

AN INTEGRATED PERSPECTIVE OF FOOD POLICIES: IDENTIFICATION OF POLICY ALTERNATIVES

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I. INTRODUCTION

At the present complex phase in development efforts, global and national, food is not only the major economic issue but also a key social problem. Development efforts to ensure that food output outstripped population growth have not been able to withstand the onslaught of current international events.¹ The promise, at the close of the previous decade, of a significant breakthrough in food production has not been fulfilled in the chronic food deficit countries of the Asian region.² The cost of food imports and essential development inputs have intensified the pressure on these countries of balance of payments difficulties. A grave dimension to the current food problem is the decreasing amount of food aid, coupled with the low global food reserves, and the high prices of food imports.³

It is difficult to review the sequence of events that led to the present food problem without being perturbed by the lack of foresight on the part of most governments in this region and the absence of advance thinking, alternative long-range strategies and an integrated food policy which could have been implemented in a phased manner. On the other hand, there are a few examples in this region where the food problem has been solved.

Planning for the food sector is inevitably an integral part of the overall development process. By now, considerable experience has been gained in planning for food; at the same time, the inadequacies of such planning have also become evident. Failures in the fulfilment of food production plans may be due to inadequacies in their formulation, in the choice of measures and the estimation of their interrelationships, in implemen-

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¹ Jean Mayer, "The Dimensions of Human Hunger," *Scientific America*, Sept. 1976, pp. 40-49.

² Lester R. Brown, *By Bread Alone*, (New York: Praeger, 1974), pp. 58-62.

³ *The World Food Situation and Prospects to 1985*, Economic Research Service, U.S. Department of Agriculture: Foreign Agricultural Economic Report, No. 98, 1975, pp. 1-23; and see also OECD, *The Food Problem of Developing Countries*, (Paris, OECD, 1968), pp. 13-62.

tation or to factors beyond the planner's control. The formulation of plans for food should be integrated with long-term factors and, at the same time, be flexible in response to short-term or unanticipated developments. It is necessary to recognize that corresponding to the financial and real resource estimates, there should be a corresponding administrative plan for the implementation of food policies and programmes.

The dismal unpreparedness of development planners in the face of sudden and adverse development, both in respect of anticipation and the formulation of effective policy responses, has underlined the inadequacies of the planning process. Even when policy instruments are developed and integrated for effective plan formulation and execution, they are conceived mainly in economic terms; their administrative aspects are invariably taken for granted. Generally, the policy instruments are derived from the experience of well-integrated highly industrialized economies with a preponderance of large-scale modes of organization. Often the economies of developing countries are not responsive to such policy measures. In designing appropriate policy instruments the social, political, cultural and institutional factors and their interactions need to be considered together. Thus, imaginative and fresh approaches are required so that a range of policies is developed along with effective alternative choices.

Essentially, the objective of the food policy should be *to make available a sufficient amount of food of the right quality to the people at a reasonable cost, whenever and wherever it is needed*. Most of the developing countries in the region ironically face the problem of shortage of food and tend to rely on imported food regardless of type. In several countries of the Asian region, the food shortage is likely to continue. There may be bad years during which the shortage could suddenly become acute and grave in some of these countries. An important aspect of food policy should be to ensure that the shortage of food grains does not lead towards an excessive unregulated rise in prices. Experience has revealed that no reasonable food policy can succeed without the existence of a sense of common purpose by the country as a whole, and the exercise of some authority by the concerned government in translating that purpose into the actual working of a national food policy.

The purpose of this paper is to develop a framework to support an integrated food policy as a part of an overall national development plan. The paper will try to examine the frame of reference and substantive content required for the development of a food policy by articulating national goals and objectives on food at the national level, and by examining alternative courses of action under different conditions. The thrust of this framework will be on the institutional arrangements and processes involved in the analysis of food policy alternatives. An attempt will also be made to raise some of the issues in the design of an administrative system for the implementation of an integrated food policy.

II. A PACKAGE OF ALTERNATIVES FOR A NATIONAL FOOD POLICY

1. Basic Policy Orientation

The problem of food shortages has arisen mainly because supply has lagged behind demand. The demand for food grains has been increasing due to the growth of population, urbanization, and rising incomes. These forces will continue to operate, and a lasting remedy is to ensure that production keeps pace with the increase in demand. However, the food problem can not be solved merely by achieving a quantitative equality between demand and supply, because of temporal and spatial factors affecting the demand.

The basic problem to be tackled by any food policy is overcoming food shortages within a certain time horizon set up by the policy planners. In view of the rising demand, the decreasing imports and the not-too-spectacular increase in food production, the food situation in several countries of the Asian region would be difficult and, in bad years, critical. It is, therefore, necessary to view the problem from an integrated perspective. The influential factor for managing a food shortage (or food deficit) is related to three main aspects—which are the *supply of food*, the *demand for food*, and *food delivery mechanisms*. The complex implications of these aspects would suggest that: (i) the governments must achieve self-reliance with self-sufficiency in food as quickly as possible; (ii) the import of food, if any, during the interval must be used mainly for building reserves; and (iii) the distribution system should be so operated as to mitigate the hardship of the poorer classes. It is desirable that an integrated food policy should act on elements and factors which affect the supply and demand of food and also the food delivery system.

The supply of food in broad terms comes from two major sources: (a) domestic production, and (b) imports from abroad, including foreign aid, but the import of food would not be favourable to the country in the long run because of the accumulated burden of foreign exchange and national security consideration. The main emphasis of any policy concerned with the food supply must be the *maximization of domestic production*. The Green revolution and the agricultural extension services are good examples of such policies.

It is usually assumed that the demand for food is determined by such exogenous variables as culturally-determined food habits and the population size. There is also a tendency to regard these factors as given, and thus difficult to change especially over a short periods of time. However, it may be necessary to pay greater attention to the demand aspect from the angle of the total national interest in terms of health, nutrition, and welfare. Another perspective for consideration is *optimizing the demand for food*—i.e. optimizing in the sense that the policy should meet the minimum extent of the nutritional requirements on the one hand and

tangular forms on a collective basis although the ownership of lands would be retained by individual farmers. The impact of such rearrangement in the land pattern on food production may be slow but it could serve as a fundamental base for the mechanization of farming technology, the scientific arrangement of irrigation and the transportation system, and also for the development of cooperation among farmers.⁷

The third alternative for maximizing food supply is encouraging the *labour commitment* which has so far received little attention. In the process of industrialization in developing countries, there has been a tendency for rural labour forces to move into urban centers and consequently the most eligible sections of the labour force, especially the younger people lose their willingness to participate in agricultural and farming occupations. There are various reasons for such a phenomena, which include a relatively poor pay-off, less opportunities for social well-being, a lack of adequate physical facilities and compensation schemes. Although migration to the cities can be regarded as a predominant phenomenon in the development process, the impact of such a phenomenon could generate an escapist attitude in the rural community and have a negative impact on the community spirit⁸ One of the important alternative courses of action would be to encourage a labour commitment which would be reflected in the farmers' motivation to increase their food production. The measures to be mobilized and coordinated for this action may include: (a) leadership support for food production in terms of a direct expression of interest as well as financial, political and moral support, (b) migration policies; (c) insurance policies for the economic and social risks involved in rural farming; and (d) food pricing policies to secure a desirable level of farmer's income. Another important policy instrument would be to consciously build up the community spirit as demonstrated by the self-help community development programmes.

The fourth alternative would be that of *improving labour skill* which has been emphasized for quite a long period of time. The policy instrument to be mobilized for this would include: (a) the short-term training of village leaders in farming methods and practices; (b) skilled training in vocational schools; and (c) raising the general level of education. Emphasis on organizing agriculture in the form of rural cooperatives should also be included in this category.

⁷ One of the interesting experiments of this sort was made in Korea under the sponsorship of the Second and Third Five-Year Plans, 1967-1971.

⁸ Dudley Jackson, "Third World Food Crisis", *New Society*, 16 May 1974, p. 380.

⁹ Besides the irrigation programme, the pricing policy has been a major concern of food policy of the Japanese Government during 1950's and 1960's by which the country achieved the self-sufficiency in rice production.

¹⁰ A massive effort for this project is being made in the name of "Sae-Maul Un-Dong", in Korea and seems quite effective. Asian Centre for Development Administration, *Strategies of Rural Development in Asia-A Discussion*, (Kuala Lumpur, ACDA, 1976), p. 123.

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the economization of the consumption of food on the other.

The additional angle to be considered for the food policy is related to various types of government intervention (fiscal and monetary policies) in the market mechanisms for the improvement of the food delivery systems. In the process of rapid social change in developing countries, the supply as well as the demand for food, tend to be more complicated in view of the various kinds of foods consumed, the large quantity, the different qualities of food and the time and space in which supply and demand take place. The issues involved in the process of food delivery tend to be more complicated in view of inefficient price mechanisms and marketing functions, insufficient facilities for the storage and transportation of foods, and insufficient government intervention.

2. *Policy Alternatives and Available Instruments**

(1) Maximizing the supply of food

The policy actions required for the maximization of food supply would include *expanding arable land*⁴ which has been a conventional approach, though limited in its effect. There are several policy measures which are available and have been utilized by governments. These include: (a) credit policies, (b) agricultural financial institutions, (c) tax policies, (d) regional planning, and (e) infrastructural development, including irrigation and transportation.

The second alternative to the maximization of the food supply would be *improving land productivity* which also has been tried over quite a long period of time, though with limited results. The policy measures to be mobilized for improving land productivity include conventional methods such as (a) policies regarding fertilizer production, its pricing and distribution,⁵ (b) mechanization of agricultural production; (c) improvement in seeds, and (b) providing a relevant infrastructure such as irrigation⁶ and transportation. Another interdisciplinary approach may be land consolidation by which the existing lands could be redesigned into rec-

* for a systematic overview, see Table 1.

⁴ It has been viewed as a basic concept of food policy, see John Clark and Sam Cole, "Models of World Food Supply, Demand and Nutrition", *Food Policy*, 1:2 (February 1976), pp. 13-1333.

⁵ Special attention should be given to the relationship between the increase in food production and the supply of fertilizer through pricing policy. For a quantitative model, see C. Peter Timiner, "Fertilizer and Food Policy in LDCs", *Food Policy*, 1:2 (February 1976), pp. 143-155.

⁶ A systematic emphasis on irrigation as a strategic investment for food production was made by Saburo Okita and Kunio Takase, "Doubling Rice Production Program in Asia", (Tokyo: Overseas Economic Cooperation Fund, 1976 mimeo.). In fact, Brown indicates that irrigation, energy through mechanization of cultivation, fertilizer and land are the "four basic resources" for food production, see L. Brown, *op. cit.*, pp. 75-132.

TABLE 1
POLICY ALTERNATIVES AND INSTRUMENTS FOR A NATIONAL FOOD POLICY

Policy Objectives	Policy Actions Required	Policy Instruments (to be mobilized and coordinated)
To maximize the supply of food	—Expanding arable land	(a) credit policies, (b) financial institutions, (c) tax policies, (d) regional planning, (e) infrastructure (irrigation, road, etc.)
	—Improving land productivity	(a) fertility, (b) mechanization, (c) seeds, (d) basic infrastructure (irrigation, etc.)
	—Encouraging labour commitment	(a) leadership support, (b) migration policy, (c) insurance policy, (d) food pricing policy, (e) community mood
	—Improving labour skills	(a) vocational training, (b) professional education, (c) general education
	—Industrializing food production	(a) tax incentives and subsidies, (b) food technology development
To optimize the demand for food	—Minimizing population growth	(a) family planning, (b) induced abortion, (c) later marriage, (d) public information and education
	—Optimizing the level and pattern of consumption	(a) health/nutrition policy, (b) taxes—subsidies policies, (c) public information and education
	—Adjusting special demand	(a) coordination with other programmes
To improve the food delivery system	—Pricing policy	(a) tax policies, (b) subsidies, (c) price fixing, (d) fair trade regulation, (e) other fiscal and monetary policies
	—Buffer stock operation	(a) analysis of food situations, organization for open-market operation
	—Import policy	(a) trade policy, (b) price policy, (c) international cooperation, (d) welfare policy
	—Quota/ration system	(a) information delivery capacity, (b) Special Distribution Project (e.g. PL480 Title II)
	—Storage and transportation systems	(a) tax policies, (b) subsidies, (c) rules on standard service, (d) financial support, (e) technical aid for programming

Source: Whang, In-Joung, "Framework for a Comprehensive Food Policy", presented at UN/ACDA Consultative Working Party on "The Development and Administration of an Integrated Food Policy at the National Level", Kuala Lumpur, 9–11 October 1975.

tangular forms on a collective basis although the ownership of lands would be retained by individual farmers. The impact of such rearrangement in the land pattern on food production may be slow but it could serve as a fundamental base for the mechanization of farming technology, the scientific arrangement of irrigation and the transportation system, and also for the development of cooperation among farmers.⁷

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The fifth alternative for maximizing the supply of food could be *industrializing food production* by technological breakthroughs in food science. Such an approach is rather futuristic in its nature and may not be a solution to the food problem in a short period of time. This option might involve the installation of production facilities and adaptation of the people's habits to chemically processed food.¹¹ Nevertheless, it may be worthwhile to pay greater attention to this alternative course of action as a part of a long-term plan for food policy.¹² The policy instruments for such an alternative may include, among others, tax incentives and subsidies for food industries and other policy supports for scientific research in food technology.

(2) Optimizing the demand for food

One of the major determinants of the food demand is population size. It is generally understood that population growth should be controlled and checked not only from the point of view of food policy, but also for the development of human resources. The policy instruments for *minimizing population growth* include family planning programmes, induced abortions, later marriage, public education, and other social and economic policies. Such measures have been organized in terms of population policies in several countries of the region.¹³ These policy instruments need to be adequately coordinated at the stage of planning and their implementation.

The second, but perhaps, most important alternative for optimizing the food demand, is related to the *level and pattern of food consumption* which has been culturally and historically determined over a long period of time. This may be one of the most critical issues for influencing the level and pattern of consumption in a desired way within the constraints of national interests, such as high levels of health and nutrition and feeding the entire population at the minimum required level.¹⁴ The policy options for optimizing food consumption include: (a) the health/nutrition policies, and (b) tax/subsidy policies. Public information and educational activities are also important policy instruments for a change in food habits and the forming the behaviour pattern necessary for optimizing food consumption.

¹¹ *OECD Observer*, No. 78 (November-December 1975), pp. 34-37.

¹² To understand the whole notion of this future food in the context of governmental food policy, see L. Brown, *op. cit.* pp. 164-178 in which he indicates high-protein cereals, single-cell protein, feeding fertilizer to cattle, etc.

¹³ In this connection, Brown proposes a "population-stabilization time table" on the world-wide base as a primary response to the world food policy. See L. Brown, *op. cit.* pp. 191-196; also see George Brown, "Survival 2000: A Grim View", *The Futurist*, Vol. 9 No. 6 (Dec. 1975) pp. 297-299, and Don Paarlberg, "A World Food Policy That Can Succeed", *ibid.* pp. 300-320.

¹⁴ It is emphasized that the reduction of rapid population growth and control of wasteful patterns of food consumption should be introduced into the frame of food policy, see Graham T. T. Molitor, "The Coming World Struggle for Food", *Futurist*, August 1974, pp. 169-178.

The third probable alternative in optimizing the demand for food is the *adjustment of special demands for food* by military, industrial and social relief organizations. This special demand for food is determined by less controllable variables from the food policy makers' point of view. Nevertheless, it is necessary to estimate adequate amounts and types of food demand for planning the overall food policy, requiring coordination with the concerned agencies and organizations in a given context.

(3) Improving the food delivery system

In these societies with free economies, it is assumed that the marketing mechanisms would be efficient in delivery of food. In most developing countries of the Asian region, the marketing mechanisms are less efficient, and the mobilization and allocation of food through such marketing channels tend to be distorted. The transfer of food between regions and also among different income groups, and the timing of food delivery under the existing price mechanisms deserve further analysis. Government intervention in the process of food delivery could be made more effective if undertaken on the basis of a planned strategy.

One of the major concerns in relation to government interventions of this type is *pricing policy and control* which has been exercised by many governments in either a comprehensive or partial form. A pricing policy would depend on the assumptions regarding the role of food prices in meeting the policy needs. Some countries may look for the high-level stabilization of food prices to maximize food production on one hand, and to discourage food consumption on the other. Another category of countries may look for a low-level stabilization of prices to provide greater accessibility to food by the lower income groups. Still another category of countries may look for the stabilization of food prices to prevent a distortion in the flow of food because of price fluctuations.¹⁵ These different views of pricing policy could be applied as alternative pricing policies for a particular country by looking at the consumers and the public interests as distinct. The available instruments for a pricing policy include tax policies, subsidies, price fixing, and regulations for fair trade.

In addition to governmental interventions in the parametric function of the price mechanisms, another alternative course of action is related to *buffer stock operations* which could serve as a base for an effective pricing policy as well as for the direct distribution of food.¹⁶ The level and types of buffer stock depend on the total amount of food demand, the population.

¹⁵ Theodor Heidhues, "Price and Market Policy for Agriculture", *Food Policy*, 1:2 (February 1976), pp. 116-129.

¹⁶ Various forms of this concept at regional and interregional level have been suggested for emergency and security purposes by several intellectuals. For example, see George Borgstrom, "Toward a World Protein Bank", *Current*, Vol. 154 (Sept. 1973), pp. 61-64; and Lester R. Brown, "Toward a World Food Bank", *ibid.* pp. 53-61.

size, economic conditions (especially the stability of the food prices), geographical and temporal determinants of the food supply as well as demand, and also on the level of private stocks. The operation of the buffer stock is related not only to the estimation of the economic situation but also to the analysis of change in demand and supply of food over periods of time. It also requires adequate organizational arrangements for the purchase of food by the government, for storage systems, transportation, and food resale activities.

In connection with the buffer stock operation, another important and practical alternative is the *import-export* policy for securing the short-term stability of the food supply-demand mechanisms. It is natural that an export policy, in coordination with a pricing policy, will be the main focus in the food surplus countries, while an import policy will be a main concern in the countries having a problem of food shortages. Although the food import policy may be an imperative for the short-term security of food, the formulation of an import policy should be made in consideration of its long-term and intermediate term effects on other policy areas as well. Attention should be paid, for example, to issues such as whether the import of food will discourage the domestic production of food because of possible maladjustment of the price system for domestic foods, or possible market disruption;¹⁷ whether it will create undesirable or nonessential demand for food, and whether a strategic use of the imported food is possible to bring about a synergetic impact on the total development process beyond the food policy objectives. These issues are more likely to arise in the case of food aid. The relevant policy instruments may include trade policy, pricing policies, international cooperation, and welfare policies.

Another alternative for improving the food delivery system is the direct intervention of the government in distribution as well as in the allocation of food to the demand points, namely the *quota-rationing system*. This may require an administrative capability of the instrumental agencies in terms of adequate information systems and delivery capacities. In this connection it may be mentioned that a special distribution project like PL 480 (title II) should receive proper attention from the broader viewpoints of food policy, especially with regard to the question of government intervention in the delivery system.

Storage and transportation systems are another aspect in which a government could pursue certain actions for improving the food delivery services. Such policy actions should be taken for both privately-managed and government-owned systems. The policies regarding improvement in the storage and transportation systems should be concerned with the expansion of their capacities, efficient facilities, and standardizing the quality of their service performance. The policy instruments for the improvement

¹⁷ OECD, *The Food Problem of Developing Countries*, (Paris, 1967), pp. 77.

of privately-managed systems may include tax policies, government subsidies, government rules and regulations on standardized service, government financial support, and the use of modern programming techniques, and other similar methods.

III. STRATEGIC CONSIDERATIONS GOVERNING POLICY CHOICES

The policy alternatives and action instruments which we have discussed above would not necessarily be mutually exclusive. In order to achieve food policy objectives, the relevant policy instruments need to be mobilized and coordinated. The mobilization of these policy instruments requires government resources of all types, including finance, manpower, equipment, and political as well as top leadership support. The extent of the mobilization of policy instruments and the particular emphasis on the use of certain instruments rests on the nature and degree of the food shortages in the concerned country. In other words, the nature and degree of a food problem should be operationally defined and clarified through future projections and predictions concerning food supply and demand, through quantitative estimation as well as qualitative assessments of the future course of development.

The selection of alternative courses of policy action as well as the mobilization of relevant policy instruments should serve as a basis for a deliberate and systematic allocation of resources. The priority in the selection of alternatives will be determined by considering such factors as: (a) the availability of policy instruments; (b) the feasibility in terms of the effectiveness of measures towards the solution of certain aspects of the food problem; (c) the extent to which a particular policy could strategically contribute towards the solution of the food problem, both in the long- and short-runs, (d) relative costs (social as well as economic) involved in the mobilization of certain policy instruments; and (e) ideological, political and legal constraints. In this connection, for instance, one can foresee an ecological imbalance developing in a food system after the introduction of certain technological breakthroughs to increase the production of a particular food item to meet the increasing demand for food arising from the population growth. The ecological imbalance tends to bring the quality of food down and sometimes becomes detrimental to health. Therefore, it can be stated that the emphasis on the population aspect of food policy should receive a more systematic attention as a priority area from the food policy makers, particularly from the long-term perspective.

In view of the chronic problem of food shortage, a different view, apart from the selective approach, is the comprehensive total mobilization of all instruments, according to priorities to be determined on the basis of assumptions on the core problems which should be tackled by the government

food policy. The total mobilization of all measures requires a deliberate analysis of the cause-effect relationships among factors and elements involved in the process of food policy implementation, an analysis of the costs and the effectiveness of individual policy alternatives and instruments, the estimation of problems involved in the overall coordination and integration of the individual policies and an analysis of their short-term as well as long-term contribution to the overall objectives.

Furthermore, a fundamental approach suggests a complete change in systems involved in and surrounding the food problem.¹⁸ This position is taken, because of the limitation of food policies within the boundary of the existing system. According to this point of view, a solution to meet the chronic problem of food shortage and to liberate a country from its dependency on foreign food aid, would require a revolutionary change in the whole system making it work on the basis of people's voluntary participation in policy planning and implementation. From the perspective of the food shortage alone, however, any policy option would have to rely on the degree of the acuteness and the chronic situation of a food shortage, and also the political as well as the administrative feasibilities of such policy options.

IV. THE INSTITUTIONAL ARRANGEMENTS FOR AN INTEGRATED NATIONAL FOOD POLICY

For the development of an adequate food policy as well as its efficient implementation, the existing government functions would need to be re-organized and new ones added within the given constraints. The stage of development of a food policy includes several steps of administrative actions:

- (i) The estimation and assessment of the food problem which include the role of food in terms of the national goals and interest, analysis of information regarding recent food technology and its long-run implications.
- (ii) The analysis of the current trends of and the future projection or prediction for the supply and demand of food, and their analysis in terms of health, nutritional and political as well as futuristic implications.
- (iii) The development of alternative courses of action and the identification of available policy instruments.
- (iv) The selection of a feasible course of action, and the systematic appraisal of policy measures.
- (v) The formation of specific action programmes including the institutional arrangements or rearrangements required for the implementa-

¹⁸ A fundamentalist view was expressed in W. Haque, N. Mehta, A. Rahman and P. Wignaraja, *Towards A Theory of Rural Development* (United Nations, Asian Development Institute, 1975, pre-publication copy, Bangkok, Thailand).

tion of food policy.

It seems necessary to pay extra attention to the institutional rearrangement for the policy planning unit concerned with food policy development in terms of accessibility to different kinds of information and expertise, and the necessary legal authority to coordinate actions with the central as well as local agencies.

Experience indicates that sufficient attention has not been paid to the planning process, and administrative requirements for the implementation of food policy. Thus far, general and sectoral development planning has been largely dominated by economic considerations, to the exclusion of management feasibility. Most planning agencies responsible for looking after the food and related sectors seem to function in isolation from the administrative agency, and the communication gap between the two prevents the development of an integrated approach to food policy development and implementation.

The development and administration of a unified food policy involve an interweaving of diverse strands of administrative activity. But the existing arrangements for coordination in most cases do not seem to facilitate effective action; they tend to diffuse responsibility rather than promote an integrated effort for increasing food production. Many of these deficiencies could be due to the innate weaknesses of the planning process. Past experience indicates that policies, objectives and priorities in the food sector were not formulated in clear enough terms to facilitate implementation, and, at times, were even inconsistent and incompatible. There have been instances of food production targets set without regard to administrative capacity and feasibility.

The implementation of a food policy requires a series of consistently devised administrative actions. These would include the development of implementation schemes, the elaboration of overall patterns of interaction among the different agencies in government and social/private organizations, the development of monitoring systems and performance indicators, coordination with the relevant organizations and agencies, strategies for the attainment of popular support and participation, and strategies required for response to the changing situation and the utilization of feedback.

Ideally, just as the production (and distribution) targets are translated in terms of financial (and real resource) requirements, an implementation plan should also have a well-defined estimation of the required administrative inputs. Administrative inputs include not only manpower requirements, but also administrative policy decisions. Invariably, the administrative requirements are estimated by broad judgements based essentially on intuition and past experience. Translation of the physical and financial plans into administrative terms is a complex task, even for a single sector. An implementation plan in support of an integrated food policy can

further serve as a useful device for programming managerial components, for formulating measures for the development of an administrative capability commensurate with the implementation needs of such a policy, and for the proper time-phasing of administrative changes and innovations needed in the context of such an integrated food policy.

V. CONCLUSIONS

The proposed framework for a comprehensive food policy is an attempt to integrate the crucial dimensions involved in the analysis and development of options for improved planning and implementation in the vital sector of food production and management. The serious situation posed by the shortage of food in the developing countries of the Asian region requires concerted effort not only from the angle of technical feasibility alone, but more perhaps in certain countries toward better management of a food production plan. The ideas contained in the framework cannot be applied *blindly*. The operationalization of the proposed framework would require experimentation toward the development of alternative strategies for food production in the specific country contexts. The elements would need to be related to the authentic situations in the respective countries.