 1. This summarizes the principles underlying malnutrition and infection, as follows. Inadequate dietary intake can cause weight loss or failure of growth in children, and leads to low nutritional reserves. This is associated with a lowering of immunity, probably with almost all nutrient deficiencies. Particularly in protein–energy and vitamin A deficiencies there may be progressive damage to mucosa, lowering resistance to colonization and invasion by pathogens. Lowered immunity and mucosal damage are the major mechanisms by which defences are compromised. Under these circumstances, diseases will be of potentially increased incidence, severity, and duration; the relative importance of these three factors is not fully worked out in all cases. The disease processes itself exacerbates loss of nutrients, both by the host's metabolic response, and by physical loss, from the intestine. These factors themselves exacerbate the malnutrition, leading to further possible damage to defence mechanisms. At the same time, many diseases are associated with a loss of appetite, and other possible disabilities, cycling back to further lower the dietary intake. While other relationships play a part, this cycle summarizes many of the most important, and accounts for much of the high morbidity and mortality under circumstances of high exposure to infectious disease and inadequate diet, characterizing many poor communities.

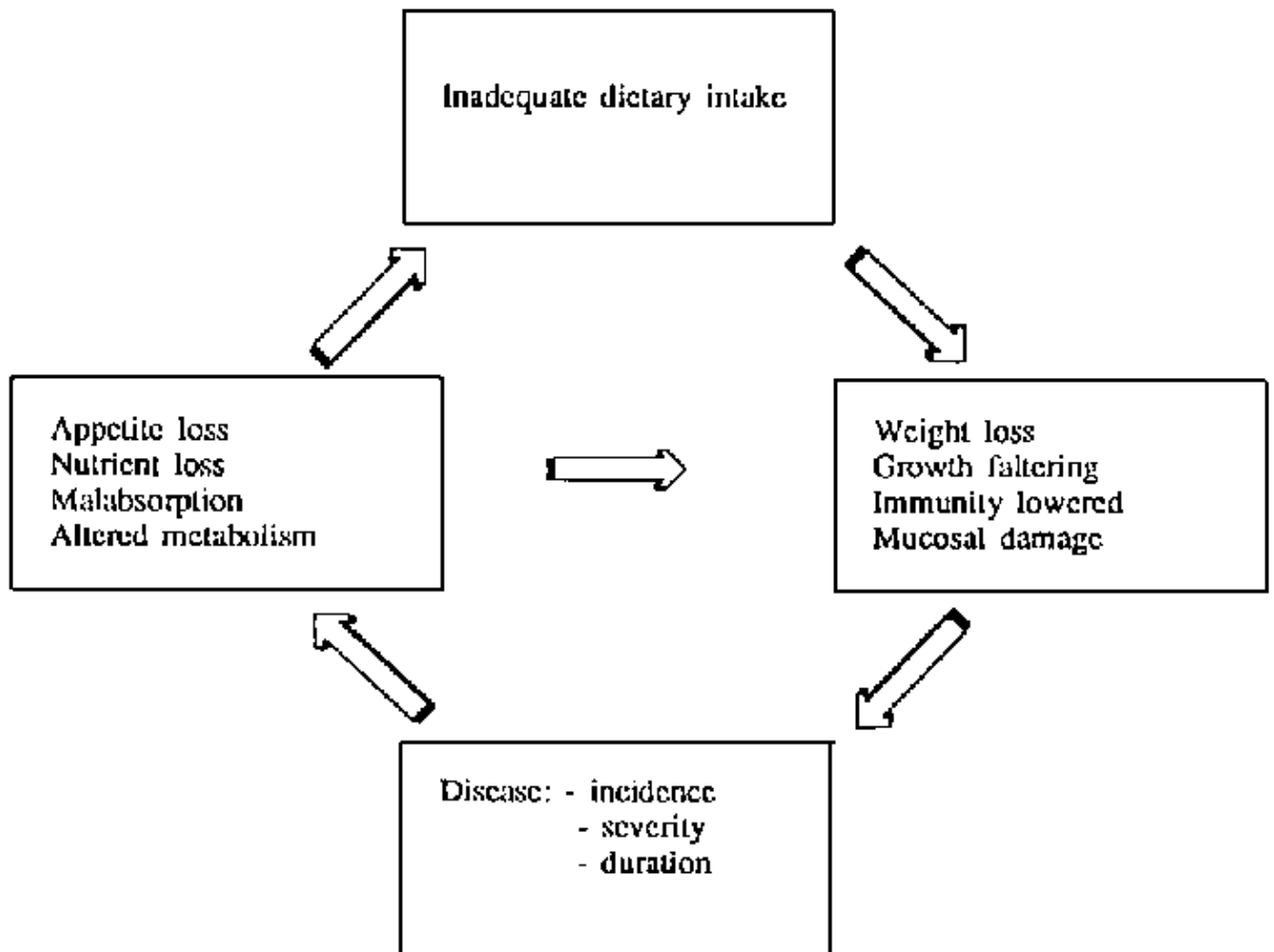


Figure 1 Malnutrition/Infection Cycle

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## OPERATIONAL IMPLICATIONS

### Diarrhoea and Malnutrition

Diarrhoea associated with malnutrition is probably the commonest cause of death in young children worldwide. For example, in an urban community in the Gambia over 35% of deaths in children aged 0–3 years were found to be caused by diarrhoea coupled with malnutrition. The importance of the distinction between acute diarrhoea and persistent diarrhoea (episodes of more than 14 days duration) has recently been recognized. Studies from different countries have shown that up to one half of deaths related to diarrhoea were linked to persistent diarrhoea. One study showed considerably higher mortality per episode from persistent than from acute diarrhoea<sup>(7)</sup>. Such figures may vary by area, season, and environment, but their importance is clear.

Diarrhoea (especially persistent diarrhoea) often causes deterioration of nutritional status, and poor nutritional status has been shown to increase the duration of diarrhoeal illness. Effects of nutritional status on incidence of diarrhoeal episodes, which are more determined by environment and personal hygiene, are more varied; the same applies to severity<sup>(8)</sup>. Effective management of diarrhoea also helps to prevent future illness, probably including diarrhoea, since maintenance of nutritional status helps to maintain immunocompetence. Thus there are important nutritional implications for both prevention and management of diarrhoea in children. But because nutritional needs change with age and because persistent diarrhoea carries a greater nutritional risk than acute diarrhoea, nutritional recommendations are specific to age and duration of diarrhoeal episode. In general, rehydration is of priority for management of acute diarrhoea, with nutrition becoming increasingly important as the duration increases towards persistent diarrhoea.

Exclusive breastfeeding is recommended for the **first 4–6 months** of life. This helps to **prevent** diarrhoea by minimizing the infant's exposure to diarrhoeal pathogens, which are common in other foods and in water. For the **management** of diarrhoea in children of this age, continued exclusive breast feeding (with increased frequency and duration of feeds if possible) is the most important nutritional aspect of management. Exclusively breast-fed infants (less than 4–6 months) with diarrhoea should be breast-fed with increased frequency, which should often prevent dehydration. If such infants nonetheless become dehydrated, rehydration therapy may be required. WHO guidelines recommend breast feeding after the first 4 hours of rehydration, or earlier if rehydration is complete, and continued breast feeding thereafter in addition to continuing oral rehydration<sup>(9)</sup>. Ensuring adequate maternal hydration through encouraging adequate fluid intakes by the mother may be important. This is particularly important in acute diarrhoea, but breast feeding should be maintained in persistent diarrhoea also. When breast feeding is maintained during diarrhoea, the growth faltering commonly associated with diarrhoea is rarely seen, and the risk of death is minimized.

Although breast milk alone is not sufficient for continued growth **after 4–6 months of age**, it is recommended that breast feeding continue into the second year of life with increasing intakes of suitable weaning foods. The frequency and duration of feeds should be maintained during diarrhoeal illness. For this age group, continued non-exclusive breast feeding is not the only nutritional recommendation, but is nonetheless of great value in the prevention and management of diarrhoea through its effects on exposure to pathogens and maintenance of nutritional status.



Breast feeding is essential for prevention and management of disease in young children.

Food hygiene during the weaning period is crucial to diarrhoea **prevention**. The use of fermented foods in weaning diets should be considered. Although an increase in exposure to diarrhoeal pathogens is inevitable during weaning, the extent of the increase can be minimized by striving to ensure that foods and utensils do not become contaminated, thus helping to prevent diarrhoeal attacks. The inclusion of fermented foods (which often constitute part of the traditional diet) may also contribute to the prevention of diarrhoea, since recent research indicates that levels of pathogenic bacteria are considerably lower in fermented foods than in non-fermented equivalents. This characteristic of fermented foods also makes them suitable for supplementation of the diet in management of diarrhoea.

For **management** of diarrhoea in children of weaning age it is most important that breast feeding continues to be supplemented with suitable foods, ideally to at least the level of the healthy child. This is especially true in persistent diarrhoea, which is relatively common in children of this age and carries a high risk of growth faltering and subsequent re-infection. During recovery from diarrhoea, extra food above the normal intake should be provided to restore nutritional status (a target of 125% of normal intake, with nutrient-dense foods, has been suggested)<sup>(10)</sup>.

In children of weaning age or older, ORT is recommended primarily for prevention and treatment of life-threatening dehydration during diarrhoea, which is more common in acute than persistent diarrhoea. It



may also play a role in nutritional management: since dehydration is thought to contribute to the anorexia that can accompany diarrhoea, ORT may help to maintain appetite and thereby nutritional status during bouts of diarrhoea.

In order to implement these recommendations for prevention and management, programmes to combat diarrhoeal morbidity will need to concentrate on influencing the behaviour of those responsible for day-to-day care and feeding of infants and young children. In some cases this will simply mean conservation and support of traditional practices, e.g., breast feeding, fermented food technologies. Appropriate dietary regimes using local food should be developed for nutritional management of diarrhoeas. As dietary bulk is such a problem in many traditional cereals, the use of amylase-rich flour to hydrolyse starches should be considered.

### **Measles, Vitamin A and Protein-Energy Malnutrition**

Measles is estimated to kill 2,000,000 children a year, almost all in developing countries. Measles is known to interact particularly with deficiencies of protein-energy and of vitamin A. It is a common precipitating cause of potentially blinding eye lesions (especially due to xerophthalmia) in young children, and of severe growth faltering and protein-energy malnutrition. Measles occurring in poor environments is thus associated with growth faltering, vitamin A deficiency and immune suppression. The immune suppression can persist for up to four months after infection, and goes some way to explaining both the particular risk of respiratory and diarrhoeal complications of measles, and the relatively greater severity of the disease, in poor communities. The increased risk of other infections contributes to the cycle of further malnutrition and further infection. Post-measles diarrhoea is particularly difficult to treat and has a very high mortality risk. Prevention of measles, through immunization, is thus an important means of reducing severe protein-energy malnutrition and vitamin A deficiency.

**Preventive** nutritional measures for reducing the severity of measles and its consequences relate to both vitamin A deficiency, and to protein-energy malnutrition. The provision of vitamin A supplements to populations at high risk from measles is recommended in all communities where vitamin A deficiency exists. In this context, distribution of vitamin A capsules with immunization programmes is particularly relevant, and is beginning in a number of countries. Protein-energy malnutrition is an established risk factor in measles, thus programmes that improve nutrition in general can also be expected to contribute to reducing the severity of measles.

Renewed emphasis on nutritional **management** during and after measles is of high priority, to prevent the severe growth faltering and high mortality often associated with measles. This again refers to deficiencies of both vitamin A and protein-energy.

Measles causes vitamin A deficiency, and measles is more severe in vitamin A deficient children. In all communities exposed to vitamin A deficiency, morbidity and mortality from measles would probably be reduced, not only by regular vitamin A supplementation for that population, but by ensuring that all children with measles receive vitamin A. In particular, when the case fatality rate for measles exceeds 1% in communities where vitamin A deficiency exists, all children with measles should without fail get vitamin A capsules<sup>(11)</sup>. Studies in Tanzania have shown reduced case fatality rates from measles when children were given vitamin A during the disease. Measles infection substantially increases vitamin A utilization, thus vitamin A administration during the disease helps prevent deficiency when body stores are marginal prior to infection, in turn providing protection against xerophthalmia and probably immune suppression.

Ensuring adequate intakes of protein and energy during the management of measles, and, especially important, during the immediate post-measles period, requires fresh emphasis. As for diarrhoea, this is particularly important for young children after the age of exclusive breast feeding. Continued feeding with suitable weaning foods can help to counter the anorexia, malabsorption, and increased protein breakdown that adversely affects the nutritional status of children with measles. Practices in some cultures of withholding food during measles in young children is particularly to be discouraged. At the same time, continued breastfeeding at all ages of children who are breastfed should be supported.

Maintenance of adequate vitamin A nutrition may also reduce non-measles morbidity and mortality. There is some evidence that vitamin A deficiency increases the risk of respiratory infection and possibly diarrhoea, perhaps through its effects on cellular and non-specific immunity. In addition, mortality from these and other causes may be elevated in vitamin A deficient children.

\* \* \*

The operational implications of nutrition and infection interactions apply to health programmes specifically, and to the fact that interventions to improve nutrition will often be an effective way of preventing ill health. Some of the latter may be outside the health sector itself.

Nutrition interventions as part of health programmes will help prevent infection, and are an important feature of effective management of disease. In general whenever malnutrition is a problem, for example as marked by growth faltering in children, nutritional support (e.g. supplementary feeding, micronutrient distribution, nutrition education) through the health services should be seriously considered. Some circumstances likely to be particularly important for breaking out of the cycle of malnutrition and infection have been highlighted. Adequate protein–energy status seems particularly important in prevention and management of many diseases – notably diarrhoea (especially persistent diarrhoea), measles and respiratory tract infections (see next issue). Adequate vitamin A status also protects against many diseases, measles being the best known. Attention to iron status is always important, and will be stressed in relation to malaria and intestinal parasites.

Measures that improve the nutritional status of the population will thus have important beneficial effects on health. This means that meeting the objective of improving health requires actions to alleviate poverty and to bring an adequate diet within the reach of everyone; the health sector must advocate such actions, some of which are the direct responsibilities of others<sup>(12)</sup>. Nutrition programmes, whether or not operated through health services, will benefit health. Similarly, access to adequate health services improves nutrition. For example, measles immunization reduces severe protein–energy and vitamin A deficiencies. The recognition that malnutrition is inextricably bound up with infection means health interventions are essential to preventing and treating malnutrition.

## NOTES

This article is based on "Malnutrition and Infection"; ACC/SCN State-of-the-Art series, Nutrition Policy Discussion Paper No. 5, 1989, by A. Tomkins and F. Watson; ACC/SCN, Geneva.

(1) Data from "*Supplement on Methods and Statistics to the First Report on the World Nutrition Situation*", ACC/SCN (1988), Table AIII; total number of infant deaths per year (1980–85) for 94 developing countries covered = 9.3 million; total number of child deaths (1984) = 3.9 million.

(2) See, for example, recent reviews by J. Rivera and R. Martorell: "Nutrition, Infection, and Growth". Part I: Effects of Infection on Growth. *Clinical Nutrition* (1988), 1 (4) 156–162. "Part II: Effects of Malnutrition and Infection and General Conclusions", *ibid* 163–167. The study still widely quoted ascribing causes of death to malnutrition is: Puffer R. P & Serrano C.V. Patterns of Mortality in Childhood. Scientific Publication No 262 PAHO (1973).

(3) Calculated from ACC/SCN (1988) *op. cit.* Table AIII: Average IMR for Africa (1980–85) equals 121.5 deaths per thousand live births; CDR equals 23.1 deaths per thousand child population per year;  $(0.1215 + (4 \times 0.0231)) = 0.21$ , or 21%.

(4) Scrimshaw N. S., Taylor C. E., and Gordon J. E. *Interactions of Nutrition and Infection*. Geneva: World Health Organization (1968).

(5) See FAO *5th World Food Survey*, Table 3.1. Data also shown in First Report on the World Nutrition Situation, and Supplement on Methods and Statistics Table AIII.

(6) From ACC/SCN (1988) *op. cit.*: estimates of numbers of underweight children for the 94 countries are: 1974–76, 149.3 million; 1983–5, 152.5 million; 1984, 157.9 million.

(7) Results from the Gambia communicated by A Tomkins. For information on persistent diarrhoea, see "*Update Persistent Diarrhoea*" WHO/CDD, No 4. March 1989.

(8) See Tomkins & Watson (1989–cited above) Section 4.2, table 3.

(9) WHO/CDD "*A Manual for the Treatment of Acute Diarrhoea*". WHO/CDD/SER/80.2 REV. 1 (1984). WHO, Geneva.

(10) National Research Council (1985).p.30. *Nutritional Management of Acute Diarrhoea in Infants and Children*. National Academy Press, Washington DC. This document also gives

details in an Appendix of energy needs for recovery from the effects of diarrhoea.

(11) Joint WHO/UNICEF Statement on Vitamin A and Measles. *Weekly Epi Record* (1987) 62 133 – 134. WHO, Geneva.

(12) See: "*Intersectoral Action for Health*", World Health Organization, Geneva (1986); and WHO Technical Report Series, No 667 (1981). "*The role of the health sector in food and nutrition*". Report of a WHO Expert Committee, WHO, Geneva.

– J.B.M.

## **Targeted Food Subsidies**

Results from trial in the Philippines.

### **The Pilot Food Price Subsidy Scheme in the Philippines**

One of the strategies used by governments to augment the nutritional status and real incomes of their populations are consumer food subsidies. Food costs account for nearly 80 percent of the total expenditures for the poorest households in developing countries. As a means of correcting income distribution and as protection from adverse impacts of structural adjustments, the provision of food subsidies has therefore had a strong attraction for policy makers. But food price subsidies, even if effective in achieving their direct objectives, may be very costly. Evidence from countries like Egypt and Sri Lanka has shown the high fiscal cost of food price subsidy programs, and that once introduced, their termination may be politically difficult. The cost effectiveness of food subsidy schemes could be improved by targeting them to those segments of the population most in need; and since cost effectiveness depends on the precise design and implementation of such schemes, small-scale pilot studies are useful in assessing the validity of a particular plan.

To test the effectiveness of a targeted food price subsidy scheme in the Philippines, a pilot scheme was implemented in a research collaboration between the International Food Policy Research Institute and the Philippines National Nutrition Council/Ministry of Agriculture. Using a geographic targeting procedure, the experiment was conducted in three provinces (Abra, Antique and South Cotabato), involving 14 villages, half of which received the subsidy, the other half providing a comparison.

The pilot scheme, implemented for one year beginning in mid-1983, consisted of price discounts on two calorie-rich foods, rice and cooking oil, and a nutrition education component in the form of classes for mothers. Rice was selected because it is the major staple in the Philippines and cooking oil because its caloric density makes it a good choice for boosting the energy consumption of children, who may not be able to consume enough calories from a high-bulk food such as rice. Results of detailed analysis, published recently (Ref. see source below) are summarized here.

The study provides strong evidence that the targeted subsidy scheme was successful in increasing calorie consumption, mostly as a result of increases in purchasing power resulting from the price subsidies from rice and cooking oil. In the experiment, each household within the geographically targeted area (a village in this case) was issued a ration card that guaranteed a monthly quota of rice and cooking oil at a subsidized price. The quotas were filled by private village stores (known as sari-sari stores in the Philippines), who in turn purchased rice and cooking oil from public or private wholesalers and received reimbursement for the subsidy from a special account established in a local bank. The assessment from the viewpoint of administrative and technical feasibility concludes that there is a real advantage in the use of an existing infrastructure of extension workers and an existing delivery system such as village variety stores.

The procurement and selling performance of the accredited sari-sari stores varied according to several factors, such as: size of population served; frequency of purchase; size of revolving store capital and supply of credit; credit to consumers; location of the stores; and the character and acceptance of retailers in the community. Of these, among the most significant was the location of the shop. When central, the use was greater; similarly, farmers living in the countryside some distance from the shop were not able to make as much use of the subsidy, and benefitted less.

Each household was guaranteed a *monthly* quota based on household size – 5 kilos of rice and 400 grams of cooking oil per family member. The price subsidy on these was 30 percent of the price of rice and 50 percent

of the price of cooking oil. The value of subsidy was equivalent to roughly 9 percent of the average household incomes in the project areas, or an equivalent of about US\$9.50 per person per annum. Close to 84 percent of the cost of the scheme was the subsidy itself. Administrative costs accounted for only 9 percent and an incentive payment to retailers was about 7 percent.

### Impact on Food Consumption and Nutrition

The food price subsidy scheme increased net incomes by more than 9 percent, according to the results of the study. Econometric analysis indicates that food (calorie) consumption increased significantly for households receiving the subsidy. Each additional peso of purchasing power (at the time \$1 = about Peso 12) obtained from food subsidies would expand calorie acquisition by 230 calories per adult equivalent unit (AEU) whereas each additional peso of income from a source other than the subsidy is estimated to expand calorie acquisition by 150 calories per AEU. These findings therefore indicate that the extra incomes transferred in the form of food subsidies are likely to increase calories more than incomes from other sources. During the year that the pilot scheme was being tested, economic conditions deteriorated in general, for example inflation caused the market price of rice to increase some 40–50%. The households receiving subsidy did not in fact show a significant increase in calorie consumption (although it did not fall) but on the other hand consumption in the control households – those not receiving the subsidy – declined sharply. Thus, comparing the subsidized and control households, the subsidy was estimated to have resulted in significantly greater calorie consumption of about 10 percent above what it would have been otherwise.

Furthermore, as a result of the subsidy, pre-school children showed an improvement in their weight-forage of 4% to 7% (measured as a mean of standards), equivalent to a reduction of around 12 percentage points in the proportion underweight.

### Cost Effectiveness

The fiscal cost of transferring each US\$1.00 of real incomes to households in the project areas is estimated at US\$1.20. However, if only the transfers received by households with malnourished preschool children are considered as benefit, whereas the transfers received by other in the project areas are considered as leakages, the cost increases to US\$3.60. If only households consuming less than 80 percent of estimated energy requirements are considered as the target, the cost would be US\$1.65. These figures are summarized in table 1.

**Table 1 – Cost-Effectiveness Indicators Philippine Pilot Food Subsidy**

	Not targeted	Targeted to households with <80% RDA	Targeted to households with children <75% WA
Fiscal cost of transferring \$1.00	1.20	1.65	3.60
Annual fiscal cost of a net increase in food acquisition of 100 calories per AEU per day	6.75	7.40	13.60
Annual fiscal cost per preschooler of a net increase of 100 calories per individual preschool child per day	26.00	45.10	74.40
Annual fiscal cost of total subsidy	9.50	13.00	28.75

In estimating cost-effectiveness, the study considers one other factor. If rice and cooking oil are subsidized, households are likely to buy less food than usual from other sources. This would lower the *net* increase of food consumption due to the subsidy, because of substitution. Allowing for this, it could be calculated that assuring a net increase in daily calorie consumption of 100 calories/person/day for one year would cost roughly \$6.75 per person/year.

There are clear policy implications from the responses of households to the food subsidy experiment. If the sole goals of the food subsidy scheme were to reach malnourished pre-schoolers, a second step could be added to the geographical targeting procedure (i.e. selecting villages). After villages with a high degree of malnourishment are selected, the subsidy could be limited to households with malnourished preschoolers, which in this case would reduce the cost of providing benefits to this group to about one-third the cost of

providing the subsidy to the entire village (since for example one-third of households had underweight children).

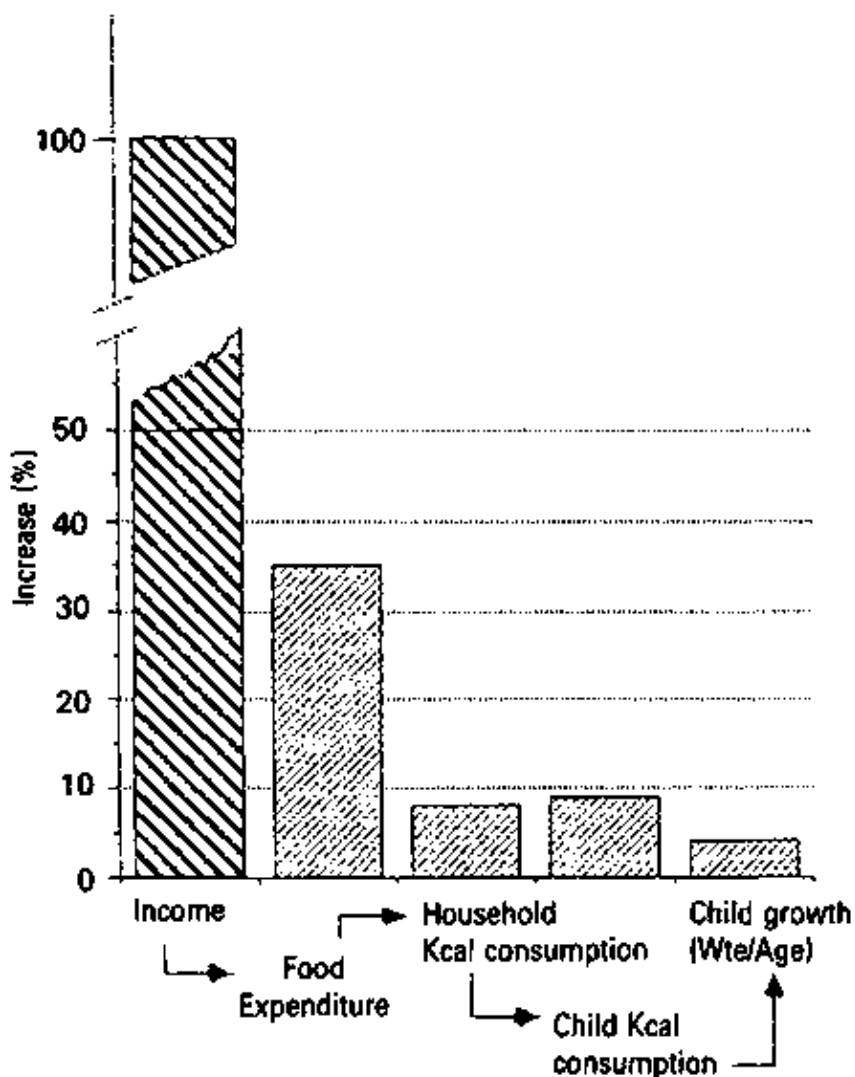
The experiment also found strong relationship between malnutrition and low incomes. Families of landless farm workers, hired fishermen, and tenant farmers, for example, are much more likely to be malnourished than their neighbours in other occupations. Efforts to improve nutritional status of preschoolers in these groups through nutrition education are unlikely to be successful unless low income households' purchasing power is augmented. Efforts to reallocate the inadequate amount of food among household members so that preschoolers receive a larger share could reduce the energy intakes of adult wage earners to the point of impairing capacity to work, thus limiting the households' incomes even more. Nutrition education was nonetheless found to be effective in assuring that a larger share of the additional income is spent on food for the most vulnerable members of the households.

– Marito Garcia, IFPRI

(Further details in: The Pilot Food Price Subsidy Scheme in the Philippines: Its Impact on Income, Food Consumption and Nutritional Status, Garcia, Marito and Per Pinstrup-Andersen. Research Report 61, International Food Policy Research Institute, 1776 Massachusetts Ave. NW, Washington DC, 20036 USA, August 1987. A copy of the research report can be obtained at this address.)

**CORRECTION:**

We regret that in our last issue of SCN News, the figure 1 of the feature article on "Does Cash Cropping Affect Nutrition?", which appeared on page 6, was unfortunately mislabelled. We therefore reproduce the corrected figure 1 below:



Effects of doubling income on nutrition. Illustration of data from project in the Philippines: dilution of income effects, through food consumption, on child growth.

## NEWS AND VIEWS

### Managing Successful Nutrition Programmes

Effective programme management, for communities and individuals, makes the difference between success and failure, for nutrition programmes as for any others. Success of course also depends on interventions being relevant to causes of malnutrition –requiring research and pilot schemes. But in many countries nutrition programmes have now moved well beyond the pilot testing stage to become large-scale routine activities. With accumulating years of experience, the crucial "nuts-and-bolts" lessons leading to sustained and efficient operations can now be examined. To help in this, the ACC/SCN organized a workshop on "Managing Successful Nutrition Programmes" at the 14th International Congress of Nutrition, held in Seoul, South Korea, 21–25 August 1989. The workshop lasting eight hours spread over three days was attended by some 200 people, participants in the 14th Congress. The presenters were supported by a number of sponsors, including GTZ, ILO, the Netherlands, UNEP, UNICEF, USAID, as well as the ACC/SCN itself.

Sixteen projects provided real-life experience, organized into five themes: targeting, staff issues (selection, supervision, training), community participation, management information systems, and sustainability and replicability. Examples of some of the large scale programmes discussed are given in the box. A report is in preparation by the ACC/SCN, and the topic will be featured in more detail in SCN News No. 5. Some initial impressions are highlighted here.

Programmes that succeed, almost by definition, are those that are sustained by long-term support. For programmes to succeed in the long run they must be clearly perceived as of benefit, both by the communities involved, and by the funders (government and donors) alike. Most of the large scale projects have been in operation for at least five years, indeed many began in the mid '70s. The crucial stage from pilot testing to large scale routine operation has clearly been overcome in these cases.

Continuing operation of such projects over a number of years generally involves simplification and refinement of operational procedures. For example, most projects now target by two criteria: geographical area and then to women and children. Some programmes then select on the basis of individuals status – usually by growth monitoring in children, and for pregnant and nursing women. More complicated targeting procedures (for example by socio-economic status) that have previously been tested have not generally found their way into operations.

A substantial level of intensity of programme activities is required to bring tangible benefits. Factors such as frequency of contact of field workers with house-holds, supervision ratios, and organizational development, are central to successful programmes. Although flawed, one measure for comparison between projects is the expenditure per participant per year, and this seems to fall in the range (where feeding is involved) of some US\$10 to US\$50 per participant per year; programmes that do not involve feeding are of around half the cost or less, but have a different type of impact.

#### *Examples of large-scale nutrition programmes from ACC/SCN Workshop*

<i>Country/Programme</i>	<i>Nutrition Components</i>
Botswana – Drought Relief Programme	Food distribution and feeding through health service. National coverage (500,000 participants in 1987/8). 1982–88, during drought.
Costa Rica – National Nutrition Programme	School feeding, food distribution, nutrition education and child care centres (about 500). Begun in 1974.

Gambia – Health and Nutrition Programme	Food supplements (take–home), nutrition education, growth monitoring. About 100 centres, approx. 80,000 women and children participate. Began in 1981, new phase 1989–94 now starting.
India – Integrated Child Development Services	Supplementary feeding, growth monitoring, nutrition education. Population of some 30 million children covered (early 1989). Began 1975.
India – Tamil Nadu Integrated Nutrition Programme	Selective time–limited supplementary feeding, growth monitoring, nutrition education, micronutrient deficiency control. More than 1 million children and women participate. 1980–9, to be expanded.
Indonesia – Family Nutrition Improvement Programme (UPGK)	Monthly weighing, nutrition education, home gardening, nutritional first aid (iron & vitamin A). National coverage, about 21 million children. Began in 1974.
Philippines – Alternative School Nutrition Programme	Nutrition education, supplementary feeding, food production, income generation; uses revolving fund. Covers over 1000 schools. Began 1983.
Tanzania – WHO/UNICEF Joint Nutrition Support Programme, Iringa	Growth monitoring, maternal and child health, household food security, etc; emphasis on community mobilization. Covered 600 villages in 1987. 1984–1989.
Thailand – National Nutrition Programme	Growth monitoring, nutrition education, supplementation. Covered 2.5 million children in 60,000 villages in 1989. Planned 1982–2001.
Zimbabwe – Supplementary Food Production Programme	Community production of supplementary foods, community mobilization, nutrition education. National, comprising over 6000 local projects in 1989. Began in 1981.

*Source: Project summaries prepared by workshop participants*

Overall the impression is that there are now a number of models of mature programmes whose future seems relatively assured, and whose impact on nutrition –although this was not evaluated directly – seems likely to continue. Sustainability of such programmes, as summarized at the end of the workshop, can be viewed as both financial (internal and external) and functional, the latter involving both technical and social/political aspects. While political support is necessary, its relation to accountability of decision–makers to the community may be one of the most important factors of all.

– J.B.M.

### **International Conference on Nutrition set for 1992/93**

At the ACC/SCN 15th Session, held at UNICEF Headquarters, New York, February 1989, the United Nations agencies represented on the SCN decided that the time was right to propose an international (or world) conference on nutrition. The objectives put forward were as follows (taken from the official ACC/SCN report):

"The ACC/SCN recommends consideration of a major effort by governments, organizations of the UN system and bilateral agencies, including financial institutions, and non-governmental organizations, to:

- increase awareness of the magnitude, causes and consequences of nutrition problems;
- formulate and adopt strategies, based on available knowledge and technology, to meet nutritional goals;
- mobilize resources for a concerted effort to implement these strategies;
- get momentum behind action for a human nutrition focus for the 1990's Development Decade."

Following this, FAO and WHO proposed to the ACC in October that they should take a lead in initiating such a conference. Other UN Agencies will be fully involved in the preparation, proceedings, support and follow-up of the conference on a continuing basis. The ACC invited these and other concerned organizations, including non-governmental organizations, to work closely together, using the mechanism of the SCN whenever appropriate.

In summary, the ACC stated that it believed that malnutrition and undernutrition, which affect millions of women, men and children are major impediments to social and economic progress, and that the conference will be an important step towards increasing public awareness and obtaining national and international commitments to appropriate strategies and actions to ensure improved nutrition world-wide.

We will keep readers informed of progress in this important effort. Watch this space.

– J.B.M.

## **Nutrition and the Road to Health**

Professor Thomas McKeown, the eminent epidemiologist and former Chairman of a World Health Organization (WHO) advisory group on health research strategy, died on 13 June 1988 aged 75. Essentially, in his most important writings, McKeown – with outstanding gifts of intellectual vigour, erudition and fluent expression – argued that the key to health lay in changes of lifestyle. WHO issued a feature (*WHO Features, December 1988, No 131*) as a tribute to Professor McKeown – drawn from a statement he prepared a few weeks before his death, for a meeting of the World Health Organization Advisory Committee on Health Research. His views are of such interest in the context of nutrition that we have extracted the article here at some length.

"With its emphasis on equity, acceptability, self-determination and social justice, the concept of primary health care reflects admirably the spirit of the "health for all" commitment. It is, however, a comprehensive approach which includes all the major developments desirable for health under more or less ideal conditions. In the foreseeable future many Third World countries will be unable to afford all of these developments, and it is therefore necessary to assign priority between them according to their effectiveness.

For this purpose there are two sources of enlightenment to which we can turn, the experience of industrial countries during the last two centuries, and the experience of some developing countries which have made rapid progress during the last few decades. Conclusions from these sources are reasonably consistent particularly on the basic observation that the advances in health were due almost entirely to the decline of mortality from infectious diseases.

In developed countries, the infections declined because of (a) increased resistance brought about by improvement in nutrition and, later to a lesser extent, immunization and (b) reduced exposure, which resulted from hygienic measures (in respect of water, sanitation, food and housing) introduced progressively from the late nineteenth century.

In the developing countries the decline of mortality appears to have been due predominantly to better nutrition, for in some countries which in a few decades have attained Western standards of health there were



no substantial advances in the other major influences. However there were some other developments which contributed powerfully if indirectly to health: education, particularly of women; equity of access to health resources; political and social will to improve health; above all, control of fertility, which safeguarded the advances from the effects of rising numbers.

In the light of this assessment of the contribution of different influences, developing countries which do not have the resources needed to provide all the services specified under primary health care – and that is the position in which nearly all are placed – would be well advised to give high priority in research and services to nutrition, immunization and sanitation. And if limited resources prevent the full provision of sanitary services, as they are likely to do, a large advance can be made by increasing resistance to infection.

**It is hardly possible to overestimate the significance of the observation that in China and Kerala the advances were due almost entirely to better nutrition; there were no substantial improvements in water, sanitation and personal care, and immunization coverage was low.....**

### **Primary Health Care: an all inclusive approach**

The content of primary health care was outlined clearly in the Report of the International Conference at Alma-Ata. "Primary health care should include *at least*: education concerning prevailing health problems and the methods of identifying, preventing and controlling them; promotion of food supply and proper nutrition; an adequate supply of safe water, and basic sanitation; maternal and child health care, including family planning; immunization against the major infectious diseases; prevention and control of locally endemic diseases; appropriate treatment of common diseases and injuries; promotion of mental health; and provision of essential drugs.

Moreover this comprehensive agenda was regarded as a statement of basic requirements, to be supplemented according to the economic and social values of each country and its communities. From this statement it is evident that primary health care, so conceived, covers all the major developments needed for health under more or less ideal conditions. It does not attempt to judge the order in which the developments should be promoted where conditions are far from ideal, as they will be in many countries for a long time to come.

The inevitability of deficiencies, and hence the need for priorities, is well illustrated by two of the influences that are most critical for health: nutrition and sanitation. A recent report on the world nutrition situation <sup>1</sup> concluded that malnutrition has decreased in Asia and Central America, has remained stable in South America and has increased in much of Africa. Since the population of the world is expected to double before it stabilizes, and the population of Africa will increase about six times, on the basis of present policies it seems inevitable that serious food deficiencies will continue well into the next century. And the WHO report on sanitary progress during the present decade makes it evident that we are not in sight of the time when clean water and adequate sanitation will be generally available in developing countries, particularly in rural areas. ....

<sup>1</sup> ACC/SCN 1987. First Report on the World Nutrition Situation.

### **Experience of Developed Countries**

In developed countries the improvement in health since the eighteenth century resulted mainly – until 1900 almost wholly – from the decline of mortality from infectious diseases. The direct influences which led to the decline of the infections were as follows:

#### 1. Increased resistance brought about by:

(a) Improved nutrition. It was responsible for the advance in health in the eighteenth and nineteenth centuries where exposure to infection was increasing because of rapid population growth and defective hygiene.

(b) Immunization. It accelerated the decline of mortality in the twentieth century, particularly by reducing the pool of infectious people.

2. Reduced exposure to infection, mainly through hygienic measures applied progressively from the late nineteenth century. The important developments were clean water, improved sanitation and, a little later, advances in the handling of food and improvements in housing.

To a limited extent exposure was also reduced by treatment.

However there were other influences which contributed powerfully, although indirectly to health: control of fertility came at precisely the time needed to safeguard the advances from the effects of rising numbers; improvements in education more or less coincided with the advance in health; and economic growth provided the resources which led to a rising standard of living, including most significantly improvement in nutrition and hygiene. ....

### Experience of Developing Countries

Fortunately additional evidence is now available from a number of Third World countries which have advanced rapidly in health: Sri Lanka, Costa Rica, India (Kerala State), China, Thailand, Cuba, Jamaica and a few others. The conclusions which follow are based on books, papers and case studies which have examined this experience... and it will be convenient to examine the direct influence under the same headings as in developed countries.

1. Increased resistance to infection. All of the countries which advanced rapidly achieved a substantial improvement in nutrition which led to increased resistance (to infection). Indeed in some countries this was the only important direct influence. It is perhaps surprising that immunization appears to have contributed relatively little to the advances, not of course because it was ineffective, but because the reduction of mortality occurred in a period when vaccine coverage was still low.

2. Reduced exposure. Improvements in water supply and sanitation were important influences in industrial countries, but they do not seem to have been very significant in the Third World countries which have advanced. For example, the coverage of the population by provision of clean water and safe sanitary measures was low in China, Sri Lanka and Kerala – lower indeed than in many other developing countries – although their death rates were well below average levels. It is also clear that treatment of established diseases contributed little to the reduction of exposure, for in several countries there was little improvement in personal care services. ....

It follows that developing countries which do not have the resources needed to provide all the services specified under primary health care – and that is the position in which almost all are placed – would be well advised to give high priority in research and services to nutrition, immunization and hygiene. And if the resources available limit full development of sanitary services in the foreseeable future (as they are likely to do), a very large advance can be achieved by increasing resistance to infection; in China and Kerala, which in a few decades have reached Western standards of health, the advances were due almost entirely to better nutrition;...

### The Present Position of the Major Influences on Health in Developing Countries

To anyone who has travelled extensively in the rural areas of the Third World, the common causes of ill-health may seem self evident. Many children are visibly malnourished; sanitary conditions are primitive; drinking-water is unclean, the food displayed in open markets is contaminated; and the number of people competing for the means of life is clearly excessive. Our conclusions concerning the determinants of health can be epitomized by the simple statement that **the most elementary requirements are that people must have enough to eat and they must not be poisoned. ..."**

Source: WHO Features, Dec. 1988, No. 131. Part of the article is based on "The Origins of Human Disease" (1988) Blackwell, Oxford.

\* \* \*

Prof McKeown went on to summarize conclusions in relation to four critical influences: food, immunization, drinking water and sanitation, and control of numbers. Here is an excerpt from his conclusions regarding food.

**"Food**

A World Bank study of the relation between poverty and hunger quoted an edict by the Emperor Wen in 113 BC: "Why is the food of the people so scarce? ... Where does the blame lie?" The deficiency is even more remarkable today, because in many countries and in the world as a whole food supplies are believed to be adequate. The World Bank Study concluded: "The often predicted Malthusian nightmare of population outstripping food production has never materialized. Instead the world faces a narrower problem; many people do not have enough to eat despite there being food enough for all. This is not a failure of food production, still less of agricultural technology. It is a failure to provide all people with the opportunity to secure enough food – something that is very hard to do in low-income countries." Although one would question the statement that population growth has *never* outstripped food production, it is an accurate assessment of the position in many countries today.

The recent *First Report on the World Nutrition Situation* (1987) made an appraisal of trends in nutritional indicators from 1960 until the most recent year available, usually 1985. The Report concluded that although nutrition has improved over the last 25 years in most parts of the world, in sub-Saharan Africa there has been declining food availability and increased malnutrition, and in South America there has been no significant improvement. Improvements in living conditions recorded during the 1970s have slowed or halted with the severe economic recession of the early 1980s, and this is affecting child nutrition.

In the light of our conclusion concerning the critical role of nutrition, the data for China in this report are of particular interest. Over the past 25 years, China's *per capita* food production increased 75% and its population by around 60%; dietary energy supply increased by approximately 40% between 1961–63 and 1983–85. There were corresponding increases in birth weight and child growth rates, and infant mortality fell from 200 (per 1000 live births) before 1949 to about 40 in 1980, and to 35 in 1982. As already noted, apart from the improvement in nutrition there were no other major changes which could account for the reduction of mortality.

The increased food production during the last 35 years has resulted mainly from technological advances; the use of chemical fertilizers and pesticides; increases in the amount of irrigated land; and the introduction of high yielding disease resistant seeds. As a result of these advances, grain production more than kept pace with the growth of populations, both in the world at large and in developing countries considered as a whole. However, for a number of reasons the practice of equating food resources with the number of people gives a misleading picture of the effects on nutrition...

... it is evident that malnutrition and its sinister effects on health are common in developing countries, and result mainly from international and national policies which prejudice food production and distribution. The international community can contribute in many ways – with resources, with advice and not least by refraining from encouraging or requiring Third World countries to absorb food surpluses (the grain and butter mountains) or to adopt agricultural and economic policies which contribute to their poverty. However, the causes of food insecurity and the resultant ill-health are determined largely by national policies. The chief requirements are (a) to ensure an adequate food supply through policies which promote domestic production (by shifting resources from industry to agriculture, from large to small farms, from capital-intensive to labour-intensive activities) and (b) to give people at risk of food insecurity the opportunity to earn an adequate income. The problem of food deficiency is determined essentially by poverty. "

## Potential Health Effects of Climatic Change

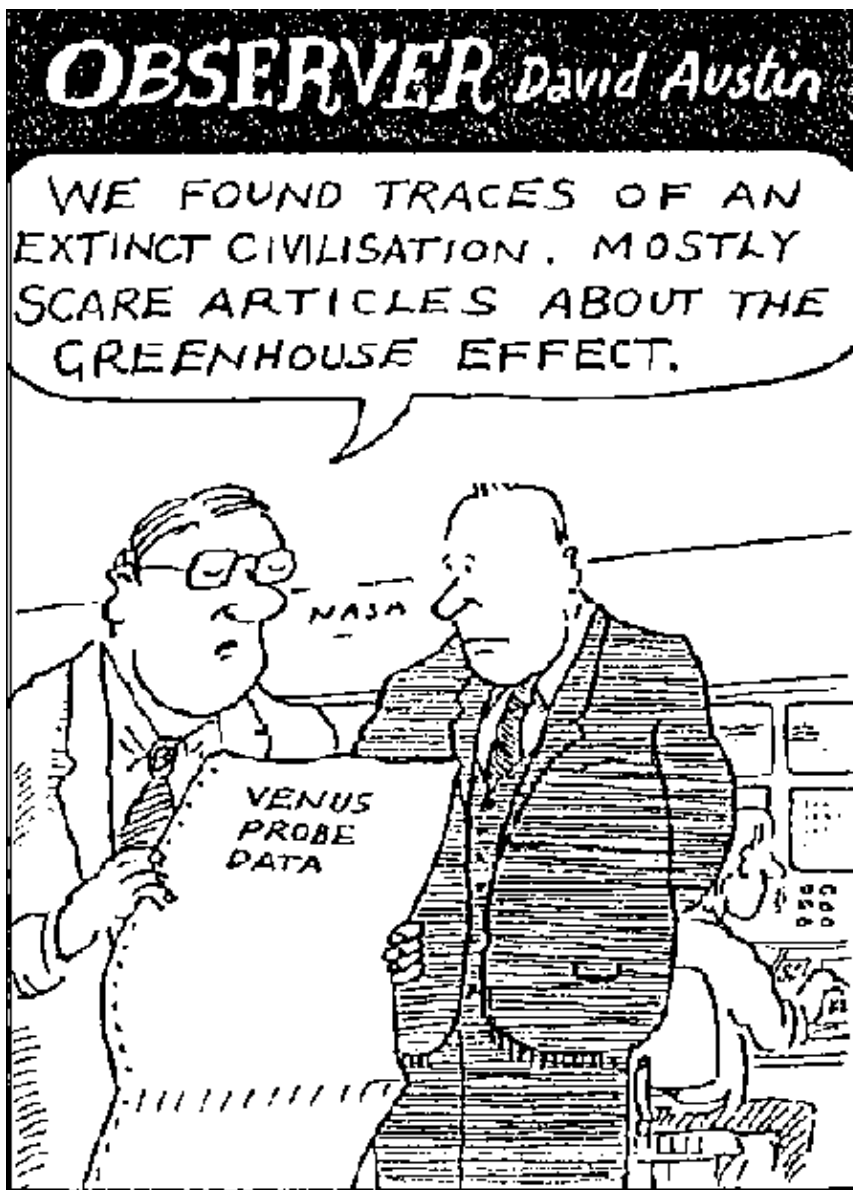
Climatic conditions may change. A rise of global mean temperature and an increase in UV radiation is predicted if the present trends of greenhouse gas emissions continue during the next 100 years, or even if they are substantially cut. Climatic changes may affect the world's entire population. The World Health Organization, through its Environmental Health Division, has undertaken to assess health consequences of climatic change. A small group of experts met in WHO, Geneva, from 12–16 June 1989 to discuss the basis for a review of the "Potential Health Effects Associated with Climatic Change".

Many of the changes will affect ecology and influence food production, vector-borne and other infectious and non-infectious diseases. The phenomena might trigger migration both from one rural region to another and from rural to urban areas. Notable among potential indirect effects of climatic change on health are those mediated by effects on food production and nutrition requirements.

Adaptive mechanisms depend, among other things, on the soundness of the environment, the strength of economy, and the quality and level of health services.

If these gradually occurring changes are accompanied by an increase in frequency or intensity of natural disasters such as cyclones and floods, their effects on human life become acute, possibly generating large refugee or population displacement problems. Predictions of the potential health effects of the climatic change have to remain very general since the available data are not sufficient for any kind of quantitative projections. Geographical factors, however will determine the population at risk in certain events (e.g. flooding from sea level rise), and affect agriculture, nutrition and household socioeconomic status. Rising temperatures may modify nutritional requirements. More important perhaps, climatic change could have a profound effect on agriculture and hence food production.

According to a preliminary draft report of this meeting, even in the absence of large quantitative effects on agriculture, climatic variations are likely to diminish the variety of crops that subsistence farmers will be able to cultivate, causing a narrowing of the dietary spectrum. Regions at present in a precarious agro-economic equilibrium due to marginal climatic conditions are of special concern. These are the most vulnerable to even minor changes, thus a small increase in the frequency or length of drought periods for example may be sufficient to make them virtually uninhabitable.



From 'New Scientist', reproduced with permission of David Austin.,

The meeting looked also at the possible public health responses to the adverse effects of climatic change, and gave recommendations for actions to be taken. The full report of this meeting will be available by mid 1990. A WHO Task Group meeting in April 1990 will finalize recommendations concerning health. The UN sponsored Intergovernmental Panel on Climate Change will produce a comprehensive report by end-1990.

### **The Cornell–China–Oxford Research Project on Nutrition, Health and Environment**

This project which started in 1983 is a large international study on the health, eating habits, environment and social practices within the People's Republic of China, designed to investigate interrelationships between food, environment and diseases. The principal investigators are nutritional scientists, physicians and epidemiologists from Cornell University, the Chinese Academies of Preventive Medicine and of Medical Sciences, and the University of Oxford, who work in collaboration with other scientists from the United States, France, Britain, Taiwan and other countries.

A large quantity of survey data and biological samples have been gathered from more than 6000 individuals in 130 rural areas in 24 provinces of China, to provide the most comprehensive data base that exists on the multiple causes of disease.

China was chosen for this health investigations because of its unique characteristics: it has a huge population; it encompasses a wide range of ecological zones, mortality rates for various diseases, and food and other consumption patterns; and a large range of exposure to both industrial and non-industrial carcinogens. In addition China is at a stage of epidemiological transition where diseases of industrialization such as lung cancer and heart disease are becoming more prevalent than diseases of underdevelopment such as infectious diseases. Another remarkable feature of China for epidemiological studies is that there has been little mobility of the population so that life styles and dietary patterns have remained relatively stable in each area. These characteristics lead to clear cut geographic differences in disease patterns from one county to the next. Mortality rates for a specific disease can vary by more than a hundred fold. This provides a level of sensitivity that is unlikely to be produced in other countries. The methods of data collection have been extremely carefully prepared and scrutinized to maximize the reliability of the data set. The information emerging from the relationship of these differences to environmental and dietary factors will have significance not only for China but also internationally.

More than 350 items of information on biochemical indicators, carcinogens and viral exposure, dietary practices, physical and reproductive characteristics, clinical status, smoking and drinking practices and other habits have been recorded. Initial computer analysis carried out at the University of Oxford has produced several thousand statistically significant associations many of which provide interesting insights into possible causal factors but a great deal of work still needs to be done on the interpretation of these findings. Sections of this database have been made available to associated research groups throughout the world for further analysis and interpretation in the expectation that many new insights into the causation and prevention of disease will emerge.

Based on the full analysis of only a small part of the data, a number of associations and hypotheses on causal relationships between food, environment and diseases are beginning to emerge. Some findings are, however, more fully developed of which only few examples are given in what follows.

At the low plasma cholesterol levels found in China the quantitative relationship between plasma total cholesterol and coronary heart disease (including myocardial infarction plus coronary heart disease) mortality is that which would be expected from a linear extrapolation of the relationship previously observed for several Western populations in which mean plasma cholesterol levels are much higher. This observation suggests that there is no threshold of plasma cholesterol below which coronary heart disease mortality remains constant. However, within the low ranges of plasma cholesterol and coronary heart disease mortality in China, no significant association was found.

On the same theme, in the absence of any association found between red blood cell (RBC) oleic acid and plasma cholesterol, the study was able to provide an alternative hypothesis to explain the observed beneficial effects of oleic acid on reducing cardiovascular disease. It was found that in the phosphatidyl fraction of the RBC membrane, the oleic acid concentration was significantly negatively correlated with its arachidonic acid concentration. Assuming that the same is true for the platelet membrane and considering that thromboxanes (potent inducers of platelet aggregation and platelet release reactions and also a vasoconstrictor) derived from arachidonic acid increase platelet aggregation, the potential for aggregation may be reduced by oleic acid displacing arachidonic acid in the membrane. In other word, beneficial effect of oleic acid may relate to reducing clot formation, rather than to effects on plaque deposition.

Contrary to the recently postulated relationship between low plasma cholesterol levels and higher total cancer rates, no evidence of such association was found in this study and if anything the opposite trend was indicated. The study provided support for the hypothesis that at least part of the geographic variation in esophageal cancer is diet related, suggesting low levels of vitamin C to be possibly involved. Esophageal cancer mortality was found to be significantly higher in areas of low plasma vitamin C and low fruit consumption. Most non cancer disease mortalities are inversely related to both socioeconomic and general nutritional status, except for coronary and hypertensive heart diseases and stroke which are negatively associated with socioeconomic status but positively associated with the general nutritional status. Salt intakes may account for part of this observation. In the case of mortalities from most cancers (including leukemia, lung, breast and lower bowel cancers) there are strong positive associations with both socioeconomic and general nutritional status. Esophageal, stomach and cervical cancers were, however, positively related to the general nutritional status and inversely to socioeconomic status.

The monograph presenting the original data and a preliminary data processing is expected to be published in January 1990 by Chen J., Campbell T. C., Li J. and Peto R. under the title: Diet, Lifestyle and Mortality in China. A study of the characteristics of 65 counties. Oxford University Press. Further enquiries on the project should be directed to Dr Thierry Brun, Coordinator of the China–Oxford Project on Nutrition, Health and Environment, MVR. Division of Nutritional Sciences, Cornell University, Ithaca, N.Y. 14850, USA.

(Source: Thierry Brun and Catherine Geissler, Division of Nutritional Sciences, Cornell University, Ithaca, N.Y., USA.)

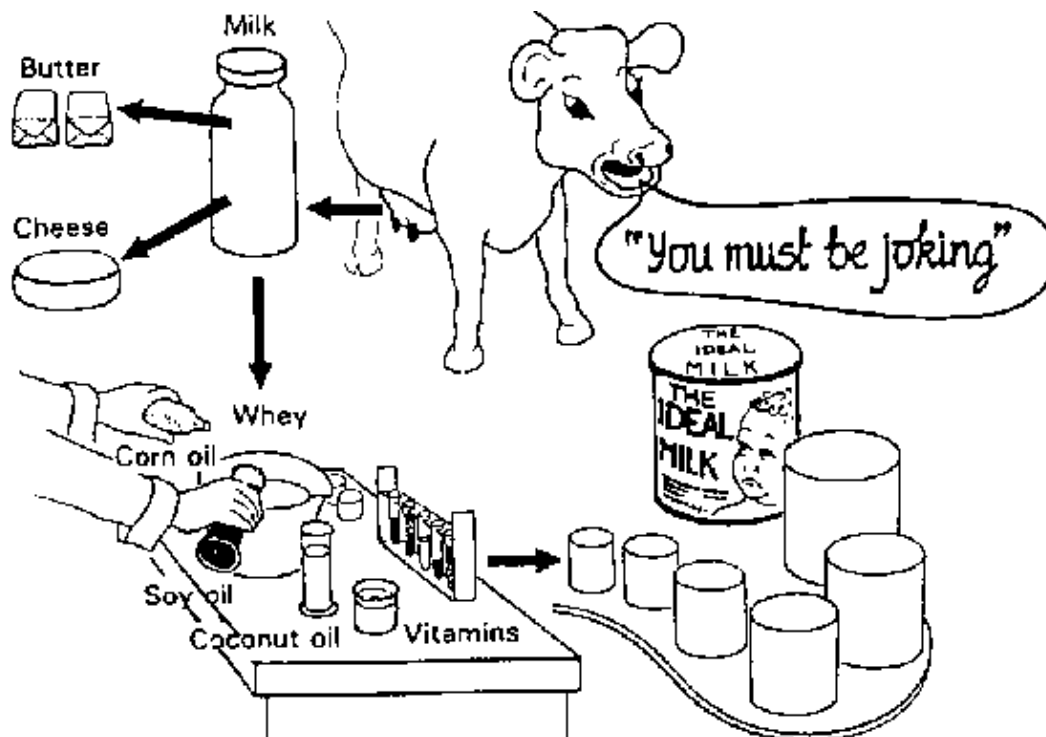
### **Use of Dried Skim Milk Powder in Refugee Programmes**

Dried skim milk is still used for feeding programmes in refugee camps, despite well-known cautions expressed by nutritionists and others, over many years now. Do the benefits outweigh the risks? At the request of UNHCR a meeting was organized by the ACC/SCN on April 7 in Geneva to consider the issue of using dried skim milk (DSM) in relief programmes, and to discuss a policy proposed by UNHCR to regulate the distribution and use of milk products in refugee camps.

The following basic principles and guidelines for DSM use in refugee camps were agreed:

(i) Distribution of DSM, when not pre-mixed with other commodities such as cereals, should be avoided wherever possible in take-home rations, due to the risk of use as reconstituted milk which is readily contaminated, and of its being used as a breast milk substitute. Where sufficient supplies of beans, tinned fish or other suitable protein foods are available, as well as enough fuel for cooking, such items are preferred to DSM for general rations where distributed in dry, take-home form.

(ii) Where sufficient supplies of beans or other suitable protein foods are not available, and/or cooking fuel is scarce, DSM for general rations should be premixed centrally, away from the distribution point, for example with cereals. When pre-mixing centrally cannot be assured, then the possibility of local pre-mixing should be looked into, but avoided if leakage and misuse of DSM is likely.



Source: Reproduced from 'My Name is Today' (1986). Fig. 161. D. Morley & H. Lovel. TALC, P.O. Box 49, St Albans, Herts, AL1 4AX, U.K.

The only likely absolute need for DSM is as part of high-energy milk diets with oil for preventing life-threatening severe protein-energy malnutrition. In supplementary feeding of moderately/mildly malnourished children, either DSM or an alternative protein source (e.g. beans) can be used in cooked feeding programmes, where meals are consumed on-the-spot.

For further information, please contact:

Ms Angela Berry, UNHCR, Palais de Nations, 1211 Geneva 10.

(Source: Report of the meeting on DSM, 7 April 1989, ACC/SCN.)

– S.G.

### Commercialization Benefits for the Malnourished Poor

"Increased income of the poor that results from commercialization of agriculture goes a long way towards providing solutions to the hunger problem" according to a Commentary by Joachim Von Braun, published in the International Food Policy Research Institute (IFPRI) Report in April 1989.

The report describes recently completed long-term research on commercialization of agriculture in the Gambia, Guatemala, Kenya, the Philippines and Rwanda, where there has been a recent change from semi-subsistence staple food production to increased production of crops for sale in the market in some of the farm households. The findings were presented and discussed at an international workshop in Guatemala in March 1989. The outcome of this workshop suggest the general conclusion that agricultural commercialization raises the income of the rural poor, thus improving their food security. Moreover, no adverse effect on nutrition was found by agricultural commercialization under any of the study settings. (See also "Does Cash Cropping Affect Nutrition?", SCN News No. 3).

Effective policies and programme design required to deal with the limited negative factors and side effects of cash cropping are often debated – if benefits are to be captured by the malnourished poor. For instance, agricultural policy can support the combined cropping of subsistence food production and cash crops, by the small land holders through the promotion of better production technology for staple foods.

Further, since the problem of malnutrition is due to the complex interaction between food inadequacy and morbidity, health and sanitation in rural areas have to be promoted together with agricultural development.

Based on the data provided by these studies, in the poorest households (at a per capita income level of under \$100 per year) a 10% increase in income resulted in improvement in children's nutritional status (using weight-for age) of 1.1% (Guatemala and Philippines), 1.9% (Gambia) and 2.5% (Rwanda). In the Kenyan example, with a particularly bad health situation, however, income had no significant effect. While generally significant and positive, the nutrition improvement effects relating to increased income were found to be small. In the authors' view these results point to the fact that "the positive impact of increased income on alleviation of the food deficit constraints is overshadowed by health and sanitation constraints in determining child malnutrition".

(Source: Joachim Von Braun, IFPRI Report, Vol. 11, No. 2, April, 1989)

– M.L.

### **Consequences of Deforestation for Nutrition**

Deforestation – for fuel or for agricultural land –coupled with low agricultural productivity can form a vicious circle, causing further deterioration in forest and land resources. IFPRI (the International Food Policy Research Institute) has studied these issues, in relation to nutrition, in Nepal. The results show that dietary improvement – both quantitative and qualitative – requires not only time spent in production activities, but also increased time for fuel collection and food preparation, all of which are time intensive for women. The study indicates that although income is the primary factor for improving the nutritional status of children in the long run, the degree of deforestation in the area also influences child nutrition. Where deforestation is severe, preschool children do not score as well against standard height and weight measurements of nutritional status. The study shows that not only is the increase in women's work loads in high deforestation areas detrimental to preschool children's nutrition, but a similar effect is seen when older children assume more household labour in the form of increased collection activities and livestock care.



Shubh K. Kumar and David Hotchkiss from IFPRI carried out the study on the Consequences of Deforestation on Women's Time Allocation, Agricultural Production and Nutrition in Hill Areas of Nepal.

Copies may be obtained from: IFPRI, 1776 Massachusetts Avenue, N.W. Washington, D.C., 20036, USA.

(Source: IFPRI Abstract – Research Report 69, October 1988).

– M.L.

### **Worldwide Immunization Coverage: No Longer a Dream?**

The goal of at least 80% coverage of the world's children with all of the EPI vaccines by the end of 1990 appears attainable! The global immunization figures released by the World Health Organization's Expanded Programme on Immunization (EPI) show that immunization coverage of the world has reached 67% for a third



dose of polio vaccine for children reaching their first year of life. The third dose coverage for diphtheria, pertussis and tetanus (DPT) stands at 66%, for tuberculosis (BCG), 71% and for measles, 61%. The coverage of pregnant women with a second dose of tetanus toxoid is, however, still only 25%. China succeeded in increasing its national coverage for polio vaccine from 74% in 1987 to 96% in 1988.

In these achievements, the World Health Organization has had the active partnership of UNICEF and the support of other organizations like the World Bank; UNDP; Save the Children Fund; Rotary International; the Rockefeller Foundation and others.

The present two-thirds level of coverage, according to a WHO report, is preventing the death from these diseases of over two million children each year – the lives of four children are being saved from the diseases of measles, whooping cough and tetanus of the newborn with each passing minute. When the programme was initiated by WHO in 1974, immunization coverage for infants in the developing world was below 5%. The world is not now far from eradicating polio by the year 2000 when the coverage with the EPI vaccines should reach over 90%.

With immunization provided as one component of comprehensive child health services, the EPI has set the goals of reducing measles cases by 90% and of eliminating neonatal tetanus by the year 1995.

(Source: International Review, 29 August 1989, World Health Organization)

– M.L.

### **Is production more worthy than consumption?**

"Our country (the US) can spend \$20 billion on producing surpluses which then go to waste, while simultaneously professing it difficult to find \$2 billion to put purchasing power into the hands of those people and countries that experience desperate hunger problems". This view was put by S Reutlinger, of the World Bank, in a colloquium on "Science, Ethics, and Food", convened by the Smithsonian Institution. In a discussion of a paper by Amartya Sen on 'Food Entitlements and the Economic Chain', Reutlinger expressed views on common failures with food policies. He saw the problem as two-fold: on the one hand, too little is done to enhance the ability of the hungry to produce or acquire more food; on the other, resources are squandered to pay all farmers to produce in excess of what markets will absorb, instead of providing direct adjustment assistance to those farmers unable to earn adequate incomes when food prices decline.

"Public opinion favours subsidizing production over consumption. The former is perceived as just, the latter as relief for the unworthy. A large part of the problem thus lies in our pervasive outdated beliefs of what is right and wrong."

A further point of discussion concerned market mechanisms – in the context of the role of private (rather than governmental) charitable organizations in alleviating problems of maldistribution and hunger. Sen observed that "the only way you can get the market mechanism to move food from those who have it to those who don't have it, is to give those who don't have it more purchasing power than they have, so that they can attract food". He continued that influence on market mechanisms is more feasible for governments.

(Source: "Science, Ethics and Food", Papers and Proceedings of a Colloquium organized by the Smithsonian Institution, edited by Brian W. J. LeMay, Washington Smithsonian Institution Press.)

– S.G.

### **Structural Adjustment: for health as for finance**

An interview with Mr T. Cullen, World Bank spokesman based in Paris, in July this year contained the following points (extracted with permission). These seemed interesting – especially coming from a banking viewpoint – and relevant to health and nutrition issues in the context of structural adjustment. Essentially Mr Cullen points out the need for increasing efficiency of *both* productive and social sectors. In past times of austerity, emphasis has often been placed on prioritisation and more efficient use of limited funds within the social sector. On the other hand, inefficient companies and enterprises within the productive sector have often been able to survive as a result of soft loans. The parallel is drawn between productive and social sectors here.

"We have recently conducted a major study of the roles of the national (financial) institutions in developing countries. One of the things that came out very clearly from this is that in the years after independence developing countries in many cases nationalized existing banks... they felt that the banks, that were there largely for trade purposes in the ports and in the capital cities, were not really the right vehicles for promoting the sort of industrialization that many countries thought they would like to undertake. In many cases they directed banks – whether they were state-owned or privately-owned – to whom to lend and at what interest rate. So very often the allocation of financial resources became really quite distorted, and it became rather easy for inefficient companies – and very often inefficient state-owned enterprises – to survive, because they continued to be financed by these rather low interest loans that the government was telling the banks to finance. Very often potentially productive companies that were not receiving this largesse could not obtain funds at competitive rates. What has now happened is that resources are much tighter. As countries are now trying to reform their economies they are discovering that a lot of these banks are in quite serious trouble. Now the banks themselves are in need of reforming and governments have to determine who carries the loss...

"... the guts of a lot of adjustment programmes is the whole concept of recognizing that there is a shortage of money, and that the funds that are available have to be used in the most effective way possible. When we embark on an adjustment programme the country undertakes a major review of its investments. We help the country review all its investments, to try to cut down on those that are not really effective and are not really going to help the country regenerate economic growth. But as part of that process, and as part of the austerity which is often involved, cuts obviously have to be made in public expenditure. One of the concerns which is raised is that in the past cuts have sometimes come in areas such as education, health care, and so on. Now one of the things that we are trying to address while designing these programmes is the importance that the government should attach to trying to protect the health budget and the education budget; but also within that budget reallocating the way the money is spent.

"So if you have got a certain amount of money for health – even if you may be having slightly to reduce the money – (we are) making the point that if you build a big elaborate hospital which will solve the needs of a few hundred people, with dialysis and cardiac units and so forth, the cost to the economy year after year of maintaining that hospital may take up half the annual health budget. Now it may be much better for your population and particularly for the poor if you forego that big fancy hospital and go for more modest clinics which can serve the needs of more people. Go for smaller health centres, go for oral rehydration kits which will stop children from dying of diarrhoea, go for preventive vaccination programmes and so on ... (support) all of the sort of very good work that organizations like UNICEF are doing to ensure that children really have a chance in life, by being assured of a certain degree of decent health in the early years. That we feel is the sort of way we would like to see health budgets being allocated."

### **Obituary – Dr John Rivers**

John Rivers made enormous contributions to nutrition, and will be known to many. Most recently he helped the SCN in its conference on "Nutrition in Times of Disaster". His death is a tragic loss for his numerous friends and colleagues, and for the cause of nutrition. We reprint here an obituary written by Dr John Seaman:

"John Peter William Rivers  
born 7 November 1945  
died 2 December 1989

"John Rivers, head of the Centre for Human Nutrition at the London School of Hygiene and Tropical Medicine, chose a career in nutrition from a belief that science should be used to benefit people.

"Professionally, he made important contributions to comparative nutrition through the better understanding of the requirements of different species for essential fatty acids and human essential amino acid requirements. But he will be chiefly remembered for his work for the practice of famine and disaster relief. These were to put disaster relief on a rational basis and, as important, to provoke and challenge constantly what he saw as entrenched academic and institutional attitudes.

"In 1971, during the East Pakistan refugee crises, John and some friends, of their own volition, went to help. What they saw of the relief effort convinced them that it could be much better done. An organization for the scientific study of disasters was founded, funds raised, and at Rivers' suggestion a conference was held. As he pointed out, a new subject needed an international conference, even if, on a shoe-string budget, only one Belgian and a resident American could be invited. A journal, Disasters, was launched at his instigation. These initiatives have had much to do with the fundamental changes which have since occurred in international relief

policy.

"John contributed and lobbied consistently for improvements in international famine and refugee relief. His most recent exertions were to try to secure better food supplies for refugees in Africa who have been consistently badly served, suffering starvation and massive outbreaks of pellagra which the international aid donors have been slow to remedy. He would have been pleased to know that in the last few weeks of his life, the problem has at last been officially acknowledged.

"John's intelligence, clarity of thought, and acerbic style often brought him into conflict with the nutrition establishment in the United Kingdom – for example over the Neuberger report, of which he was an outspoken critic – and with international organizations whose motives and priorities he saw as often less than clearly focused. It also brought him, however, a devoted following of colleagues and students who will remember him as an inspiring teacher and an unstinting source of scientific ideas, support, and courage."

(Source: The Guardian, 5 Dec 1989)

### **Botswana honoured**

The Hunger Project's "Africa Prize for Leadership for the Sustainable End of Hunger" was awarded, recently – jointly to Dr. Quett K. J. Masire, President of the Republic of Botswana, and Dr. Bernard Ledea Quedraogo, founder and president of Africa's largest grass-roots movements for self-reliance. The co-winners shared a cash award of US\$100,000.

Dr. Masire was recommended for the prize by the Director of the Pan American Health Organization, Dr. C. Guerra de Macedo, and by Dr. A. Horwitz, the Director Emeritus of PAHO and Chairman of the ACC/SCN, in recognition of his leadership in the critical situation facing Botswana during the 1980s. Botswana demonstrated that malnutrition can be controlled, even during a severe drought, at a fairly low cost.

In his address to an audience of more than a thousand diplomats, world leaders and members of development groups, Dr. Masire described in detail the steps taken in Botswana to cope successfully with the six-year drought that ravaged most of Africa in the early 1980s. The drought-relief programme, including nutritional surveillance and an early warning system, ensured that adequate food supplies were distributed across the country. Botswana actually emerged from the drought with no more (possibly less) malnutrition than in pre-drought years. Key components of the successful handling of the drought, Masire said, were "preparedness, planning and willingness to act" plus government commitment. "It was this commitment, rather than our current favorable foreign exchange reserves and budget surplus, that saw us through this patch in our development and saved lives that would otherwise have perished."

(Source: World Development Forum, 15 October 1989, Volume 7, No. 18; and PAHO).

– M.L.

### **ACCIS Register of the UN Development Activities**

Following five years of intensive efforts, the first edition of the Register of the UN System Development Activities has finally become available by ACCIS.

The great value of this effort is that it has brought together what previously was stored in many different reporting systems. This first volume gives a comprehensive coverage of *all* UN project operational in 1987 and has information on over 20,000 social and economic development activities of the various UN Organizations. The Register for 1988 has now just been published.

For more information please see publications section of this issue of the SCN News.

### **FOODBASE – International Food Consumption Survey Data**

We were asked to draw attention to the following:

"Technical Assessment Systems, Inc (TAS) is working with the US National Cancer Institute (NCI) on a three year project to collect international food consumption survey data and to enter summary data into an IBM-PC compatible data management and analysis system called FOODBASE. FOODBASE will be a powerful but straightforward tool for nutritionists,

epidemiologists, medical researchers, and other health professionals for assessing the intake of foods and food constituents by people throughout the world. NCI will use FOODBASE to investigate relationships between diet and cancer incidence, although the system will be equally useful for investigation of other diet–disease relationships and for endeavours such as chemical exposure assessment, nutrition education, nutritional anthropology, and food industry research. TAS hopes that the many people around the world with expertise in food consumption or food disappearance will provide assistance and thus minimize the difficulty of this project. Their ultimate goal is to make the information gathered and the tools developed available to as many countries and institutions as possible. FOODBASE data contributors will be reimbursed for expenses and will receive a copy of the database. For further information, or to contribute data, please contact Dr Barbara Petersen, Judi Douglass, or Dr Kathryn Fleming, TAS Inc, 1000 Potomac St, NW, Washington, DC 20007, USA (Telephone: 202–337–2625)."

### **WHO Collaborating Centre for Nutrition in Rome**

The WHO Collaborating Centre (WHO–CC) for Nutrition in Rome is organizing an International Meeting on "Food and Nutrition Policies in the Southern European Region". The Meeting will be held in Rome in March 1990 under the sponsorship of the Italian Ministry of Agriculture and the National Institute of Nutrition. Representatives from 7 Southern European Countries will participate as well as from Scandinavian and Eastern European Countries. Representatives from the EEC, FAO and the public and private sectors involved in food and nutrition have been invited. This Meeting is a step towards preparation for the First European Conference on Food and Nutrition Policy which is to be organized by the WHO Regional Office for Europe in Budapest on October 1–5, 1990. For information on the Rome meeting please contact Prof. A. Ferro–Luzzi, WHO–CC for Nutrition, via Ardeatina, 546, 00178 Rome, Italy, Tel. 5042677, Telefax 5031592.

### **NIAN: Nutrition in Agriculture Network**

Inserting consideration of nutritional effects into agricultural development has long been regarded as a key factor in improving nutrition for the rural poor. Now the University of Arizona and the University of Kentucky, with the Nutrition Economic Group (NEG), Office of International Cooperation and Development, United States Department of Agriculture, have begun a network (Nutrition in Agriculture Network, NIAN) to assist developing countries in this. The main objective is to provide technical and research support to assist developing countries to improve the food consumption and nutritional consequences of their agricultural projects. One of the activities is the formation of a Nutrition in Agriculture Network (NIAN) for disseminating information on programme activities and products.

The network is planning to circulate periodic updates of ongoing research focusing on nutrition/consumption issues relating to agriculture. Contributions are welcome (send a 1–2 page summary of related research activity). For materials, information, publications, contributions of information or requests for inclusion on the NIAN mailing list contact: Dr. Timothy Frankenberger, Office of Arid Lands Studies, College of Agriculture, University of Arizona, 845 N. Park Avenue, Tucson, Arizona 85719, USA. Tel: 602 621 1955.

– M.L.

### **The Pacific Basin Maternal and Child Health Resource Centre**

The Pacific Basin Maternal and Child Health Resource Centre (PBMCHRC) is a regional resource centre with a primary focus on maternal and child health. The Centre is responsible for providing culturally relevant educational services, information and technical assistance to the health professionals in the Pacific Basin jurisdiction. It serves as an important link between the sources of information services and the professionals in the various health and educational settings providing maternal and child health. The Centre produces regular publications and provides information and use of its resource materials in response to requests.

Established in 1984, PBMCHRC is located in the University of Guam and is funded by the Bureau of Maternal and Child Health and Resources Development, Health Resources and Services Administration, Public Health Service, US Department of Health and Human Services. The Centre seeks to establish contact with various public and private organizations at the local, regional, national and international levels who are engaged in community health development activities. Please address your enquiries to: PBMCHRC, PO Box 5143, UOG Station, Mangilao, Guam 96923, USA, Telephone: 671–734–4717.

–M.L.

## **The Centre to Prevent Childhood Malnutrition**

As an independent, non-profit organization, affiliated with the Department of International Health, School of Hygiene and Public Health of the Johns Hopkins University, the Centre to Prevent Childhood Malnutrition works to improve child nutrition worldwide by supporting communities in their efforts to eliminate hunger. The Centre has field offices in Ghana, Peru and the United States. Funded in part by a matching grant from the Rockefeller Foundation, the Centre supports small-scale, self-help projects that communities themselves design. "Unlike many other organizations that work to treat malnutrition, the Centre effectively reaches children before illness begins" says Dr. Robert Black, Chairman of the Department of International Health, Johns Hopkins University.

The Centre funds a range of projects. Some of these help communities work together to enhance children's diet; some create opportunities for women to earn incomes so they can better feed their children; and others improve child care so that children are kept in a safe and healthy environment when their mothers work to earn money needed for their children's survival. Dr. A. Horwitz, Director Emeritus of Pan American Health Organization believes that "the Centre to Prevent Childhood Malnutrition brings several new approaches to the field that are not common....the Centre's focus is community based. Its work is a process of strengthening the natural motivation of people to improve their lot".

The work of the Centre shows that successes are possible if nutrition training is combined with supported self-help projects in communities. More information on the Centre's activities from: Dr. Sandra L. Huffman, President, The Centre to Prevent Childhood Malnutrition, 7200 Wisconsin Avenue, Suite 204. Bethesda, Maryland 20814 USA. Tel: 301 986 5777.

– M.L.

## **International Decade for Natural Disaster Reduction**

The United Nations General Assembly in 1987, adopted the 1990s as the International Decade for Natural Disaster Reduction. The over-riding objective is to reduce loss of life, property damage and social and economic disruption caused by natural disasters, especially in developing countries with the following specific goals:

Improving countries' capacity to mitigate the effects of natural disasters; devising appropriate guidelines for application of existing knowledge; fostering scientific and engineering endeavors to close gaps in knowledge; disseminating new and existing information on assessment, prediction, prevention and mitigation; implementing and evaluating programmes of technical assistance, technology transfer and training.

The UN Secretariat is proposing programmatic priorities and actual activities. These will be the yardstick for measuring the Decade's potential benefit to vulnerable groups in developing countries. Preliminary reports suggest that emphasis may be placed on developing sophisticated technology and basic earth science research as long-term investments of critical importance. Improvements, however, will also be required in the short and medium term application of existing knowledge and technology.

(Source: Disaster Preparedness in the Americas Newsletter. January 1989, issue no. 37)

– M.L.

## **Pan-African Centre for Emergency Preparedness and Response**

In relation to natural disaster reduction, the birth of a new centre is of special interest: The WHO Panafrican Centre for Emergency Preparedness and Response, in Addis Ababa, Ethiopia, set up to give service to African people living in disaster prone areas. This centre has been established to provide the necessary inputs to WHO services in Africa in terms of training programmes, health operational research, policy analysis and research activities to address disaster and food crisis situations. The new Centre organizes workshops or seminars on issues relevant to health disaster management and training sessions based on long term health and developmental perspectives. Epidemiological studies, operational research including field evaluations and assessments are also among the services provided by the Centre. Further information from: Dr. Sandro Calvani, Director, Panafrican Centre for Emergency Preparedness and Response, UN, ECA Building. P.O. Box 3050, Addis Ababa, Ethiopia.

### **Nutrition in Development Workshop**

The International Health Programmes of the University of California at Berkeley and at Los Angeles are holding a workshop on "Nutrition in Development" from July 9 to 27, 1990, at Santa Cruz in California.

The workshop is designed to provide non-nutritionists involved in international development with the knowledge, skills and competence to collect relevant information, to define problems, to select and design project components and to implement, monitor and evaluate their impact within broader socioeconomic development projects and programmes. The conceptual framework and principles for integrating nutrition into development planning is another area of emphasis in this workshop.

Enquiries should be addressed to: Dr. R. L. Minnis, Director, International Health Programmes, 210 High Street, Santa Cruz, CA, 95060, USA.

– M.L.

### **ECSA Training Programme**

A project consisting of in-service food and nutrition training courses is being implemented at the University of Zimbabwe, Harare, under the regional Food and Nutrition Cooperation Programme, in the Eastern, Central and Southern African (ECSA) countries. Scientific, educational and technical assistance is provided by the International Course in Food Science and Nutrition. Senior food and nutrition staff from the ECSA region collectively provide the expertise for holding the training courses.

The focus of the fourth ECSA course is on the theme of maternal and child nutrition. Supported by the Dutch Government, UNICEF, and SIDA, the objective of holding this course is to update knowledge and to improve the multisectoral functioning of participants in solving nutritional problems of mothers and children specific to the region. The 6-week course (22 January – 3 March 1990) will be held in English, at the University of Zimbabwe, Harare. Topics included in the course curriculum are assessment of nutritional status; data collection and analysis; programme planning and evaluation. The course programme includes a mixture of activities consisting of class work group projects, individual presentations, seminars and field projects. Further information from: Dr. R. G. Choto, Director, ECSA – Food and Nutrition Training Programme, University of Zimbabwe, P.O. Box A178, Avondale, Harare, Zimbabwe. Telex: 24152 univz zw. Or from: International Courses in Food Science and Nutrition, Attn. Prof. Dr. J. G. A. J. Haut-vast, Lawickse Allee, 6701 AN WAGENINGEN, the Netherlands. Telex: 45888 intas nl.

– M.L.

### **Programmes/Letters/and more**

Sir,

In a recent issue of *The Lancet* (17 June 1989, p. 1392), we commented on the need for those responsible for refugee feeding to consider more closely the nutritional needs of such populations. It is appalling and inexcusable, in the twentieth century, to read repeated reports (such as that in SCN News No. 3) of scurvy, anemia, and vitamin A deficiency amongst refugees who are receiving food aid. All these deficiency diseases are to be expected so long as the present assemblance of commodities which make up the "food basket" are limited to providing mainly macro-nutrients, expecting that refugees will be able to supplement their micro-nutrient needs from the environment. Although in some instances this may be possible, refugees who lack access to land or markets have apparently received no special consideration as has been demonstrated by the increasing number of reports of nutritional-deficiency diseases.

Amongst the three deficiency diseases reported, scurvy is the major killer. The clinical symptoms of simple gum bleeding – which is one of the easily recognized symptoms of vitamin C deficiency – have apparently been ignored even though it is well-known that a patient at this stage, if untreated, will be dead within a few months. Either agency personnel are untrained to recognize such symptoms or are unaware of the high levels

of mortality which this disease afflicts.

Amongst the various strategies to provide vitamin C to refugee populations, we believe that in short term, fortification of cereals or oil may be the only solution. The technology for fortification has been available for a number of years. Fortification of foods to provide necessary micro-nutrients to various populations has proved to be a successful means of preventing nutritional deficiencies (eg iodine and vitamin A deficiencies). Several compounds, for example, ascorbyl palmitate and retinol palmitate which are both fat soluble, may be used to fortify oil.

It is incredible that humanitarian agencies have failed to draft in the appropriate expertise to resolve these problems. Moreover, as far as we are aware, little research has been conducted on the suitable vehicles, appropriate compounds for fortification, or on the stability of these micro-nutrients under field conditions. Apparently in one field situation, where a large number of people had scurvy, it was suggested that vitamin C should be added to the water being transported in iron barrels. It is well known that vitamin C is an extremely unstable nutrient and when in contact with iron and stored at the ambient temperature encountered in the semi-arid regions where this disaster was taking place, little or no vitamin C will remain after a few hours. Whilst this attempt to cure scurvy is encouraging, it also demonstrated the acute need for a more scientific approach to resolving micro-nutrient deficiencies in the "food basket" provided to populations who are totally dependent on outside assistance. We urgently recommend that a more concerted effort is made by agencies, food manufacturers and scientists to address these problems to avoid the unnecessary high levels of mortality which are currently seen.

Dr B. E. Harrell-Bond  
Director  
Refugee Studies Programme  
University of Oxford

Dr Jeya Henry, Msc., Ph.D.  
Senior Lecturer in Nutrition  
Oxford Polytechnic  
and  
Research Associate  
Refugee Studies Programme  
University of Oxford

\* \* \*

Sir,

The ACC/SCN Report "Update on the Nutrition Situation – Recent Trends in Nutrition in 33 Countries" Jan/Feb. 1989, contains information for ready reference, and the graphic presentations enable a study of the trends related to the nutrition situation in the countries dealt with. I do wish that India had also featured in this report.

If such similar recent information is available on India in any of the ACC/SCN reports, I would thank you for copies of the same.

You have also made a mention of ten-year programmes on two major deficiencies i.e. Vitamin A and Iodine.

I would greatly appreciate some further information on these programmes as they are related to two of the major problems in India.

Dilnawaz Mahanti, Senior Project Officer, Voluntary Health Association of India, New Delhi.

**Replies are:**

*On data on nutrition in India*

The SCN's "Update" report aimed to present trends in nutrition indicators, mainly for the 1980s. The data compilation was completed by July 1988. For India, the latest nutritional data available to us at that time were for 1979, hence we could not include India in the report. Since then more recent data have been published from the 10-state surveys conducted by the National Nutrition Monitoring Bureau (NNMB – Hyderabad), and

in future reports on the world nutrition situation we would certainly hope to include such results. Results that we do have available may be of interest, and some of these are as follows.

Since estimates are made in India using Indian standards, for purposes of comparison it is necessary to recalculate to an international standard, for which the NCHS/WHO standards are now those generally used. The common cut-off for calculating prevalences of underweight children is less than 2 standard deviations below the median. Using these criteria, we calculated prevalences of underweight in pre-school children, from surveys in 1976 and 1979, as 79% and 72% respectively. These results are given in the SCN's "Supplement on Methods and Statistics to the First Report on the World Nutrition Situation" (ACC/SCN, December 1988 – available on request). Using indirect methods (given in the First Report, and in more detail in the Supplement), we estimated equivalent prevalences as approximately: 74% for 1975; 70% for 1980; and 66% for 1984. We would much appreciate hearing of more recent and more detailed information on this.

#### *On vitamin A and iodine programmes*

Information on epidemiology and control programmes for iodine deficiency disorders (IDDs) in India (and South East Asia) can be obtained from Dr C. S. Pandav, ICCIDD Regional Coordinator for SE Asia, All India Institute for Medical Sciences, New Delhi 110029. For vitamin A one contact would be Dr M. Gurney, WHO Regional Nutrition Advisor for SE Asia, World Health House, Indraprastha Estate, Mahatma Gandhi Road, New Delhi 110002; and/or Dr J. Lambert, Chief Nutrition Section, UNICEF Regional Office for South Central Asia, UNICEF House, 73 Lodi Estate, New Delhi 110003.

## **PROGRAMME NEWS**

Update on progress around the world

### **AUSTRALIA**

#### **AIDAB and ACIAR's Nutrition Activities in 1989**

The Australian International Development Assistance Bureau (AIDAB) has been involved in a number of nutrition activities in the current year, briefly described here.

**Africa.** A \$12.5 million activity in Ethiopia through World Food Programme in the form of food aid (wheat and oil), part of which is used as food for work.

A special Southern Africa Non-Government Organization (NGO) Participation Programme includes two nutrition-related projects:

- in Botswana, Village Food Production, Gardening and Nutrition Training (\$0.7 million);
- in Zimbabwe, a nutrition component in an Agriculture, Water and Immunization Project (\$1m).

**China.** A \$2.3m project to monitor the effectiveness of iodine supplementation programmes through a neonatal screening network.

**Indochina.** It is planned to fund an FAO Vitamin A Deficiency programme commencing 1989–90 (estimated at \$1.05 million). Several UNICEF projects in Vietnam amounting to \$6.9 million over 4 years include nutrition components; one specifically focuses on iodine deficiency diseases.

**Southeast Asia.** A new programme of assistance in the health sector in Indonesia is being formulated which will include a primary health care focus including basic nutrition. Budgetary resources have been allocated for a health initiatives programme in Southeast Asia in which nutrition has been designated a priority area. Groundwork is proceeding on the development of appropriate activities.

**Papua New Guinea.** A large rural improvement project co-financed with IFAD includes a strong focus on improving nutritional conditions. The Government has recently requested Australian assistance with the development of an intersectoral plan of operation to provide for community-based nutrition improvement activities in targeted provinces. A programme of assistance is being developed.



**South Pacific.** Through AIDAB's Pacific Multicountry programme, support has been given to a Diabetes Prevention and Control workshop which will be followed up by further activities in the area of diabetes and other non-communicable diseases (\$0.5m). Support is given to the South Pacific Commission for their regional nutrition programmes (\$0.1m). In Vanuatu a maternal child health project implemented through Save the Children Fund (Australia) includes training in nutrition.

**Other Activities.** The Bureau's *Food Aid* programme focuses on relieving food shortages in general rather than meeting specific nutritional deficiencies. However, they do seek to maintain or improve the nutritional status of recipients through the supply and delivery of food commodities appropriate for each recipient and having a high quality exceeding international nutritional standards; and the supply of high protein biscuits as a supplement to usual food aid commodities where recipients show nutritional deficiency.

A high proportion of Non-Government Organization (NGO) activities funded under the AIDAB-NGO Committee for Development Cooperation project subsidy scheme are in the health sector, many with nutrition focus or components. *Training* scholarships in nutrition are also part of country programme aid. As part of the Bureau's health sector strategy, improved knowledge of and links with Australian nutrition experts are being developed.

The Australian Centre for International Agricultural Research (ACIAR) supported the following activities relevant to human nutrition:

- Publication of Monograph on "Chemistry of Tropical Root Crops: Significance for Nutrition and Agriculture in the Pacific".

(This publication is introduced in the Publications Section of this issue of SCN News).

- ACIAR is currently considering support for two projects related to Nutritional chemistry and analysis. One is to provide a method for assaying cyanide content of cassava that is both cheap and accurate, to facilitate screening of cassava varieties in breeding programmes; the other is to develop an assay for acidity in taro, also for use in breeding programmes.

- Fungi and Mycotoxins in Asian Food and Feed Stuffs: these have become a "hidden" chronic threat to human health and to the quality and value of animal feed stuffs in Asia. This project aims to study the distribution, prevalence and importance of postharvest spoilage fungi in cereals and also other durable food and feed stuffs in Asia. Researchers will identify the predominant spoilage and mycotoxigenic fungi in a range of important commodities in Asia, and will determine the factors affecting toxin production by these fungi. Better handling and drying procedures will reduce fungal load and mycotoxin production, reducing the losses amongst livestock attributable to mycotoxins in feeds. The improved procedures will also benefit human consumers.

(Source and for further information, please contact: Ms Ruth English, Principal Nutritionist, Commonwealth Dept. of Health, P O Box 100, Woden, A.C.J. 2606, Australia)

## CANADA

### Health and Welfare Activities

Two years of work on Revised Nutrition Recommendations for Canadians has led to reports to Health and Welfare Canada from coordinated committees responsible for scientific review and communications/implementation. The reports include revised recommended nutrient intakes as well as dietary advice, guidelines and programme implementation suggestions; they will be published shortly by Health and Welfare Canada.

The Health Promotion Directorate, Health Services and Promotion Branch released the documents "Promoting Healthy Weights: A Discussion Paper" and "Canadian Guidelines for Healthy Weights" in response to concerns about weight problems. A programme is being implemented to integrate healthy eating, enjoyable physical activity and a positive body image to promote healthy weights.

A collaborative project resulted in the release of "Promoting Nutritional Health during the Preschool Years: Canadian Guidelines" in November. The guidelines were endorsed by 6 major associations.

(Source, and for more information, please contact: Dr S. W. Gunner, Health Protection Branch, Health and Welfare Canada, Ottawa, Ontario, Canada)

FAO

### **Traditional Food Crop Programme Expands to Asia Region**

Traditional food plants are those accepted by a community through habit and tradition, as appropriate and desirable sources of food. These under-exploited traditional food crops can make a substantial contribution to meeting the nutritional needs of populations; both urban and rural, especially of low income groups and particularly at times of seasonal scarcity of staple crops. The case for promotion of traditional food plants rests on nutritional, ecological and economic arguments.

A broad promotional policy for increasing production and utilization of traditional but under-exploited food plants for human consumption was adopted by the member governments attending the 1985 meeting of the FAO Committee on Agriculture, based on recognition that these supplementary food crops are important in the nutrition and household food security of vulnerable groups and that they have income generating potential. In November 1985 the Food Policy and Nutrition Division of FAO, initiated activities related to the "Promotion of Under-exploited Food Plants", the strategy being consisted of four major elements: advocacy; publications; workshops; and applied field projects.

Initiating the programme in Africa, an Expert Consultation was convened by FAO in Harare, Zimbabwe, which was followed by the preparation of a policy paper entitled "Promoting Under-exploited Food Plants in Africa", and a resource book on "Traditional Food Plants", with special reference to arid, semi-arid and sub-humid lands of Eastern Africa. In extending this programme to other regions, FAO commissioned case studies in 1989 on selected food plants from national experts in Bangladesh, Indonesia, Nepal, Pakistan, the Philippines, and Thailand. These provided background for the first intercountry workshop in Asia on the "Promotion of the production and consumption of under-exploited traditional crops of nutritional importance for vulnerable groups", held in Kathmandu, Nepal, in September 1989.

Representatives of participating countries in the programme – senior agriculturalists, planners and nutritionists – showed keen interest in the topic as it falls well into their own government policies on food diversification, household food security and improvement of nutrition. National workshops are planned in 1990 in Bangladesh, Nepal, Philippines and Thailand. Projects in Nepal and Pakistan will begin to support field programmes for promoting growing traditional crops in vegetable gardens – particularly aimed at helping women activities – and for seed production and extension training.

(Source: Food Policy and Nutrition Division, FAO, Via delle Terme di Caracalla, 00100 Rome, Italy).

HELEN KELLER INTERNATIONAL

### **Vitamin A Technical Assistance Programme (VITAP)**

This year Helen Keller International, a US private voluntary organization (PVO), received a five-year grant from USAID's Office of Private and Voluntary Cooperation to develop a vitamin A centre of excellence. This centre, the Vitamin A Technical Assistance Programme (or VITAP), provides technical assistance to PVOs to strengthen existing vitamin A activities and to expand vitamin A programming. Vitamin A deficiency is known to cause nutritional blindness, the major cause of childhood blindness in the developing world. It is also associated with the child's increased vulnerability to diarrhea, respiratory infection and measles complications. Vitamin A is now seen as a child survival tool.

Some of the services VITAP offers are: workshops and orientation seminars; consulting and advisory services; development of training and education materials and dissemination of current literature and information on vitamin A.

VITAP targets 20 countries, located in Africa, Asia and Latin America, all designated by WHO as countries with a significant public health problem in vitamin A deficiency.

While targeting the PVO community, VITAP promotes a collaborative approach in combatting vitamin A deficiency by seeking the participation of the Ministry of Health, local AID missions, UNICEF, WHO, FAO and other relevant agencies. Workshops organized by VITAP typically receive technical input from both WHO and

UNICEF. During the past year, VITAP has served as a catalyst in bringing PVOs/NGOs, international, bilateral and government organizations together to develop national strategies and implement programmes.

The first year of the project was spent in: staff recruitment; developing a baseline directory of PVOs; setting up a computerized system for monitoring and tracking vitamin A activities; establishing a data bank of available technical consultants; creating a library of publications; and development of a semiannual newsletter.

Technical assistance in vitamin A deficiency assessment, social marketing and overall programme guidance was provided to a number of countries. Exploratory visits were made to Benin, Chad, Ghana, Haiti, Malawi, Nigeria, Tanzania and Zambia. Workshops were held in Africa, Central America and the United States.

One of the early project goals will be to work with WHO's Nutrition Unit in revising the classification system for vitamin A deficient countries. Presently, members of the VITAP staff and the Nutrition Unit are collecting information on vitamin A in all countries where vitamin A deficiency is a suspected or documented public health problem. The objective is to establish a systematic data collection and a formal review process for determining vitamin A deficiency status of WHO member countries.

Over the five-year period, VITAP will increase the bank of technical personnel who specialize in vitamin A activities. At the end of the grant, outcomes will include: a computerized roster of vitamin A consultants; an increased number of PVOs with skills in vitamin A programming; an increased number of vitamin A field projects; and a comprehensive library of materials and publications.

For further information, please contact: Ms Anne Ralte, VITAP Deputy Director, Helen Keller International, 15 W 16th St, New York, NY 10011, USA.

ICCIDD

### **Highlights of Activities in 1989**

In 1989, the International Council for the Control of Iodine Deficiency Disorders (ICCIDD) had several meetings and experienced a considerable escalation of interest and enthusiasm throughout the year. Some highlights are given below:

A WHO/UNICEF/ICCIDD Inter-country Meeting was held in Delhi (9–16 March) with the establishment of a Regional IDD Working Group for South East Asia.

On 26 and 27 April an ICCIDD/Ministry of Public Health (MOPH) Consultation was held on the National IDD Control Programme of the People's Republic of China. This led to the recommendation of an International Working Group for IDD Control in China. The recommendation was accepted by the MOPH and Mme S F Gao convened the first meeting which was held in Beijing on 15 May 1989.

A National Consultation on the IDD Control Programme in Indonesia was held in Jakarta (7–9 August 1989). This meeting arose from the Delhi meeting. It reviewed progress in the control of IDD, especially in Java, where some 3.75 million injections of iodized oil have been given out of a total of 10 million in the last 5 years (1985–1989). Improvement in IDD prevalence had occurred in a number of provinces, but the more remote provinces (as Lombok Island and Kalimantan) had failed to improve. An international working group was formed and had its first meeting in Jakarta on 9 August.

An IDD Symposium was held at the XIV International Nutrition Congress in Seoul (10–25 August). Papers were presented on Iodine Deficiency and Brain Function (Dr T Ma, China); Communication and the National IDD Control Programme in India (Dr C S Pandav, India); Global Monitoring (Dr G Clugston, WHO, Geneva); and The Global Strategy for Elimination of IDD by the year 2000 (Dr B S Hetzel, ICCIDD).

(Source: Dr B. S. Hetzel, Executive Director, ICCIDD, CSIRO Division of Human Nutrition, Kintore Avenue, Adelaide 5000, Australia)

IDECG

### **International Dietary Energy Consultative Group**

The International Dietary Energy Consultative Group (IDECG) was established in Geneva on 3 September 1986 under the sponsorship of the United Nations University (UNU) and the International Union of Nutritional

Sciences (IUNS) and with the endorsement of the United Nations ACC/Sub-committee on Nutrition.

The IDECG has been established for the study of dietary energy intake in relation to the health and welfare of individuals and societies. The foundation meeting in Geneva, attended by scientists from research institutions and international agencies, defined the following as specific objectives for IDECG:

- The compilation and interpretation of relevant research data on functional and other consequences of deficiency, change or excess of dietary energy.
- The identification of related research needs and priorities and the promotion of needed research.
- The publication of scientific and policy statements and other information on the significance of chronic deficiencies and excesses of dietary energy.
- The identification and promotion of appropriate and practical means of corrective action.

To meet these objectives, IDECG seeks to bring together scientists engaged in relevant research with representatives of international organizations concerned with the problem. It also seeks to involve in its work bilateral agencies, foundations and governments interested in relevant research and policy actions.

For further information, please contact: Dr B Schurch, Executive Secretary of IDECG, C/o Nestle Foundation, P O Box 581, CH-1001 Lausanne, Switzerland.

(Source: IDECG Newsletter, February 1989, No. 1.)

IFAD

### **Technical Advisor in Nutrition**

IFAD has recently appointed a Technical Advisor in Nutrition, to be based in the Technical Advisory Unit of the Project Management Department. The position is held by Ms Wenche Barth Eide, a national of Norway on leave from the University of Oslo, with long experience in international nutrition through research, training and advisory activities. One of the responsibilities of the nutrition advisor will be to participate in project reviews at all stages concerning the impact of IFAD projects on household food security and nutrition, and to develop a workable approach to incorporating nutritional considerations into IFAD-supported projects. As part of the latter, she will organize staff training in matters relevant to nutrition. The Advisor will liaise closely with the other Technical Advisors (agronomy, livestock, irrigation, credit, women in development, environment) to enhance the full integration of nutrition into the mainstream of IFAD's development efforts. The Nutrition Advisor will serve as the focal point for the contact between IFAD and the ACC/SCN.

PAHO

### **Food and Nutritional Surveillance**

The Food and Nutrition Programme of the Pan American Health Organization arranged a planning meeting on food and nutrition surveillance in Cali, 7–10 November, 1989 directed primarily to formulate a Regional Training Programme.

The meeting was supported by the Inter-Agency Food and Nutrition Surveillance (IFNS) Programme and there were representatives from FAO, UNICEF, PAHO and WHO/Headquarters, as well as officials from member governments and institutions. Four training proposals were discussed, presented to IFNS by Costa Rica/INCAP, Colombia/University of El Valle, Chile/Institute of Nutrition and Food Technology (INTA), and the Caribbean Food and Nutrition Institute (CFNI). In addition, other technical issues were discussed such as the strategies to incorporate birth weights and school height censuses in surveillance systems, as well as the relationship between food security and nutritional surveillance.

(Source and details from: Dr C H Daza, Coordinator, Food and Nutrition Programme, PAHO, WHO Regional Office for the Americas, 525 Twenty-Third Street, N.W., Washington, D.C. 20037, USA.)

UNESCO

## **Education for All**

The World Conference on "Education for All" will take place in Thailand, from 5 to 9 March 1990, under the joint sponsorship of UNDP, UNESCO, UNICEF and the World Bank. The USAID, Sweden, Norway, Finland, Denmark and the Asian Development Bank are other sponsoring agencies as well as Switzerland, Canada, IDRC, Bernard Van Leer Foundation and WHO.

A series of regional preparatory conferences are now being held to compare and to consolidate preparations undertaken at national levels for document presentation and to determine regional view points and priorities – required to be highlighted at the conference. The conference will arrange a number of concurrent activities including plenary sessions, a series of thematic and illustrative round tables and exhibition of various aspects of Education for All policies, programmes, and practice.

Nutrition, Health and Learning will be the subject of one of the Thematic Round Tables, organized by UNESCO in cooperation with the World Food Programme. The key issue to be addressed by this round table is that nutritional deficiencies and poor health in school children are among the causes of poor school enrollment, absenteeism, early drop outs and poor classroom performance; and that appropriate school-based nutrition/health interventions can result in significant increments in educational efficiency in many developing countries. A special study has been prepared which provides a review of evidence on the impact of nutrition and health on learning. Other discussion papers are being compiled. A country case study from Zimbabwe will be presented. The round table will be organized around a slide and video presentation with interventions from a number of distinguished personalities.

More details from: Mr. Wadi Haddad, Executive Secretary, Interagency Commission for the World Conference on Education for All. UNICEF House, 3 United Nations Plaza, New York, NY 10017, USA.

(Source: Dr Susan van der Vynckt, Programme Specialist in Nutrition Education, Division of Science, Technical and Vocational Education, UNESCO, 7 place de Fontenoy, 75700 Paris, France)

UNHCR

## **Nutrition of Refugees**

### *Training Video*

UNHCR is in the process of developing a training video series entitled "How to Conduct a Rapid Nutritional Status Survey in Refugee Situations". The training set will include four videos which cover the areas of preparation and planning, principles of anthropometric measurement, sampling, and data analysis and interpretation. The videos will be accompanied by a users manual describing step by step procedures for rapid assessment of malnutrition in refugee populations. The complete training set is expected to be available from UNHCR by the end of the first quarter of 1990.

### *Milk Policy*

A policy guideline has been issued by UNHCR concerning the safe use of milk products in refugee situations, following a meeting organized by the ACC/SCN. This policy has been endorsed by other concerned UN organizations (FAO, UNICEF, WFP and WHO) and has been circulated to all UNHCR field offices.

### *Deficiencies in Camps*

Over the last ten years an unprecedented number of cases of nutritional deficiency diseases (scurvy, xerophthalmia and anaemia) have been documented in refugee camps (see SCN News No. 3, page 11). Hundreds of thousands of refugees, particularly in arid regions of Africa, have been affected. The largest number has been among children, pregnant and lactating women, and the elderly. This has had an extensive social as well as physical cost on refugee communities. To help combat this problem, UNHCR has prepared a discussion paper on the subject which analyses certain options available to food planners and donors. These options review: table distribution, fresh food purchase, monetization, and food aid fortification. Each option is discussed with regard to their advantages, disadvantages and relative merits. The most practical options should be initiated.

Copies of documents and further information can be obtained from UNHCR, Technical Support Service, Centre William Rappard, 154 rue de Lausanne, CH-1202 Geneva, Switzerland.

UNICEF

### **Innocenti Centre in Florence**

UNICEF's new International Child Development Centre in Florence, Italy, became operational in September 1988. The host organization is the Istituto degli Innocenti which manages the founding hospital (serving abandoned and needy children since 1445), and a number of innovative community-based activities for the benefit of children.

The primary purpose of this Centre is to strengthen the capacity of UNICEF and its cooperating institutions to respond to the evolving needs of children and to help promote an emerging global ethic for caring for children. The Centre provides a forum for international professional exchanges of experience and undertakes or promotes policy analyses, applied research and the dissemination of ideas towards the goals of child survival, protection and development.

The initial work of the UNICEF Innocenti Centre is concentrated in four major programmes areas: "National capacity building for child survival and development"; "Economic policies and mobilization of resources for children"; "Rights of the child"; and "Needs of the urban child".

An international Advisory Committee has been established. The Centre is also beginning to form consultative groups in each of the four major programmes areas designed to provide general advisory support and to maintain effective links both with other parts of UNICEF and with operating institutions and key resource persons.

The Centre will offer fellowships of varying lengths of time to recognized experts working within the major areas of the Centre's activities. Fellowships will be used to offer opportunities to professionals, especially from developing countries.

(Source: Innocenti Update, UNICEF International Child Development Centre Newsletter, April 1989, Nos 1 and 2. For further information, please contact: UNICEF, International Child Development Centre, Spedale degli Innocenti, Piazza SS. Annunziata, 12-50122 Florence, Italy)

WHO/UNICEF

### **Iringa – Improved Children's Nutrition**

In contrast to what has happened in most of Africa, the Iringa region in Tanzania has enjoyed a significant improvement in the nutritional status of infants and young children during the last five years.

Between 1984 and 1988, it was estimated that severe and moderate malnutrition have been reduced by 70% and 32% respectively, according to a recently published report \*. Moreover, such downward trends in malnutrition are being maintained. Similarly, infant mortality and child death rates considerably were reduced compared to the rates were recorded for Iringa in the 1978 Tanzania national census. Since these marked improvements were apparent only in the areas where the Iringa nutrition programme has been functioning, much of the observed improvements in the nutritional status has been attributed directly to the impact of this programme.

\*Based on: JNSP in Iringa, Tanzania, 1983-88 Evaluation Report, WHO and UNICEF, Dar es-Salaam, October 1988.

The Iringa Nutrition Programme is part of the joint WHO/UNICEF Nutrition Support Programmes (JNSP), conceived in 1981, with funds from the Italian Government, for the improvement of nutrition in some of the poorest parts of the world. In Tanzania – one of the first countries to implement the programme – Iringa region was chosen as the most suitable site for the programme activities because of its diverse cultural, socioeconomic and geographical characteristics, plus its relatively high malnutrition prevalence and existence of a relatively strong institutional infrastructure.

A National Ad-hoc Planning Group was established with representatives from the Prime Minister's Office, the Ministries of Health, Education and Agriculture and the Tanzania Food and Nutrition Centre. The programme had the overall objectives of reducing infant and young children mortality and morbidity; achieving better child growth and development and improving maternal health and nutrition. Further, development of people's capabilities at different levels of society to assess and to analyze nutrition problems and to design appropriate actions, in order to solve them, was recognized as being fundamentally important for attaining the programme goals.

To reach these goals, the main programme components included: systems development and support; maternal and child health; water and environmental sanitation; household food security; child care and development as well as income-generating activities. The programme focus was on pregnant women and under-five year old children, being the most vulnerable section of the community.

The Iringa Nutrition Programme has continually grown and expanded. The original 168 villages covered by the programme has now been increased to 620 villages and townships in the whole region. Similar activities are being replicated in six other regions of Tanzania. However, in any replication process, specific characteristics of the concerned area should be considered carefully – as emphasized in the report. It is also stressed that while very substantial resource at all administrative levels have been mobilized by this programme and although resource mobilization and external inputs have been crucially important for the success of the Iringa Programme, analysis suggests how these can be reduced and/or replaced by local commitments from different levels in order to decrease dependency on external support.

The Iringa programme evaluations highlighted the achievements of the programme and at the same time recognized that feasible and affordable solutions to many of the health and nutrition problems in Iringa are yet to be found. Despite marked improvements, the region still suffers from high malnutrition and mortality in its children. Nevertheless, the experience gained confirmed that much could be done to improve nutritional status of the vulnerable groups by creating public awareness and strengthening the support services.

## WORLD BANK

### **Expanding Support for Nutrition Programmes**

Throughout 1989, the World Bank has continued to finance nutrition projects in a number of countries on the recognition of the importance of nutritional support during the course of economic adjustment programmes. Briefly, the main activities included the following.

The *Jamaica* Social Sector Development Project, approved in June 1989, encourages the government to target social spending on the poor and vulnerable groups, reducing general food subsidies and increasing targeted food stamps and nutritional assistance through maternal and child health care programmes. Nutrition and food-related programmes account for about 50% of the overall expenditure of the social well-being programmes supported by the loan.

The Structural Adjustment Loan for *Venezuela*, also approved in June 1989, provides nutrition inputs. Assistance in the form of either cash or food vouchers is provided through schools in low-income areas to school and preschool age children. Support is will also be given to nutrition programmes for preschool children through an expanded day-care system; school feeding programmes; and nutrition and health care for pregnant women and infants in low-income areas. The government focussed attention on the poor by using direct and targeted subsidy programmes instead of indirect ones benefiting mainly the affluent.

In *Lesotho* a Population/Health-/Nutrition project had a multifaceted nutrition component including a unique programme to promote village-based grain processing and stimulate domestic grain production. The activities are designed to complement those under a UNICEF-financed Child Nutrition and Household Food Security Project. A nutrition project in *Mozambique* has been approved.

The *Sri Lanka* nutrition sector report has been revised to take account of recent major changes in government food programmes. Meanwhile, a Sri Lankan Nutrition Working Group has been established to design and pilot-test community nutrition interventions in three service delivery areas covered under the recently implemented Health and Family Planning Project.

In *India* preparation is under way for two future nutrition projects for World Bank support. These may expand Bank-assisted nutrition operations in India to at least four other States as well as expansion of an existing project in Tamil Nadu, to cover the entire state.

*Argentina* recently requested Bank financing for nutrition, while as a result of an earlier proposal from *Colombia*, a Community Child Nutrition and Development Project is being prepared.

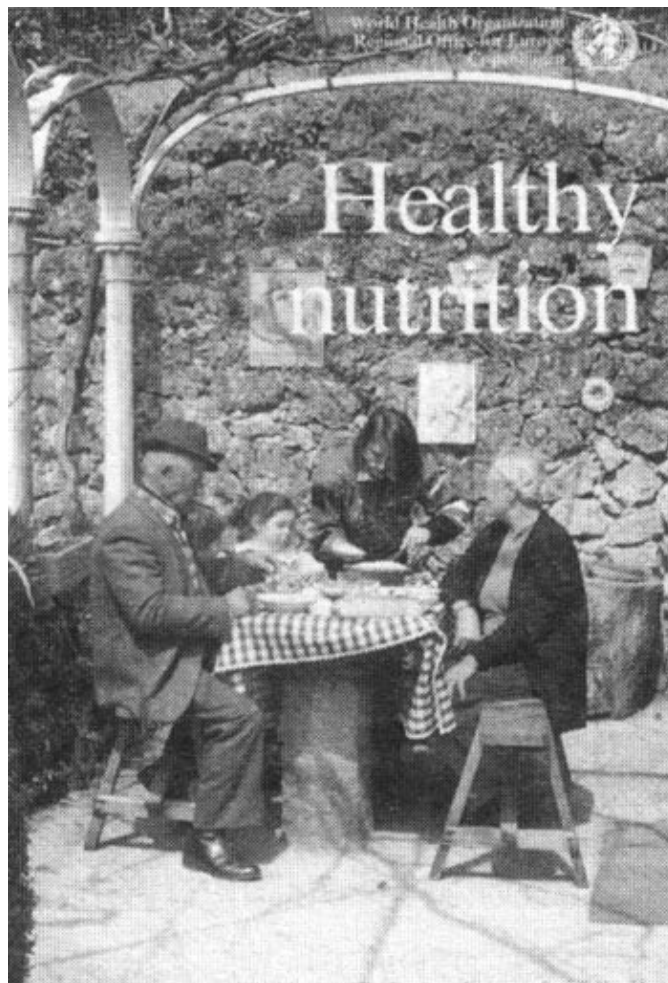
The World Bank has explored possibilities of including nutrition elements in projects. In *Mexico* nutrition studies have been done in the context of an Agriculture Sector Adjustment Loan. Discussions have been held with other countries including *Bangladesh*, *Brazil* (Northeast), *Guatemala*, *Madagascar*, *Nigeria*, and *Philippines* on prospects for nutrition operations.

(Source: The World Bank.)

– M.L.

## PUBLICATIONS

### Healthy Nutrition



#### **Preventing nutrition-related diseases in Europe**

by W. P. T. James in collaboration with A. Ferro-Luzzi, B. Isaksson and W. B. Szostak.

WHO Regional Publications, European Series, No. 24 (paperback) 150 p, SFr. 20. \*

\* The WHO – Collaborating Centre for Nutrition in Rome has recently undertaken the translation in Italian of the book. Five thousand copies are planned for distribution to family doctors as one of the components of a coherent Italian food and nutrition policy.



"People can now eat every day the foods that our ancestors had only on festive occasions. And, as our forebears have told us, too much feasting is not good for health". This early quote encapsulates the major concern of the book: the evolution of European dietary patterns and their relationship with changing patterns of disease. Diet influences the development of preventable diseases which now lead to about half the premature deaths of Europeans under 65 years of age. After a review of the changing dietary and health patterns in Europe in the first half of the book, attention turns to the types of strategies necessary to prevent diseases such as coronary heart disease, diabetes, cirrhosis of the liver, nutritional anaemia and goitre. In the final chapter, the practical aspects of implementing a relevant nutrition policy, and its goals – both intermediate and ultimate – are outlined.

In general, dietary patterns in Mediterranean countries are found to be more conducive to good health than those in northern Europe. In their traditional pattern of foods, the ratio of energy derived from vegetable as compared to animal sources is relatively high. There is now however evidence of growing adverse change, both in the Mediterranean and eastern Europe.

Obesity and hypertension are highlighted as conditions predisposing to major health problems. A strategy for preventing obesity would include a reduction in the total fat and sucrose content of the diet. This could be compensated for by an increase in the consumption of cereals, roots, vegetables and fruit. In this way, the energy density of the diet decreases as nutrient density increases. Vitamin and mineral intakes also rise, minimizing problems such as iron deficiency anaemia and goitre, increased fibre intakes reduce the likelihood of constipation and diverticular disease and dental caries would become less common as the sugar content falls.

In any one country, cultural factors and availability will determine the types of cereals, fruits or vegetables consumed. Significant dietary changes however may necessitate an alteration in manufacturing practices to produce foods with a higher nutritional value. One example is salt, high intakes of which are associated with the development of hypertension. Reducing the use of salt at the table would have a small effect compared to a reduction in levels added during manufacturing.

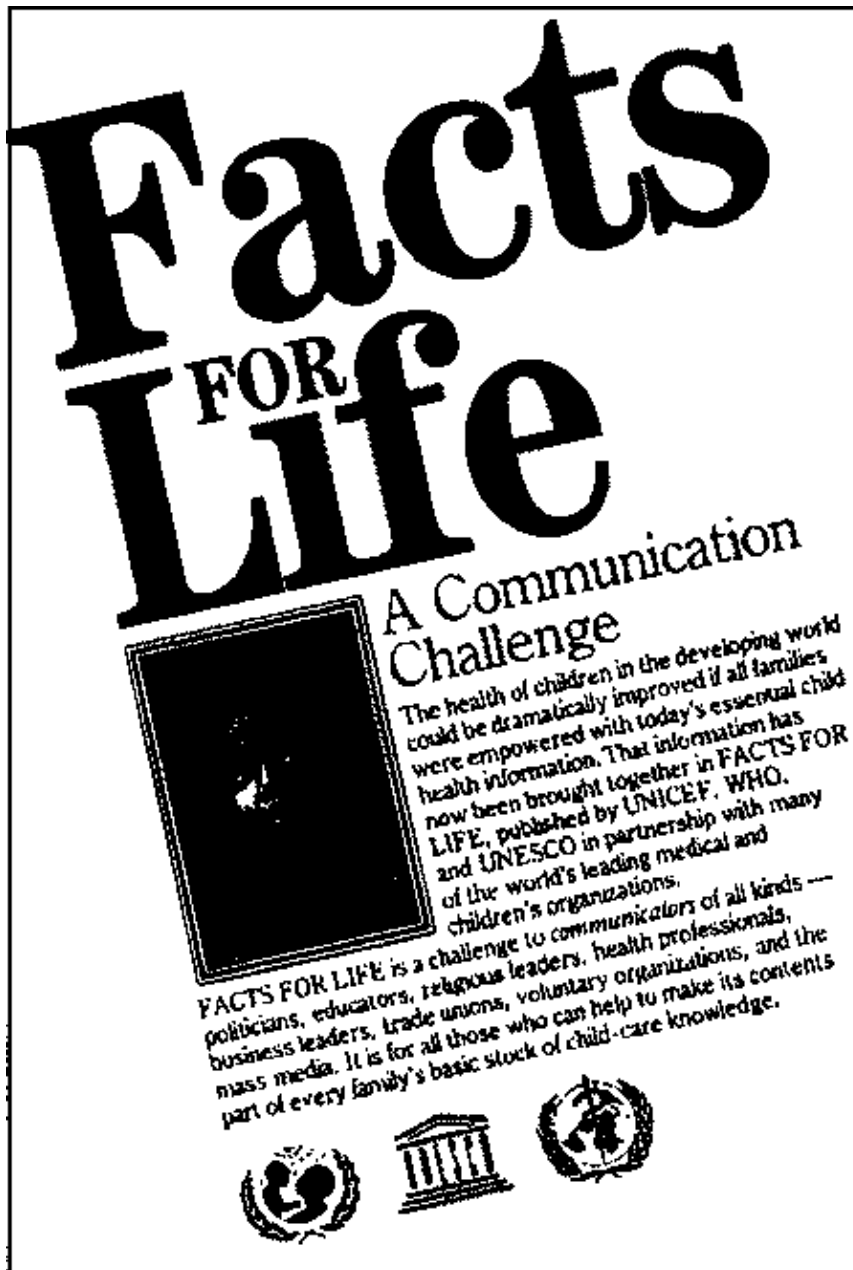
Substantial dietary changes can occur within short periods. The introduction of subsidies on fat-enriched foods in Sweden and a national nutrition policy in Norway were respectively associated with significant increases and decreases in total fat consumption. However, just as it is not possible to prove that dietary factors are the sole causes of the disease conditions mentioned, secular changes in diet composition can not be solely attributed to policy initiatives.

A country's dietary goals should be consistent with the ability of its agricultural industry to adapt. The example of Scandinavian countries is cited, where in order to attain the goal of reducing the proportion of energy intake from saturated fatty acids to 10%, drastic changes in the breeds of farm animals would be needed, as well as the adoption of vegetarianism by a large number of people. Clearly then intermediate as well as ultimate goals are needed, and these are set out for several dietary components. Different conditions obtaining in different countries prevent agencies like WHO from producing a universally applicable model for achieving such goals. They can however identify common themes in recommendations thus facilitating a clearer policy formulation.

Food balance sheets, as produced by FAO, can be used to assess the sources of certain dietary components, enabling adjustments in policy, and consequently food and agricultural practices. Whereas, for example, the major proportion of saturated fats in Great Britain is derived from dairy products, the position is very different in Italy where olive oil consumption is particularly high. The introduction of low-fat dairy products in countries such as Great Britain is one possible means of achieving intermediate goals, although this could increase butter surpluses.

The book is concise and well-illustrated with graphics and a series of bar-charts illustrating international differences in dietary and disease patterns and their associations. It should serve as an accessible and informative sourcebook for policy-makers, nutritionists and health professionals as well as providing an interesting read for the increasingly health-conscious general public in Europe.

– S.G.



### A Communication Challenge

published by UNICEF, WHO and UNESCO

The recent publication of *Facts for Life* is a welcome event. UNICEF, WHO, and UNESCO are to be congratulated on their collaboration in presenting substantial technical information on ten health topics in a clear and accurate manner with an eye toward being applicable worldwide. The vast array of partners they have amassed for this "communication challenge" is perhaps unprecedented. The statement in the beginning of the book –which reads like a dedication and emphasizes the need for fathers to receive this information – is commendable.

Almost certainly there will be debate about particular facts that are omitted or that should be modified. For example, in relation to nutrition, there is no mention that the nursing mother needs extra food. The omission is particularly apparent in the advice on maintaining adequate growth. Here it is not enough to say that breastfeeding is best, since growth can falter in the first months of life, even though the mother is breastfeeding. In this case breastfeeding frequency must be increased and the mother, herself, must eat and drink more. Likewise, the section on child growth (most of the messages are on child feeding), omits mention of the consistency of young children's food. We have found in our work that almost universally, young children's food is too watery and that just by reducing the dilution of the gruel, energy density can be

increased substantially.

The critical issue with *Facts for Life* however, is how it will be used. It should be considered the standard against which health authorities in each country examine current practices in their own institutions and populations to arrive at their own "facts", and to adapt the ideal to the real situation. Several of the specifics, for example, how to improve the daily food intake of a young child, the recipe for ORS or maternal risk factors, will need to be adjusted locally. Likewise, school teachers, scout leaders, etc. must adapt the book not only to the health realities in their area but also in their programmes. How to do this is not evident in *Facts for Life* or its companion book, *All for Health*.

In putting the "facts" to use, it will be important to remember that the acquisition of knowledge alone, while essential and in a certain sense "liberating" to parents, is insufficient. Adapting the "facts" to local conditions is one step. The second is to *motivate* families to act on them. The users of *Facts of Life* should be urged to investigate barriers – those of culture, finance, logistics, and time – and to demonstrate how parents can overcome these barriers in order to act on advice given. For example, generally women know that breastfeeding is best, but they seldom breast-feed their children exclusively for four to six months. A woman's confidence in her ability to breast-feed is a critical factor, but is that changed just with information? Likewise, many people know that they should boil water, wash their hands, and keep utensils clean, but does that mean they follow what they know? Usually not. These facts need careful crafting to turn them to meaningful messages.

As the introduction to *Facts for Life* states, the book is "a starting point for discussion" and for that it is excellent. It is our job to use these facts and our own expertise to shepherd this discussion along a path that will lead to relevant, sustainable communications programmes in each of the ten areas touched in the book. This will ensure that the technical information ultimately will reach those who can benefit from these labours, the parents of the world's young children.

Marcia Griffiths  
President, the Manoff Group Inc.

To obtain a copy contact: UNICEF, DIPA, Facts for Life Unit, 3 U. N. Plaza, New York, NY 10017, USA.

**Register of Development Activities of the United Nations System 1987**, Compiled by the Advisory Committee for the Co-ordination of Information Systems (ACCIS). 752 pages.

*The Register of Development Activities of the United Nations System 1987*, is an enormous volume of 752 pages providing descriptive and financial information on over 20,000 social and economic development activities. The register provides a comprehensive information source of the activities of the United Nations, its specialized agencies, and the International Atomic Energy Agency.

The Advisory Committee for the Co-ordination of Information Systems (ACCIS) was established in 1983 and as part of its mandate, was requested to prepare an annual register of all development activities within the United Nations system. The time-consuming and labour-intensive task of compiling the information was complicated by the diverse programming and reporting systems of the U. N. agencies. Among the U. N. agencies, there is considerable variation in methods of identifying, formulating and approving projects, reporting on expenditures and classifying countries and areas by region. Nevertheless, ACCIS has done an outstanding job of compiling the data and producing a valuable source of information on the U. N. system's activities.

The Register, which includes all development activities current during the 1987 calendar year, is divided into four basic sections: 1) activities executed in individual countries/areas, 2) regional activities, 3) inter-regional activities, and 4) global activities. Within each section, activities have been assigned to 16 sectors according to the ACC Programme Classification. The sectors include agriculture, natural resources, population, health, education, industry, and humanitarian aid and relief. For each activity information is provided on: reporting organization, activity identifier, project title, funding source, type of activity, executing agencies, project years, and expenditure data.

The database management system used for the Register database was UNESCO's CDS/ISIS (Mini-micro Version 2). ACCIS can provide the data from the register on 5 1/4 inch diskettes in a format which can be used by a number of different software packages including dBASE III+. In addition to the information found in the Registry, the database contains more detailed expenditure data and descriptors for each activity which reflect the subject content of the activity title.

The 1988 register of development activities is now being finalized and will be available in early 1990. The 1987 Register costs \$30 US and can be obtained from United Nations Sales Sections in Geneva and New York or by contacting ACCIS Address: ACCIS Secretariat, Palais des Nations, 1211 Geneva 10, Switzerland

*ACC/SCN Secretariat has benefitted from the ACCIS database, for assessing flows of external resources relevant to nutrition. With additional data on multilateral loans and bilateral loans and grants we are assessing the overall flows. A report is planned for 1990, and some results will be given in future issues of SCN News.*

Paula Yoon

## **Protecting, Promoting and Supporting Breast-feeding**

A Joint WHO/UNICEF Statement on Protecting, Promoting and Supporting Breastfeeding: The Special Role of Maternity Services, has been published by the World Health Organization, Geneva in 1989. This statement has been prepared to increase awareness of the critical role that health services play in promoting breastfeeding, and to describe what should be done to provide mothers with appropriate information and support. It is intended for use, after adaptation to suit local circumstances, by policy-makers and managers as well as by clinicians, midwives and nursing personnel. It outlines practical steps that can be taken to promote and to facilitate the initiation and establishment of breastfeeding (see box).

### **Ten Steps to Successful Breast-feeding**

Every facility providing maternity services and care for new-born infants should:

1. Have a written breast-feeding policy that is routinely communicated to all health care staff.
2. Train all health care staff in skills necessary to implement this policy.
3. Inform all pregnant women about the benefits and management of breast-feeding.
4. Help mothers initiate breast-feeding within a half-hour of birth.
5. Show mothers how to breast-feed, and how to maintain lactation even if they should be separated from their infants.
6. Give newborn infants no food or drink other than breast milk, unless *medically* indicated.
7. Practice rooming-in – allow mothers and infants to remain together – 24 hours a day.
8. Encourage breast-feeding on demand.
9. Give no artificial teats or pacifiers (also called dummies or soothers) to breast-feeding infants.
10. Foster the establishment of breast-feeding support groups and refer mothers to them on discharge from the hospital or clinic.

Copies may be obtained (at SF6 each) from Distribution and Sales Services of the WHO, Geneva or through local authorized sales agents.

– M.L.

## **Feeding the Child**

by Ruth K. Oniang'o and others (Kenya)

The authors of this book have attempted to address nutrition and health related problems of Kenya's children from a practical point of view and to give suggestions on how to approach them. This book –written by and for

Kenyans – was not intended to be an exhaustive review of all related aspects of health and nutrition, probably because a lot of this information is available already. Rather, only important areas are covered in detail. The main issues covered in the first part of the book include proper nutrition in health and disease, emphasizing periods of infancy and pregnancy; feeding problems; measurements of nutritional status and the relation of hygiene and sanitation to health of particularly very young children.

The second part of the book is devoted to presenting a collection of locally available foodstuffs as well as giving information on their preparation and use. In the authors' view, lack of food is only rarely the most important problem in Kenya. It is, however, necessary to know how to prepare nutritious meals for children, using local ingredients. It is for this reason that part three of the book contains a whole set of recipes for weaning dishes. These recipes – developed as part of a research project – according to the authors, were collected from different parts of the country and were carefully tested, standardized and in some cases improved to give a nutritiously balanced meal suitable for child feeding.

This easy-to-read and extensively illustrated book is written by Dr. Ruth K. Oniang'o, a senior lecturer in the Kenyatta University, with contributions from Prof. N. O. Bwibo, Dr. I. O. Ndombi and Dr. K. O. Rogo from the University of Nairobi. It is published by the Heinemann Kenya Ltd. (1988). Copies from: Heinemann Kenya Ltd, Kijabe Street, P.O. Box 45314, Nairobi, Kenya.

– M.L.

### **Improving Young Child Feeding During Diarrhea**

A Guide for investigators and Programme Managers, by M. Griffiths, E. Piwoz, M. Favin and J. Del Rosso, June 1988.

Manoff International, through its weaning project, has published in June 1988, an excellent guide for investigators and managers on improving feeding practices for young children during diarrhoea. The guide adapts a methodology which combines market, nutrition, health and anthropological research techniques to the challenge of motivating mothers to continue feeding their young children during and after diarrhoea episodes. This technique relies on constant consultation with the intended beneficiaries using qualitative methods to aid in formulating programme strategies. It consists of three phases: problem identification; intervention or concept testing; and analysis and synthesis. The research process should provide educational planners with the knowledge required to give the right advice and to be able to motivate mothers to follow them.



**Flowers need water**

Diarrhoea takes away water from the body. Like a flower without water, the body droops.

Unlike a flower the child's body also needs salt. Sugar is required to help the body to absorb the salt and water.

(Source: Reproduced from 'My Name is Today' (1986), Fig. 138, D. Morley & H. Lovel, TALC, P.O. Box 49, St. Albans, Herts. AL1 4AX, U.K.)

"This manual provides a practical step by step approach to conducting field studies with mothers, and the subsequent analysis and application to message design, that is needed to develop effective feeding recommendations and messages" writes Dr. Robert S. Northrup, Technical Director of the Technologies for

Primary Health Care Projects (PRI-TECH), Management Sciences for Health, in the preface to this publication.

The manual is available from the following address:

Manoff International, 2001 S Street, NW, Washington, D.C. 20009-1125, USA. Tel: 202-265 7469.

– M.L.

### **Breastfeeding: A Preventive and Treatment Necessity for Diarrhoea**

By Sandra L. Huffman and Cheryl Combest – Centre to Prevent Childhood Malnutrition, 1988, 27p.

This paper, presented at UNICEF-/National Center for International Health workshop on "Breastfeeding: Passport to Life", held at UNICEF, New York on 10 December 1988, discusses some of the scientific data concerning the role of breastfeeding in child health and growth and gives examples of recent studies showing, once again, the beneficial effects of breastfeeding in preventing morbidity and mortality from diarrhoea. Both community-based studies in Brazil, Peru and elsewhere, and hospital-based investigations in Indonesia, Costa Rica, India and the Philippines have demonstrated a much lower risk from diarrhoea in breastfed infants.

A dose-response relationship of breastfeeding with mortality from diarrhoea was evident in the Brazil study, where each additional daily breastfeed was associated with a reduction in the risk of death due to diarrhoea. The authors conclude that "few other interventions have been shown to be as effective as breastfeeding". Breastfeeding through its role in preventing malnutrition may exert an additional independent effect on the severity of diarrheal morbidity. Numerous studies have been quoted to show that continued breastfeeding during diarrhoea also reduces the risk of dehydration, as well as the negative nutritional consequences of diarrhea. It has also been shown to be effective in treating protracted diarrhoea. All such data point to the need to extend the duration of exclusive breastfeeding to at least 4-6 months.

The authors believe that "while many Diarrheal Disease Control Programmes and some Child Survival Programmes have included breastfeeding promotion in their campaigns, much more needs to be done to take advantage of potential benefits of breastfeeding in reducing diarrhea-related morbidity and mortality among young children".

Guidelines are given to ensure successful breastfeeding and actions are proposed for enhancing programme effectiveness in reducing diarrhoea. The authors emphasize that because breastfeeding promotion activities are feasible and cost effective, they need to be considered an integral part of programmes for child survival.

Copies of this paper, at US\$3.75 each plus postage, are available from:

The Centre to Prevent Child Malnutrition, Department of International Health, The Johns Hopkins University, Suite 204, 7200 Wisconsin Avenue, Bethesda, MD. 20814, USA.

– M.L.

### **Iron Deficiency and Behavioural Development**

A recent supplement to the American Journal of Clinical Nutrition, Vol. 50, No. 3 (September 1989) comprises the proceedings of a conference held in Geneva, October 10-12, 1988, on the subject of iron deficiency and behavioural development (see SCN News No. 3, p13-14). The conference was co-sponsored by the ACC/SCN, UNU, INACG and WHO.

### **Improving Young Child Feeding in Eastern and Southern Africa**

Household-Level Food Technology Proceedings of a workshop held in Nairobi, Kenya, 12-16 October 1987

Food scientists, nutritionists and health planners working in Africa and South Asia met in an international workshop in Nairobi in October 1987 which was co-sponsored by UNICEF, SIDA and IDRC. The proceedings have been published with support from IDRC (Canada). The purpose was to examine household-level food

technologies that hold promise for improving nutrition of infants and young children. In particular, the use of weaning diets of fermented foods and germinated flour, both for improved nutrient intake and decreased risk of food contamination, was discussed prior to identifying areas of research into effectiveness and discussing its diffusion into the community. Copies can be obtained from IDRC, P.O. Box 8500, Ottawa, Ontario, Canada K1G 3H9; or via UNICEF.

## **Hunger and Society**

Edited by Latham, M. C., Bondestam, L., Chorlton, R. and Jonsson, U.

### **Vol. 1: An Understanding of the Causes**

### **Vol. 2: An Examination of Country Cases**

### **Vol. 3: Causes and Strategies in Tanzania**

Cornell International Nutrition Monograph Series Nos. 17–19. Ithaca, N.Y., USA: Division of Nutritional Sciences, College of Agriculture and Life Sciences, Cornell University, 1988. US \$3 per volume.

The papers in these three volumes were originally presented at a workshop sponsored jointly by UNICEF and the Tanzanian Food and Nutrition Centre (TFNC) and held in Iringa, Tanzania in December 1983. This followed the circulation to a number of scholars worldwide of a conceptual framework on hunger and society, by Dr Jonsson of UNICEF (Dar es Salaam).

In the first volume, a theoretical analysis of the underlying causes of hunger and malnutrition in society is undertaken. The first chapter comprises a critique of contemporary schools of thought in development theory with regard to their relative implications for the problem of hunger, and includes a basic characterization of four such theoretical traditions, termed here: the Growth and Modernization School, the Dependency School, the Global Political Economy School and the Another Development School. Subsequent papers focus on the ideological bases for nutrition planning, the type of indicators for measuring nutritional impact of development projects, the effects of bilateral and multilateral aid organizations on food and nutrition, and the concept of food as a human right.

Country–case studies examining the nutritional and welfare effects of different types of development policy are developed in the second volume. Papers concern the relationship between transnational capital, food dependency and nutrition in the Caribbean; 'free–market' politics and nutrition in Chile; export–oriented industrialization and welfare in Sri Lanka; and hunger and famine in Ethiopia in the 1960's and 1970s.

The causes of hunger and the strategies – both attempted and potential – for alleviating it in Tanzania are examined in the final volume. As well as an evaluation of the work of the pioneering Tanzanian Food and Nutrition Centre, problems of the environment and women's lack of resource control, are investigated. Subsequent chapters focus on the causes and responses to urban food shortages, the use of social indicators in nutritional surveillance, and the making of a nutrition programme.

The underlying causes of hunger in Africa are largely identified as being embedded in the continent's historical development through colonialism and the policies of industrialized countries, multinational development agencies and corporations. Despite the delay in publication, many of the arguments remain relevant and challenging, although a more balanced critique might have included an examination of one or two countries in which development policies have had positive welfare and nutritional impacts.

The various deliberations of the workshop participants concerning the causes and solutions of malnutrition are brought together in the 'Declaration of Wanging'ombe'. In brief, in order to achieve progress in nutrition and health, these conclusions highlight the need for popular participation, equitable access to and control of productive resources (particularly for women), priority for food crops and promotion of immunization, ORT, early malarial treatment and child growth monitoring.

– S.G.

## **Food Subsidies in Developing Countries**

by Per Pinstруп–Andersen

IFPRI Food Policy Statement No. 9 October 1988 4p.

In this short paper from IFPRI, Pinstруп–Andersen discusses the uses and misuses, costs and benefits of consumer food subsidies and rations and their role in countries following different development strategies, including examples from Egypt, Sri Lanka and Bangladesh.

Food subsidies may be expensive for governments but they may also be effective policy tools for reaching objectives such as those aimed at enhancing health and nutrition. They may, in the short run, compensate for losses in real incomes of the poor caused by economic recessions or adjustments or an inappropriate development strategy. Food consumption has increased e.g. 15–18 per cent in India and Bangladesh during subsidy programmes, and decreases in prevalence rates of underweight children have been observed e.g. in the Philippines.

Conversely, where a development strategy that emphasizes employment generation and productivity growth among the poor is pursued, subsidies may be unnecessary. If misused, they may be harmful to growth and equity e.g. by providing disincentives to producers.

Benefits of subsidies to vulnerable groups may be increased simultaneously with decreasing fiscal and economic costs through targeting. Political and logistical factors as well as insufficient information may present difficulties in this. Targeting has been done by geographical area, by nutritional status, by season and by commodity. The latter has proved to be particularly successful as self–selection of target groups may occur through subsidizing less–preferred staples consumed by the poor. The costs as well as benefits of subsidies may be targeted e.g. revenue may be raised by taxing luxury goods.

If the primary goal of a subsidy programme is nutritional improvement, cost–effectiveness is likely to be improved by combining it with a primary health care programme. Growth monitoring at health centers could be used to target households which would then be given food stamps to exchange at private retailing outlets.

Pinstруп–Andersen concludes by pointing out the potential for using food subsidies to create self–sustained income–generating capacity e.g. by linking them to public–work schemes aimed at infrastructure creation allowing future small–scale entrepreneurship.

The question is not whether consumer food subsidies are good or bad but when and how they are applied.

– S.G.

### **Rapid Rural Appraisal Annotated Bibliography**

Rapid Rural Appraisal (RAP) is an appropriate tool for the collection of information on food consumption and nutrition–related issues. This is considered particularly relevant for quickly identifying nutritionally vulnerable groups and their food consumption problems at the household and community levels, in order to take appropriate actions. The aim of RAP is to develop a quick, cost–effective and accurate understanding of the rural situation, be it farming, nutrition, health, food consumption, poverty, women's roles, etc., or indeed combinations of these.

An annotated bibliography, prepared by Jeanette Hassin–Brack for Nutrition Economics Group, Technical Assistance Division of the United States Department of Agriculture, surveys a selection of recent literature relevant to rapid rural appraisal. This is one of a series of publications prepared under a Nutrition in Agriculture Cooperative Agreement involving the University of Arizona and the University of Kentucky with the Nutrition Economics Group, Office of International Cooperation and Development, and United States Department of Agriculture (see "News and Views" in this issue). The volume two of this bibliography came out in December 1988. For more information contact: Dr. Timothy Frankenberger, Office of Arid Lands Studies, College of Agriculture, University of Arizona, 845 N. Park Avenue. Tucson, Arizona 85719, USA. Tel: 602–621–1955.

– M.L.

### **Food Aid in Disasters**



In 1983, Diakonisches Werk published a manual entitled "Food Aid in Disasters" for those involved in the emergency relief activities. A revised edition of this book, by P. Glasauer and C. Leitzmann, has been compiled and published in May 1988, for the Diakonisches Werk of the Evangelical Church in Germany. This 118–page English edition, contains six chapters on the causes of disasters and their influence on food supplies; aspects of food aid in disasters; some aspects of nutrition in disasters; food aid through local purchase; early warning systems and food security programmes.

To obtain a copy, at DM20.00, contact: Ms. Erika Friese, Press and Information Department Diakonisches Werk of the Evangelical Church, Central Office, Stafflenbergstr 76, D–7000 Stuttgart 1, Federal Republic of Germany. Tel: 0711–21590.

– M.L.

### **Health Surveillance and Management for Food–Handling Personnel**

This is the report of a WHO Consultation which met in Geneva from 18 to 22 April 1988. Published as WHO Technical Report Series No. 785 by the World Health Organization, Geneva, in 1989, it contains the collective views of an international group of experts on the subject. Some of the main topics covered are: the potential of food–handling personnel to transmit diseases via food; selected diseases and their relevance to food safety; limitations of routine health examinations of food–handling personnel; effective preventive measures and management; and finally conclusions and recommendations of the meeting. Copies from: Distribution and Sales, World Health Organization, 1211 Geneva 27, Switzerland.

– M.L.

### **Requirements of Vitamin A, Iron, Folate and Vitamin B<sub>12</sub>**

With the availability of a lot of new information during the past twenty years, it was considered by FAO and WHO as appropriate to convene another joint expert consultation following the previous two in 1965 and 1969 – to review vitamin A, iron, folate and vitamin B<sub>12</sub> requirements. Considering that both vitamin A deficiency and nutritional anaemia are important public health problems particularly in developing countries, these recommendations on human requirements of such micronutrients, are of special value. The report of this Joint FAO/WHO Expert Consultation which met in March 1985 in Geneva, is published by FAO in 1988 and provides a much required reference in these important areas. This publication will be reviewed in the next issue of the SCN NEWS. Copies of "Requirements of Vitamin A, Iron, Folate and Vitamin B<sub>12</sub>" are available from FAO, Rome, and from authorized distributors in most countries.

– M.L.

### **FAO Review of Food Consumption Surveys – 1988**

The review of country level food consumption surveys conducted during the period of 1977–86 was published by the FAO in 1988 (FAO Food and Nutrition Paper 44), as a continuation of a series of reviews published between 1958 and 1985. It presents the methodology as well as data from selected surveys in which household food consumption is classified by income, total expenditure or by some other indicators of economic status.

The publication is divided into two parts. Part I, The "Descriptive Notes" gives the main characteristics of the methods used in planning and executing the surveys. In Part II, the "Tables" provide information on expenditure and consumption of a standardized set of food items, classified by economic status. Information on the number of households covered and their average size is also shown for each economic group. The data reported have been recorded on standard floppy discs utilizing Lotus spread sheets in the Commodity and Trade Division of FAO and can be made available to interested analysts for use on personal computers.

The FAO Technical Papers can be purchased locally through the authorized FAO Sales Agents or directly from Distribution and Sales Section, FAO, via delle Terme di Caracalla, 00100 Rome, Italy.

– M.L.

### **Food Composition and Analysis**

The Journal of Food Composition and Analysis is an official publication of the United Nations University, International Network of Food Data Systems. It is devoted to all aspects of the chemical composition of human foods, with the primary goal of providing sufficient description of food samples, analytical methods, quality control procedures and statistical treatments to permit the end users of the data to evaluate the data's appropriateness in their projects. The main features are data and methods for natural and/or normal chemical and biochemical components of human foods (such as nutrients, toxicants, flavors, colours etc.) and methods for determination of inadvertent materials in foods including pesticides, agricultural chemicals, heavy metals, general environmental contaminants, chemical and biochemical toxicants of microbiological origins. Sample copies and privileged personal rates are available upon request. For more information contact: Academic Press Inc., Promotion Department, 1250 Sixth Avenue. San Diego, CA 92101, USA. Tel: 619 699 6742. Manuscripts may be submitted to Dr. Kent Stewart, Department of Biochemistry. Virginia Polytechnic Institute and State University, Blacksburg, VA 24061, USA.

– M.L.

### **Chemistry of Tropical Root Crops: Significance for Nutrition and Agriculture in the South Pacific**

The Chemistry of Tropical Root Crops is a compilation of data on chemical composition and nutritional value of a wide range of Pacific root crops produced by the Australian Centre for International Agriculture Research (ACIAR). This comprehensive text should be of value to agriculturalists and nutritionists all over the world. It contains a literature review summarizing previously published data as well as the original data generated by the ACIAR project.

The monograph, written by J. H. Bradbury and W. D. Holloway, and published in 1988 as ACIAR Monograph No. 6, is the culmination of more than four years work in Canberra, Australia, on the chemical analysis of tropical root crops (sweet potato, taro, yams and cassava) obtained from seventeen collaborators located in nine countries of the Pacific. Analyses made for all important nutrients fill many gaps in previous data sets for starch, sugar, dietary fibre, minerals, vitamins, organic acids, amino acids, etc.

Because of consistency between averaged data across the countries of the Pacific and also (where comparisons are possible) between present data and that of earlier studies in other countries, the results are not country specific, but will be applicable worldwide. The book thus gives a comprehensive compilation of nutritional data on tropical roots crops.

Further information from: Dr. J. H. Bradbury, Department of Botany, The Australian National University, GPO Box 4, Canberra, ACT 2601, Australia. Tel: 062-495111.

– M.L.

### **Palm Oil**

The Palm Oil Research Institute of Malaysia (PORIM) has recently published two information brochures on palm oil. The first one, came out in January 89, entitled "New Findings and Facts on Palm Oil" is a compilation of materials previously published. Reproducing communications from various authorities in their original forms has been one of the objectives of the publication.

The second publication "Palm Oil, A compilation of Documented Facts on Nutritional Effects Palm Oil" – dated February 89 – is a collection of 16 basic facts about palm oil, reviewed and endorsed by a panel of leading nutrition scientists. It has been written for easy reading and according to Professor Augustine S H Ong, Director-General of the PORIM, it should be useful as a convenient foundation of knowledge and a guide for further reading, particularly for those intending to do nutritional research on palm oil. Promoting human consumption of palm oil may become of increasing interest, as it is a high natural source of vitamin A precursors. Enquiries should be addressed to: Mrs Mardiah Mohd Zin, Librarian/Head of Unit for Director General PORIM, No. 6, Persiaran Institusi, Bandar Baru Bangi, 43000 Kajang, Selangor Darul Ehsan, Malaysia, Peti Surat 10620, 50720 Kuala Lumpur. Telephone: 03-8259155, 8259775.

– M.L.

### **Data Management and Analysis Software for Epidemiology (EPI-INFO)**

Epi-Info is an applications software programme designed to facilitate the management and analysis of epidemiological data with emphasis on disease surveillance. Epi-Info contains modules for defining data entry

screens; setting data entry validation checks; performing data entry; listing data; and producing analytical outputs including frequency distributions, cross-tabulations, analyses of variance, multiple linear regression statistics, and simple graphs. In addition, it includes utilities for importing from and exporting to other common data formats such as Lotus 123, dBase III, SPSS, and SAS. Also included is a module for the calculation of anthropometric indices required in nutritional surveys.

Since 1987 more than 4,000 copies of Epi Info (which is in the public domain) have been distributed in 34 countries. It is used in routine communicable disease surveillance systems, for disease outbreak investigation, data management for HIV/AIDS surveillance, nutritional surveys, and by universities in teaching bio-statistics and epidemiology. Earlier versions of Epi Info were produced in the Epidemiology Program Office, Centers for Disease Control (CDC), Atlanta, Georgia. Version 5 is a joint CDC/WHO effort. In addition to the features of versions 3 and 4, version 5 includes many new features, and a new manual.

*Hardware required.*

The hardware specifications for using Epi-Info Version 5, are as follows:

1. IBM compatible microcomputer with DOS 2.0 or above.
2. 512K Random Access Memory (640K is better).
3. 2 floppy disk drives; or 1 floppy drive plus hard disk (better).

(The programme size is just under 1 MB; however it can if necessary run in modules using 2 360K floppy disk drives).

For more effective use, you need a hard disk, 640K RAM, a color monitor, and a printer.



*"Think back ... which keys did you press?"*

*Capacity.*

Data files may contain up to 4,000,000 records of up to 300 variables. A questionnaire may consist of up to 500 lines or approximately 20 screens.

*Description of Epi-info.*

Several aspects of Epi-Info make it useful for the processing of nutritional survey data. First, it is extremely easy to learn the minimum required for data entry, processing, and output. More advanced functions are

available which allow sophisticated applications. One of Epi-Info's strongest features is its ability to create a custom data entry screen (much easier than in dBASEIII, for example), and to set-up internal checks for errors at data entry. These features will allow a much reduced error rate at data entry, thus saving time in later data cleaning.

Epi-Info's data management programmes allow easy conversion to other's such as dBASEIII and LOTUS 1-2-3. Likewise, files from these packages can be converted for use in Epi-Info, and dBASE files can be used directly in the ANALYSIS module of Epi-Info without any prior conversion. All files used in and created by Epi-Info are ASCII files, so can be transferred into any other software package even if there is no conversion option for the package. This avoids constant problems with file incompatibility.

The ANALYSIS programme is meant for more applied applications and not upper level analyses. Statistical output for the analysis of tables are quite extensive (e.g. Chi-square), as is the ANOVA routine. Regression gives a standard output with B coefficients and the ANOVA table; however, no residual analysis is available. No log-linear regression, discriminant analysis, life tables, or time series analyses are included. Particular mention should be made of its sorting routine, which is done quickly and on one to several fields at once, regardless of whether they are character or numeric fields. Also, custom reports can be created for feedback and/or updating information.

A graphics routine is being developed, called Epi-Map, which is a companion programme to Epi Info. Epi-Map will provide the ability to create map boundary files using a digitizer, a mouse, or the cursor keys. Thematic data may be displayed using color/hatch patterns or dot density displays. The maps can then be displayed on the monitor, printed, or output to a color plotter. GPA/WHO is currently creating a library of global and country maps that will be distributed with Epi-Map. One application might be to graph the prevalences of malnutrition by country; mapping for Africa is now available and other regions will shortly become so.

#### *The ANTHRO module.*

ANTHRO is a module which calculates anthropometric indices and provides options for their presentation. It was developed jointly by WHO and CDC. It has been designed as a replacement for the CASP software which had been widely distributed over the past years but had some operational problems. Data entry and the management of data files is done in Epi-Info, and can be linked directly to the ANTHRO programme.

ANTHRO performs batch processing of multiple records containing basic measures of weight, height, sex and age. This can also be done interactively. However, for data analysis the batch procedure is useful whereby anthropometric indices can be created for a whole data set at one pass. The variables can be handled in different units, i.e. lbs/ozs, ft-inches, or metric, and age in years, months, or computed from the date of survey minus the date of birth. The default file format for ANTHRO is dBASE (.DBF) files, although the capability to import, or "translate" other file structures, including ASCII, PRN/Comma-delimited, WKS/WK1 (LOTUS), SYLK (Microsoft Multiplan), PFS (PFS: File), DIF (Visicalc) and EPI-INFO is being developed.

For each record, the following variables can be calculated (based on NCHS/WHO standards): percentiles, percent-of-median values and S.D. scores for the three indices weight-for-height, weight-for-age, and height-for-age; BMI, and ages from dates. The user selects which of these is required. In addition to these, an extra field called FLAG is created which identifies records with either missing data or a strong likelihood that some data may be incorrect (based on extreme S.D. scores). There are default criteria for "flagging" but these can be adjusted by the user.

There are standard analytical procedures in the software, which include calculation of either prevalences or frequency distributions. For prevalences, the user indicates which mode to use, i.e. centiles, % median, or S.D. score, as well as the corresponding cut-off point(s). In the second case, descriptions of entire distributions are represented either in terms of centiles or S.D. scores and shown alongside "expected" distributions of the reference population. The size of the intervals used are based on recommendations of a WHO Working Group (Bull. WHO (1986) 64(6) 929-941). In all cases, analyses can be performed on subsets of the data stratified by age group, sex and/or a third variable such as geographic region, socio-economic status, etc.. For more elaborate analyses, files created in ANTHRO can be exported for use with other statistical software packages, or in Epi-info ANALYSIS. The ANTHRO module can be set-up in English, French, or Spanish.

#### *In summary – Why Use Epi-info?*

There are several major advantages of using Epi-info in processing nutritional survey data. First, a program to calculate anthropometric indices is included, which can interface directly with Epi-info. Epi-info is very easy to learn therefore requiring little effort in training. The package stands alone, so there is no need to obtain other commercial packages, such as LOTUS123, dBASEIII, etc.. It contains only those functions most needed in survey analysis, which usually require two or more separate packages, and it thus takes relatively less storage space. Finally, it is free for distribution (see below).

The disadvantages of Epi-info are not substantial but must be considered. Because it is an applications software package and includes aspects of many different types of packages, it has some limitations. In particular, higher level word processing, upper level statistics, and "fancy" graphics are not available. Secondly, support is not as extensive as some commercial packages – in terms of reference guides and locating others who are familiar with the package. Thus, if help is needed, it may be more difficult to find.

*How to obtain a copy of Epi-info.*

Version 5 is currently being tested and is scheduled for release in January 1990. A French version is planned for release in mid-1990. Version 1 of Epi-Map is scheduled for release in April 1990.

Copies of Epi-info including the ANTHRO Module may be obtained by writing to WHO.

Please specify 5 1/4 inch or 3 1/2 inch disk.

Contact: Nutrition Unit, World Health Organization, CH-1211 Geneva 27, SWITZERLAND

– K. Test; J. Gorstein (WHO/NUT); also based on material from A. Burton (WHO/GPA)

#### CORRECTION

We regret that in our last issue five lines were omitted by mistake from the review of "Adjustment with a Human Face, volume II" in the Publications section of SCN News No. 3, on page 29. Since this removed the sense of the whole paragraph, and the correct paragraph is less interesting out of context, we are reproducing the review again here in full:

*Adjustment with a Human Face, Volume II, Ten Country Case Studies, A Study by UNICEF*

(Giovanni Andrea Cornia, Richard Jolly and Frances Stewart (Editors) Clarendon Press, Oxford, 1988 – 310 Pages)

Monetarists regard inflation, rather than unemployment, as a social malady. Milton Friedman invented the phrase "natural rate of unemployment", a normal and acceptable outcome of the market process. The IMF neo-liberal monetarist model used for stabilization policies had led to measurably high unemployment and real low wages in the 70 or so countries where it has been applied. In the Philippines, real wages fell by 50% in the 1980's. Employment levels shrank from 55.5% in 1976, to 35% in Peru. Wages in Chile in 1985 were 14% less than in 1981.

A prerequisite of orthodox stabilization programmes is to reach quantitative targets: contraction of the money supply, credit restriction, wage freeze. Unemployment statistics and per capita GNP are considered to be economic indicators rather than terms used to quantify human distress. Reduction of government spending on poverty alleviation seems logical if the rationale is deficit correction or foreign debt servicing.

The IMF inadvertently contributes to a cycle of deprivation in its role as net recipient of capital from developing countries. It is a source of conditional loan finance to whom needed resources are delivered in the form of interest payments. Debt servicing obligations siphon export earnings and divert cash from social welfare programmes. In 1985, Brazil paid the equivalent of the entire budget of the federal social welfare and medicare system. The external debt in the Philippines is 82% of GNP (1985) and is so debilitating that it makes economic sense to convert it to equity, or to repudiate it. The IMF, as ringmaster of debt rescheduling, may be forced to modify the monetarist solution by shifting the emphasis from inflation to unemployment. If unemployment, rather than inflation, is defined as the social malady, the monetarist paradigm may be skewed to incorporate a humanist clause.

The modification of government strategies to include or exclude this human and quantifiable dimension, and the evolution of this process as it relates to IMF stabilization planning, is the subject of *Adjustment with a*

*Human Face, Volume II, Ten Country Case Studies, A Study by UNICEF.* Edited by Giovanni Cornia, Richard Jolly and Frances Stewart, each monograph adopts the same format: a retrospective look at the administration of austerity plans during the 1970–1985 period in the context of world recession and local catastrophe, an update on trends from 1985, and a prognosis. Investigative reporting forms the backbone of the text, using social sector data to measure the impact of stabilization economics on human structures. The deterioration, or in some cases amelioration, of social conditions is analyzed in the language of input, process and impact indicators which provide detailed information on government expenditure correlated with access to employment, food, education and health service at the household level. Unemployment translates into a familiar arithmetic of low food purchasing power, malnutrition, increased child morbidity and mortality rates. Positive health interventions translate into child survival.

Among the other countries chosen for this research, Botswana, Peru, South Korea and Zimbabwe emerge on the credit side for combining adjustment with allocation of resources to vulnerable groups, compared with Brazil, Ghana, Jamaica and the Philippines, who have less political will in this regard.

The contributors to these country case histories are aware that an analysis of the cycle of deprivation is insufficient without the corollary analysis of response: what decisions add up to a workable crisis resolution tactic. Botswana and Zimbabwe are cases in point. Their respective governments chose to fund a drought relief programme despite budgetary restrictions. At the onset of the drought in 1982, underweight prevalence rates were measured and an appropriate response organized in the form of direct and supplementary feeding. Zimbabwe reduced its infant mortality rate to 83 per 1000 in 1983–84. In Ghana, the mechanism for coping with drought was undirected, resulting in an infant mortality rate of 120 per 1000 in the same period.

A sharp decline in wages in Brazil caused the infant mortality rate to increase from 65 to 73 per 1000 from 1982–84. State and city governments worked with community groups to form buffer mechanisms to moderate adverse conditions. In Sao Paulo, wholesale food markets, food convoys and food network schemes provided poorer members of the community with food they could not otherwise afford. In Chile, these OEPs (people's economic organizations) provide 3% of the 1.2 million Santiago shanty town population with food. When unemployment is endemic, it is the woman who is responsible for the sustenance of her family. The ingredients for the stabilization agenda – or menu – directly affect what goes into the cooking pot.

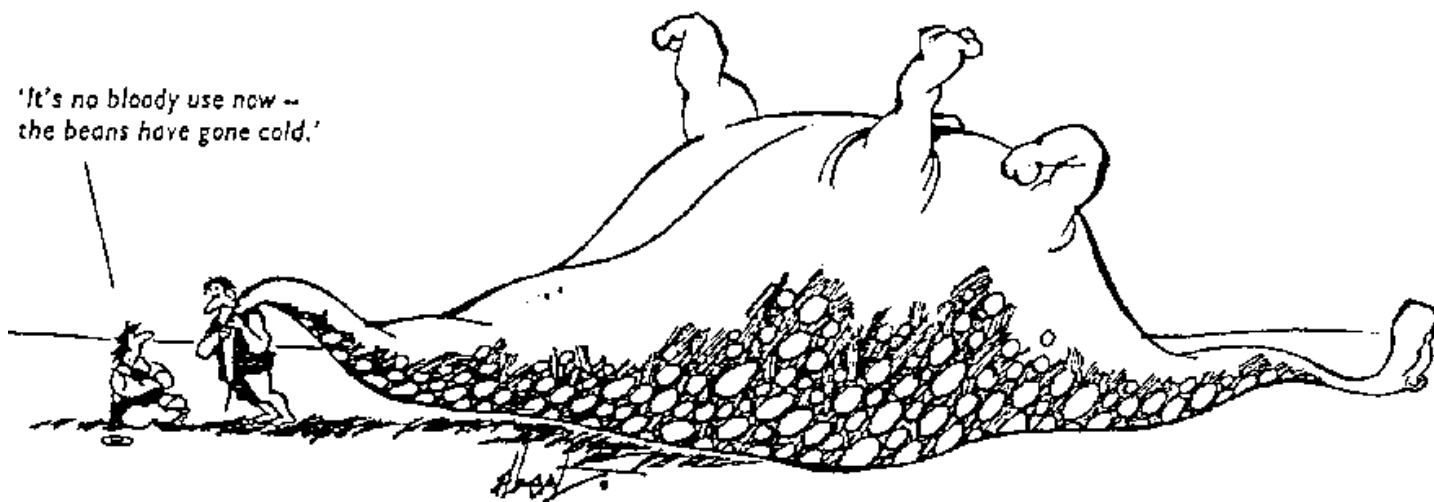
These examples provide valuable insight to both the economist and the nutritionist on the variation in causes of, and responses to, the economic crises that currently afflict many developing nations.

They serve most of all to highlight the capacity of some countries to successfully buffer the short term effects of structural adjustment on the health and well-being of the poor.

And no one exists alone  
Hunger allows no choice  
To the citizen or the police  
We must love one another or die.

(W H Auden)

Rosemary Kevany



*The importance of a balanced diet ... known since prehistoric times.*

## **UNITED NATIONS – ADMINISTRATIVE COMMITTEE ON COORDINATION – SUBCOMMITTEE ON NUTRITION (ACC/SCN)**

The ACC/SCN is the focal point for harmonizing the policies and activities in nutrition of the United Nations system. The Administrative Committee on Coordination (ACC), which is comprised of the heads of the UN Agencies, recommended the establishment of the Subcommittee on Nutrition in 1977, following the World Food Conference (with particular reference to Resolution V on food and nutrition). This was approved by the Economic and Social Council of the UN (ECOSOC). The role of the SCN is to serve as a coordinating mechanism, for exchange of information and technical guidance, and to act dynamically to help the UN respond to nutritional problems.

The UN members of the SCN are FAO, IAEA, World Bank, IFAD, ILO, UN, UNDP, UNEP, UNESCO, UNFPA, UNHCR, UNICEF, UNRISD, UNU, WFC, WFP and WHO. From the outset, representatives of bilateral donor agencies have participated actively in SCN activities. The SCN is assisted by the Advisory Group on Nutrition (AGN), with six to eight experienced individuals drawn from relevant disciplines and with wide geographical representation. The Secretariat is hosted by WHO in Geneva.

The SCN undertakes a range of activities to meet its mandate. Annual meetings have representation from the concerned UN agencies, from 10 to 20 donor agencies, the AGN, as well as invitees on specific topics; these meetings begin with symposia on topics of current importance for policy. The SCN brings certain such matters to the attention of the ACC. The SCN sponsors working groups on inter-sectoral and sector-specific topics. Ten-year programmes to address two major deficiencies, vitamin A and iodine, have been launched.

The SCN compiles and disseminates information on nutrition, reflecting the shared views of the agencies concerned. Regular reports on the world nutrition situation are issued, and flows of external resources to address nutrition problems are assessed. State-of-the-Art papers are produced to summarize current knowledge on selected topics. As decided by the Subcommittee, initiatives are taken to promote coordinated activities – inter-agency programmes, meetings, publications – aimed at reducing malnutrition, primarily in developing countries.

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**UNITED NATIONS**



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ADMINISTRATIVE COMMITTEE ON COORDINATION –  
SUBCOMMITTEE ON NUTRITION