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STRATEGY FOR MAXIMISING SELF-SUFFICIENCY IN FOOD IN THE REGION

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Introduction

Food production has not been an attractive proposition in Caribbean agriculture, particularly among the larger land owners. There are many factors confronting successful production of several of the foods which can be grown in the Region either on small or large scale. For the purpose of this paper food covers all crops - short and long term, which is grown for direct human consumption or for feeding to livestock, the products of which go into the local diets.

The policies of plantation agriculture which is mainly export oriented and influenced by the importing countries, and the associated trading linkages in consumables forced on the region from outside, are well chronicled. Beyond this the risks associated with the traditional export crops are so much less than those confronting most of the local food crops that it was natural to find investment interests concentrating on the safer enterprises. The result has been that local food production has been left almost entirely to the small farmer who suffers from a multiplicity of disadvantages - natural, institutional, economic and social. From the start, it must be stated that these several disadvantages of the small farmer, and all the constraints to food production in general, whether on large or small scale operations, are not insuperable.

Perhaps we should remind ourselves that not too long ago, during World War II when the shipping lanes to our normal trading metropolitan partners were blockaded, this region was able to go a long way to feeding itself although not in luxury style, but at a time when the technologies now at our disposal were not even in the idea stages. Perhaps we should also remind ourselves that there were two major enabling factors in this - firstly was the determination founded on the only alternative of starvation, and secondly, there was never the hesitation on the part of those responsible to take action on what was considered necessary no matter how unpopular it may have been to sectoral or vested interests, and to provide the necessary institutional framework, and other enabling conditions for production.

After thirty years of advances in agricultural science and technology, the region should be now far better equipped to become self-sufficient in foods if there is the will and determination at all levels to do so.

Current State of Regional Agriculture

It is difficult to consider the current state of Caribbean agriculture without drawing attention to the effects of the recent world energy crisis, even at the risk of incurring monotony. It is undoubtedly the most important single factor affecting the economy at the moment, causing not only sharp rises in costs of fuel, fertilizers and other chemicals, machinery and other services such as transportation, processing, storage, etc., but it has also led to some serious shortages of these essential petroleum-based or dependent supplies for agricultural production. As a result, the basic cost of production of all commodities has risen sharply. While there has been price increases for some of these export products, such increases, except perhaps in the case of sugar, are not commensurate with the increase in production costs. The situation is likely to become worse, because some of the locally derived costs, particularly labour, will be seeking rises in wages to measure up with the new costs of consumables most of which are imported and have been affected perhaps even more sharply by the energy squeeze. The position is further aggravated by further declines in already low labour productivity in the field.

The apparent good fortune of sugar at this time may in the long term have serious repercussions on the sugar industry in particular, and the economy in general, if management and labour do not get together early and understand the implications of the new price agreements with the ECCM and not use only the high prices of 1974 as the basis for negotiating future wages. Any misjudgement of this could so raise production costs that the industry will have no alternative but reduce on manual labour in favour of mechanised methods. If done injudiciously or too suddenly, this could lead to more social disorder in the sugar growing countries of the Caribbean.

The other less perishable orchard crops such as cocoa, coffee, nutmeg, coconuts, etc., should expect less favourable returns. There may be some decline in production as a result of reductions in normal management inputs such as fertilizers, pest control chemicals, etc. On the other hand, where these commodities are not regarded as essential they will be among items on which the consumer may effect economies to offset his lower purchasing power. This could cause declines in markets for these crops.

The more perishable products such as bananas and fresh citrus will face increasing difficulty in retaining markets and commanding good prices in the face of competition from other countries. Both of these commodities are in surplus on the world market and the Caribbean producers may find it extremely difficult to secure adequately protected markets at satisfactory prices, particularly since the region's production of these commodities is already relatively small and there is no indication that some increases can be forthcoming in a reasonably short time to satisfy the traditional market outlets.

The short term vegetable and other food crops such as grain and starchy roots, peanuts, other fruits, etc., are likely to fare no better although the market prospects and prices now appear more favourable than in the past. The major constraint will be inadequate supplies of pest control chemicals and fertilizers or their excessively high costs which could cancel all the apparent benefits from current high prices.

The livestock industry continues to generate interest throughout the Region, but apart from poultry and perhaps pigs, there is unlikely to be an immediate breakthrough towards self-sufficiency in meat and dairy products. Even in the case of poultry and pig products, selfsufficiency may be difficult to sustain since they are too vulnerably dependent on feedstuffs originating from outsife the Region. While there are determined efforts currently being made to overcome the Region's livestock food problems, significant results may be expected more in the medium to longer term than in the immediate future.

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The problems of the livestock industries particularly unrealistic price controls, indiscrimate slaughterings, health and feeding standards, etc., deserve better attention at national and regional levels if there is to be some real progress in meeting our needs of the meat, egg, dairy and other livestock products.

In general, plantation agriculture continues to decline because of the difficulties in adjusting to the high costs and increasing scarcity of labour and other inputs and the lack of interest on the part of land owners who are satisfied enough with the returns from their efforts and are unwilling to take fruitless risks.

An important factor in many of the countries is the difficult terrain which prohibits the use of traditional machinery for much of the field operations, and the increasing costs of labour which is unable to provide commensurate increases in productivity.

Recent information indicates that approximately 500,000 acres of arable land have gone out of production or are underutilised in the Region. At the same time the inability of small farmers to derive from their holdings the incomes necessary to keep up with the spiralling cost of living, let alone rise to standards of the national average, is forcing them to seek other occupations, while the younger generation is turning away from agriculture as a source of career opportunities. The small farming sectors, the main producers of local foods, have thus been failing to meet the need bacause their efforts are not adequately rewarded.

Regional Food Supplies

The region, with the exception of Guyana, is becoming increasingly dependent on imports for its food supplies. While many of the imported commodities could be produced locally or replaced by substitutes, the local production, often because of economies of scale, poor marketing facilities, or lack of modern technology has tended to be more costly. With the general world-wide price increases the siltuation is changing such that local production is offered a better chance of making a real contribution to the Region's food and other raw materials needs. Shortages of local food commodities could however, continue and even worsen except in those countries where there are positive institutional policies towards self-sufficiency in them.

A substantial part of the basic energy foods still comes from outside the Region as shown in Table 1. These include particularly the cereals ans Irish potatoes. This is not to imply that the Region's contribution to high energy foods is insignificant. With the exception of perhaps the livestock products, almost all the locally produced foods come from the small farming sector. Although their contribution to the overall food supplies may be declining in relative importance, these local foods serve a very large part of the population in both the urban as well as the rural areas.

Product	Production	Imports	Total Consumption
	(Millions of lb.)		
Milk	157.8	314.0	471.8
Eggs	269.7	36.4	306.1
Poultry	87.9	n.a.	-
Beef	36.4	31.3	67.7
Other Meats	147.0	91.1	238.1
All Cereals and Grain			
for Livestock	180.8	1077.0	1257.8
White Potato	29.7	70.4	100.1
Other Starchy Root Crops	675.0		675.0
Onions	2.9	26.5	29.4
Carrots	21.5	2.4	23.9
Cabbage	31.4	2.1	33.5
Peas and Beans	20.3	42.3	62.6
Pumpkins	40,0*	-	40.0
Potato	38.4	0.2	38.6
Total Vegetables	294.0	143.9	437.9

Table 1. Production and imports of selected major food items in the Caricom region in 1972.

* Jamaica only

Source: Caribbean Regional Study, Vol. III, 1975, I.B.R.D., Washington.

Food Consumption and Future Trends

The increasing dependence on food supplies from outside the Region is due in part to the decline in local food production per head of population and also to responses to better presentation and often better quality of imported foods. With the decline in low cost domestic help and the trend towards increasing employment for women outside the home to supplement family incomes, there is a growing demand for partly or wholly prepared *convenience* foods. Until the region is able to process much of the local foods into such forms there will continue to be the demand for the imported products. This can be countered only by appropriate local food processing. It will require development of techniques for processing many of the traditional local commodities and their proper presentation to the consumer.

Particular attention must be given to vigorous promotion of these foods in their new forms in order to gain consumer acceptance. Here consideration must be given not only to educating the consumer in the merits of the new products but also presenting them in convenient and attractive packages which permit easy handling and storage. There is of course, a major benefit from processing in the levelling of peaks and troughs in the production and supply cycles.

Mobilisation of Resources for Self-sufficiency in Food Production

In considering the approaches to developing greater self-reliance on our capability to produce more of our food requirements, it must be understood that although the basic physical or natural resources for production are not all easy to harness and control, there is enough knowledge at our disposal to correct, at least in part, if not in whole, those disadvantages and to make significant progress in the immediate future. The major limiting factors in agriculture at the moment unfortunately do not rest here. They are largely in the institutional provisions which are outside the direct control of the producer who, incidentally, could have significant influence in their adequate provision if there was the overall* determination to do so.

The rest of this paper will attempt to put into perspective the main considerations, in particular the more problematic institutional ones, in planning strategy for maximising self-sufficiency in food, and will not go into details of possible technology applications for improving production and productivity.

Land

The withdrawal from agriculture and the general abandonment of land is due to a number of factors including high costs, low prices and labour shortages, leading to inadequate profits from the investments.

Much of the lands involved have rugged topography which limits the adoption of fully mechanised production practices. This therefore restricts their use to crops whose normal management does not require heavy field operations. In such circumstances, tree or orchard type crops are more suitable for safe use of the slopes while also providing acceptable returns on investments in them. Their management can be immensely simplified with terraces at appropriate intervals to provide access and to serve as drainage and conservation measures. In this way the heavy operations of moving materials and products in and out of hillside fields can be undertaken at relatively low cost. There will also be a greater opportunity for partial mechanisation and other high technology management techniques in securing the highest possible production from such lands.

Many of the flat and gently sloping lands also need redevelopment if there is to be full benefit from mechanised operations. Excessively wet conditions may require appropriate drainage provisions, while irrigation facilities may be necessary where normal rainfall cannot be relied upon. Other factors of efficient production such as layout of fields, access for transport, etc., must be provided.

The misuse of the land and water resources on slopes which are vulnerable to erosion by water, is a matter which has been allowed for much too long by landowners as well as governments. The serious consequences of erosion are easily seen throughout the Region. It is important that steps be taken at national levels to ensure the preservation of the vital land and water resources of the Region for future generations. The physical and practical measures for this are well known. It therefore requires at this stage the adoption of strict and sensible land use and management policies which are oriented toward conservation of resources while also permitting their productive but safe use for the economic and recreational needs of the region. Such considerations as zoning and allocation of safe types of crops for the different slopes are of paramount importance.

The Transfer of Agricultural Lands and Programmes of Land Reform

There is a paradoxical situation in the Caribbean with large acreages of idle or underproductive land while potential investors in agriculture experience serious difficulties in acquiring productive land at economic prices. The transfer of agricultural land generally is made at economic prices. The transfer of agricultural land generally is made at economic prices. The transfer of agricultural land generally is made at economic prices. The transfer of agricultural land generally is made at economic prices. The transfer of agricultural land generally is made at economic prices. The transfer of agricultural land generally is made at economic prices. The advent of tourism and the growing populations of islands of limited size contribute in a large measure to this. It is a problem which, if remained unsolved, will continue to impose severe limitations to development and expansion of agriculture. There is urgent need therefore, for the formulation and implementation of national policies which will put agricultural land values at realistic levels for investments and so facilitate the easy transfer of usuable lands for putting into full productive use to the benefit of the countries as a whole.

National land use policies must take into account, in addition to conservation criteria already mentioned, the land capabilities, the need for zoning, incentive and punitive measures to promote the proper use of land, and the availability of management, manpower, financial and technological capabilities to be able to derive as much benefits as possible from the available institutional and physical resources. In such a setting, the long and widely advocated land reform measures for the Region could be quietly achieved at minimum cost in human anguish and financial resources.

Attention must be given to the possibilities of creating a type of economic farming unit which can avoid the disadvantages of both the large plantation as well as the very small farm operations. Here the accent should be on a size of unit which will allow successful operation essentially by the efforts of the owner alone and perhaps some family help at peak work loads, using high technology inputs, and which is capable of yielding to the owner or operator an income no less than that earned by skilled workers in urban occupations or other business operations. The size of the farming unit in terms of land area will depend on the several physical factors of soil, climate, etc., and the enterprises which they can economically support. A better measure however of size of the farming unit should be in terms of possible income generation rather than actual land area. The long term aim therefore should be to upgrade the peasant type operations to this scale of operation and tie in with sensible land reform policies.

Marketing and Pricing Policies

The importance of well organised marketing arrangements for the production from agriculture is illustrated by the relative stability of export agriculture, even when the prices have not always been as favourable as might be desired by producers. With the exception of the fresh fruits such as bananas and citrus, the exported commodities have been in forms which permit ready storage and relatively inexpensive transport. In the case of exports of delicate fresh fruits, the handling, transportation and storage requirements are much more critical, but these have generally been well organised, with the buying interest taking the initiative in providing them.

The marketing arrangements for the local fruits, vegetables, starchy foods and other products have at best been quite unsatisfactory. In some instances the itinerant local traders have played major roles in distribution but a substantial part of these commodities have depended on the efforts of the individual producers to reach to consumer. In either case there is considerable room for improvements in reliability of marketing, proper handling, grading, packing, storage and presentation. There is also considerable scope for improvements in the method of movement of food products within the Caricom region. In particular the smaller territories require shipping facilities which can transport relatively small quantities of food items to regional markets within short periods and regularly.

Finance institutions in the Region should recognise the vital importance of this service in the development of agriculture and actively promote the establishment of proper organisations and facilities for it. In a few of the LDCs there have been efforts at central marketing but the degree of success so far has been limited due to several key factors.

The most important limiting factor rests impolicies in which the consumer is given favoured treatment at the expense of the producer. The low prices normally offered have tended to cause farmers to lose confidence in the capability of the marketing agencies to look after their interest. Even when minimum price guarantees exist, farmers prefer to sell through other outlets. The central marketing agencies, as a result, handle only a small portion of the crops, and often at times of glut when retail prices may be even below the minimum guaranteed prices to the producers.

The general organisational structure of these agencies are weak and they may not have the legislative powers to undertake efficiently the regulation of production and the distribution of products. Even when such powers exist, they may be subject to the final authority of ministers who are often more inclined to give protection to the consumer rather than arrive at equitable treatment of both consumer and producer.

There are other important considerations in the marketing organisations which must be taken into account, e.g., the constant monitoring of the market and the regulation, by appropriate means, of production and supply to avoid shortages and gluts, thus serving more adequately the needs of the consumer and the interest of the producer. An important factor which is conveniently ignored is the need for workable policies to stabilise prices and ensure the required quality and volume of production. In addition, the need for import regulation of non-essential items such as Irish potatoes and vegetables, is basic to the promotion of the desired local production.

Apart from the administrative and organisational aspects these central marketing agencies do not have the physical facilities which will permit maximum efficiency in the collection, handling, sorting, grading, processing, packaging, storage and distribution, reduce wastage and give the fullest benefits to both producers and consumers. There is little doubt that the savings in wastage from such investments, and the enhancing of the capabilities of the agencies in their collection and distribution responsibilities, will more than justify the cost. However, it must be recognised that the provision of the physical facilities without the proper organisational structure, operations, policies and dynamic management, is unlikely to affect the improvements and indeed could worsen the position of the organisation. Finance institutions could play an important role in this by assisting in the establishment of the appropriate facilities. It should be no surprise however, that as conditions of loans for upgrading or provision of physical marketing facilities, they require due attention to the more important organisational and policy matters, including pricing policies and regulation of production to match the market.

Road Communications

The very poor road access to much of the agricultural lands, particularly in the more hilly areas occupied by large numbers of very small farmers, is a major constraint to raising production efficiency. A substantial part of farm operations consists of handling or movement of supplies of materials and crops into and out of the field and to the markets. Unfortunately the roadways and other transport facilities are generally very inadequate for the efficient performance of these operations. There is serious need for acceleration of the feeder road programmes by national governments in order to be able to serve all or at least a higher percentage of farms than at present.

The farms too, need a better network of field access roads, traces and terraces to undertake as efficiently as possible the transport of materials and crops to production operations involving mobile equipment. This is a highly rewarding area for putting in investment capital.

The benefits from a better network of roads, etc., are derived not only in greater efficiency in performing the transport and handling operations but also in the considerable savings from wastage when crops are not subject to as much damage and spoilage as they are under bad transport conditions.

Credit

It has generally been felt that inadequate, or complete lack of easy credit has been a major hindrance to progress in agricultural production, but experience in recent years has tended to disprove this. The business of money lending even for agriculture is no different from other business and banks or other money lenders are never reluctant to put their funds into businesses in which there is reasonable assurance that the debt can be properly serviced and repayments made. In a situation of high risk however, there will either be higher cost of borrowing and perhaps on short term conditions, or the lender may veer completely away from such ventures. Even potential borrowers with good business sense will be reluctant to put their money or tie up their assets into doubtful ventures. This more often than not has been the reason for farmers keeping away from borrowing particularly if it requires provision of real property as security for the loans. Naturally, money lenders will require stricter security and closer supervision of such risky propositions as the production of food and other materials for the local market.

It is important therefore, that policy-makers recognise that until they can establish the basic organisations and allow them to function in a manner calculated to ensure efficient and reliable marketing of farmers' produce, there will continue to be the reluctance by farmers to make use of strict credit facilities to improve their operations. This is not to imply that farmers will not borrow on easy terms especially if they do not incur undue risks on their part. In fact, the experiences in the Caribbean of agricultural loan schemes of various kinds which make inadequate provision for security and supervision, paint gloomy pictures of defaults and failures.

There is reasonable access in the region to long term development funds and the programmes of lending from those for agriculture have been satisfactory. There is however, some considerable need for short term credit facilities particularly for the small farmer operations. The difficult and risky nature of this sector has tended to frighten away lending by traditional sources. The problem is to devise means of inexpensively reducing the risk. It will involve close supervision, availability of services such as marketing, transport, materials and equipment supplies, extension, research and development, etc. This, therefore, is a matter not only for the credit institutions but also for governments and other support agencies to help resolve.

Finance institutions and agencies must continue to give high priority to long term credit for development of agriculture and the diversification efforts. At the same time concerted effort should be made to provide more short term working capital for production operations. Greater use will be made of available funds when potential borrowers develop a better understanding of money management and the implications of borrowing.

Management and Manpower Development for Agriculture

There continues to be the general attitude that agriculture must absorb the Region's unskilled labour and low quality management. This is perhaps its greatest handicap. It has not yet been adequately recognised that modern agriculture is highly technical and involves the skillful application of business methods to achieve commercial success. The quality of management for decision-making and operations, and the support labour for the operations must therefore be of a high order. Changes in such attitudes can only be achieved through vigorous national effort in educational policies. A complete rethinking of such policies and priorities must be undertaken and the necessary provisions made for the training at all levels of the manpower to attend fully to the Region's agriculture. In the light of the immediate challenges ahead such provision must include a massive programme of in-service training in order that the unskilled labourer with the capability may become a technician for attending to the wide range of operations and practices involved; and that those concerned with management will be able to undertake with skill and sophistication the necessary practices for commercial success of the business enterprises. The only significant capability for such training at present in the Region is at the University of the West Indies for the professional level and the three farm schools in Jamaica, Trinidad and Guyana for the intermediate level. Candidates from these institutions find occupations mostly in the public service, but the private sector, which has more critical needs for such people particularly for management,

is poorly served. Beyond this there has been very limited effort in training of high quality technicians to undertake the various production and processing operations involved in efficient modern methods. It has been done mainly by a few Ministries of Agriculture for very small operators of existing farms. While the existing farmers and individuals from their labour force, who can be trained, should be made to go through the process, the real concentration in the future should be at the school age groups, from which a certain percentage will be expected to seek occupations in agriculture. The educational facilities at the national level should therefore make provision for such groups in much the same way that they should be doing for other production and service sectors of the economy. This should be the responsibility of the ministries responsible for education but the Ministries of Agriculture should be closely associated with it and indeed should play an active part in seeing that it is adequately provided for in the national priorities.

Development and Transfer of Technology

A considerable amount of technology is already available but is either poorly applied or still not being used. These will find increasing application as management becomes more enlightened. There is however, considerable scope for the development of new technologies or modification of existing ones to fit the peculiar circumstances or features of many of the Region's agricultural enterprises. At present some of the new techniques are suffering from gaps or weak links in the sequence of production operations and thus have been slow to be adopted. In some of the small islands there are the serious problems of field operations on sloping lands. These will require special developments in technology to raise labour productivity or simplify operations.

New technology development and application is an area which has been sadly neglected particularly among the small farming communities and in local food production. The modernisation of production, processing and marketing operation's call for the adoption of new techniques which must be developed from sound basic scientific principles and which can stand commercial application. It involves not only scientific research but also the development of technologies to put together the successful research results in complete commercial production packages which can be easily adopted by the farmer. These can best be undertaken by well operated research and development organisations such as those serving some of the commodity sectors, and as is intended in the newly formed Caribbean Agricultural Research and Development Institute. An integral part of the functions of this institute will be to ensure that the relevant technologies are developed in close association with the producers, carried promptly to them, promoted vigorously and applied successfully. Its programmes therefore must be associated with the extension organisations, marketing and credit institutions, etc.

It should direct attention in its priorities on the crops and livestock which have real potential for making significant contributions to the local food needs, and devise the practical and commercially sound production packages which will bring about the desired levels of self sufficiency in food production.

The Regional Approach

While it is most crucial for national policy-makers and indigenous

support staff in individual Caricom territories to place continuous effort on the development and implementation of programmes and projects to increase food supplies for the Region and to permit agriculture to play a significant role in the economy of each territory, it is increasingly evident that the Caricom territories should adopt *joint but well coordinated approaches* towards the mobilisation of the available regional agricultural resources - land, capital and manpower principally and the institutional or organisational support, particularly marketing - for maximising food supplies. This is particularly important for the Less Developed States so that they make the economic breakthrough that is so necessary to reduce the gap between MDCs and LDCs.

The regional benefits and justification to be derived from this approach could be listed as follows:

- (i) import replacement and consequent foreign exchange savings;
- (ii) development of regional skills in agriculture and employment creation;
- (iii) the demonstration of viable large scale commercial farming with advanced adaptable technology; and
- (iv) backward and forward linkages to other agricultural subsectors.

The present regional food deficit of about US\$300m., of which about one-third is meat and dairy produce, offer a challenge for pursuing a vigorous and efficient import replacement programme in agriculture at the national and regional levels.

Regional projects open opportunities for collaboration permitting more competent management and sharing of regional markets through judicious protective policies and the benefits of scale of operation, which has been a major identifiable constraint on production. The aim of such collaboration in the development of regional projects and its general benefits therefore is the optimum use of the Region's production resources in the following ways:

- (i) land for extensive operations in the larger land masses land which is otherwise idle such as in Guyana, Belize, Jamaica, Trinidad and Dominica, etc.;
- (ii) labour to be shared among territories the transfer of people from high density population areas to project location;
- (iii) financial resources being shared between buying and producing countries; and
- (iv) ensuring a wider and more even distribution of benefits and risks from production, beyond national boundaries.

A Working Party on Regional Food Production is currently finalising the details for setting up the institutional framework to promote and manage regional production and marketing projects. The general intention is to have a Caribbean Food Corporation which will serve the holding company with subsidiaries to implement specific projects in varying locations as identified and determined to be financially and economically feasible, including regional marketing and provision of services. So far, some priority regional projects have been identified but the process of project identification will be a continuous one. The major initial consideration is the need for undertaking pre-investment studies to determine the financial viability of such enterprises and identify the main constraints which have to be resolved to put these projects on self-sustaining commercial bases.

The Role of Policy-Makers and Their Support Staff

There is no question that the degree of success attainable in a programme of regional self-sufficiency in food production depends substantially on the formulation of the correct policies and the establishment of the organisations and institutions for their efficient implementation. Much of this will require courage and dedication at the top policy-making level and full cooperation and determination of the technocrats in the supporting services as well as the farming community as a whole. There is the urgent need for policy-makers and their support staff to work very closely with commodity associations and agricultural organisations in formulating plans for the development of the agricultural sector. This must be seen as a means of initiating continuous consultations between the public sector and the farming community, particularly at the grassroot levels. Agricultural sector plans will be meaningless unless they have the support of the farmers and are flexible enough to accommodate appropriate changes from time to time.

There is a general feeling that, in terms of agriculture in the Caribbean, there is excessive talk and very little action. Yet, there is so much to be done. We know what can be done but we hesitate to take the decisions, and to commit our financial and manpower resources to move agriculture significantly forward. It seems senseless to wait until we have gone through unnecessary hardship from food shortages and other deprivations to do what we already know are the right things.