

Improving Food Security in Developing Countries: A Role for the IMF *

I. Introduction

The precariousness of the food security situation in many less developed countries (LDCs) continues to be a matter for international concern. Despite the progress that has been made in increasing world production of cereals and other major foodstuffs, many LDCs continue to face serious difficulties in ensuring an adequate level of food supplies on a regular year to year basis. Recent events in the Horn of Africa have once again demonstrated the vulnerability of low income economies to a sudden shortfall in food supplies and have highlighted the need for additional measures to strengthen food security in LDCs.

The focus of the present paper is upon the problem of short-term food insecurity, as manifested in variability in year to year *per capita* consumption. It should be remembered, however, that these short-term insecurity difficulties frequently intensify an existing longer-run, structural food insecurity problem, where significant sections of the population are suffering from chronic and persistent malnutrition. World Bank estimates suggest that in the mid-1970s as much as 40 to 60 per cent of the population in LDCs had a calorie intake below the minimum recommended level (Knudsen and Scandizzo, 1979). As Mellor and Johnston (1984, p. 545) have observed in their recent survey of the world food situation, "malnutrition, however defined, is a huge and persuasive problem in less developed countries".

* The Author is Senior Lecturer in Economics, University of Manchester, and currently Visiting Senior Fellow, Department of Economics and Statistics, National University of Singapore. The paper draws on previous work on food security issues undertaken in collaboration with C. Green and D. Diakosavvas. The usual caveat applies.

In this paper it is argued that fluctuations in *per capita* food consumption levels are the direct result of a shortage of foreign exchange which limits the capacity of low income countries to obtain the level of food imports necessary to offset a sudden shortfall in domestic production and/or an increase in world prices. It is suggested, therefore, that the international community could play a significant role in the alleviation of the food insecurity problem in LDCs through the provision of concessionary finance for the funding of exceptional food import requirements. The use of existing facilities operated by the International Monetary Fund is proposed as a source of this financing of food import needs.

II. The Magnitude and Sources of Food Consumption Instability

Many low income economies experience sizable annual variations in *per capita* consumption levels. Green and Kirkpatrick (1982) found that for a sample of fifty LDCs covering the period 1965-77, almost half experienced a shortfall in *per capita* cereal consumption of at least 2.5 per cent once every third year, and forty countries experienced such a shortfall one year in four. Where such a shortfall is unevenly distributed, the impact upon the already uneven consumption pattern can be severe for the poorest sections of the population, and under plausible assumptions an average shortfall of 2.5 per cent could translate into a shortfall of 10 per cent for as much as 30 per cent of the adult population (Green and Kirkpatrick, 1982, p. 182).

Short-run food insecurity is caused by two main factors — fluctuations in domestic production and in food import costs. There is evidence to suggest that the variability of both variables has increased in recent years. Hazell (1984), for example, estimates that between the periods 1960-61 to 1970-71 and 1971-72 to 1982-83 there was a net increase in the variability of world cereals production of 22 per cent. The past decade has also been a period of increased variability in the world market price of major cereals. Blandford (1983) finds that on average world grain prices were considerably more unstable in the 1970s as compared to the 1960s. This result holds even if the effect of the two years of rapidly increasing prices, 1972-73 and 1973-74, are removed (Blandford, 1983, p. 383).

In principle, fluctuations in food production and/or import prices need not result in consumption instability. A shortfall in consumption could be avoided by holding a portfolio of assets in the form of food stocks and foreign exchange, which could be used to offset the potentially adverse impact on consumption of a production or price shock. In practice, however, the ability of a LDC to adopt this form of stabilisation policy is severely limited. In the majority of low income food importing countries domestic food stocks are either non-existent or much below target. Foreign exchange shortages mean that an increase in expenditure on food imports has a high opportunity cost, since it can only be financed by a cutback in non-food imports, many of which are essential for sustaining the development effort. The result has been that short run declines in food production and increases in food import prices have been translated into downward adjustments in consumption standards.¹

The short run food insecurity problem in LDCs can be summarised therefore as a foreign exchange constraint. The fundamental determinant of the degree of food insecurity that a country experiences is the availability of foreign exchange with which to purchase the imports necessary to stabilise consumption levels.

III. Recent Initiatives to Improve Food Security

Wheat Trade Negotiations

Proposals for the stabilisation of international grain prices date back to the 1930s, since when various conventions aimed at regulating the international wheat trade have operated with varying degrees of success. Following the unprecedented increase in food prices during the international food crisis of 1972-74, the international community agreed to proceed with new negotiations aimed at establishing an internationally coordinated system of nationally held grain reserves, to be used for the primary purpose of reducing the short run variability in the international wheat price. In 1971 an International Wheat Agreement had been negotiated with two elements, a Wheat Trade Convention and

¹ For evidence of this adjustment process in the countries of sub-Saharan Africa, see DIAKOSAVVAS and KIRKPATRICK (1985).

a Food Aid Convention. The Wheat Trade Convention established a consultative mechanism for the main trading countries within the International Wheat Council (IWC), and the Food Aid Convention dealt with the minimum cereal food aid commitments of the Council members. The 1971 Convention did not contain substantive economic provisions — such as price ranges or quantitative supply and purchase commitments — which would directly regulate the international wheat market. Between 1977 and 1979 considerable efforts were made under the auspices of the IWC to negotiate a new international wheat agreement that would create an internationally coordinated system of nationally held reserves. However, failure to reach agreement on the issues of the ceiling and floor-prices, the size of reserve stocks, and special provisions for the LDCs, led to the collapse of the negotiations in February 1979.² The IWC subsequently considered proposals for a less ambitious agreement with more modest national reserve levels and with market intervention for accumulation and release to be by consultation between participants. This "Alternative Approach" was considered in July 1981, but was again unacceptable to all parties, and agreement was reached only on the renewal of the old Convention.³

With the failure to achieve an international agreement that would bring about greater stability in international wheat prices and supplies, attention has shifted to the consideration of other means of improving food security in LDCs. Two proposals in particular have been widely discussed: the provision of balance of payments support to offset the additional import costs resulting from crop failure or abnormally high import values, and the establishment of national food security reserves.

IMF Food Facility

Following requests made by FAO and the World Food Council in 1979, the International Monetary Fund (IMF) considered the feasibility of extending financial assistance to members to meet their variable commercial food import needs. In May 1981 the IMF's Executive Board announced its decision to extend compensatory financing assistance to

² MORROW (1981) provides a detailed account of the negotiations on a new International Wheat Agreement.

³ At the 27th session of the IWC held in November-December 1982, the Council agreed to extend the Convention, for the seventh time, until June 1986. The Food Aid Convention was also extended until 1986.

members encountering balance of payments difficulties produced by increased cereal import costs.⁴

Rather than establishing a separate facility for cereal imports, the existing Compensatory Financing Facility (CFF) for export fluctuations was amended to give members the option of making compensatory drawings on cereal import cost excesses and export receipt shortfalls. An excess in cereal imports is calculated as the c.i.f. cost of such imports (excluding concessional cereal imports) in a given 12 month period, less the arithmetic mean of the country's cereal imports for the 5 year period centred on the excess year. Since the financing of cereal imports is integrated with the financing of export shortfalls, the country's entitlement is determined by the net amount of the cereal import excess and the export shortfall. The total amount of the purchase and the amount of each component are subject to certain limits: the amount of compensation in relation to import excess or export shortfall cannot exceed 83 per cent of a member's quota, and the combined amount for exports shortfall and import excess cannot exceed 105 per cent of quota.⁵

There are several additional conditions on the use of the amended CFF. The cereals import excess must be temporary and be the result of circumstances beyond the country's control; the member must have a balance of payments need; the member must agree to cooperate with the Fund in finding appropriate solutions to its balance of payments difficulties. If a country opts to use the amended facility, then it must continue to so for a minimum of three years.

In the three and a half years since the food facility was introduced, members have made only limited use of it. At the end of 1984, nine purchases amounting to 850.1 million SDRs had been made by six countries (Table 1). However, this figure overstates the amount of compensation received for cereal import cost increases, for two reasons. First, in several cases the cereal excess has been offset by a negative export shortfall — this occurred in the case of Malawi (October 1981) and Korea (January 1982). Second, a number of drawings attributed to the amended facility related only to export shortages — Malawi, (March 1983 and August 1984) and Korea (June 1984). Adjusting for these considerations, the compensation relating directly to cereal import

⁴ For a description of the negotiations leading up to the establishment of the food facility, see ADAMS (1983).

⁵ The quota limits were reduced from 100 and 125 per cent in January 1984.

TABLE 1

DRAWINGS UNDER CEREALS PROVISION OF CFF
(million SDRs)

Country	Date of Purchase	Net Amount	Cereal Excess	Export Shortfall
Malawi	October 1981	12.0	18.7	- 6.7
	March 1983	12.2 ¹		12.2
	August 1984	13.8 ¹		13.8
Korea	January 1982	106.2	570.2	-464.0
	June 1984	279.7 ¹		279.7
Morocco	April 1982	236.4	123.4	113.0
Kenya	May 1982	60.4	31.6	28.8
Bangladesh	August 1982	71.2	33.6	37.6
Ghana	December 1984	58.2 ²		

¹ The published sources do not provide information on the difference between 'gross' export shortfall and negative cereal excess, if any.

² The drawing is related to both a shortfall in export earnings and excess in cereal costs: the size of each component is not reported in published sources.

Source: IMF Survey, various issues.

excesses amounts to 306.8 million SDRs, less than half the amount accredited to the food facility.⁶

National Food Security Reserves

The contribution of national food reserves to improving LDCs' food security has received only limited attention in the past. It has generally been argued that national reserves are an economically inferior means of achieving food security since the level of reserves needed to produce a given level of insurance will be much greater if held nationally than if held on a collective basis. Furthermore, the cost of holding reserves in LDCs is higher: according to World Bank estimates the cost of holding a ton of grain in developing countries is at least twice the storage costs in North America.

⁶ Excluding Ghana's drawing in December 1984.

However, with the failure of attempts to establish a system of internationally coordinated cereal reserves, the role of national food security reserves as a "second-best" element in an effective food security scheme becomes more important. This has been recognised by the FAO and the World Food Council, both of which have emphasised the need to establish adequate food security stocks in low income LDCs (FAO, 1984, WFC, 1982).

To prevent a consumption shortfall, a country needs to be able to procure food supplies rapidly. However, the nature of the short-run food insecurity problem means that these exceptional needs will arise with little advance warning, particularly in countries where a second, short harvest may be critical in determining whether a country experiences a food shortage in any given year. The immediacy of the need for additional supplies suggests that a country must know in advance, with a high degree of certainty, that the necessary resources will be available. The delays that most developing countries experience in arranging purchases and shipment, together with the internal transportation and distributional bottlenecks that exist in many of these economies, means that there are inevitable lags in supplying imported foodstuffs (WFC, 1982a). Locally held reserves ensure that an immediate response can be made to sudden shortages.

Most LDCs have formulated national stock policies to safeguard domestic food security. A recent report to the FAO Committee on World Food Security noted that 80 developing countries have adopted explicit stock policies in accordance with FAO's 1979 *Plan of Action* recommendations (FAO, 1984). But, in most LDCs the existing food security stocks are much below target or non-existent. The International Wheat Council's recent review of the national stockholding situation found that:

"Although the stockholding policies of many developing importing countries are intended *inter alia* to protect them from the effects of international shortages and high market prices, many have not yet been able to build up stocks to their intended targets. The main reasons are lack of finance and inadequacy of storage facilities. Stocks currently held by most developing countries will not suffice to protect them against prolonged periods of declining availabilities and resulting price increases. In some of these countries the margin of security— if in fact there is one— is barely a few weeks" (IWC, 1983, p. 21).

The establishment of national reserve stocks requires domestic production surpluses, or sufficient foreign exchange to purchase commercially supplied food imports, or sufficient food aid to support stock-

building. In practice, the ability of a low income food deficit country to exercise these options is severely limited. Given the low levels of average consumption, a temporary increase in production is likely to be used for immediate consumption purposes. Food aid can play an important role in meeting the food needs of low income countries. However, shipments have declined significantly in recent years, both in absolute terms and as a share of total cereal imports (Huddleston, 1984). Furthermore, there appears to be a lack of correspondence between the pattern of food aid inflows and the import needs of individual LDCs (Huddleston, 1981). The ability of low income countries to increase commercial food imports is, as was argued in Section II, severely constrained by foreign exchange shortages. These considerations suggest, therefore, that the provision of additional finance for the purchase of food imports would enable the food deficit countries to establish national food reserves, and would thereby contribute to an improvement in their food security situation.

IV. An Increased Role for the IMF

It has been argued that the short run food security problem in many developing countries is the result of a limited capacity to purchase imports in time of need. In this section we consider how the IMF might play a more significant role in the alleviation of food insecurity through the provision of concessionary finance for the funding of exceptional food aid requirements.

Reforming the Food Financing Facility (FFF)

We have seen that only limited use has been made of the Food Facility. About this experience, the Director-General of FAO has commented: "The IMF facility provides some relief for balance-of-payments difficulties and marks a breakthrough in recognition of the importance of the cereal import problem but it needs to be improved." (FAO, 1983).

The limited impact of the Food Financing Facility is a reflection of its inherent limitations. Previously we have argued that the fundamental weakness of the FFF is its integration of export earnings and cereal

import costs in the same facility, so that a cereal excess is regarded as a negative export and compensation is based on the net export shortfall from trend (Green and Kirkpatrick, 1981). There is a fundamental difference between the main objectives of compensatory financing for foodstuffs, and for exports. The latter is directed at stabilising foreign exchange receipts, whereas the purpose of compensatory finance for foodstuffs is the stabilisation of domestic food consumption and not food imports *per se*. Variations in food imports will result in part from variations in domestic food production that induce adjustments in the domestic economy which will not be reflected in a straightforward way in the international accounts. The implication of this consideration is that an effective food facility would need to take into account more information than that provided by the observed value of food imports. The optimal compensation rules for exports may well be sub-optimal when applied to imports because the objective of such compensatory financing is the stabilisation of some variable other than imports.⁷

Lack of data prevents us from assessing the effectiveness of the existing arrangements in stabilising consumption levels in the countries which have drawn on the FFF. What can be asserted with confidence is that the integration of cereal imports with exports earnings will have meant that a number of countries have not received full compensation for the estimated excess in cereals import expenditure.

Two further limitations of the amended CFF can be noted. The limits placed on a country's access to the facility's resources are based on the individual country quotas. By linking cereal imports compensation with export compensation, the amount of *net* additional resources available under the new scheme is effectively limited to 22 per cent of quota, much less than would be available under a separate scheme. Finally, the restriction of the facility to cereals reduces its usefulness to those countries where non-cereals represent a significant share of food consumption. To the extent that imports of non-cereal foodstuffs are a significant component in a country's food needs, the IMF scheme offers only a partial means of meeting a rise in import requirements.

It appears that in its present form the IMF's amended CFF is unlikely to succeed in making a significant contribution to the alleviation of food insecurity in developing countries. To enable the facility to play a more effective role, certain reforms can be proposed. Of these,

⁷ For a formal demonstration of this argument, see GREEN (1983).

the separation of cereal import compensation from export earnings compensation is the most important. The establishment of a separate facility would significantly increase the amount of assistance that a member country could obtain. It would also make it possible to distinguish between the volume and value of cereal imports. In the case of export compensation it is irrelevant whether the shortfall is caused by a decline in price or volume of exports — the purpose of the compensation is simply to restore a given purchasing capacity over real resources. In the case of imports, however, an increase in the world price may well result in a reduction in the volume of imports accompanied by a change in value. Compensation based on import values alone will therefore understate the need of that country for assistance.⁸

In the absence of significant reforms in the present structure and operations of the Food Financing Facility, it is likely to continue “to suffer from the weakness of appearing to satisfy the form of tackling food insecurity while failing to deal with the substance of the problem” (Green and Kirkpatrick, 1982, p. 146).

Amendment to the Buffer Stock Financing Facility (BSFF)

The BSFF was established by the IMF in June 1969. The facility is intended to assist members in balance of payments need in making their financial contributions to approved international buffer stocks of primary products. Since the establishment of the facility, Fund assistance has been extended to 18 countries in connection with agreements covering tin, sugar, and rubber. Total drawings have amounted to 558 million SDR (IMF, 1984, p. 79).

There have been several proposals in recent years that the BSFF should be used for the purpose of financing the establishment of food security reserves in LDCs. At its meeting in October 1980, the International Wheat Council received a statement from the IMF's representative on how the Fund might provide assistance through the BSFF to enable countries to meet the domestic reserve stock obligations of the proposed 'Alternative Approach' to a new Wheat Convention.⁹

⁸ The IMF's Oil Facility was based on a separate analysis of price and quantity, and there does not appear to be any great difficulty in distinguishing between the two.

⁹ A summary of the IMF statement is included as Annex A in the International Wheat Council *Annual Report*, 1980-81.

The World Food Council has also recommended the use of the BSFF for the financing of food reserves in LDCs (WFC, 1982).

When it was established, the BSFF was intended to complement the CFF by “... intervening one link further back in the causal chain by making finance available for the support of arrangements designed to dampen price fluctuations, thereby reducing the variability of exports receipts” (IMF, 1981, p. 48). In a similar way, the use of the buffer stock facility to finance the establishment of food security reserves, by intervening at an earlier stage, could reinforce the food financing facility's objective of helping members to prevent short-term shortfalls in food consumption standards.

The use of the BSFF for financing domestic food security reserves would not appear to be in conflict with the facility's basic principles. The facility has already been used to finance domestic stockholdings under the International Sugar Agreement, and the issue of verification of stocks has been satisfactorily resolved. The main obstacle to the use of the BSFF for food security purposes would appear to be the existing requirement that national stocks be subject to international control. Normally this involves the buffer stock authority in authorising the release of domestic reserves in response to an upward movement in the international price of the commodity concerned. However, since for most LDCs the main source of short run food instability is variations in domestic production (Green and Kirkpatrick, 1982; Reutlinger and Knapp, 1979), an arrangement which tied the release of stocks to a “trigger” price level would restrict the ability of countries to respond to domestic shortages.

The use of the BSFF for food reserve purchases would make a positive contribution to improving food security, additional to that of the food facility. A member could be eligible to draw simultaneously from the BSFF and the amended CFF if, for example, international cereal prices had risen significantly and at the same time, domestic food security reserves were below the target level. Alternatively, a member could fail to establish eligibility under the CFF when, for example, international cereal prices were low, but qualify for BSFF assistance if reserve stocks were sub-optimum. It would be necessary, however, to introduce some procedure to avoid double compensation when, for example, import costs rose as a direct result of domestic stockholding.¹⁰

¹⁰ The procedures used to avoid double compensation with the CFF and existing buffer stock agreements, are described in IMF (1980) pp. 34-36.

The structure and operating criteria of an "amended" BSFF would require further detailed study. It appears, however, that the use of the Buffer Stock Financing Facility for the purpose of financing food security reserves would be consistent with IMF's general objectives and principles, and could be seen as a logical extension of the Fund's existing commitment, through the food financing facility, to assist low income countries facing balance of payment difficulties in meeting their food security needs.

V. Concluding Comments

Short run variations in food consumption continue to be a serious problem in many developing countries. In this paper it has been argued that the inability of most LDCs to insulate food consumption from short term fluctuations in production and import prices is the direct result of a foreign exchange constraint which limits their capacity to vary food imports in response to increased need.

The international community can play an important role in the alleviation of the food insecurity problem in LDCs through the provision of access to concessionary finance for the funding of exceptional food import requirements. As the main international source of short term balance of payments assistance, the IMF has a major role to play in this context. Two proposals have been considered: the liberalisation of the existing food facility for the financing of exceptional food import costs, and the use of the Buffer Stock Financing Facility to finance the setting up of national food security reserves.

It is recognised that an improvement in the LDCs' access to sources of finance for food imports will not eliminate the food insecurity problem. Domestic policies towards income maintenance, pricing and distribution of food supplies will also play an important role in determining the degree of consumption instability and deprivation experienced by vulnerable sections of the population. But taken in conjunction with appropriate internal policies, increased financial assistance by the international community could make a significant contribution to the reduction of food insecurity in the developing world.

Manchester

C.H. KIRKPATRICK

BIBLIOGRAPHY

- ADAMS, R.H. (1983), "The Role of Research in Policy Development: The Creation of the IMF Cereal Import Facility", *World Development*, Vol. 17, pp. 549-563.
- BLANDFORD, D. (1983), "Instability in World Grain Markets", *Journal of Agricultural Economics*, Vol. XXXIV, No. 3, pp. 379-395.
- DIAKOSAVVAS, D. and KIRKPATRICK, C. (1985), "Food Insecurity and the Foreign Exchange Constraint in Developing Countries: The Case of Sub-Saharan Africa", mimeo.
- FOOD AND AGRICULTURE ORGANISATION (1983), *Report of the Director-General on Food Security*, Committee on World Food Security, Rome, April.
- FOOD AND AGRICULTURE ORGANISATION (1984), "Review of the Implementation of the Plan of Action on World Food Security" Committee on World Food Security, Ninth Session, Rome, January.
- GREEN, C. (1983), "Insulating Countries Against Fluctuations in Domestic Production and Exports", *Journal of Development Economics*, Vol. 12, pp. 303-325.
- GREEN, C. and KIRKPATRICK, C. (1981), "Insecurity, Food Financing and the IMF", *Food Policy*, Vol. 6, pp. 135-146.
- GREEN, C. and KIRKPATRICK, C. (1982), "A Cross-Section Analysis of Food Insecurity in Developing Countries: Its Magnitude and Sources", *Journal of Development Studies*, Vol. 18, No. 2, pp. 185-204.
- HAZELL, P. (1984), "Sources of Increased Variability in World Cereal Production", paper prepared for IFPRI Workshop on Food and Agricultural Price Policy, Elkrigde, Maryland, April.
- HUDDLESTON, B. (1981), "Responsiveness of Food Aid to Variable Import Requirements" in Valdes A. (ed.) *Food Security for Developing Countries*, Westview Press, Boulder.
- HUDDLESTON, B. (1984), *Closing the Cereals Gap with Trade and Food Aid*, Research Report 43, International Food Policy Research Institute, Washington D.C.
- INTERNATIONAL MONETARY FUND (1980), *Compensatory Financing Facility*, Pamphlet Series No. 34, IMF, Washington D.C.
- INTERNATIONAL MONETARY FUND (1981), *The International Monetary Fund: Its Evolution Organisation and Activities*, Pamphlet Series No. 37, IMF, Washington D.C.
- INTERNATIONAL MONETARY FUND (1984), *Annual Report*, Washington D.C.
- INTERNATIONAL WHEAT COUNCIL (1983), *National Stockholding Policies*, Secretariat, Paper No. 13, IWC, London.
- JOHNSON, D.G. (1984), "Alternative Approaches to International Food Reserves", paper presented at Symposium on World Food Security, Rome, September.
- KNUDSEN O.K. and SCANDIZZO, P.L. (1979), *Nutrition and Food Needs in Developing Countries*, World Bank Staff Working Paper No. 328, World Bank, Washington D.C.
- MELLOR, J.W. and JOHNSTON, B.F. (1984), "The World Food Equation: Interrelations Among Development, Employment, and Food Consumption", *Journal of Economic Literature*, Vol. XXII, pp. 531-574.
- MORROW, D. (1981), "The International Wheat Agreement and LDC Food Security" in Valdes A. (ed.) *Food Security for Developing Countries*, Westview Press, Boulder.
- REUTLINGER, S. and KNAPP, K. (1979), "Food Insecurity in Food Deficit Countries", paper presented at the International Conference on Operations Research in Agriculture and Water Resources, Jerusalem, November.
- WORLD FOOD COUNCIL (1982), "Report of the World Food Council on the Work of its Eighth Session", Rome, June.
- WORLD FOOD COUNCIL (1982a), "Cereal Import Procurement Practices and Alternatives for Developing Countries" Report by the Executive Director, Rome, April.