

FIGHTING HUNGER AND MALNUTRITION

**(Proceedings of the Seminar to Commemorate the
World Food Day Held at the Hector Kobbekaduwa
Agrarian Research and Training Institute,
Colombo, on 15th October 1996)**

**Compiled and Edited by
W.G. Jayasena**

Documentation Series No. 18

July 1998

**Hector Kobbekaduwa
Agrarian Research and Training Institute,
114, Wijerama Mawatha,
Colombo - 07.**

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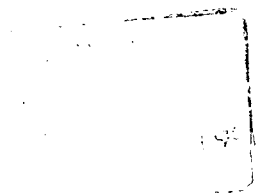
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FOREWORD

Over the last fifty years it has been stated that agricultural production managed to keep pace with and even outpace population growth. Nevertheless poor accessibility, uneven distribution and inadequate availability of food continued to keep nearly one billion people cronicly undernourished.

The challenge that looms over the horizon is formidable. By the year 2030, we still have to nourish 3 billion additional people. Even to maintain current level of food availability, it will require rapid and sustained food production by over 75 percent.

The global effort to meet this challenge is spearheaded by the FAO. This programme needs support from all concerned. The Hector Kobbekaduwa Agrarian Research and Training Institute in order to commemorate the "World Food Day" on 16th October 1996, organized a one day seminar titled "Fighting Hunger and Malnutrition". The purpose was to make policy makers, implementing agencies, academics and others aware of the existing and impending situations and to devise ways and means to deal with it effectively

I wish to thank the FAO Representative in Sri Lanka and Maldives for his encouragement, and the academics who took time away from their heavy schedules to present papers in this seminar.

My thanks are also due to Dr. W.G. Jayasena, Head, Agricultural Planning and Evaluation Division, for his energetic efforts in organizing this seminar and also for preparing the seminar proceedings for publication.

Dr. S.G. Samarasinghe
Director
HARTI

ACKNOWLEDGEMENT

One day Seminar was organized by the Agricultural Planning and Evaluation Division of the HARTI on 15th October, 1996 to commemorate the World Food Day and enhance the awareness of policy makers, professionals, and general public about the world food security situation and future prospects.

Opening the first session of the seminar, Dr. S.G. Samarasinghe, Director of the HARTI, briefly explained the purpose of the seminar. The Chief Guest Mr. G. Bernard (FAO Representative in Sri Lanka and Maldives) emphasized the importance of taking action individually, regionally, nationally and internationally in order to produce sufficient food in quality and quantity to feed 800 million people in the World who don't have sufficient food at this time. The FAO Director-General's Message on the occasion of World Food Day was also read at the seminar by Mr. G. Bernard.

The key note address was made by Prof. M.M. Karunanayake and this was followed by three presentations made by Dr. D. Gamage (Research and Training Officer, HARTI), Dr. Gamini Wickramasinghe (Research and Training Officer, HARTI) and Dr. S.G. Samarasinghe, (Director/HARTI).

The theme of Prof. Karunanayake's key note address was the "Perspectives on Food Security in Sri Lanka". He presented an account of present food security situation in Sri Lanka by looking at food security from several perspectives such as poverty, health and nutrition, technology, environmental degradation and structural adjustments. In his concluding remarks Prof. Karunanayake pinpointed several issues which are to be addressed in order to ensure food security in Sri Lanka.

Dr. Gamage's presentation emphasized the need for promoting grass root participation in nutrition programmes. Poverty and malnutrition are strong indicators which show the food insecurity in any society. As emphasized by Dr. Gamage, grass root participation, strengthening self-reliance among rural poor and also 'empowerment' of grass roots are essential to achieve successful results from nutritional programmes.

Further he argued that instead of standard top-down approach to nutri-

tional improvements, the participatory approaches to nutrition make possible the adoption of a context specific, holistic approach to solve it.

Dr. Gamini Wickramasinghe in his presentation attempted to elaborate cultural dimension of nutrition with a view to bringing out the complexity of the issues involved in improving nutrition.

The final presentation of the seminar was made by Dr. Samarasinghe, Director, HARTI on the theme "Food for All : An Agenda for Sri Lanka". He focussed attention of the participants on two matters pertaining to food security in Sri Lanka, firstly the importance of paddy cultivation in the agricultural sector and the assistance given by the Sinhala royalty to ensure food security. Secondly, the transformation of paddy based agriculture to merely a substance agriculture. Further Dr. Samarasinghe briefly explained the activities initiated by the present Government to improve the agricultural production and food security situation in the country.

The full texts of the papers presented at this seminar by the invited speakers are included in this report.

I also take this opportunity to thank Mr. G.A.K.K. Kumara, Research and Training Officer, who performed as the rapporteur, Mrs. N. S. Abeygunawardane, Senior Assistant Registrar, for the logistic support, Miss. Udeni Jayawardane for word processing and Mr. Palitha Gunaratne for type setting the seminar proceedings.

Dr. W.G. Jayasena
Head, Agricultural Planning and Evaluation Division.

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THE THEME FOR WORLD FOOD DAY 1996

Fighting Hunger and Malnutrition

(Food and Agricultural Organization of the United Nations)

Fighting Hunger and Malnutrition is the World Food Day theme for 1996. This important theme also expresses the primary mission of the Food and Agriculture Organization, reaffirmed recently in a Fifteenth Anniversary Declaration on Food and Agriculture issued in Quebec City, Canada. At a ceremony held on 16 October 1995 in the same hall where FAO was founded, Ministers and Plenipotentiaries pledged anew their commitment to FAO's goal of helping to "build a world where all people can live with dignity, confident of food security".

The dignitaries echoed the founding members, who stated in the FAO Constitution of 1945 their determination "to promote the common welfare by raising levels of nutrition and standards of living". The 1995 Quebec Declaration went further. It stressed that hunger and malnutrition would only be vanquished when all people had secured access to the quantity and variety of safe foods of good quality that they needed for a healthy diet.

In 1992, the International Conference on Nutrition, convened in Rome by FAO and the World Health Organization, adopted a World Declaration and Plan of Action for Nutrition that offered a framework for efforts to solve the problems of hunger and malnutrition.

Fighting Hunger and Malnutrition, the theme for World food Day 1996, carries forward the message that the twin scourges of hunger and malnutrition can and must be defeated. It looks to an historic World Food Summit, to be held from 13 to 17 November 1996 at FAO Headquarters in Rome, to secure the commitment of world leaders to the cause of universal food security, thus ensuring, in the words of the Summit slogan, **Food for All**.

As preparations for the Summit proceeded, world grain stocks have dwindled to dangerously low levels, pushing export prices up by 30 to 50 percent and serving as a reminder of the fragility of food supplies in a world that must produce more each year to feed a rapidly increasing population.

Over the past 50 years, agricultural production has managed to keep pace with and even outstrip population growth. Yet an estimated 800 million people are still chronically undernourished and 200 million children under the age of five suffer from protein and energy deficiencies.

Achieving food security for today's hungry, who constitute 20 percent of the population of developing countries, requires policies that make it possible for them to grow or buy the food they need.

By the year 2030 the planet will have to nourish 3 billion additional people. Simply maintaining current levels of food availability will require rapid and sustainable production gains to increase supplies by more than 75 percent without destroying the natural resources on which we all depend.

We know that hunger and malnutrition can be vanquished because we have seen some developing countries significantly improve levels of nutrition for all their people, especially children. Other countries must follow their example. The right to food is the most fundamental and basic of human rights.

Three weeks after this year's World Food Day, the World Food Summit will convene. Heads of State and Governments are expected to discuss and adopt a Policy Statement and a Plan of Action aimed at achieving universal food security. The World Food Summit will be the first meeting of its kind ever held. It is being convened in the belief that the goal of Universal food security merits the full support of Heads of State and Governments who can transcend sectoral interests and make a political commitment to create a world free from hunger and malnutrition.

It is FAO's hope that the World Food Summit will serve to rally governments, the international community, non-governmental organizations and other sectors of civil society to the fight against hunger and malnutrition and for the attainment of **Food for All**.

WELCOME ADDRESS

by

Dr. S.G. Samarasinghe*

Good Morning ! Ladies & Gentlemen

Mr. G. Bernard, FAO Representative in Sri Lanka & Maldives

Mr. A.M.B. Warsakoon, Addl. Secretary

Prof. M.M. Karunanayake

Mr. Alex Perera, Director of NGO Council in Sri Lanka

My Officers and Colleagues

Well, as you all know the World Food Day is tomorrow. But, we have organized this seminar for today because the FAO Representative is actually is not only the representative of Sri Lanka but Maldives as well. But, he is a resident in Sri Lanka. So, at least on the World Food Day let him be in Maldives. So we thought that we should have this seminar this morning. I welcome you all for this half day's seminar and I am sure that Prof. Karunanayake and Senior Research & Training Officers will make presentations which will give food for thought just before lunch. We all know that Macro Economic Structural Adjustments have been the key approach in Sri Lanka as well as in elsewhere in the past decade or so, work towards poverty alleviation. But, the FAO itself has found that with all these adjustments and activities there are 800 million people who are actually suffering from hunger. So the question is now been asked whether this Macro Economic Structural Adjustments should be further adjusted or what should be done. Today we are meeting to commemorate the World Food Day in an eventful

* Director, Hector Kobbekaduwa Agrarian Research & Training Institute

year, when the World Food Summit is to be held very soon ensuring an opportunity for all the countries, their presidents, prime ministers and the chief executives to discuss and deliberate and work out a concerted work plan towards finding food for all. Food for all, I think you all know, is not a new concept. We are aware that Lord Buddha himself said '*Sabbe Sattha Aharatithika*' that every man exists in food and so many instances in the "*Nikayas*" he has mentioned how food can be acquired, how food can be saved, how food can be preserved and how it could be utilized. I am not going into details in these quotations, but the problem will be there as long as humanity is there. So the FAO is now working on a programme towards finding accessibility of food, availability of food and the quality of food. These are the three important aspects which will be discussed very soon in November. Food security as far as Sri Lanka is concerned I think we are aware that from the time of the Sinhala royalty we have had royalty intervention or government intervention in food security. We all know that there is a saying '*Raja Bhavathu Dhammiko*' that is, let the rulers be righteous, when they can afford to provide enough food, enough transport facilities and enough religious opportunities to the community. Of course there were changes then during the colonial periods. We are aware that how our resources have been exhausted by the colonial rulers in order to have a plantation economy, which resulted in paddy cultivation, the main food, the staple food in Sri Lanka making, becoming a subsistence agriculture which was not so during the Sinhala royalty. Of course now a concerted attempt is being made as to how we could make subsistence agriculture a commercial venture. It is towards this goal that the present Government, the present Minister of Agriculture, Lands & Forestry have developed a plan which is called the 'Agriculture Policy Framework' which is destined or which is dedicated for restructuring, resuscitating and motivating the 13,000 odd Farmer Organizations in this country. So that through the farmer organizations an attempt will be made to make the subsistence agriculture at least a 50% of commercial venture. It is towards this goal actually we call Food for All, the agenda for Sri Lanka would be restructuring the farmer organizations. I think some of these facts will be discussed today. I don't think I should take your time which is already passed. I kindly now invite Mr. G. Bernard, FAO Representative in Sri Lanka and Maldives, to deliver the message of the Director General of the FAO which will be followed by the key note address by Prof. Karunanayake.

Address by
FAO Representative in Sri Lanka and Maldives,
Mr. G. Bernard

Dr. Samarasinghe, Mr. Perera, Mr. Jayasinghe, Distinguished Guests,

Before I present the message of the Director General of the FAO for commemoration of the World Food Day, I would like to personally emphasize the importance of the World Food Day this year, corresponding to the presentation of World Food Summit, that should be a very important event, not specially for FAO, but more for all people. We know that more than 800 millions of people in the world don't have sufficient food at this position. We have to take very strong action individually, regionally, nationally, internationally in order to produce sufficient food in quantity and in quality to all these people. You know that the World Food Summit is not an international conference but it is a practical conference for which each country has to prepare a plan of action in order to achieve the World Food Security targets. Before I read the FAO Director General's message, I would like to thank Dr. Samarasinghe for organizing this seminar to commemorate the World Food Day.

FIGHTING HUNGER AND MALNUTRITION

(The FAO Director-General's Message on the Occasion of World Food Day, 16th October 1996, Sri Lanka)

Today, on the occasion of World Food Day, we mark the anniversary of the founding of the Food and Agriculture Organization exactly 51 years ago - the first of the United Nations specialized agencies created after World War II to guide the world from devastation towards a better future.

Last year on this day - our 50th anniversary - we looked back over five decades of solid achievements in the fields of agriculture, forestry and fisheries. We were able to state that, despite unprecedented population growth, the world can produce enough food to feed everyone. But our work is far from done. The food the world produces is not reaching everyone. Hunger and malnutrition still blight the lives of many hundreds of millions of people. Such a situation is unacceptable. We cannot - and we will not - allow it to continue.

This year, we are looking forward to an important event that we hope will lead the world into a future in which universal food security is finally achieved so that every man, woman and child is assured of the nutrition they need to lead a full and productive life.

The event to which I refer is the World Food Summit, which will convene in less than a month at FAO Headquarters in Rome. Its goal is simple to state - "Food for All". But to reach that goal will take the concerted effort of all of us, starting with the Heads of State and Governments assembling in Rome. We look to them to renew the global commitment to fight hunger and malnutrition, to agree on a concrete plan of action and to mobilize their ministries and agencies - in other words, to give the fight against hunger and malnutrition top priority in their agenda for the 21st century. That is the first step.

In the process of preparing for the Summit, you all have been working in

Sri Lanka closely with governments, other UN system organizations, intergovernmental and non-governmental organizations, the private sector and technical and scientific experts. We will need their help - and the help of all of civil society, of all men and women of goodwill - to make the Summit's plan of action a reality.

Together we will have to institute policies that provide better access to food, meet emergency food needs in ways that encourage long-term development, improve trade conditions, make stable food supplies the aim of agricultural and rural development and involve everyone concerned in the north, east, central and south of Sri Lanka, in the Dry Zone and in the Wet Zone - starting with the producers of food, both men and women - in decisions affecting food security. We will need investment in infrastructure, institutions, research, and extension, for sustainable agriculture and fisheries. And that will require international cooperation and assistance.

We must recognize that our resources are finite. There is only so much arable land and usable water on earth, but the possibilities for increasing our harvests are far from finite. We must rediscover the potential of forgotten plants and learn from traditional farming methods, improve methods of irrigation, particularly for the minor irrigation schemes, and utilize the advances of biotechnology to engineer crops that are pest-resistant and harvests that are slow to rot.

The Green Revolution of the 1960s changed the lives of millions. Now it is the turn of those who have been left out of benefit from technological advances in food production that can empower the smallest farmers and do not degrade its environment, as already started here in Sri Lanka in Small Farmers Group Organizations.

Africa is the only region in the world in which average food output per inhabitant has fallen during the last quarter century, but countries in other developing regions have also been unable to produce or buy enough food for their needs. In order to help them all on an urgent basis, FAO has launched a Special Programme on Food Production in Support of Food Security in the Low-Income Food-Deficit Countries.

Fighting hunger and malnutrition by producing enough food and making sure that it reaches everyone is a moral and ethical obligation. It is our duty, and it is also an exciting challenge. Let us join forces to meet the challenge in a campaign to provide food for all - for all of us living today and for all the generations to come.

(This message was read by the FAO Representative in Sri Lanka and Maldives, Mr. G. Bernard)

PERSPECTIVES ON FOOD SECURITY IN SRI LANKA

by

Prof. M.M. Karunanayake*

Chief Guest Mr. Bernand, FAO Representative,
Dr. Samarasinghe, Director, HARTI
Mr. Warsakoon, Additional Secretary, Min. of AL&F,
Distinguished Guests,

Let me first of all thank Dr. Samarasinghe, Director, HARTI, for inviting me to deliver the keynote address at this seminar held to commemorate the World Food Day. An Institute such as the HARTI cannot and indeed should not insulate itself from the issues that concern the mass of the population - that happens to be rural and agricultural. It is therefore, heartening to note HARTI's sensitivity to the issue of food security and its impact on human health and nutrition. Food is of course the most basic of human needs, but as the Director General of FAO, Dr. Jacques Diouf has recently reminded us:

“Approaching the third millennium, the world still faces a crucial challenge to the most basic human right-freedom from hunger.”

Sri Lanka too has to face a formidable challenge in regard to food security. According to the draft National Charter on Agriculture, the demand for rice alone would increase by nearly 50% of present production, assuming a population of 20 million in the year 2000. Production costs have risen sharply, and since 1984 paddy production has remained stagnant. At present 14% of rice requirement is imported. On the other hand structural adjustment policies are constraining the accustomed levels of social welfare and benefits.

* Dean, Faculty of Graduate Studies, University of Sri Jayawardanapura

Talking on food security, I shall confine myself to the rural situation and secondly, not touch on the impact of war on food security - though it has important implications in terms of constraining or preventing agriculture, displacement of people and difficulties relating to food distribution. I shall look at food security from several perspectives namely:

1. Poverty
2. Health and Nutrition
3. Technology
4. Environmental degradation, and
5. Structural adjustments

Definition of Food Security

In most societies food performs certain symbolic and ritual functions. It forms an integral part of a person's total culture. Food is often used to initiate and sustain interpersonal networks and relationships and may also be utilized to establish social distance. Some foods may be culturally accepted and others rejected. If people are unable to gain access to culturally preferred food, the deprivation caused may not only be physical but also psychological.

It is through a nutritionally adequate diet that the nutritional status of individuals or families could be ensured. Nutritional values relate to age, sex, physical built of the individual and degree of physical activity. Nutritional standards in terms of nutrients and energy requirements have been established by nutritionists. For example, in Sri Lanka for a male above the age of 18 years, weighing 65 Kg and engaged in moderate work, the calorie intake per day should be 3000. It would be less (2200 cal) for a woman over the age of 18, engaged in similar work but with a lesser body weight of 55 Kg (Dept. of Nutrition, Medical Research Institute).

Procuring food should not be at the cost of human dignity. In other words, a person should be capable of procuring food without violating one's self respect (i.e. without recourse to begging, borrowing, stealing or being subject to other forms of exploitative relationships). He should also be able to exercise freedom of choice in accessing food. This is possible only if a person has the means of producing and/or purchasing one's food requirements. According to Amartya Sen (1981) this has to do with a person's entitlement to resources acquired through legal or social means for economic and social betterment.

In order to be food secure not only should an individual, family or a community be in a position to achieve a 'food norm' i.e. ability to obtain nutritionally adequate and culturally acceptable food without violating human dignity (Barth Eide, et al, 1986) but he/they should also be in a position to sustain it over the long term; coming to terms with short-term disruptions and not being affected by a decline in the general progress made towards the food norm. In otherwords, there should be a high degree of resilience made possible by coping and mitigating strategies.

In dealing with food security, we have to make a distinction between "starvation" and "famine". In Sri Lanka the poor are generally exposed to starvation but not famine. Famines imply starvation but not vice versa. Starvation is used in the wider sense of people going without adequate food, while famine is a particularly violent manifestation of it, causing widespread human misery and even death. In regard to starvation three issues stand out:

- (a) low typical level of food consumption;
- (b) low quality of the food consumed (i.e., sub-standard or adulterated)
- (c) declining trend in food consumption.

In contrast, famine implies a sudden collapse in the level of food consumption.

Poverty and Food Security

In Sri Lanka poverty is found both in the urban and the rural sectors (implying also the estate sector). However, it is more dominant in the rural sector. Poverty leads to deprivation of basic and other needs. Food deprivation is often caused by poverty. According to the report on 'State of World Rural Poverty - 1992', Sri Lanka ranks number 1 among 114 countries in regard to the rate of increase of rural poverty. There is also a rapid widening of income differentials between the urban and the rural sectors as indicated in the World Development Report - 1993.

We find that quite often poverty is seen as a statistic. On the basis of a head count one may say that so many are poor because they are below an accepted poverty line. But it is important to note that the poor are not homogeneous in composition and access to food is directly conditioned by their 'entitlements' - in the sense Amartya Sen (1981) uses the term. According to Sen, entitlement rights

result in a complex set of exchanges involving labour for produce, wages for labour and food for cash. A person's capacity to satisfy food requirements depends on his/her position within the class structure to which he/she belongs.

Indeed, in Sri Lanka an ultra poor category has been identified implying that some households spend nearly 80% of their income on food, yet with a per capita calorie intake per day of household members which was less than 80% of the normal requirements. It is claimed that about 60% of the poorest of the poor live in households, where the main income earner is employed as a farmer or a labourer.

Another important aspect which has to do with food security is seasonal poverty. Yet, the seasonal aspects of poverty and of food security are not too well perceived. Rural incomes vary seasonally. Even those who are considered to be above the poverty line may have low incomes at particular times of the year. Seasonally, availability of food stocks may be low, and prices may be high. Seasonal poverty, in short, subjects rural people to 'hunger, sickness and incapacity'. It is also important to note that seasonal disruption of economic activities may expose the assetless, the landless poor and the casual agricultural labourers to the effects of what is known as the 'derived poverty syndrome'. That is the poor have to go without livelihoods, because those with assets have no means of employing them.

The poor spend a disproportionately high amount of their total income, which is known as Food Expenditure Ratio (FER), on food. Consequently, they have very little to spend on other basic needs. It is also important to note that households with a high FER are more vulnerable or at risk from the point of view of food security. A sudden increase in prices may drastically bring down the ability of such households to obtain food or in the alternative, an increase in non-food expenditure without a proportionate rise in overall income, would also lead to a reduction of resources available for food purchases. In a baseline survey of the poor in the Hanguranketa Division that was carried out recently we found that as much as 40% of households has spent more than 80% of income on food, while another 36% has spent between 60-80%. This means that 76% of the households has spent 60% or more of income in the provisioning of food.

In recent times, the concept of 'feminization of poverty' has come to the fore meaning that poverty also has a gender dimension. It implies that women headed households are worse off than male headed households. This is an area which needs to be investigated in Sri Lanka. However, gender based wage differ-

entials are a fact in the rural situation.

We may note that rural households traditionally had a range of coping strategies designed to overcome or mitigate seasonal food scarcities. However, many of these strategies had to function within a given social and economic milieu. Social change and incorporation into the market economy have often constrained the utilization of these strategies, leading to what Van Appledoom has called the 'atrophy of the defences of the poor' (1981).

Food Security in Relation to Human Health and Nutrition

We have seen that poverty and hunger are interrelated. The poor, because of their inability to produce or purchase food may be subject to starvation either because they have to reduce the food intake or skip meals or both. In extreme instances they may have to go without food. It is this process which subjects them to what is called the 'silent famine' (watts, 1987). Seemingly they do not starve, but in fact their diet is deficient in nutrients, which over the long term has undesirable consequences on their health and nutrition.

It is well known that there is a synergistic alliance between malnutrition and intestinal parasites, diarrhoeal infections, respiratory infections and similar diseases. The children of poor families will be vulnerable against both inadequate nutrient intake and infection.

In view of welfare measures and safety nets provided for the poor, Sri Lanka ranked high on the Physical Quality of Life Index - measured in terms of infant mortality, literacy and life expectancy. What is important to note is that infant mortality and life expectancy are highly sensitive to food availability.

A nutritional status survey undertaken by the Ministry of Plan Implementation some time back has clearly brought out the fact that despite the high PQLI for the country as a whole, the incidence of stunting (height for age) among children was high in the administrative districts of Kandy, Matale, Badulla, Nuwara-Eliya and Monaragala. Similarly there was high incidence of wasting (weight for height) in the districts Matale, Polonnaruwa, Anuradhapura and Moneragala. Incidence of concurrent stunting and wasting was found to be high in Matale and Monaragala districts.

However, more recently there has been a further decline in the status of

health and nutrition of the Sri Lankan population. According to UNICEF (1995), malnutrition among children below five years has reached 60% Island wide. World Development Report 1993 shows that the proportion of low birth weight babies had reached 28% making Sri Lanka the third worst among all countries. Moreover, according to a demographic and health survey carried out by the Government of Sri Lanka in 1993, a third of the children in the critical age group of 03-35 months are underweight for their age.

Agricultural Technology and Food Security

We know that high input Green Revolution Technology encouraged expansion of paddy cultivation, raised paddy production and also led to a considerable rise in employment in the paddy sector, thus benefitting the poorest categories in the rural sector. But it has led to marginalization and pauperization of large numbers of small holders as made evident by research studies undertaken in land settlement schemes, including the Mahaweli Development Scheme.

From a food security point of view, HYVS have led to a reduction in the flexibility of the peasant agricultural system, thus exposing the farmer to the adverse impacts of natural calamities such as droughts and floods. It is worth noting that traditionally there was a wide range of paddy varieties which gave the farmers a wide choice in their decision making.

Therefore, it is now evident that high input technology has not proved to be sustainable. A tendency among farmers to abandon paddy cultivation has recently been noted. A recent study of factors responsible for the declining trend in paddy cultivation undertaken by Senakaarachchi and others of the HARTI (1996) concludes that "overall cropping intensities have dropped in the recent past despite the expansion of the total asweddumised area". Needless to say these developments have an adverse impact on food availability and food security of the poor.

It is also a truism that agricultural technology has shown a bias towards the improvement of paddy cultivation. While this is justifiable to a degree in that rice forms the staple item in the diet of the Sri Lanka population, it would have been worthwhile to improve the technological base for the crops of the poor, for example, grain legumes (green gram, cowpea, black gram, pigeon pea), coarse grains (maize and kurakkan for example) and oil seeds (groundnuts, gingelly and soyabean etc). As Nimal A Fernando (1986) has rightly pointed out in a Central Bank Staff Study:

“Another aspect that emerged in the review of poverty alleviation measures is the lack of concern for development and promotion of pro-poor technology and research. While the research work on new varieties of paddy benefitted the poor, since the early period a number of other crops such as kurakkan, meneri and manioc which were cultivated by, and important in the diets of a large number of poor farmers in the dry zone received no attention at all. Yet, these crops played a useful role in increasing the food security of the poor and reducing the vulnerability of the poor to fluctuations of prices of other crops in the market and to adverse weather conditions. Since the keeping quality of harvests of such crops is greater, they play a particularly useful role in reducing pre-harvest seasonal hunger and probability of starvation during bad weather seasons among the poor farm families.”

The same applies in equal measure to post harvest technology at the farm level. As Wickramanayake (1996) has recently pointed out post-harvest losses in the paddy sector may be as high as 10-15 percent. There is also evidence to suggest that 20-45 percent of food crops, grains, root crops and export crops are lost due to poor pre and post harvest technologies.

It is encouraging to note that post-harvest processing and technology are duly emphasized in the National Policy Framework of the Ministry of Agriculture, Lands and Forestry (1995). From a food security point of view, popularization of appropriate technologies would help raise farm incomes and cope with the problems caused by glut and lean seasons. It would help prevent perishability and ensure the quality of products passed on to the consumer. We may note that the consumption of food of low quality by the poor is part of the problem of starvation.

Environmental Degradation and Food Security

Degradation of environments has been an inevitable accompaniment of development - of both the urban and rural landscapes. In rural areas this is well illustrated by the rapid reduction in the forest cover, depletion as well as pollution of water resources, soil erosion and problems of environmental health and sanitation. The last tends to exacerbate health problems of vulnerable populations.

Processes of poverty and environmental degradation are mutually interactive. Poverty is both the cause and result of environmental degradation. In traditional societies man had subsisted either in active or passive adaptation to

nature. A case in point is chena cultivation which in the traditional context was based on sound ecological principles.

Decline in land resources and the need for livelihoods have led to what Wisner, et al (1977), calls "decision pathology" on the part of the rural poor - when they go against the principle of symbiotic co-existence with nature. Encroachment of forest, stream and reservoir reservations provide examples of this tendency. It is a process which undermines the collective rationality on which many sound land and water husbanding practice have been formulated.

A consequence of all these processes has been a decline in common property resources which provided many items, including food items, needed to satisfy and enrich household subsistence. There were also items of food that were held in reserve as communal resources to tide over difficult periods of prolonged starvation.

While harvesting of non-timber forest products has declined, the increasing distances that rural women have to trudge for water or fuelwood have an adverse impact on their time budgets. This has implications for food security in view of the gender based allocation of tasks pertaining to processing, cooking and storage of food.

Structural Adjustments and Food Security

The Sri Lankan economy has been subject to an on-going process of structural adjustment from 1977 onwards, largely at the instance of the World Bank/IMF. Some of these policies are likely to depress food security for the mass of the population. The declining level in nutritional status of the poor has already been referred to.

The structural adjustment programs have to be viewed against the backdrop of a range of welfare measures which contributed to the well being of communities. These measures ensured a degree of food security to even the poorest of households. Some of these measures were designed to influence the flow of income or consumption to individuals or households.

Some of the problems thrown up by structural adjustments can be illustrated with reference to the Food Stamp Scheme, which replaced the Food Subsidy Scheme. It has been pointed out that it led to a fundamental change in the

State Intervention Policy in sustaining minimum consumption levels of the poor (Edirisinghe, 1985; Fernando, 1986). That is to say, there was a shift from a commodity specific price subsidy to a direct income transfer programme, aimed at a target population. Food stamps which have a fixed cash value are encashable against a specified basket of commodities. Apart from the fact that in the implementation of the programme there was a considerable leakage of benefits to non-targeted individuals, and there were also other weaknesses. Edirisinghe (1985) comments that:

“The non-indexation of the food stamp values to account for cost of living, has resulted in the erosion of the real value of the stamps”.

We may also note that unlike the Food Subsidy Scheme, the Food Stamp Scheme does not have a specific nutritional objective.

Recent World Bank policy recommendations in regard to structural adjustments are contained in three World Bank Reports:

- (a) Sri Lanka Poverty Assessment (1995)
- (b) Non-Plantation Crop Sector Policy Alternatives (1995);
- (c) Sri Lanka in the Year 2000 - An Agenda for Action (1996).

Some of the recommendations made in the above documents will undoubtedly have an impact on prospects for food security eg. emphasis on export oriented production, freeing of the land market, marketing of agricultural extension services and greater recovery of expenses on irrigation. As such it would be important to monitor the impact that structural adjustments will have on measures designed to ensure poor security.

Concluding Remarks

To tie-up the main threads of my presentation I would like to highlight the following issues:

-Greater attention has to be focussed on issues impinging on food security given its importance for the well being of the people - most of whom are rural and poor. Research Institutes and the Universities should be encouraged to undertake research on food security. This should receive high priority on the HARTI research agenda.

- High emphasis needs to be placed on seasonal aspects of poverty and food security. According to Longhurst and others (1986) "seasonality needs to be keyed into existing policy, technology development and support for vulnerable groups".
- More attention has to be given to pro-poor technology and research, particularly in relation to hitherto neglected food crops. Similarly, there should be emphasis on post-harvest technologies and their transfer.
- It is relevant to recognize that nutrition relevant actions span agricultural, employment, health, education, social welfare and gender concerns; and actions planned and coordinated accordingly.
- Providing support to and strengthening of existing strategies to deal with food scarcity. It may be relevant to take note of negative and positive coping mechanisms. Going hungry may be a negative response; greater reliance on wild foods may be a positive response.
- Nutrition education and the creation of space for the application of such knowledge should be broad based. Involvement of women is crucial for the success of nutrition education programmes and for their applications.
- In times of food scarcity special attention should be paid to the needs of the poorest of the poor.
- Indigenous knowledge relating to food and food crops(including knowledge on wild plants) should be promoted.
- As proposed by the FAO/NGO consultation on the World Food Summit, structural adjustment programmes should be monitored to assure consistency with the right to food for all.
- Public action to express needs and influence public welfare (pertaining to food security) through the political system should be encouraged.
- In the final analysis food security could be ensured only through alleviating poverty and this requires strengthening of actions and strategies which help asset creation for and by the poor leading to an enhancement in their entitlements.

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PROMOTING GRASSROOTS PARTICIPATION IN NUTRITION PROGRAMMES¹

by

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Introduction

Malnutrition is a multifaceted problem. Lack of access to food, a factor mainly emanating from mal-distribution of productive resources than the overall food availability, is a major problem linked to malnutrition. Food also is unequally distributed within an individual family, when most nutritive foods in larger proportions are customarily served to the adult males. A shift in crop production orientation, for example, from subsistence to market, may result in reduction in the availability of food items consumed mainly by the resource poor farmer families and other marginal groups with negative implications for their nutritional intake. Similarly, ignorance can be linked with purchase or consumption of foods with little nutritional value. The modern marketing advertisements also tend to induce the people to purchase "wants" over "needs". Certain food habits and inappropriate cooking practices, such as "over cooking" also affect the nutritional value of foods consumed by the people.

Prolong illnesses with little nutritional food intake during the periods of sickness also can cause undernutrition. Not feeding the sick with solid nutritional foods can be linked to cultural beliefs than to modern health science knowledge.

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Furthermore, people's health and nutrition are interrelated. Therefore, the availability of sanitary facilities such as the toilets and the clean potable water, their proper use, and the individual hygienic practices such as washing hands with soap after toilet, are important for nutritional well being of the people.

The multifaceted nature of malnutrition demonstrates the need for a broad based holistic approach to solve it. Often the standard nutrition programmes are based on single factor analysis that attribute the malnutrition to such causes as the lack of availability of foods, poverty, ignorance and neglect. Such simplified views of the problem is a major factor influencing the implementation of such programmes as food production, food subsidies, family planning and mass nutritional education. These implemented as individual programmes of isolated activities are unable to correct the causes of malnutrition. These also have unplanned, unanticipated and undesirable consequences. For instance, when malnutrition is attributed to such causes as high fertility, ignorance, neglect and low productivity, the victims "self-esteem" is adversely affected. Similarly, some programmes of the governments such as the food subsidies can be seen as "political handouts" to guarantee political affiliation and political quiescence. Most welfare programmes end up in creating dependency among the poor on government handouts for meeting their daily subsistence.

Besides the inadequacies emanating from their ideological basis, the standard nutrition intervention programmes also suffer from inadequate knowledge systems they are based. For instance, they are conceived and designed by professionals² who operate from the national and regional levels. The professional planners of nutrition programmes often have a little knowledge of the conditions under which the marginal groups, specifically the rural poor, suffer from malnutrition. Therefore, they respond little to the actual needs and conditions of the nutritionally vulnerable groups. Insufficient participation by the intended target groups in standard nutritional programmes is, therefore, a factor attributable to lack of sensitivity to the local conditions and the needs of the vulnerable groups. Consequently, these programmes tend to have a limited impact than they are planned to achieve and become a burden on limited public funds.

Participatory approach, compared to that of a simplified and standard,

² For instance, such programmes are being planned from the top; mostly by professional planners, nutrition specialists and policy makers with little cognizance of the conditions under which the poor and other vulnerable groups meet their nutritional requirements.

top down approach, requires the adoption of a holistic process to diagnose the causes of malnutrition. Such an approach will consider almost all "contextual" or "situational" factors causing the problem along with the elements that are commonly attributed to it. In other words, any given nutritional predicament should be understood by "situating" it in its actual context. Relating the causes of a nutritional problem to its context requires the taking into consideration of such factors as the nutritional influence of the specific local, family and individual factors along with broader social and economic causes. This paper attempts to examine how the active participation of the vulnerable groups can be solicited in a nutrition programme.

What is Participation

Participation has been viewed from different perspectives. Among them, there are two standpoints that are important for the objective of this paper. From one perspective, participation means the "collaboration" in which the targeted groups agree to or be coerced into participate in programmes implemented by the government and in their maintenance. However, the "collaboration" in a programme does not necessarily mean that the public will have a "voice" in planning and designing it. Rather the participation is seen as the incorporation of a previously missing ingredient which now needs to be injected into the programme. Participation from this perspective is also viewed as a way to improve the delivery of services by the state by incorporating local resources such as local labour and raw material.

From the second perspective, the participation means the active involvement of the targeted beneficiaries in all aspects of a programme; planning, implementation, maintenance and evaluation. In this view, participation is seen as a strategy to change the fundamental direction of the programme as well as the destiny of the participator such as by increasing his/her "self-reliance" and "self-esteem".

The Need for Participation in Nutrition Improvement Programmes

Multi-faceted nature of malnutrition calls for localized, context specific and holistic approaches to solve it. Specially, there is a need to understand social causes of malnutrition thoroughly before planning strategies to solve it. Social roots of malnutrition can be understood by examining many factors associated with it. To begin with, the poverty and malnutrition are mutually reinforced; pov-

erty causing malnutrition and malnutrition in turn, causing poverty. The productive capacities of individuals are reduced due to poor nutrition and worn out health conditions. In turn, diminishing productive capacities causes incomes to decline resulting in poverty and malnutrition. Poverty also explains why certain people have to live in unhealthy environments. Similarly, the lack of access to food by the poor, both at the global and national levels, is a problem caused by maldistribution than that of overall food availability. The poor have a limited access to food because their access to a means of production such as land is restricted. Maldistribution of foods within a family also causes malnutrition among such vulnerable groups as pregnant mothers, children and elders.

Inappropriate nutrition, hygienic and sanitary practices can also be partly attributable to ignorance and neglect by the people. Individuals and families tend to consume foods and drinks with little nutritional values due to ignorance and negligence. On the other hand, modern advertisements conducted through media have a deceiving effect on the consumers. For instance, shifts in food habits, with significant negative implications for nutrition, are induced by modern sales propaganda. Industrially processed foods, such as fruit drinks and sweetened aerated water, may have a role to play in satisfying the "wants" in affluent industrial societies, but little in meeting the "needs" of the poor in developing countries.

Customarily, the breast feeding has been the main source of nutrition to the infant child.³ It is recognized that the breast feeding is beneficial not only for nutritional and physical well-being of the children, but also for their mental and emotional development. Breast feeding is also known to have such beneficial effects as natural protection against infection and allergic disorders to the newly born child, and often functions as a means of birth spacing.

In spite of the importance for child nutrition and health, breast feeding has declined in almost all the poorer countries. There are many factors causing the observed decline in breast feeding in poorer countries where the child malnutrition is a serious problem. First, the influence of modern life styles and values, specifically those copied from Western industrial societies, have a major role to play in changing patterns of breast feeding. Such processes as modernization, urbanization and more women entering the labour market include notable illustrations for the influence of the modernity on changing patterns of breast feeding. Deception of the advertisement strategies used by the milk food industry is another major

³ Nutrition specialists are of the view that breast milk alone can provide all the nutrients needed by the newly born child for four to six months.

factor in changing attitude toward breast feeding. The tendency towards declining breast feeding is linked with an increasing tendency toward feeding the newly born children with powdered milk.

The need for alternative approaches to solve the problem of malnutrition in developing countries depends, to a larger extent, on how successfully the top down standard approaches have been able to resolve it. It appears that the success in top-down approaches to combat hunger and malnutrition have been significantly limited. For instance, in spite of large sums of funds spent on programmes such as food aid, health care, education, agricultural production and rural development, people in poorer countries are more malnourished today, both in absolute and relative terms, than a decade ago. Therefore, the need for participatory approaches to eradicate malnutrition, as alternative strategies, emanates from the deficiencies met in the standard top-down approaches.

The standard, top-down approaches to eradicate malnutrition can be viewed as attempts at resolving the twin problems of demand and supply for food for a growing and hungry population. They often include the following measures taken by the national governments.

1. Population control.
2. Agricultural extensification or opening up of new farm land for increasing food production.⁴
3. Agricultural intensification of adoption of new technologies (irrigation, high-yielding crops, fertilizers and agro-chemicals) to improve the productivity of existing land to increase domestic food production.
4. Food supplements and food subsidies to the poor.
5. Acquisition and distribution of international food aid.

The standard top down approaches tend to link malnutrition to "ignorance" or "neglect" by the people of seemingly proper nutritional habits and hygienic practices. In this view, the under nourished are victims of their own inadequacies and

⁴ In many developing countries this option is curtailed by such factors as lack of availability of capital, arable land and water. Very often the new land settlement projects results in massive deforestation and reduced bio-diversity affecting the sustainability of domestic food production.

they should be helped to solve their problems through public health education programmes. This appears to be the basis of many nutrition and health education programmes conducted in schools and outside them. Standard health and nutritional programmes also provide for food supplements for vulnerable groups such as for school children, clean potable water and curative health care. There appears a link between population growth with population pressure on land, declining land productivity, and, increasing scarcity of foods. Therefore, population control through government sponsored family planning is a major top down approach to eradicate malnutrition.

Mobilizing Grassroots People for Participation

Type of participation expected from grassroots people differ in different approaches. For instance, from the "collaboration" approach, the participation of grassroots people in nutrition programmes is expected to occur by their involvement in home gardening, latrine construction, digging wells for obtaining potable water and observing the personal hygienic practices. In the second perspective, which emphasize the need for increasing "self-reliance" or "empowerment," the active involvement of the targeted beneficiaries in all aspects of a nutrition programme; including the planning, implementation, maintenance and evaluation is envisaged. However, the objective of participation in this perspective goes beyond the mere participation in prescribed of selected activities. For instance, from the "empowerment" perspective, the participation by the intended beneficiaries in an intervention programme is expected to cause fundamental changes including how the problem is conceived and addressed altogether. First, the participation requires the individuals, as members of families, groups, communities and the society to take responsibility to correct a situation by himself/herself that either may emanate from own deeds or from an unjust social situation. Therefore, the participation in this manner may be seen as a strategy to change not only the fundamental direction of a programme, but also the very destiny of the participator such as by increasing his/her "self-reliance" and "social responsibility". Participation in nutrition programmes from the second perspective, therefore, is aimed at increasing the "social responsibility", "self-reliance", and "empowerment" of grassroots people to deal with a problem affecting them individually through their "collective action". An attempt is made in the remaining part of this paper to examine how the participation for "empowerment" or "self-reliance" could be encouraged in a nutrition intervention programme.

In the "empowerment" approach to participation, "power" is something that the individuals, as the members of the society, need to correct social, eco-

conomic and political situations affecting them. In a psychological sense, power denotes inner qualities of individuals such as ability to understand, self control, motivation to achieve and take leadership. In a political sense, power is the ability to understand and affect all the oppressive and exploitative forces within an individual or at large in the society. Socially, the power may mean upholding such social values as self-esteem, self-reliance and independence. An individual with "power" becomes conscious of not only the problems affecting him or her, but also of direct and indirect, personal and social, factors causing such problems. Such persons also become "conscious" of need for solving the perceived problems, meeting felt need and taking part in action programmes in meeting them.

An individual begins to increase his or her power to deal with a situation affecting him or her by understanding the factors affecting, both internal and external, the predicament they are in. However, such awareness often leads to little practice. This is because the socially and politically marginal individuals are overwhelmed with feeling of "powerlessness" or "alienation". However, the feeling of "powerlessness" and "helplessness" among marginal groups can be reduced through conscious and concerted collective action among them. In other words, the power of the grassroots people can be enhanced through collective actions; especially collective actions among those experiencing a common predicament. Therefore, to overcome the feeling of powerlessness or alienation among the grassroots people, collective actions are encouraged in the "self-reliance" or "empowerment" approach to participation. The top-down approach to nutrition, in contrast, reinforces the alienation feeling among the marginal groups by making them dependent on subsidies and welfare, which often are nothing less than "political hand-outs" to maintain political affiliation or political quiescence. Similarly, the collaboration in "collaborative approach" may mean the coercion by the state or its apparatus by aggravating the feeling of "alienation" among the marginal groups. In this paper emphasis is given to examine the possibility of "self-reliance" or "empowerment" approach to participation to address the issues related to malnutrition.

It was noted in a preceding section that the factors causing nutritional problems are embedded in the contexts where the nutritionally vulnerable endure to survive. However, such contextual factors affecting the situation is complex to be realized by an outsider through standard research methods in the short run. On the other hand, by understanding the magnitude of the problem and its causes, the participants inclination and the ability to solve it increases. Therefore, in an approach to participation towards "self-reliance" and "empowerment," it is useful to

encourage the participants to "diagnose" the problem and its very causes by themselves. They should take into account, for instance, the magnitude of the problem, individuals and groups affected, its effects and impacts with their nutritional well-being.

Generally the people are cognizant of how they are as individuals, families, groups, communities and social classes, affected by nutritional and related problems and their causes. Similarly, they also have views of how to solve them and aware of the constraints they have to face in solving them. However, such individual experiences, views, awareness and perceived solutions are not translated into practical actions or viewed in "action terms". This is because the individuals experiencing a problem tends to take it individually, perhaps attribute it to own deficiency or as something that s/he is destined to undergo. This is mainly because the individual's feeling of powerlessness or alienation, as noted earlier, is enormous.

In fact, there are many individuals encountering comparable nutritional problems caused by identical factors or situations. Therefore, a "dialogue" among those with common experiences and common backgrounds can lead to their understanding that some common factors and processes affect them all. In other words, "exchange" of experiences and ideas among a group of people affected by a similar problem may result in their understanding of the intricacies of factors causing it. These include individual, psychological, social, economic and political factors. In the process of a "group dialogue", the participants also become aware of the need for having individual and or collective action to enable them to have a "voice" of "control" over their destiny. Therefore, the group having a "dialogue" will develop strong inclination or "concientization" to solve the problem and arrive at possible courses of actions that they can resort to in resolving it. Individual "concientization" of the problem, its magnitude and the need for solution, are one of the most important elements in a participatory action programme.

Therefore, in the approaches to grassroots participation for "self-reliance" or "empowerment", a need exists for the grassroots people to have a "dialogue" among them to understand the factors affecting, both internal and external, their present predicament. Having a "dialogue" in the participatory process means having a free exchange of experiences and ideas about a specific problem the participants want to solve. For instance, in the process of an on-going "dialogue", a participant member may begin to express his/her experiences and views of a specific problems the he/she encounters.

Then the others in the group may seek clarifications, make comments on what is already said or may express how the problem is related to them or their specific experiences and views of the problem. Thus in the process of free exchange of experiences and ideas, the group begins to realize the commonalities of their problems and causes. It should be stressed that while self criticism is encouraged in the process of a "dialogue", no one participating in the "dialogue" should be encouraged to say things or ask questions to condemn the other or his/her experiences or views.

By participating in a group dialogue, the individual participants find that the problems that they commonly confront have common causes demonstrating the need for resorting to collective actions to solve them. Therefore the participating individuals' power to solve a specific problem emanates from two major sources; through "concientization" of the need for action and resorting to "collective action" for "collective power".

The power that the individual accomplishes through the participatory processes to solve a problem affecting him or her may vary from individual to individual, group to group or from situation to situation. For instance, individuals engaged in such harmful habits as smoking, excessive drinking of alcohol and gambling may build up strong "self-determination" to do away with such habits as a result of the group processes. In many situations the external forces present a barrier in solving an identified problem by a group of affected people. In such instances, the group may resort to collective action and take political positions to remove such external constraints in achieving their objectives. For instance, participants may confront a group of corrupted public officials who neglect or exploit a service meant for them through their collective efforts. It should be noted that when the participants take steps to reveal corruption, mal-practices and inefficiencies by the official actors in such occasions, they invariably engage themselves in political actions. This is because such action stand for political positions taken by them to affect the "power" of the established or the privileged. Sometimes, the grassroots people must confront official actors publicly and challenge them with their misdoing. Very often the official actors start to suffer when their misdoing, inefficiencies and corruption are publicly disclosed and therefore provides a useful political tool for the grassroots to affect their official conduct.

It should be emphasized that the latter type of political actions by the "oppressed" is not meant for capturing political power or to establish the dominance of the marginal or the under class. In other words, such actions does not

mean the "oppressed" themselves resorting to "oppression" to end "oppression" as this would shift the "oppressive" deeds from one sector of the society to another. Therefore, the participation for "self-reliance" or "empowerment" means going up against all types of "oppression" by understanding and controlling "oppressive forces" within a person and in society.

Role of the Catalyst in Promoting Participation

Participatory programmes to nutritional improvement require the engagement of a "catalyst" or a "change-agent" to mobilize the grassroots people to participate in them. Catalyst's role in the targeted community is as a "facilitator" or an "enabler" than somebody who undertakes charitable work or an official provider of a public service. Therefore, the catalyst engaged in promoting grassroots participation should have substantive skills in social mobilization and essential training in technical nutritional aspects.

Unlike in the standard, top-down approaches to malnutrition that provide generalized services to a commonly defined target, the catalyst engaged in nutritional improvement activities adopting participatory approach to increase the "self-reliance" would go in search of nutritionally most vulnerable groups in a specific community. It is important to determine at this stage the type of contacts the catalyst would have with the members of the selected community, of the nutritional problem to be addressed and the target groups to work with. In selecting a target group, the catalyst may begin with nutritionally most vulnerable groups such as the pregnant women and nursing mothers, children, elderly, ethnic minorities, slum dwellers and generally the poorest of the poor.

In identifying the problem to work with, the catalyst may consider the "concerns" and "felt needs" expressed by the majority in the targeted group. At this stage, it is important to select a problem that the target group can handle by themselves, individually or in groups, than a problem needing outside help or resources. Solving a problem with external help may work as a barrier to develop "self confidence" and "self - reliance" among the participants. However, working with first set of problems and a few people at the beginning is useful as an "entry point". The catalyst should strive later to help the community to take upon much more fundamental and deep rooted problems which have implications for their nutritional well-being. At the initial stages, it is also important to consider which food and health and nutrition problems are most important in the specific community by the catalyst.

Assessing of resources, both natural and cultural, available to the targeted groups to solve their nutritional problems are another major task the catalyst should undertake at the initial stage. After working with the community for sometimes, the catalyst may understand that certain attitudes, beliefs, traditions, customs and fears may work both as resources and constraints for solving the nutritional problems. The old ways and beliefs, like new beliefs and ways, have their strengths and weaknesses. Local people may look down on local beliefs and traditions related to food or look up to them as completely beneficial (Werner and Bower, 1991). At times, they also may fail to look at local traditions and customs with positive implications for nutrition. The catalyst's task would be to prepare the atmosphere so that the grassroots people look critically at their food and health habits and their implications. Helping people to recognize the value of their practices increases their confidence in their knowledge, experience and ability to meet own needs on a self-help basis.

Participatory approaches, specifically participatory approach to empowerment, seeks to find lasting solutions to the grassroots peoples' problems. Therefore, the catalysts active in nutritional improvement programmes should look beyond the standard approaches and critically examine the "contexts" in which the individuals and groups suffer from nutritional and related problems and relate these to the programme objectives. In other words, the catalyst engaged in a participatory nutritional programme should also understand the specific factors causing malnutrition in his/her targeted community besides knowing only of the common factors causing it.

It is also useful in the participatory approaches to nutritional improvement to view that the nutritional problems are deep-seated in the circumstances under which the nutritionally vulnerable stay alive. In other words, the catalyst needs to consider that the major causes of nutritional problems are embedded in the context in which the nutritionally poor find a sustenance. Therefore, it is important to understand that the causes of malnutrition differ from situation to situation, group to group and individual to individual. In relating a particular nutritional situation to its specific context, an attempt should be made to link the observed nutritional predicament to its individual, psychological, social, cultural, economic and political setting.

For instance, if the cause of malnutrition is "secondary poverty", that is not knowing how to use the available incomes for maximum personal or family welfare, the catalyst has to provide the opportunity for the affected individuals or

groups to understand the causes of their problem and encourage them to take steps to correct them. Secondary poverty is most visible when the bread winner becomes a chronic alcoholic or a drug addict. In like manner, smoking and gambling include the other habits causing the secondary poverty among the low income receivers. The phenomenon of secondary poverty also is caused by not knowing how to get the maximum use out of the available incomes by buying most appropriate goods, especially the foods. Similar circumstances may arise when limited available resources within a family, such as land, water and labour are used for producing commodities for the market than for nutritionally valuable foods for family consumption. Likewise over cooking, as noted earlier, results in loss of nutritional qualities of foods prepared for consumption. Often these factors are not reported in surveys and difficult to observe through village level observations. However, they come to the surface when the prospective participants as "peers" start to rely upon each other and "disclose" them in the process of the "dialogues" they have. By engaging in a "dialogue" of a common problem they experience, the participants in the group may also become strongly convinced of the need for solving it.

Similarly, the nutritional problems emerge from lack of access to a means of production or lack of equitable distribution of available foods within the family. When the access or the maldistribution is a problem, welfare cum foods subsidy programmes can only help to reduce the severity of the hunger or the social unrest emerging from it, but little of the phenomenon of malnutrition itself. Thus it is critical in a participatory nutritional programme to "guarantee" the access to a means of livelihood.

Nutrition also becomes a major problem when the individuals, families and groups continuously are inflicted by diseases. Besides, the poor nutrition is associated with increasing susceptibility to diseases, recurrent and persistent sickness causes severe nutritional conditions in individuals. Cultural habits such as not serving the solid food such as the boiled rice, fish meat, eggs and certain fruits to a sick person during the spells of sicknesses only aggravate the conditions for recovery and severed nutrition.

To summarize what was discussed in this section so far, a catalyst has to play major role in encouraging and getting the participant groups to have a dialogue on their nutritional problems. Other techniques the catalyst may use include encouraging the community members to play roles, experiment and observe the relation the nutritional problem has with its socio-economic, political and environmental conditions as well as individual behaviours and personal practices. The

catalyst may help the targeted groups to undertake community nutrition survey.

A catalyst engaged in a participatory nutrition programme may organize the work with a few steps or tasks. The first task the catalyst should undertake is to select a target group to work with. With this task, the catalyst may go in search of readily apparent nutritional problems including *marasmus* (dry malnutrition due to not eating enough) and *kwashiorkor* (wet malnutrition due to not eating enough protein), if any, and their magnitude. Second, the catalyst may identify the nutritional problems to concentrate. It is important that the catalyst should consider the initial problem that he/she works with is an important "entry point" to the community or a major means of establishing rapport with the prospective targets. Third, the catalyst should critically examine the routine practices and norms adopted in the standard nutrition programmes and choose only what fits into the specific needs of his/her target group. Fourth, the catalyst should take into account the resources available within the targeted groups and outside it to solve the nutritional problem they are facing and the major constraints that they are expected to face in doing so. Fifth, the catalyst should arrange the targeted groups to have a series of "dialogues" among them on the nutritional problem they are facing and their causes. The catalyst may guide the group to uncover the nutritional problems affecting them, their magnitude and causes by undertaking community surveys and village level observations. Sixth, when appropriate, the catalyst should make use of various approaches to encouraging participation such as the "community organization".

The Role of the Grassroots People

Participation of people in diagnosing their nutritional problems, major factors causing them, and planning of activities to solve them together and their implementation are the most important elements included in participatory approaches to nutrition improvement programmes. Thoroughgoing participation increases the participant's active involvement in solving nutrition and related problems and the likelihood of sustaining the outcome attained. Therefore, participatory approaches to nutritional programmes require that they be designed and implemented by the grassroots people themselves for whom such programmes are intended. The participation does not mean listing of "wants" by the grassroots people to be supplied as "hand -out" but "felt needs" to achieve through their efforts. The idea is that when the grassroots people discover the problems and the factors causing them on their own, they will take the necessary steps within their reach to solve them.

A useful strategy that can be adopted in a participatory nutritional programmes is a "dialogue" among the participants. The "dialogue" may concentrate on such matters as identifying the nutritional problem, felt needs and building up consensus among the target group of the possible ways of solving the problem and meeting the felt needs. Therefore, as an initial step the participants should have the opportunity to discuss different forms of malnutrition in the community, their magnitude, the factors causing each type of malnutrition and the remedial actions required. Once the consensus is built up among the participants of the need for taking actions to solve their nutritional problem, the process of information gathering, analysis, planning strategies, their implementation, monitoring and evaluation may be started.

Primary surveys conducted by professionals and the uses of existing secondary data include the major sources of information used in planning in the standard nutritional improvement programmes. However, surveys undertaken by the members of the target group themselves can be used in a participatory nutritional programme. Such a survey may concentrate on finding how many are affected with various forms of nutritional problems, which groups are affected most and circumstances under which they are affected. Besides collecting necessary information, community surveys by the participants are useful for initiating an interest in nutritional problems and their causes among them. Participants' first hand knowledge of community nutritional and related problems are also important for their willingness to take steps to solve them.

Enlisting the participation of all the members in the targeted community in a community survey may help to enhance the level of enthusiasm created in the community in nutrition, solving related issues and collective work. According to Werner and Bower (1991:25.7), different groups from the community can be involved in different aspects of the community survey. They suggest that :

- I. School children might check to see whether their younger sisters and brothers are well nourished or too thin.
- II. Family health care worker (midwives) could help in reviewing the nutrition of pregnant women
- III. Mothers could find out how many babies are breast fed or bottle fed and how this affects the babies' health
- IV. Fathers might do a study on how the drinking habits of men affect the nutrition of different families.

Analysis of information gathered through surveys should reveal the factors affecting the nutritional problems in the community. First, it is important to encourage the participants to look into the prevalence of malnutrition in the community. This may be undertaken for various forms of malnutrition and number of people that are involved in each form. Second, the participants should consider the major factors causing the existing nutritional situation. Some factors that the group should consider in identifying the causes include peoples' habits and attitudes, land ownership and tenure, land use and farming orientation and practices, water shortages, storage and post harvest losses, marketing problems, food prices and wages (Werner and Bower, 1991). Third, the group also take into account the obstacles and constraints in solving the nutritional problems.

There may be many nutritional problems to attack in the community. The problems are there because there are many obstacles in dealing with them. Some limitation are socio-cultural such as the maldistribution of available food within the family. Other problems originating from family practices include the inappropriate personal hygiene, purchase of wrong foods or their inappropriate preparation and alcoholism. Sometimes, foods are consumed for prestigious reasons than for their nutrition value. Likewise, there may be other problems quite internal to the community. The group should first attempt to understand and build up consensus to correct these domestic or internal problems. This is encouraged where applicable because such an approach requires little outside help and useful for "self control" and "management" by the members of the groups themselves. Success in "home keeping" will also help develop community spirit and self respect.

However, many factors that affect nutrition at the individual, family or community level are emanated externally or outside the community. For example, inappropriate foods are produced or imported, traditional subsistence food crops with the access to poor are replaced with cash crops to meet export demand. The catalyst may employ the process of conscientization (awareness raising) to increase people's critical awareness of the sources of their problems, especially of the oppressive forces and their belief in their power to control and change their lives.

Summary and Conclusion

In the place of blanket application of programmes and activities to improve community nutritional well-being applied in the standard, top down approaches to nutritional improvements, the participatory approaches to nutrition

make possible the adoption of a context specific, holistic approach to solve. Participatory approach also can be used to encourage the "self-reliance" among the participants to resolve own problems or "empower" them through collective action to influence the unjust social situations affecting their predicaments.

In promoting the grassroots participation in a nutritional programme, a trained catalyst has to be employed to mobilize the prospective participants to have a closer look at the conditions and causes of their nutritional predicaments. The catalyst's major tasks in mobilizing grassroots people for improving their nutritional level include promoting a "dialogue" among them to discuss their nutritional predicament and causes and action required in solving it. The diagnoses of the problem, its magnitude, causes, and planning at remedial actions are left to the participants including the responsibility of their implementation. The catalyst may encourage the target groups or communities to undertake a community survey. The role played by the catalyst, therefore, is that of an enabler. Finally, as very focus and nature of the participatory approaches to nutritional improvements vary from that of the standard top down approaches, they require the employment of more flexible organizational forms than that of the state sector institutions.

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CULTURAL DIMENSION OF NUTRITION

by

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This paper focuses on the cultural dimension of nutrition with a view to bringing out the complexity and how to think about the issues involved in improving nutrition. Cultural attitudes override the internal regulators in the brain resulting in particular eating habits or no eating at all such as when fasting. Certain foods may be labeled as inedible by culture, though, technically, they can be safely eaten. Parents themselves consider their childcare strategies are culturally normal and positively beneficial, even if the children are malnourished. Thus certain childcare practices adopted by different groups that make up a society have implications for nutrition and health. These practices have a cultural or symbolic dimension that provides their perceived meaning for continued adoption which must be understood in their specific context. However, to limit the inquiry merely to analyzing the nutritional inadequacy or adequacy of particular diets of particular groups is akin to beating a straw man. Project workers who work towards improving nutritional standards will find that an understanding of the cultural dimension has a significant contribution to make in dealing with the twin problem of fighting hunger and malnutrition - the theme adopted by the F.A.O. to celebrate this year's World Food Day.

Malnutrition, direct and indirect, is by definition identified with specific groups - children under the age of five years, lactating mothers and pregnant women. On the other hand, hunger is a condition which may affect some people across all different social groups in a given community irrespective of their age. The two conditions are related, and generally prevalent in the Third World societies (and certain underprivileged subsections of the affluent societies) are such that fighting

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hunger and malnutrition presents a serious challenge for the governments. Until recently the problem has been defined as protein energy malnutrition (PEM) - the label itself being introduced as late as the 1970s. While the norm of nutritional adequacy was defined in terms of Western cultural values, in the past two decades many studies have emphasized that energy deficiency is more important in the etiology of malnutrition. This is particularly true for populations whose staple is rice.

Biological Basis and Adaptation

“Adaptation” is used in anthropology both in terms of biological adaptation and cultural adaptation. The former refers to what is innate and focuses on genetics. The latter emphasizes on what is learned under particular environmental conditions. Human cultural complexity or the symbolic and behavioral aspects with regard to food and eating are partly related to human organization: cutting incisors, grinding molars and premolar, the pointed canines, and a digestive system with an extremely long gut distinguish human beings in terms of ability to adapt themselves to a variety of conditions and the capacity to evolve an enormous range of behavior connected with eating. Being omnivorous and not dependent on particular foods, the human beings are better able to find food in the given environment which they happen to live in and also readily move into new environments containing new food sources.

Yet, human groups differ in regard to physique, body dimensions, and the size of the face skull. These adaptations have long been explained in terms of genetic make up. However, no two individuals have precisely the same metabolism although they are of the same age, sex and physical proportions. One may burn calories faster. Some women in India have been found to be capable of synthesizing vitamin C. Equally healthy people differ in their capacity to secrete pepsin and hydrochloric acid. And the variation is explicable in terms of nutrition which contribute to realizing the full genetic potential of growth. Again, studies have shown that certain people (e.g. New Guinea) who subsist on a diet extremely deficient in both calories and protein that may be expected to cause clear signs of malnutrition, have shown no ill effects from this diet; only they grew more slowly than white children of North America. The health of the young adults was good, and the adult females paid no penalty in terms of decreased fertility. One highland group consumed 80 - 90 percent of their calories from a single food source - sweet potato - and the rest from leafy vegetables and beans.

It is therefore very difficult for the nutritionists to recommend an appropriate daily intake of various nutrients for people in general. The approach has to be at the local level.

Cultural Diversity

Although a proper balance of proteins, carbohydrates, fats, vitamins, and minerals can be obtained by a combination of both plant and animal foods, in some societies, the diet seems to consist of either animal meat or plant food almost exclusively. However, some people are vegetarian by necessity rather than by choice such as when they do not have money to buy meat and are forced to subsist on a low protein, high carbohydrate diet. Others may abstain from eating meat because of moral reasons (religious or ethical repugnance). While a devout Buddhist will not knowingly deprive the life of an animal, he would still eat eggs, drink milk, and eat butter (Sri Lanka, Burma, Tibet, Thailand). The Sri Lankan Buddhists believe the farm eggs to contain no life. Certain people in the low castes in India eat meat whenever they can despite being Hindus. Thus no society is exclusively vegetarian. In fact, any woman who strictly adheres to a vegetarian diet would lack vitamin B 12 which is essential to avoid anemia. The nutritional quality of breast milk is affected by mother's diet. Thus, where vegetarian diet is concerned, every culture, through a long process of selection, has circumvented the problem of the deficiency in amino acids of plant foods by developing dishes that combine and balance them. For example, Sri Lankans eat milk rice in combination with green gram. Mexicans eat beans, rice, and leafy vegetables with a maize tortilla. Certain Eskimo groups were long thought to subsist on purely meat, but suffering no major nutritional diseases. It is only recently that the nutritional diseases have become common among the Eskimos due to changed way of life where increasingly large amounts of processed food are bought and consumed.

EVOLUTIONARY PERSPECTIVE

In terms of evolution of hominid subsistence behaviour, three phases could be recognized: Shift from an unprocessed primarily vegetarian diet to one which is processed and involving meat; Specialized hunting and gathering techniques; Agricultural transition (including animal husbandry) beginning at about 12,000 B.C.. The immediate motivation for domestication and food production is controversial, though theories of population pressure and inadequate natural food resources have been widely accepted. In the short run, it may have leveled-out the food shortages, but in the long run the agriculturists were more disadvantaged by climatic condi-

tions than would have been the hunters and gatherers in the same environment.

The solution created other problems such as intragroup variation in diet which appeared to have followed the distinctions based on sex and status. The record of Sumerian civilization in Mesopotamia for example shows that although a wide variety of foods high in proteins and calories was produced and available, the diet of the lower classes was heavily biased towards barley, while the higher classes enjoyed a more varied and richer diet. A recent study which compared contemporary diets of industrialized societies to several models of pre-agricultural diets concluded that the modern diet is deficient or inadequate in several fundamental ways. Protein, fibre, vitamin C, and calcium are much lower in the average American diet; levels of sodium and fat, particularly saturated fat, are much higher. It has been said that the agricultural "revolution" was not so revolutionary at its inception, but it has come to represent a nutritional "devolution" for much of the humankind. While the process of adapting to these changes is not complete, further progress will have to involve political and economic adjustments in addition to food technology.

Worldview Conflicts

Another aspect of the cultural dimension involves what is known as worldview conflicts. Worldview descriptions are sets of assumptions and values that permit the users to perceive, categorize, and understand events in the world and socialize their children. In other words they are cognitive orientations held by people. Because of subscription to different world views, the interveners (project workers or cultural outsiders whether or not being adapters or activists) and their clients (beneficiaries) begin from different assumptions, and perceive and interpret the same "objective reality" differently. The intervention process is affected by both the intervener's world view as well as the donor agency structure. Culturally sensitive research would reveal not only the parental motivations but also the role of the intervener himself in causing or perpetuating worldview conflicts. However, an awareness of the same is likely to lead to reduction of the severity and the frequency of worldview conflicts.

FOOD FOR ALL

An Agenda for Sri Lanka

by

Dr. S.G. Samarasinghe*

Macro-economic structural adjustments have been the key approach by the policy makers during the past decade or so towards poverty alleviation. Now the question is being asked whether this has reduced the number of hungry people in the world estimated at approximately 800 million. In fact the Director-General of the FAO Dr. Jacques Diouf has said that approaching the third millennium the world still faces a crucial challenge to the most basic human right - "freedom from hunger". A World Food Summit has therefore been convened to provide a historic opportunity for governments, international organizations and all sectors of civil society to join forces in a concerted campaign to ensure food security. Now what is this food security? According to the World Bank food security is "access by all people at all times to enough food for an active, healthy life. Its elements are the availability of food and the ability to acquire it". In just mere three words a similar concept was uttered to the world by the Buddha when he said "*Sabbe satta aharaithika*". All beings depend on food.

Food security exists at a number of levels; global, regional, national, district, household and individual. The whole process is interlinked particularly at present with the concept of "open economy", the accepted policy of most governments including our own. Adequate food supply and access to same are the key components of the definition given earlier. It is therefore presumed that every country should endeavour to ensure an adequate food supply without depending on others. This is where sustainable agriculture is a pre requisite as a policy decision by the concerned governments who should formulate country specific

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national strategies. It is needless to say that if an adequate supply can be ensured, all other issues arising from the definition accessibility - economic ability to acquire, quantity, variety and quality - nutrition - wise could be fulfilled.

The FAO has stated that in the world's poorest countries, 40% of the gross domestic product (GDP) is earned by agriculture and up to 80% of the people depend on farming for their livelihoods. Agriculture in these countries has what the International Conference on Nutrition called a "Multifunctional role": it serves not just a source of food but also a major provider of jobs and income. Agricultural resources are not only an input of food production but also the major economic asset on which depends a good part of the population in the developing countries for employment and income. It is in this context that specific measures have to be taken to promote sustainable agriculture among small farmers in developing countries. It is this intervention which can help both the supply of food and access to same by the poorest groups. In Asia, the FAO forecasts that the food demand is expected to grow by 2% per year up to the year 2000 with food production rising by an estimated 1.3 percent.

Why I made this preamble on this important day is to focus two important matters pertaining to food security in Sri Lanka. We observed the importance of agriculture and in the entire context of food security. As far as Sri Lanka is concerned, agriculture primarily is paddy cultivation. Permit me to recount very briefly the evolution of the agrarian culture in our country. Firstly, it was the responsibility of the Sinhala royalty to ensure that subjects were contented and happy. The often quoted saying "*Raja Bhavatu Dhammiko*" (may the rulers be righteous) was indeed that the rulers had an obligation towards the food security of its subjects. Almost every king endeavoured to carry out this responsibility by constructing reservoirs and irrigation works. Some could perform that duty well. Others could not achieve such excellence due to varied reasons such as internal strife and enemy activity. Secondly we had the colonial experience. All the three colonial invaders, the Portuguese, the Dutch and the English wanted to transform our resources to be their resources. They did not certainly undermine agriculture, instead provided irrigational facilities etc. as in the case of the exemplary example given by Governor Gregory.

However, the emphasis was on the plantation crops thus transforming paddy cultivation to a mere subsistence level exercise.

Physical, institutional and human resources infrastructure development is a *sine qua non* for the pursuance of the major objective of accelerated economic growth. The sectoral resource allocations for the development of physical infrastructure such as transport, power and energy, telecommunications, irrigation, posts etc. reveal any government's conscious effort towards strengthening these sectors. Institutional development and structural adjustments towards the improvement and the efficiency of the public-sector administration, skills development, legal and regulations framework amongst other measures have received a new emphasis and orientation consequent to substantial resource allocations. The Government has accepted that it is its responsibility to ensure the human resource development in the two major segments of education and health.

Agriculture in this context comes under the physical infrastructure in the investment and management of irrigation works and the supportive role provided by the agencies and institutions operative under the Ministry of Agriculture, Lands and Forestry. Fiscal policies in fertilizer subsidy, liberalization of the imports and marketing of planting materials and seeds have had the desired effect in the non-plantation agricultural sector. The provincial extension system has been structured to build the appropriate linkages ensuring the essential advice needed by the farmer. However, the most important factor in the hierarchy of these measures has either been forgotten or not understood. That is the development of the farmer-community resources. Motivation and mobilization of the human-resource factor of the farmer community presently aggregating to about 9.0 million of a total population of 18 million has been ignored or very scantily cared for.

No doubt the participatory approach has been active even prior to independence but regrettably the dominance of the bureaucracy and the technocracy impeded any meaningful upsurge in the farmers' getting organized. It is accepted that all policy decisions taken hitherto in the agricultural sector were directed towards enhancing the production, and marketing of paddy, other field crops, fruits and vegetables. However, no meaningful programme was initiated to develop the farmer-community resources, their ability to organize and make themselves effective in the developmental progress.

Fiscal policies introduced particularly after the independence in 1948 were responsible for new institutional reforms in harnessing the organizational capacity of the farmers in the periphery. They are the Agricultural Productivity Centres, Cultivation Committees and the Co-operative Societies. The Land Reform Law of 1972 established the Land Reform Commission imposing a ceiling on agricultural

land holdings. Law and the regulatory framework of this period provided for fiscal measures for the development of agriculture. However, there had been no single concerted attempt to consolidate all these policies in an endeavour to project a clear vision on the agricultural sector. It was in order to establish this clear perspective that the new **National Policy Framework - Agriculture, Lands and Forestry** was framed providing inroads to a kind of Integrated Farm Planning in order to ensure the transformation of subsistence rural level agriculture into a profitable commercial venture. The emphasis of the new policy are on the following five concerns:-

- a) Provision of high-quality seeds and planting materials;
- b) Streamlining of the agricultural extension services including the provision of supportive services and inputs;
- c) Integrated farm planning to include production, harvesting, collection, storage, processing, marketing, value addition and export;
- d) Institutional building including organizing of farmers and restructuring of Agrarian Services Centres as Production Centres catering to all the needs and the supply of all requisites for farming;
- e) Integrated approach by the State, private and non-governmental organizations;

Preparations are now almost finalized as mentioned earlier in holding the "World Food Summit" in Rome during November this year providing an opportunity for about 200 countries including Sri Lanka to work out a strategy for food security - which term has now many working definitions. In July 1996 FAO has given us the latest definition.

Working Definition of Food Security

Before we can talk about information systems for food security, we must first be sure that we all share a common understanding of the term "food security" itself. Although there have been many formulations over the years, the essential meaning has not changed. In 1983 the Committee on World Food Security (CFS) defined food security as "Physical and economic access for all people at all times to the basic foodstuffs that they need". In 1996, more than a decade later, the World Food Summit will consider for adoption a very similar definition, i.e., "Access of all people at all times to the food they need for an active and healthy life with dignity".

The CFS in 1983 also defined three essential components of food security, namely, availability of adequate food supplies at global and national levels, stability of supplies in local markets, and access of all households and individuals to these supplies. This approach related food security to the quantities of food available, in relation to a minimum per capita threshold defined as nutritionally adequate. During the International Conference on Nutrition in 1992, two other concepts were added, i.e. food quality, that is, nutritional content, and food safety, that is hygienic condition and absence of health-endangering materials in the food. Thus, for working purposes we may take the definition of food security as **“availability of, and access to, a minimum of nutritionally adequate food for all people all the time”**. Information system is a pre-requisite to food security. It is in this respect that the HARTI has made her singular contribution through the Market Intelligence Food System funded by the UNDP and the FAO. In fact Food Security Information Systems are wide and extensive depending on the circumstance of each country. In the circumstances prevailing in various countries, priorities are given depending on their own requirements. Some such Food Information Strategies are:-

- a) Baseline information on minimum food requirements.
- b) Vulnerability in identifying those groups who are food-insecure.
- c) Availability of food supplies at the national, regional and local levels which is defined as the sum of production plus net imports (including food aid) and the available stocks.
- d) Stability in identifying the sources of risk and the periodicity of risk related events such as drought, floods, production fluctuations, economic crisis, devaluation, illness etc. It is in this area of supply stability that information on market prices and quantities, stock levels, marketing and storage infrastructure, the operation of transport system, trading regulations etc. become very significant and operative.

The Food Security Information per-se has the following key areas as its main functions:-

- a) Data collecting and monitoring including agricultural production monitoring system, market information systems, food and nutrition surveillance systems.

- b) Forecasting information regarding warning that a risk related event is about to occur in the spheres of food availability, stability and access.
- c) Emergency needs assessment in assessing the changing situations of vulnerable groups in terms of crisis.
- d) Data-base management for long-term planning in providing at all levels with the vital data and analysis.

HARTI with limited resources has been able to achieve some of the important requirements mentioned above.

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