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Changing Nutrition Scene In South Asia

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The countries of South Asia, (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) with 1.3 billion people account for 37 per cent of Asia's population and 22 per cent of the population of the world. International reports such as the Human Development Report¹ have accorded a low ranking to some of these countries in the developmental scale. While the validity and utility of these international rankings can be challenged, it must be conceded that the countries of South Asia have faced and are still facing major problems related to undernutrition.

However, the present situation in these countries has to be seen and understood in the total historical context. Practically all the countries of this Region could be considered to have started on their developmental journey just five decades ago, with the attainment of their political independence. During the last five decades these countries have, in fact, registered some remarkable gains and these must be recalled:

- Large-scale famines, which used to devastate vast sections of the population of this Region with distressing regularity for centuries, have been eliminated.

- Florid forms of malnutrition such as beri-beri (cardiac and dry), pellagra, keratomalacia, famine edema, classical kwashiorkor, pendulous goitres and osteomalacia have been eliminated. The Indian subcontinent was a veritable museum of these most florid

forms of undernutrition. These have now ceased to be the major public health problems, which they once were.

- Cereal (wheat and rice) production has nearly kept pace with population growth, ensuring that the per caput availability of food grains has not declined. This has been achieved in spite of a tremendous population rise during the past 50 years, from 456 million in 1950 to 1.3 billion in 2000.

- Death rates of infants and children have been drastically reduced and life expectancy has risen (Table 1).

THE UNFINISHED TASKS

While the gains of the past have been impressive, a great deal more needs to be done before the problems of poverty and malnutrition in this Region are fully eliminated. The tasks ahead are indeed formidable. Four such major tasks that require our immediate attention are mentioned below.

Food production: 'Food security' of earlier years was largely looked upon as a quest for freedom from starvation and hunger. The calorie adequacy yardstick has been the measure of achievement in this regard. Unfortunately, the Green Revolution, which saved the lives of millions in this Region, has led to some distortions with respect to the pattern of food production. Thus, whereas cereal production had soared, the production of pulses (poor man's pro-

tein) has stagnated with the result that the per capita availability of pulses has actually declined². Horticultural development has been very tardy. With regard to milk production, India has had some striking results, largely due to the imaginative co-operative programmes of the type initiated by Dr V. Kurien.

On the whole, the production of "quality foods" has not kept pace with increasing requirements. The result has been that there has been no significant improvement in the quality of household diets. Durable improvement in the nutritional status of populations can be achieved only by ensuring qualitative and quantitative adequacy of household diets. This is a major challenge.

It will be a formidable task to meet the increased demands (Table 2) for quality foods by the end of the next decade in the context of shrinkage of land size holdings, scarcity of water and electric power and declining yields per hectare. Clearly new imaginative strategies and safe new technologies will be needed to achieve adequate production of a range of foods.

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TABLE 1
Infant Mortality Rate, Under-five Mortality Rate and Life Expectancy in South Asia

Countries	Infant Mortality Rate (per 1000)		Under five Mortality Rate (per 1000)		Life Expectancy (in Years)	
	1960	2000	1960	2000	1960	2000
India	236	69	236	88	44	63
Bangladesh	247	79	247	83	40	61
Pakistan	226	95	226	110	43	64
Nepal	297	180	297	105	38	59
Sri Lanka	133	17	133	18	62	73
Bhutan	300	84	300	-	37	62
Maldives	300	62	300	66	44	-

Source: Human Development Report 2000, Human Development In South Asia, 2000

Ensuring adequate access to food:

Much of the undernutrition seen in South Asia is attributable to the fact that sizable sections of the population do not have adequate access to foods. We are, therefore, witness to the cruel paradox of vast stocks of food grains posing storage problems, on the one hand, and sizable pockets of undernutrition, on the other.

It has been claimed, on the basis of certain criteria, that 30 per cent of the population of the Indian sub-continent could be below the poverty line. Several anti-poverty programmes have been undertaken in this Region. While these may not have succeeded in eradicating poverty, they have certainly helped to mitigate it. Disaggregated data analysed by the National Nutrition Monitoring Bureau (NNMB) at National Institute of Nutrition (NIN) show that severe degrees of poverty

have been reduced³. The fact that there has been an emergence of an urban middle class in the last decade numbering over 200 million, presumably including a sizable number of 'first-generation rich', would also indicate that the anti-poverty programmes are having an impact. Subsidised food grains at low prices are now being made available to the poor and attempts are now being made to evolve a more effective public distribution system. All the same, new imaginative strategies are necessary to combat poverty and quicken the pace of poverty eradication in this Region.

Anti-poverty programmes in this Region have been generally undertaken as short-term relief operations, which would yield immediate relief. These may be justified perhaps in dealing with situations of distress like droughts and floods. The poverty syndrome has many synergistic attributes. (Figure 1) The problem of poverty cannot be "solved" or pushed under the carpet through populist relief programmes. Our strategy must be to attack the root causes of poverty rather than its symptoms. Even modest inputs addressed to the alleviation of root causes of malnutrition in a planned manner, converging on a population group, would yield significant results. Relief programmes could be an adjunct to this effort.

The central part of any such strategy should consist of programmes for the aggressive spread of education, especially female education, and for imparting income-generating skills, which would facilitate creation of large numbers of blue-collar jobs. It is through such efforts, which are calculated to improve the quality of our human resources, and not through short-term relief operations, that we can hope for a durable solution of the poverty problem.

Child survival and stunting: While there have been striking improvements with respect to child survival, this has yet to be followed up to the point of achieving optimal child health/nutri-

TABLE 2		
Estimates of Food Needs of India by 2010		
Production (Million Tonnes)	2001	2010
Food Grain Production	208	266
Milk	84	153
Vegetables	80	117
Fruits	22	43
Animal Products	6	13

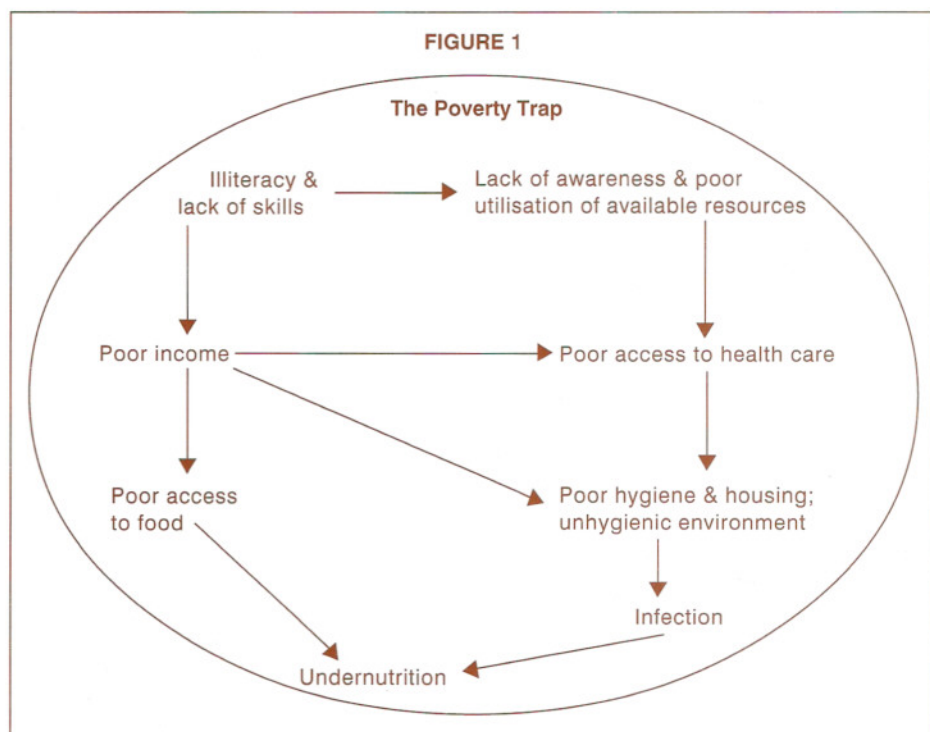


TABLE 3
Stunting in South Asia

Country	Stunted (%)
Bangladesh	51
Bhutan	54
India	63
Maldives	30
Nepal	50.5
Pakistan	50.2
Sri Lanka	16.1

Source: WHO (1999)

tion. With modern health technology, it is possible to successfully apply death control strategies even in the continuing context of poverty and undernutrition. As a result of a policy where the chief objective was "child survival" rather than child health, there has been an expanding pool of substandard survivors. Thus, more than 50 per cent of children in this region are stunted according to available reports. (Table 3)

Much has been written about stunting and quite a few gloomy conclusions about the state of child health in this Region have been drawn on this basis. However I would like to sound a note of caution. We must perhaps avoid drawing sweeping conclusions regarding the state of child health in a country just on the basis of prevailing heights of children in comparison with an international standard. So-called "stunting" is after all a non-specific sign of multifactorial origin. It cannot be considered as the 'Gold Standard' for evaluation of the child health of a nation. It is not stunting *per se*, but the process that led to it and the precise factors involved in it, that lend it significance. These may not be the same in all communities and in all stages of development.

There has always been a secular trend in all developing countries, children of succeeding generations being taller. According to reports, it took 50 years (1880-1930) for the secular trend in Canada to plateau off. It may be wrong to argue that Canadian children were stunted for nearly five decades. Similarly in Japan, the secular trend has been on right from the end of World War II. Elimination of stunting is, therefore, apparently a multi-generational phenomenon.

There is already some evidence of secular trends with respect to heights even among poorer sections of the population³. We should promote this secular trend, so that the populations achieve the heights which are reflective of their genetic potential.

Maternal health: An unfinished task that must find high priority is nutrition care of the pregnant woman. Today nearly 80 per cent of pregnant women in this Region are anaemic and, even more importantly, nearly one-third of infants born to them are of low birth weight. The diets of pregnant women in poor communities in South Asia are as poor, if not even poorer, than those of non-pregnant women.

Recent studies have indicated the long-term implications of low birth weights and intra-uterine growth retardation. In a long-term study extending over 18 years, Shanti Ghosh and her colleagues as reported by S.K. Bhargava and V. Kapani⁴, had shown that low-birth-weight infants continue to grow and develop in a substandard growth trajectory as compared to children of the same socio-economic groups born with normal birth weights. This would indicate the long-term implications of intra-uterine growth retardation on subsequent growth in childhood. It is possible that some part of the stunting that we see may be attributable to intra-uterine growth retardation.

More recent studies of Barker and colleagues⁵ have indicated that subjects born with low birth weight are more vulnerable to chronic degenerative diseases such as Syndrome X and Type II diabetes in adulthood. This finding must be of special

concern to us, considering that we have, on the one hand, a high incidence of low-birth-weight deliveries and, on the other hand, an escalation of chronic degenerative diseases in adulthood.

An important factor, which has not attracted adequate attention, but which probably contributes significantly to low birth weight and intra-uterine growth retardation is that the gestational age of live born infants in the poor communities⁶ appears to be significantly shortened as compared to those in the developed countries^{7,8} (Table 4). Shortening of gestation period seems to be an important attribute of maternal undernutrition. Even among "full-term births" in poor communities, a high proportion of deliveries take place in the 37th and 38th week and not in the 39th and 40th week⁶.

Preliminary results of recent studies undertaken by the Nutrition Foundation of India (NFI) show that regular daily supplementation of iron and folate to pregnant women can significantly contribute to reduction in the incidence of low birth weights. However, we did not find a linear relationship between the severity of anaemia and low birth weight. On the other hand, the addition of food supplements containing n-3 fatty acids (such as soya oil) over and above iron-folate supplements could significantly correct the shortening of gestation and increase birth weights. The beneficial effect of iron-folate supplementation may be at least partly due to the fact that it facilitates the conversion of n-3 fatty acids to their active metabolite (Figure 2).

If extended studies, which are now ongoing, confirm these findings,

TABLE 4
Gestation Distribution Of Live Births

Gestation (in weeks)	U.S.A ³ (40000)	Norway ⁴ (125485)	India, NFI ⁵ (14128)
<37	5.35	5.03	22
37	3.75	3.61	13.2
38	9.40	8.54	20.7
39	16.52	19.7	23.1
40	39.23	28.27	13.5
>=41	25.75	34.85	7.6

Figures within brackets indicates sample size

* indicates reference number

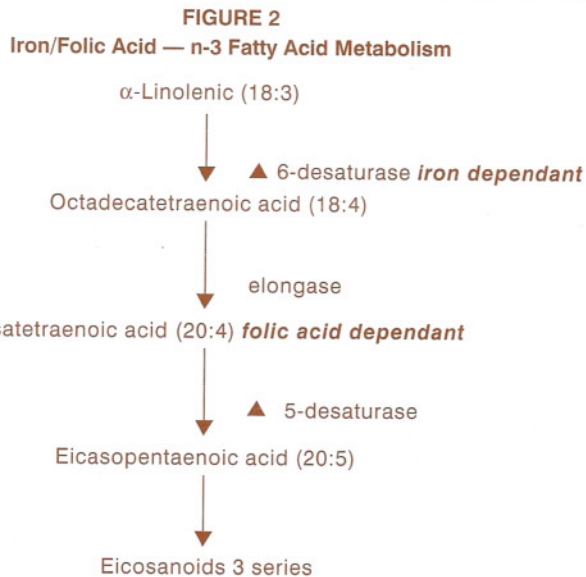


TABLE 5
Inexpensive Common Food Sources of Both Efa and Iron-folate

Pulses
Red gram
Black gram
Green gram
Lentil
Bengal gram

Green Leafy Vegetables
Spinach
Amaranth
Mint
Fenugreek leaves
Drumstick leaves

we would have placed in the hands of health workers valuable information regarding precise inexpensive and practically feasible directions in which diets of pregnant women can be improved. There are several inexpensive foods which could supply both iron/folate and essential fatty acids available in this Region (Table 5). Our attempts should be to promote the intake of such foods rich in iron and essential fatty acids which are specially rich in n-3 fatty acids for pregnant women.

this section also appears to be the most vulnerable to chronic degenerative diseases such as obesity, Type II diabetes, Syndrome X, etc, because of changed lifestyles and dietary habits¹⁰. There has been a debate as to whether this vulnerability is genetically determined or whether it is a transitional phenomenon arising from the fact that this middle class, sizable sections of whom have presumably been born in poverty and have acquired affluence in adulthood along with life-style changes associated with such affluence.

of undernutrition and poverty with problems related to unbridled and ill-regulated affluence. For the next 20 years, South Asia will have to fight at two ends of the developmental spectrum. It must attempt to achieve complete elimination of undernutrition and poverty, on the one hand and the disturbing escalation of chronic degenerative diseases among the affluent sections, on the other.

Information technology revolution: Information technology has made rapid advances in the past few decades and continues to do so. Radio and television media have been bringing information into the homes of largely illiterate populations, thereby opening a window to the world. Satellite imagery has been providing valuable inputs about ground water resources, soil quality, weather, and desirable cropping patterns. And now, with computers penetrating slowly but

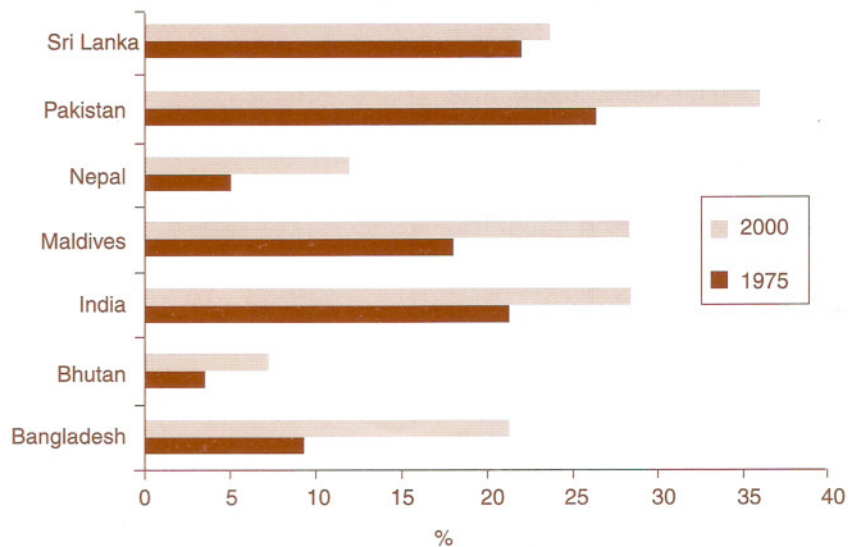
FACTORS INFLUENCING FUTURE DEVELOPMENT

The major factors which are bound to have a profound influence on the nutrition scene of this Region are the following: urbanization, information technology revolution and globalisation.

Urbanisation: A major change in the last few years has been the large-scale movement of rural populations to urban areas (Figure 3). Urbanisation implies not just a change in the location of the dwellings, but also a change in life styles, value systems and dietary habits. While urbanisation has had its positive effects and has contributed to overall economic growth, it has also led to undesirable side effects. There has been a rapid emergence of a newly affluent middle class (prone to dietary errors and excesses) in the Indian subcontinent⁹. This new middle class has been, in many ways the spearhead of economic and overall national development. Unfortunately,

Whatever may be the explanation, the escalation of chronic degenerative diseases poses a serious problem. It would almost appear that South Asia may be exchanging its problems

FIGURE 3
Urban Population (as % of Total Population) in South Asia



surely into district, block and even village levels, the wide world of the Internet is only a mouse-click away.

Governments, including local governments, and development scientists can leverage these available inputs in imaginative and innovative ways to enhance nutrition information, hygiene awareness, better farming practices and so on. Web pages in regional languages will accelerate the process of reaching target groups. A planned strategy to harness the full potential of information technology must form an important part of any developmental programme. Knowledge is power. The best way to empower the poor and the vulnerable sections will be to equip them with knowledge using the modern tools of information and technology. This could be a powerful help in combating poverty.

Globalisation: Globalisation could certainly contribute to macro-economic development. But as Khadija Haq cautions¹, "If globalisation is superimposed on a poorly educated and poorly trained labour force with poor systems of governance and infrastructure, it would not lead to growth nor reduce poverty". Unless globalisation is accompanied by institutional changes and by rapid improvement in the educational levels of the poorest sections of the population, there could be a further polarisation between the haves and the have-nots. The advent of globalisation greatly adds to the urgency of the need for upgrading the quality of the poorer sections of society through the spread of education and imparting of income-generating skills.

In pursuing developmental objectives, Asian countries should not make the mistake of accepting the 'western model' as perfect. It must be remembered that western countries had made many dramatic U-turns such as return to breast-feeding, jettisoning high saturated fat diets and recognising the importance of vegetables. Asian countries should seek to foster and cherish traditional practices that have been proved to be conducive to general health and well-being. At the same time they should be receptive to new ideas and new technologies of proven value and safety for combating undernutrition.

Paper presented at the opening session of the IX Asian Congress of Nutrition.

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NUTRITION NEWS

● **IX Asian Congress of Nutrition:** The IX Asian Congress of Nutrition was held at Hotel Ashok, New Delhi from February 23-27, 2003. India was happy to host the Congress for the second time. The First Asian Congress of Nutrition was also hosted by India and was held in 1971 at Hyderabad. The President of the IX Asian Congress of Nutrition, Dr C. Gopalan was also the President of the First Asian Congress of Nutrition and he was the one who had initiated this series.

Mr K.C. Pant, Vice Chairman of India's Planning Commission, presided over the Inaugural Function and delivered a scintillating and informative address indicating the proposed steps that would be taken by the Gov-

ernment towards nutritional upliftment of the population. This comprehensive address will form part of the Proceedings of the Congress.

The Congress was organised by the Nutrition Society of India and the Nutrition Foundation of India under the auspices of the Federation of Asian Nutrition Societies (FANS). It was attended by over 1,350 delegates from over 46 countries. The Scientific Programme consisted of 6 Plenary Lectures, 6 Plenary Sessions, 30 Symposia, Oral Free Communication and Poster Sessions.

The Scientific Programme presented a proper balance between the basic scientific aspects and practical applications. The Congress provided an opportunity for scientists from different countries to interact with each and share experiences.

Dr C. Gopalan was elected as the President of FANS and Dr Ramesh V. Bhat as the Secretary General. It was unanimously decided that the X Asian Congress of Nutrition will be held in Taipei.

● **Third Course in Practical Paediatric Nutrition:** The Third Course in Practical Paediatric Nutrition was jointly organised by the Centre for Research on Nutrition Support Systems (CRNSS) and the Apollo Centre for Advanced Paediatrics (ACAP) on March 8-9, 2003 in New Delhi. In contrast to a large Congress, the primary objective of the Course was to provide a practical approach to the administration of enteral and parenteral nutrition in the hospitalised child and was intended primarily to target the practicing clinicians and dietitians. The Course was attended by over 60 delegates who had the opportunity to interact with the faculty through intensive brainstorming sessions, involving practical day-to-day problems encountered during the nutritional management of critically-ill patients.

● **Report of the Steering Committee on Nutrition for the Tenth Five Year Plan (2002-2007):** This report, which has just been released by the Planning Commission, is a comprehensive document, which deals with the current nutrition scene in the country and the possible action programmes that could be undertaken during the Tenth Five Year Plan. This report should be of interest to all nutrition and health scientists.