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Assessing Food Insecurity in LDCs – Roles of International Schemes in Relation to LDCs

There are districts in which the position of the rural population is that of a man standing permanently up to the neck in water, so that even a ripple is sufficient to drown him.

R.H. Tawney, *Land and Labour in China*

1 INTRODUCTION

The lack of food availability to poor consumers is a problem that can be analysed under three different time frames. The first type of problem is the chronic lack of food arising out of low productive capacity, and its existence and solution extend over many years. The second is the temporary shortages that arise from the year to year fluctuations in the harvest. Finally, there is the acute shortage of food that strikes a community, usually concurrently with some form of natural disaster such as earthquakes or storms which severely damage the normal channels of delivery of food to the area. The concern of this paper will be with the second type of problem. Food security is then defined as the capacity of LDCs to finance or have access to food supplies to meet per caput target consumption levels on a year by year basis. The choice of what constitutes target consumption levels in our opinion is the heart of a country's food policy. The working definition for target consumption adopted in this paper is the trend of consumption estimated from past data. Food security as defined here does not imply a shift of the consumption trend from what it would otherwise be, although it may increase the long run level of consumption by making more food available in poor harvest years. Food security could contribute indirectly to an increase of food consumption trend by assuring governments of grain supplies in crisis years and thus supporting the implementation of national food distribution schemes. However, we do not intend to examine this secondary effect.

Food security can be looked at from a world, national, village, and even a household level. This paper focuses on the national level. At that level, low supply could force consumption per caput to fall and thus may lead to

social and economic disruptions. It also has an adverse impact on scarce foreign exchange and capital resources, causing the country to forego other needed imports or to cut back on investments designed to increase the long run food supply or future export revenues.

The paper is organized as follows. Part 2 presents a description, both institutional and quantitative, of the food security situation of a sample of LDCs. Part 3 discusses various international schemes and their merits in reducing food insecurity for the LDCs.

2 INTERNAL ASPECTS OF FOOD INSECURITY

Since the focus of this paper is the assessment of the role of international schemes in alleviating food insecurity, it is important to point out from the very beginning the limitations on any international scheme from the point of view of an LDC food consumer.

Any international scheme, as presently conceived, will have to be directed via the central government of the particular LDC that faces food insecurity. It usually ends also there when either the money or the actual food is handed over to the government. Since the same government will have then to convert the resources so obtained into food for the consumer, the problem of food insecurity as faced by the government of the LDC is much broader than that faced by the international agencies. It involves essentially the problem of collating the information on the status of food supplies within the country in order to determine the requirements of food procurement on the one hand, and distributing the food to the deficit areas on the other.

The problem of collating information on the state of the harvest is acute in many countries. The range of estimates in extreme cases can differ by a factor of two or three (Lele and Candler, 1978). Even when the range of estimates as a proportion of total production is more "reasonable", it may still be large as a proportion of required imports. The resulting failure of import planning has been responsible for the frequent run-up of prices at the lean pre-harvest periods, something that will not be observed if the import plan has been used on accurate information.

The problems outlined above refer largely to the estimation of national needs. There are many countries where data have to be disaggregated to the regional level. This is particularly necessary where there are poor transport facilities within the countries. It may be more efficient in some of these cases to have local stockpiles. There are many traditional institutions and behaviour patterns that guide farmers' production and marketing decisions, and that help these societies to cope with food insecurity problems independently of any international or, indeed, of any national schemes. One example is from Northeast Thailand, where farmers tend to refrain from marketing their rice until the coming of the next monsoon when they can make better judgements concerning the prospects of the next crop.

These are the problems *prior* to the decisions to procure food supplies to meet the shortfall. Once the incremental supply arrives, there is also the problem of distributing it to reach the region or the group that otherwise would be most affected by the supply shortfall. Where the shortfall is regional, transport bottlenecks may arise, particularly if the shortfall is severe or has been allowed to develop into an acute crisis so that the supply inflow has to be concentrated in a short period of time.

In many cases, governments face a more complex problem of designing a system that will direct the incremental supplies to the poorer segments of the population. The supply shortfall and the consequent high prices usually have more impact on the food consumption of the poor than on that of the better off. In the past, many countries, particularly in South Asia, have not been able for a variety of reasons to procure enough foreign supplies to neutralize the effect of the shortfall. A consequence of this inability is the development of a public distribution system and a dual-price scheme so that the poor at least would be insulated from the effects of high prices. The needs of such a programme then become the driving force behind the government's food security concern.

Different LDCs would face different subsets of this myriad of problems. Consideration of some of these problems is relevant for some of the international schemes; for instance, accurate production statistics are essential for the operation of a food insurance type scheme. In most cases, however, they point in the direction of increased *working* stocks, an area in which the international community can put in only a modest amount of resources even though it may be an extremely critical task facing the LDC governments.

Quantitative assessment of food insecurity at the national level

In most studies on food security, food has been identified solely with cereals. Although the share of cereals in total food consumption (measured in calorie equivalents) is very high on average, it ranges from 85 per cent in Afghanistan to only 16 per cent in Zaire. Cereals are clearly the dominant food staple in Asia, but in Africa and Latin America the role of non-cereals in consumption is very important and must be incorporated into any meaningful consumption equation. However, in terms of what most governments express as their main concern with respect to food security, the commodity groups "cereals" cover on average more than two-thirds of total calorie intake in most LDCs, and also account for the more politically sensitive commodities. Cereals, particularly wheat, dominate among traded food products. Thus, they serve as a good approximation by which to measure the variability of food consumption.

In this analysis consumption instability is measured around the long term trend, using the "coefficient of variation" as an indicator of variability. The observed variability in food consumption in a sample of LDCs ranges from a low of 3 to 4 per cent, such as in the Philippines and Peru, to a high of 20 to 25 per cent in Morocco and Algeria. High variability levels of 15 per cent or more are concentrated in North Africa and the Middle

East where cereals' share in food consumption is above 40 per cent. Over 67 per cent of the countries had an amazingly high degree of consumption variability – equal to or greater than 7 per cent (Valdes and Konandreas, 1978).

Food consumption variability can also be expressed as the probability of actual consumption falling below, for example, 95 per cent of trend consumption, given the level of actual imports. In fifty-one out of sixty-seven countries, a consumption shortfall below 95 per cent of trend occurred every five years. In most of the Arab countries, it occurred approximately once every two and a half years.

Some may assume that shortfalls in domestic production are the basic cause of food insecurity. This need not be the case if the country concerned has the capacity to vary its food import volume to compensate for the variability of production. However, its ability to do so could be limited by sudden increases in world prices for food imports and/or decreases in export revenues. When these events occur simultaneously (that is, domestic production shortfalls in a year of adverse world prices, such as happened for many Asian and African countries in 1973/74), the ability of many LDCs to meet target consumption levels is devastated.

An alternative to relying on imports could have been to release stocks. However, historically, for most LDCs stock level changes have not been sufficient to reduce consumption variability. In view of the arguments presented above, this reliance on imports was a rational strategy, except perhaps in a large country such as India. Therefore, we may analyse fluctuations in consumption as resulting from fluctuations in the levels of production and of imports.

Production variability

Production has been relatively stable in most large low income countries. These include Bangladesh, Egypt, India, Indonesia, and the Philippines. For these countries, the coefficient of variation of production is around or below 6 per cent. In contrast, in thirty-three out of the sixty-seven countries this figure is 10 per cent or more, and several Arab countries it is above 20 per cent. The probability of production falling below 95 per cent of trend in thirty out of sixty-seven countries is once every three years. For the operation of a food security system, the absolute magnitude of the shortfall is critical. A country such as India may have a relatively low level of instability (6.4 per cent), but a high value of absolute variability (6.6 million tons); in contrast, Morocco has relatively high instability (27.2 per cent), but an absolute variability only one-sixth that of India (1.2 million tons). Hence withdrawals from an international scheme could very well become dominated by the large countries, many of which have relatively low production variability.

Variability in the food import bill

In an effort to compensate for the variability in domestic production, countries may destabilize their food import bill beyond a desired level.

Fluctuations are aggravated by the world price instability of cereals. Historically, analysis for the time period 1961–76 clearly shows that, except for a few countries like Egypt, the variability of the import volume explains most of the variability of the food import bill. On average, only one-quarter of the variability of the import bill is explained by world price movements (Valdes and Konandreas, 1978).

The above analysis has two important qualifications. First, particularly before 1972, world grain prices were relatively stable. Second, a considerable portion of imports to developing countries had been through food aid. The quoted price of imports overestimates the true cost of food aid imports to recipient countries.

Foreign exchange constraints

Foreign exchange availability could be the most critical factor in determining whether or not a country can import enough to stabilize food consumption.

Table 1 presents the average ratio of the actual value of food imports to total export revenues (including services) and its maximum for the period 1965–76. This ratio indicates the pressure on foreign exchange supplies to finance actual food imports. To the extent that actual food imports are already subject to financial constraints, this ratio would underestimate the true pressure exerted by foreign exchange shortages. The results show that, except for three out of the twenty-four cases (Bangladesh, India, and

TABLE 1 *Ratio of food imports to total export revenue, 1965–76 except as noted (per cent)*

	Mean	Max.		Mean	Max.
<i>Asia</i>			<i>Sub-Sahara Africa</i>		
Bangladesh ^a	88.4	119.4	Ghana ^d	3.7	5.4
India ^b	22.4	44.5	Nigeria ^d	1.9	2.5
Indonesia	9.5	19.9	Senegal ^b	12.2	17.8
Korea, Rep. of	13.5	21.4	Tanzania ^d	5.5	22.2
Philippines	4.9	9.1	Upper Volta ^e	7.4	13.0
Sri Lanka	27.2	49.2	Zaire ^b	3.1	6.9
<i>North Africa/Middle East</i>			<i>Latin America</i>		
Algeria ^c	6.0	9.3	Brazil	3.9	8.5
Egypt ^a	14.0	27.0	Chile	5.3	13.9
Jordan ^a	10.6	15.4	Colombia	2.8	4.9
Libya ^d	1.4	2.3	Guatemala	2.4	3.3
Morocco	7.0	13.4	Mexico	0.4	9.3
Syria	5.7	18.4	Peru	6.6	10.5

^a 1973–76 ^b 1965–75 ^c 1966–76 ^d 1967–76 ^e 1968–75

Note: All food import values at commercial prices, including food aid.
Source: Valdes and Konandreas, 1978.

Sri Lanka), during 1965–76 the mean ratio was less than 15 per cent, which, in our opinion, does not indicate a severe constraint during normal years. However, this ratio reaches significantly higher levels in unfavourable years. In Table 1, one observes that for some countries with “low” average ratios such as Tanzania and Syria, exceptionally unfavourable years raise this ratio by a multiple of more than four. This ratio becomes intolerably high, particularly in Asia, and in Egypt, Tanzania, and Senegal. The ratio remains remarkably low even at its maximum values in a few countries such as Nigeria, Libya, and Colombia.

There is a common impression, implicit in most of the discussion about the food gap projections of developing countries, that the weight of the food import bill measured, for example, as a ratio of total export revenues is increasing. Thus, the use of an “average” ratio for the period 1965–76 might understate the true magnitude of the problem of financing food imports by not revealing an upward trend in this ratio. This is, in fact, the case for some LDCs such as Sri Lanka, Morocco, and Chile, but it should not be generalized to describe the situation of LDCs in general. In fact, for many LDCs export revenues have increased faster than the value of food imports. As we can see in Table 2, the situation is mixed, as the trend varies sharply according to the country in question.

3 INTERNATIONAL POLICY ALTERNATIVES

There are two different but related approaches, currently discussed, to the problem of food security. One addresses itself to the question of world food security, in particular, world price stabilization mechanisms. The other addresses issues of food security for a sub-system of the world, namely, food deficit developing countries. For the latter, trade is an option, which is less attractive the more prices fluctuate.

Greater price stability in the world market for food is an important

TABLE 2 *Food import bill/total export revenue ratio (per cent)*

	1965–67 average	1974–76 average
India	39.4	19.7
Indonesia	7.1	6.0
Republic of Korea	13.4	9.2
Philippines	6.7	4.4
Sri Lanka	21.1	40.4
Morocco	8.0	11.5
Brazil	9.4	4.9
Chile	3.2	10.5
Colombia	2.9	3.5

Note: All food import values at commercial prices, including food aid.

element for food security in LDCs, as its fluctuations may aggravate fluctuations in the food import bill resulting from production shortfalls in domestic markets. As mentioned earlier, however, historically for most countries it is the variability of import volume that explains most of the variability of the food import bill. Thus, world price stabilization schemes do not solve, but might alleviate the burden of consumption stabilization in LDCs. Moreover, of course in themselves these schemes do not address aspects of financing food imports.

Several international approaches are currently being discussed which could contribute to food security in LDCs. These approaches include: (a) greater reliance on the responsiveness of grain reserves systems; (b) financial approaches to alleviate the foreign exchange constraint, and (c) consumption adjustments in developed countries. Political support for each of these initiatives is still, however, quite uncertain.

Grain reserves

In some food deficit LDCs, progress has been made towards building food storage programmes, assisted by international organizations. Examples of such schemes are FAO's Food Security Assistance Scheme (FSAS), bilateral food aid programmes, and some country projects financed by the World Bank. The objective of these programmes is to help LDCs through technical assistance and financial support for the design of storage programmes and distribution infrastructure. Given the relatively small size of the programmes (total contributions to FSAS in 1978, for example, were only \$27 million), it seems to us that efforts should go first to the often lacking infrastructure to support working stocks (intra-year) rather than to provide year to year reserves, apparently the thrust of some programmes as they exist now.

Reserve stocks are needed only to supplement imports, and not to provide year to year internal price stability through the use of large buffer stocks. As Reutlinger (1978) has shown, the price stability objective can be achieved at a relatively lower cost primarily through varying the level of imports. Thus, except in the case of large grain importers, attempts to build buffer stocks may place an unnecessarily heavy burden on LDCs.

This approach requires, however, that there are adequate stocks held elsewhere in the system. But, to the extent that variations in the demands placed on these stocks by different countries may cancel one another out, the world can economize on the total level of reserves required.

Leaving aside politically unrealistic suggestions for internationally owned and managed buffer stocks, proposals under the International Wheat Agreement (IWA) call for a nationally owned, internationally co-ordinated system of grain reserves. Undoubtedly grain reserves could be managed to reduce world price variability, but the collapse of the IWA negotiations in February 1979 confirms the suspicion that an agreement on price levels and on the size and cost sharing of the reserves that would consider simultaneously market realities and accommodate LDC requirements was most unlikely. If the abundant research on grain

reserves is used for clarification, it appears that price stability and world food security *per se* do not have much to offer for the exporters. Their interest lies in getting the rest of the world to share the cost of maintaining their domestic price support programmes. Since the LDCs perceive that these price programmes will result in large stocks being held by the exporters in any case, they have little incentive to reach an agreement.

Some analysts argue that, although its tangible effect on stocks and price bands would have been questionable, a new agreement would have allowed an active periodic review of market conditions and national wheat policies by senior policy makers, thus avoiding a repeat of the 1972/73 situation. In this sense, the collapse of the wheat negotiations poses a threat to LDCs; this should strengthen the incentives for developing alternative policy instruments which are relevant to food security.

Trade policies in developed countries

It is well recognized today by researchers in the field that a large fraction of world market price variability in cereals – between a third and a half – resulted from national policies as more countries, particularly developed countries, insulated domestic prices from conditions in world markets. Thus, the need for a large stock of grain reserves required by the world food system is due more to government policy than to nature. In this sense, consumption adjustments represent a direct alternative to variations in stocks. However, as a result of domestic price stabilization objectives, little progress is envisaged as to what could become acceptable policy proposals for the required changes in the system of protection.

Alleviating the foreign exchange constraint

Variable food aid programmes and compensatory financing for commercial imports represent the two major groups of policies which have been discussed recently.

Under the *variable food aid programmes*, such as the grain insurance programme suggested by D.G. Johnson, the United States, alone or in co-operation with other donors, would “guarantee to each developing country that in any year in which grain production declines more than a given percentage below trend production that the shortfall in excess of that amount would be supplied” (Johnson, 1978). A substantial degree of internal price stability could be achieved at low cost for each developing country. The results by Johnson indicate that food security could be achieved by modifying the distribution pattern of food aid, without significant increases in the average amount of food aid given in the long run. However, donor countries would have to change their food aid policies with respect to the required store of grain, the management of the variable food aid component, and the political criteria for eligibility.

Additional commitments by donors could be made in a renegotiated Food Aid Convention, as part of the International Wheat Agreement. These could be grants or concessional loans, depending on the income

level and foreign exchange capacity of the recipient countries. Calculations by Huddleston indicate that "whereas for the entire period 1970-75, food aid flows substantially exceeded the variable requirements of LDCs (to achieve stability in supplies), the 5.9 million ton food aid flow in 1974-75 fell short of the amount of compensation required by two million tons". The same study shows that historically, the donor countries "chose to use a substantial portion of their restricted supply for purposes other than meeting the variable food security requirement. . . ." (Huddleston, 1978).

Up to now, concessional food sales have been dependent upon erratic surpluses in donor countries, and hence can hardly be considered a dependable base for food security in LDCs. Unlike the pattern for food aid in the past, food aid should increase when prices are high. Thus, minimum quantity guarantees are essential to food security. Moreover, political considerations are so important for eligibility that LDCs are unlikely to feel secure if they have to rely only on food aid programmes that are passed on an annual basis by the legislature.

The previous discussion on variable food aid facilities is very much tied to the availability of food grain stocks in the developed exporting countries. This has a number of implications which adversely affect the political feasibility of such schemes: (a) the burden of aid is unevenly distributed among donor countries and rests overwhelmingly on the grain exporting countries; (b) negotiations on the issue of provision of food security to the developing countries would be confounded with other issues such as the size of stocks and their management with resultant expansion on the areas of disagreement. We do not wish to imply that the demand for stocks is unrelated to the existence of this facility. On the contrary, as will be seen below, the facility will definitely increase the demand for stocks. What we are saying is that the negotiations on the issues can be kept separate.

The *financial food facility* has the advantage of simplicity. It protects member countries against fluctuations in the cost of cereal imports by providing foreign exchange in years of above-trend food imports. It has an added advantage in that the financing is made available to the government which is thus directly helped in maintaining food prices by subsidies when the price of imported food has risen. Possible approaches include enlarging the scope of existing compensatory financing schemes such as the existing IMF facility or the STABEX scheme to include the cost of cereal imports on the one hand or setting up an altogether separate facility on the other.

Fluctuations of a country's food import bill may coincide with fluctuations in its export earnings, and thus a country should have no problem in financing food imports. Results of our computations indicate the extreme sensitivity of the expected withdrawals with respect to whether or not the facility is adjusted for export earnings and with respect to the country coverage.

Table 3 illustrates this sensitivity of our calculations with respect to the

TABLE 3 *Financial facility to cover all fluctuations in cereal imports of food deficit LDCs in US\$ billions, constant 1976 (1965–76)*

	67 countries ¹	34 MSA countries ²
A. Sum of excess food imports		
actual food imports	12.0	6.8
consumption stabilizing imports*	22.9	13.2
B. Sum of increase in compensatory financing for export earnings adjusting for variability in the cost of cereal imports		
actual imports	2.9	3.0
consumption stabilizing imports*	12.6	9.5

* Excludes major oil exporters as defined by IMF, namely, Algeria, Indonesia, Iran, Iraq, Libya, Nigeria, Saudi Arabia and Venezuela.

² Most seriously affected countries (MSA) as defined by FAO.

* Computed as imports required to achieve consumption at the trend level for the period 1965–76.

country coverage (columns 1 and 2) and to whether or not the facility is adjusted by export earnings (sections B and A respectively). This calculation covers 100 per cent of the above-trend food import bill; another possibility is to cover only a fraction of the excess import bill.

It is our belief that some form of subsidy is essential for this scheme, because many poor countries would not be in a position to contribute significantly to financing a self-sustaining fund. However, this does not imply that the facility should operate on a grant basis for all countries. It would require that the facility have the flexibility to distinguish among country situations, similar to that of the IMF's Trust Fund, and the World Bank's IDA loans. Also, a totally subsidized scheme may induce misuse, and hence it is of strategic importance to cover something less than the full adjustment, and to require the recipient to bear a proportion of the cost of participation in the facility.

The existence of this facility would tend to reduce the elasticity of LDC import demand with respect to the world price as well as to increase the variability of this demand. These two consequences would increase both the need for and the profitability of holding stocks. There is as yet no research that examines the issue of whether the increased profitability would by itself induce sufficient stock accumulation to match the need.

A limitation common to the variable food aid scheme and the food facility scheme (to the extent that the latter has a concessional element) is that both rest on the availability of accurate information on production shortfalls. Although many claim that this is an insurmountable problem, particularly for the poorest LDCs, we share the optimistic belief that the existence of such schemes will in itself induce greater effort at overcoming problems whose solution, after all, is not *technically* difficult.

Interesting as the question is, we have not, due to space limitations, explored here why such a facility should or should not be expanded to insure the entire import bill of the member LDCs.

REFERENCES

The following papers used as references were all presented at the *IFPRI—CIMMYT Conference on Food Security for Developing Countries*, El Batan, Mexico, November 1978, and are part of a forthcoming publication of proceedings.

Huddleston, Barbara, "Grain Reserves, Food Aid, and Food Insurance: How a Comprehensive Scheme Might Operate."

Johnson, D.G., "Grain Insurance, Reserves and Trade: Contributions to Food Security for IDCs."

Lele, Uma and Wilfred Candler, "Food Security: Some East African Considerations."

Reutlinger, Shlomo, "Policy Options for Attaining Food Security: Feasibility, Effectiveness and Costs."

Valdes, Alberto and Panos Konandreas, "Assessing Food Insecurity in Developing Countries," Table 2.

DISCUSSION OPENING – LAWRENCE WITT

My congratulations to Drs Valdes and Siamwalla on preparing a comprehensive and interesting paper, and doing so within the rigid space limitations urged by the programme committee. I have five points to make in opening this topic for discussion.

First, I wish to re-emphasize the limited focus specified by the authors on the first page. The paper deals with national level, food security problems caused by year-to-year fluctuations in the harvest. On the next page, the authors touch on but do not elaborate many problems that may arise in assessing the need for additional food supplies and in actually making such supplies available where most needed. But the rest of the paper concentrates on supra-national efforts to assist national governments. I suggest that other discussants should remember that the Conference Programme has in this session shifted to the latter level of analysis.

Second, I believe the authors should have been as critical of the data on variability in food consumption, cited on the third page of the paper, as they were earlier on production statistics. Many of the national consumption statistics are derived as a residual, by adding and subtracting imports and exports from production with certain standard adjustments for seed, waste and industrial use. Thus, consumption figures suffer from some of the same statistical deficiencies as do production figures. Close examination of year-by-year consumption figures for some countries, including some major developing countries, provide unbelievable variations in consumption per caput. When they suggest that two-thirds of the LDCs have a consumption variability exceeding seven per cent, I wonder whether they are identifying wide variations in consumption or serious

inadequacies in available statistics.

While some consuming groups within a country may suffer from significant year-to-year variations in consumption, I am arguing that the ability of other groups to maintain more stable levels of consumption is not fully identified by the process by which national levels of consumption are estimated. These adjustments include private stocks carried into the next crop and marketing year, production and use of supplementary crops, etc. However, this comment does not deny the national need for supra-national programmes to help offset harvest shortfalls; it does argue for caution in estimating the size of the deficiency, whether based on consumption or production statistics.

Third, I would have placed greater emphasis than did the authors on the increased variability in the supply of grain imposed by the trade policies of the developed countries and including the Soviet Union. A large part of the food crisis of 1973–74 came as a result of policies followed by Western Europe, Japan and the USSR to maintain grain prices and availabilities at pre-existing levels, or nearly so, thus imposing a greater variability in both prices and supplies available to consumers in the major exporting countries and the LDCs. And among the LDCs, there were many with prices, import policies and foreign exchange availabilities to maintain internal food grain supplies, thus further increasing the variabilities imposed on the others.

Several of the existing proposals to alleviate the variability in food supplies to the LDCs could have the same effect of exacerbating the variability in the residual grain supplies available in world markets.

Fourth, such policies impose great variability in prices and supplies on the domestic livestock producers in the exporting countries and could lead to pressures to subject exports to some form of allocation.

This leads to my fifth point. I doubt that programmes that attempt to insure food supplies to the LDCs, whether through variable food aid, foreign exchange assistance, or modest levels of grain reserves, are likely to solve the problem unless there are complementary actions on the part of the developed countries. When world production declines in a particular year, the developed countries too must conserve in the use of grain by reducing consumption, decreasing national stocks, turning to alternative foods and feeds and seeking to expand production in the next crop period.

I conclude that the topic under discussion is important to all of us. It cannot be resolved by the LDCs by themselves or by certain supra-national programmes directed towards the LDCs as a group. When food crises threaten to arise, the equitable resolution of these problems requires adjustments in the bread, butter, meat and milk available in all the world. The authors mention but do not emphasize this point. I suggest that both trade and internal policies in the developed countries, including the socialist countries, need to recognize this also.

GENERAL DISCUSSION – RAPPORTEUR: WAYNE LAMBLE

The observation was made, with which the authors agreed, that many LDCs, especially in Africa, attempt to deal with the food insecurity problem with programmes to store grain and other foods and that this seems to be a very expensive approach.

Another speaker maintained that programmes to address the problem of food insecurity can have a negative (undesirable) affect on income distribution – especially for farmers, giving rice production in the Philippines as an example.

The point was also made that there might be a contradiction between a “cheap food policy” to deal with food insecurity problems and a “high price food policy” to encourage food production.

In their reply the authors of the paper agreed with the comments on data on food consumption variability, but noted that little is known about this important variable. They acknowledged the importance of trade policies on food instability.

They also noted the income loss in the Philippines due to continued high production of rice in spite of a relative disadvantage of doing so and a policy to distribute that loss primarily on the producer.

Finally they suggested that programmes to deal with food insecurity should be more target oriented towards cheap food distribution programmes.