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Agricultural Prices "Bases of Setting and Control"

By

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"Opinions Expressed and Positions Taken by Authors are Entirely their Own and do not Nesessarily Reflect the Views of the Institute of National Planing".

"The main points and ideas in this thesis depends upon the authors Ph.D. Dissertation about: The Organization of Agricultural Market and Control Agricultural Prices in Developing Countries, With Special References To A.R.E. (Egypt) - The Central School of Planning and Statistics - WARSAW - 1972".

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PREFACE

Agriculture, in most developing countries is still the dominant sector of the economy. Till the industrial sector takes the lead, agriculture will continue to play a predominant part in the growth of the economy and will be the major contributor to the increase of national income.

In developing countries, agriculture contributes to economic growth. It has been the main source of labour force for other economic sectors. Supply of food and industrial raw materials, is also one of the most important tasks of agriculture in developing countries. If food supply fails to expand in pace with the growth of demand, the result is likely to be a substantial rise in food prices. To support the establishment of agriculturally - based industries, it is necessary to expand raw materials production.

In developing countries, particularly during the early stages of economic growth, agriculture shoulders the major part of the financial burden of economic development - in domestic or foreign currencies - since it is the major producing and exporting sector.

Until and unless industrial development has reached that stage at which these countries would be in a position to export manufactured good their foreign exchange position will be dependent mostly on the volume a

value of the exports of agricultural commodities. As such priority has to be given to agricultural production as a source of foreign exchange earnings and also as means to counteract inflationary pressures in the economy.

The historical experience of the economically developed countries indicated that industrial expansion was preceeded by the development of agriculture. It is logical to stress that, it is rather difficult to achieve industrial development without agricultural development. The growth of industries in turn have a beneficial effect on the agricultural development. In fact there is a close inter relationship of the agricultural and industrial development. Industrialization requires modernization of agriculture, and adversely, modernization of agriculture requires industrialization.

This close interdependence of the agricultural and industrial sector of the economy has led to the suggestion that there should be a balance in the development of both these sectors in order to ensure stable overall economic growth. If increase in agricultural production takes place without corresponding expansion of the non-agricultural sector, the demand for agricultural products will fall short of supply, and this would lead to depression in agricultural prices and fall in incomes.

On the other hand during the process of economic growth an increase in both income and employment take place. This, leads to an increase in the demand for agricultural products. The success of developing countries in avoiding inflation and accelerating economic growth can be largely attributed to their success in solving the problem of increasing agricultural output.

The basic prerequisite for a rapid industrialization of a developing country is a revolutionary upsurge in agricultural production.(1)

The lack of sufficient food marketed surplus in the developing countries is a drage on their efforts towards industrialization, because it makes it more difficult to shift workers away from agriculture and provides them with sufficient quantity of food products. Also, the lack of marketing facilities are obstacles for mobilizing the agricultural marketed surplus to consumer centres, and industries.

To increase agricultural output, to mobilize the agricultural surplus, and to ensure farmers fair prices and stable incomes, it is necessary to organize agricultural market and control agricultural prices.

Low agricultural prices may discourage farmers to increase their production and on the other hand a rise in food prices gives rise to political discontent which may hinder development.

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(1) Kalecki, M. - "Unemployment In Underdeveloped Countries"- in "Short Papers on Economic Growth"- Teaching Materials Vol. 1 - SGPIS - Warsaw 1964- p. 89.

The purpose of this paper is to examine and analyse the bases of setting and control agricultural prices under planning system.

I . Base of Setting Agricultural Prices

This part will discuss and analyse the bases on which the agricultural prices should be set or established in order to fulfil the tasks of agricultural price policy.

This establishment must be taken of the interests of the producer and the consumer, within agriculture and in relation to other sectors of the economy. To a large extent, the relative importance given to these and other criteria will depend on the objectives that a country sets itself.

In many countries - India for example - some or all of these criterias are taken into account when establishing the level of agricultural prices.

These bases can be set as follow:

1.1 Cost of production formula

From the theory of price and allocation of resources, we know that the price must cover the cost of production, or to look it in other way round, the cost of production must be lower than the price.

The price fixed as the floor price should at least cover the avarage cost of package[1] cultivation in a normal crop year, or over a period

(1) Cultivation with improved inputs and practices, will be referred to as "package cultivation" - Johnston, F.B., and Southworth, H. "Agricultural Development and Economic Growth' Cornil University Press - 1967, p. 518.

of 3 to 5 years including good and bad crop years, estimated on the basis of input prices likely to prevail.

Since there are at least two important concepts of the cost of cultivation in a dual agriculture in which a substantial part of the input comes from the peasant household, it is necessary to choose the one that ought to form the basis of the "floor price". There is, first, the complete average cost of cultivation, including the value of the services of family labour, computed with the market rent and wage-rate in the neighborhood. And there is second, the so-called "paid-out" average cost of cultivation, which excludes the imputed value of the services of family labour.

Therefore, for many analytical purposes "paid-out" cost is the relevant cost. But for fixing the "floor price" it is complete average cost or the best available approximation to it - would induce the commercial farmers, who are actually paying for the services of labour, to seek more profits through increasing their output; and it would give other farmers a cash income over and above their "paid-out" cost, which would improve their capital position, and enable them to invest the innovate more than before.

On the other hand, when the value of the services of family labour inputs calculated with the rent and wage per unit of hird labour in neighbourhood and included in the guaranteed price, we assure to the peasant

what may be called the input return parity. The actual inputs of family labour on the family farm are given the same remuneration that they could earn if and when they could be hired out.

This is the only concept of equity of peasant rewards the developing countries may be able to work with. Equity in the sense of an equivalence of earnings on the farm and earnings for equivalent work in urban employment, which the developed countries have recently tried to realize, is more than the developing countries can offord at the present stage of their development. In developing countries if the farmers were rewarded for their labour at wages equal to that of workers, agricultural prices would be very high. Many economists have been of the opinion that wage rates in the modern sector have to rise substantially above farm incomes (1) This, in their opinion, brings modern sector as much labour as it wants.

Another issue relevant for the determination of the "floor price" arises from the fact that the variability of cost as between different farms is very high. Whose cost should in this situation, be the basis of the "floor price" should it be the minimum cost in a representative sample or should it be the sample average cost? Ideally it should be the sample minimum. But in a shortage situation the minimum price has to be above th minimum cost to induce even some of the relatively inefficient farmers to increase output. It will be the minimum cost which covers the actual aver age costs of farmers producing a major part of the output. It is, of cour

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(1) Lewis, W.A. - "Development Planning" - The Essentials of Economic Policy, New York, 1966, p. 77.

necessary that relible and representative data about the cost of cultivation of individual commodities be collected for the purpose of price fixation. The price should only be based upon the cost of cultivation under "package" condition. Where, therefore, data about the cost of "package" cultivation are not available, the cost of traditional cultivation can be used as the basis of price fixation, reduced by a "package" discount which can be estimated from realistic experimental data. It follows, any price that covers the cost of traditional cultivation will automatically cover the cost of "package" cultivation.

As regards the geographical variation of prices, it is desirable to fix the same "Floors" in markets which are of the same order in the hierarchy of markets throughout the country, but to provide differentials as between markets at different levels of the hierarchy. That is to mean, that there will be reasonable differentials between village "floors", town "floors" and district "floors".

Since there are many grades of farm products, it is necessary to determine whether a "floor price" is to be defined for every grade or for only a few selected grades.

In Egypt in setting agricultural prices, the government price policy has been mainly concerned with accomplising certain income distribution rather than affecting production, based on cost criterion. The idea of cost

plus pricing is at work in Egyptian agriculture. Where costs are average costs including depreciations, and the profit plus is understood as "normal" or "fair" profits in some sense.(1)

According to the cost criterion the approprite income for one feddan is determined by adding two to three the rent rate to the estimated cost of production. Or by the cost of production - without rent - plus a definite percentage rate from cost of production. By dividing total income calculated from the above estimations by the output of one feddan, we get the price per unit of the product.(2)

The departments of agriculture in the governorates derive average costs for each crop they produce by means of questionnaires. From these average the Ministry of Agriculture derives general average of costs for these crops for the country as a whole. The items of costs can be divided to: a) preparing the land. b) seeds and cultivation; c) irrigation; d) fertilizers; e) harvesting; f) transportation; g) rent; h) others.

Table (1) shows prices, average costs and net revenue of every unit of production of main crops in Egypt (1956-1966). It shows that prices are generally high enough to cover costs of production and allow for certain margins. Costs increased more rappidly than prices through the perio

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(1) Hansen, B. and Marzouk, G.A. - "Development and Economic Policy in U.A.R." - North Holland Publishing Company - Amsterdam 1965, p. 287.

(2) Bshir A.M. - "Agricultural Price Policy in Egypt" - "L'Egypt Contomporaine" No. 332, Cairo, Oct. 1967, p. 916 (in arabic)

Prices, Average Costs and Net Revenue of Every Unit of Production of Main Crops in Egypt

(1956 - 1966)

	Rice			Wheat			Barley			Maize		
	Price	Cost	Net revenue	Price	Cost	Net revenue	Price	Cost	Net revenue	Price	Cost	Net revenue
)56	17.00	11.48	5.52	3.95	4.10	-0.15	2.73	2.28	0.45			
)57	16.96	11.28	5.68	4.28	4.30	-0.02	2.24	2.27	-0.03			
)58	16.96	13.00	3.96	4.28	4.27	0.01	2.75	2.23	0.52			
)59	17.00	12.35	4.65	4.35	4.27	0.08	2.91	2.22	0.59			
)60	17.00	12.30	4.70	4.29	4.14	0.15	2.57	2.15	0.42			
)61	17.00	13.26	3.74	4.25	4.15	0.10	2.45	2.06	0.40			
)62	17.00	11.76	5.24	4.37	3.94	0.43	2.58	2.29	0.29	3.21	2.12	1.09
)63	17.00	12.63	4.37	4.37	4.01	0.30	3.15	2.19	0.96	3.86	2.12	1.74
)64	18.09	15.64	2.54	4.40	4.00	0.40	3.61	2.28	1.33	3.91	2.51	1.40
)65	20.09	18.81	1.28	4.53	5.03	-0.50	3.09	3.19	-0.10	3.78	2.70	1.08
)66	25.89	21.78	4.11	4.92	5.17	-0.25	3.52	3.26	0.26	4.56	2.96	1.60
he secular trend.	0.55	0.81	-0.26	0.06	0.06	0.00	0.09	0.06	0.030	0.26	0.23	0.03

ource: Computed from: Ministry of Agriculture-Bulletin of Agricultural Economics-several issues - (in arabic).

(1956-66). The rate of increase of rice price was 0.55, while the rate of increase of its cost of production was 0.81 and the rate of increase of net revenue was 0.26. In other words the net revenue decreased yearly by 0.26. In wheat production, the rate of increase of prices - in the same period - was 0.06, while the rate of increase of costs was equal (0.06), and the rate of increase of net revenue was 0.00.

For barley, the rate of price increase was 0.09 while costs increased by 0.06 per annaum, the rate of increase of net revenue was 0.030.

In maize production the rate of increase of prices was 0.26 costs increased by about 0.23 and the rate of increase of net revenue was 0.03.

The above analysis shows that costs increased more than prices, and the rate of net revenue of each unit of production decreased in rice and wheat. These two crops are important for homeconsumption and exports afte cotton.

It should be mentioned that, cost-plus pricing, is not enough to be a base adequate or national base for setting agricultural prices in Egypt.

Cost of production formula - in general - has some limitations. Firstly, farmers are not in a position to plan unit production costs in advan for they cannot foresee precisely the size of the harvest. Nor are they i a position to adapt production level and costs to changing prices when the are lowered.

Secondly, what about the problem of family consumption? Characteristic for developing countries agriculture is the higher proportional of expenditures on living labour to the gross production outlays. The cost of maintaining the peasants family may, on the one hand, be treated to a great extent as a constant cost, but it is, on the other hand, actual farm income which represents the magnitude resulting from the nature of its dependence on crops in the peasant economy.

Now, the question arises if it would not be correct to take the calculation of unit production cost as the point of departure in fixing agricultural prices? The following principal points may be mentioned; it is difficult to estimate costs for individual products where enterprises are dependent upon each other, which so-call goint production. Other items of costs are difficult to assess, for instance, unpaid labour by the farmer and his family, as we mentioned before. Other difficults in using cost of production formula arise from the differences in efficiency between farms.

Sot it seems to me that cost of production formula is not adequate or workable as a basis for agricultural prices, lastely because this formula based as it is on supply criteria, totally ignores the influence of demand in the determination of prices and thus makes it unusable for policy decisions.

Coming to the end of this discussion, it should be mentioned that, all the above limitations do not make us ignore that, the results of unit cost calculation are very important for evolving a proper price policy. That is what Prof. Poharille says "Unit Costs ... cannot directly serve as a basis for setting agricultural prices. They may, however, provide important and indispensable data for a profitability analysis and for determining the proper relationship between the prices of individual agricultural products".(1)

1.2 Farm income formula

Generally, there are two approaches to this formula. The first aims to assure a certain net income parity to the farming community as a whole. It reflects an attempt to make the farmers income balance better with the income of people engaged in non-farm occupation.(2)

The other approach of this formula, is to ensure the farmers with a certain minimum net income for a given production. This formula - a minimum income formula - is suggested by Dr. Sen in India.(3) According to this formula, before the sowing season for each crop, the government

(1) Pohorille M. - "Problems of Political Economy of Socialism" - Edited by Oskar Lange - Warszawa - 1962, p. 235.

(2) Ozaki Chujiro- "Agricultural Price Policies By Commodities in Japan"- The Rural Economic Problems - The International Association for Agricultural Economics in Japan - April - 1963. pp. 7-15.

(3) Bose K.S. - "Price Policy for Agriculture in the Context of Indian Economic Development" - Indian Journal of Agricultural Economic - Mar - 1962 - p. 38.

may announce a specific size of the crop that it expects (provisional quantity = QP) and the price per unit (P_p) which it would expect to rule and be ready to purchase in the market for a crop of that size. To anticipated or targeted size would bear a certain ratio to the previous years crop. The quantity QPX the price P_p represents the anticipated income from the cultivation of that crop. After harvesting, the actual or final size of the crop (QF) - may differ from the expected quantity.

The final price (P_F) should be so regulated that:

$$P_F \times Q_F = P_p \times Q_p \text{ , or}$$

$$P_F = \frac{QP \times P_p}{Q_F}$$

and taking account of the amount not marketed.

$$P_F = \frac{P_p(Q_p - r)}{Q_F - r}$$, where r is the quantity of the crop retained by the farmer.

The former approach consists in an abstract approach to the distribution, which is treated in seperation from mode of production. The latter approach is more reasonable and practical. Generally, the farm income formula is more comprehensive and dynamic than parity price formula which will be discussed a little later. It moves from farm income to prices and not from farm prices to income as the parity price formula does. Also, it is most comprehensive and appears to reflect most faithfully the economic situation of agricultural producers.

However, the application of this formula confronts serious difficulties and shortcomings. Its value is limited by the difficulties and uncertainties of calculation.

Firstly, net farm income is a concept which is difficult to pin down statistically. Secondly, a considerable margin of error is liable to enter into the calculation. On the output side many elements are open to large errors, both in quantity and price, and hence in total value.

Thus, the calculation may not give a good indication either of the absolute level of farm income or of the trend of farm income from year to year.

Another limitation on the farm income formula, that is the calculation of net farm income on the national standard of farms, throws no light on the prosperity of different classes of farmers, e.g. with different farming system in different areas, or with different size of farms. This method needs, investigations and much supplementary information has also to be collected, and this of course includes many difficults in practic, specially in developing countries.

1.3 Production distribution formula

This formula discussed by /constitutes and attempt/ Prof. Poharille at theoritical generalization of the practice of price setting for agriccultural products in socialist countries.(1)

The point of departure of this formula is the distinction between the problem of general level of agricultural prices and the problem of price relations between separate agricultural products.

As we mentioned before farmers base their decision not on absolute profitability but on the relative profitability of the farming branch under consideration.

At given production costs the relation between the prices for different agricultural products are of decisive importance in arriving at a suitable structure of agricultural production. The general level of agricultural prices must, according to the formula, be set in close connection with the planned increase in agricultural production and the planned proportions of national income distribution.

When speaking of the distribution of national income it is born in mind its distribution between the accumulation fund and the consumption fund just as much as its distribution between social chasses/workers and peasants/.

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(1) Nassar S.Z. - "Regulation and Control of the Agricultural Prices in the Developing Countries with Special Reference to the U.A.R. (Egypt)" - The Central School of Planning and Statistics-Warsaw - Doctor dissertation 1970 - pp. 105-113.

In mentioning the actual methods by which national income is distributed it is meant that there must exist a close link between the level of agricultural prices and the various forms of income transfer as applied in any given period. It follows that "any changes in the system ans scope of agricultural finance must be accompanied by well-defined changes in the general level of agricultural prices".(1)

The reasoning is as follows: The plan provides for a specified increase in agricultural production; the achievement of this increase needs a given amount of investment in agriculture and ancillary sectors. Part of this investment is financed by the state; part by the farmers. But this decomposition of investment expenditure according to sources does not depend alone upon the planned increase in production. It depends upon a whole series of economic; political and institutional factors, which also govern the rate of increase in farm - household consumption (included in general economic plan).

Increase in agricultural production, prices, incomes, consumption and accumulation are interconnected magnitudes.

It is obvious that the level of agricultural income depends upon the volume of output and upon prices, and that, on the other hand, the achievement of a given volume of output requires a corresponding level of farm incomes /during the preceding period/, of which a well-defined portion must

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(1) Poharille M. - "Plan and Market in Agriculture" - in "Planning and Markets" - Dunlop T.J. and Fedorenko P.N. - Mc Graw - Hill - 1969 - p. 138.

devoted to productive investment. On collective farms, according to the state law, a definite income rate is designed for expanded reproduction. In Poland, the government influences the distribution of farm income (between consumption and investment) by means of a system of tax relief on invested funds, low - interest credits, and assistance for Agricultural Development Fund.

Once a feasible rate of increase in farm consumption and accumulation has been determined, and once practical arrangements have been put to work to assure that accumulated funds will be used for investment (to rise agricultural production by a given percentage, for instance) the basic data for defining the general level of agricultural prices are at hand.

The following hypothetical example shows, how the level of agricultural prices should, according to the production - distribution formula, be determined; let us assume the following:

(1) The national plan aims at increasing the agricultural production by a %.

(2) To fulfil this, total agricultural investments amount to I should be carried out.

(3) From these total agricultural investments the state will carry out the amount of I_1 and the farmers themselves have to carry out the rest: $I - I_1 = I_2$.

(4) The plan aims at increasing the consumption of the rural population (C) by $\triangle C$.

Then, to realize these aims the net incomes of the farmers (D) should be equal to $C + \triangle C + I_2$. If we know that D = Q (quantities of production) X P (prices) - T (cost of production).

Then, the agricultural prices should be at the level of

$$P = \frac{D + T}{Q} = \frac{C + \triangle C + I_2 + T}{Q}$$

Given the general price level, the relations between the prices of different agricultural products must be so shaped that they differ in favours of certain crops and induce changes in the structure of production to match as far as possible the changes in the structure of societys consumption needs. In this connection the calculation of production costs plays an important part. The production - distribution formula does not exclude the calculation of unit costs in agriculture, but nearly divests it of its absolute significance and avoids eversimplification of cost-price relationship.

Prof. Poharille,(1) also discussed how to link up the theoritical system of farm prices - on the base of the production - distribution formula - with the actual price system for end products of agricultural orig

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(1) Poharille M. - "Plan and Market in Agriculture" - Ibid. p. 139.

the system which comes about under the influence of the factors which determine market equilibrium (supply and demand), and said that those two prices systems can be combined by manipulating five factors:

(a) The margin between the retail price of the end product and the producer price. This margin has certain elasticity and can be regulated by the state.

(b) Taxes levied from farmers.

(c) Subsidies and credits to agriculture.

(d) The prices of agricultural inputs.

(e) The prices of industrial consumer goods which require.

"By mainpulating these factors the plan can be made internally consistant, that is, its targets for an increase in agricultural production and incomes can be harmonized with an economically justified system of retail food prices".(1)

Production - distribution formula takes into consideration in shaping agricultural prices, all the interconnected magnitudes; production, prices, incomes, consumption and accumulation.

On the other hand, the application of production - distribution formula as a base for setting agricultural prices in developing countries may face serious difficulties.

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(1) Pohorill M. - Ibid., p. 139.

Statistical data needed for the application of this formula are not available. Also, the role of the state in regulating and carrying out the agricultural investments is not significant in many developing countries.

But in spite of this the fact remains that, the basis on which this formula is based could be of some use in developing countries, because it makes a close link between the agricultural prices and the all sectors of the economy.

1.4 Parity formula

The parity formula provides, prices that would give farm products the same purchasing power per unit, which they had in an earlier base period. This formula is used extensively in U.S.A. and Japan.

The parity prices seek to stabilize inter-relationship between dif ferent agricultural products as well as between agricultural and non-agri cultural products. Parity prices can be constructed by the use of any th following methods:

(a) The ratio between the index of prices of all agricultural commodities and the index of prices of all non-agricultural commodities.

(b) The ratio between the index of prices received by farmers for the farm production and the index of prices paid for farm inputs.

(c) The ratio between the index of prices received by farmers for the farm products and the index of prices paid for farm inputs and family expenditure (consumption) taken together.

(d) The ratio between the index of prices received by farmers for the products they sell and the index of prices paid by them for means of consumption they purchase.

(e) The ratio between the index of agricultural prices and the general prices level.

Generally, the present parity price formula is a prices - received and prices - paid formula in which the prices received by farmers in the base period are multiplied by the current index of prices paid by them. A computing separate parity price index for individual farm products would be more accurately than the generalized parity index, reflect the parity purchasing power of those products.(1)

A periodic modifications or adjustment of the base period seems necessary for the proper functioning of the parity formula especially at times of rapid social and technical development.

The base period has been estimated under three methods:
a) Fixed base method. b) Moving average base method (the average of the last ten years). c) Average parity method.
The last method reflects the average relationship of individual commodity prices to wholesale prices during the ten preceding years. This can be obtained by taking the average index of prices for the specified commodity

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(1) Shaphered G.S. - "Agricultural Price Analysis" - Iowa State University Press - First edition - 1963, p. 277.

for the last ten years and deflating it by the average price index of the corresponding years. The average parity index so obtained will be multiplied by the actual price in the base period and wholesale price index for the year for which projection is made. The formula is:

$$\text{Projected price} = \frac{CP}{WP} \cdot C_{pto} \cdot W_{t+1}$$

where:

CP is ten-year average price of the commodity.

WP is ten-year average of wholesale price index

C_{pto} is actual price of commodity in base year

and W_{t+1} is wholesale price index for the year for which projection is made.

In India[1] the average of all these parity price calculations can form a base to consider the level of support prices, as it is showen in table (2).

There are many limitations of the parity formula, for instance, the prices of different factors of production change at different rates, in di fferent areas, so the use of the same quantity weights for all farm areas, means that the single parity index as a whole is not an accurate one of th prices paid, as Fuller says that "Parity prices for individual farm produc would reflect the parity purchasing power of those products more accuratel

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(1) Indian Journal of Agricultural Economics - January/March 1970, p. 40.

if the parity index were computed separately for each product".(1)

In addition that the basic data for the index of prices paid for the articles that farmers buy-were more difficult to obtain.

Also, the parity formula ignores the volume of production as we know, that prices are only one of the elements that determine farmers economic status, and thus does nothing to smooth out income fluctuations arising from variations in yield or in the pattern of production.

Economic status is measured more accurately by prices multiplied by quantities sold, than by prices or quantities alone. But, gross income is only one step for measuring economic status, a second step is needed to dudect costs from gross income in order to measure net income. The above parity index measures only one element in the costs incurred by farmers. The index is only an index of prices per unit paid by farmers, not an index of costs. In fact parity formula is not adequate or rational as a base for setting agricultural prices. But it helps for analysis the price relations between the goods and those required by the rural areas.

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(1) Fuller W. and Others - "An Alternative Parity Formula for Agriculture"- Agricultural and home economics experiment station - Iowa State University - 1960, p. 696.

Table No. (2)

Different estimates of parity prices for selected agricultural commodities: 1969-1970 (in India)

Commodity	Parity with 1952 base fixed	Parity with ten years average as base.	Parity with adjusted base.	Parity with price of inputs (base 1952-53)	Parity with prices paid in inputs plus consumption base 1952-53.	Average of parities parity of 1969 - 70.
Wheat	82.93	76.82	82.84	91.27	81.51	83.07
Grain	92.15	80.83	87.20	101.52	90.56	90.45
Maize	69.01	60.91	65.68	76.02	67.80	67.88
Bajra	62.79	69.46	74.44	69.38	61.69	67.55
Rice (paddy)	58.73	48.37	52.22	64.70	57.70	56.34
Barley	60.55	60.87	65.62	66.75	59.54	62.67

Source: Indian Journal of Agricultural Economics - January/March 1970, p. 40.

1.5 Multiple factor formula

Multiple factor formula as developed in New Zelund, includes statistically assessed production factors, also takes into account various factors such as a moving average of prices received in export markets, trends of prices in previous seasons, future market prospects and a number of other defined consideration which are not statistically assessed.(1) It goes a long way towards the ad hoc (non-formula) method of determining the prices.

1.6 Ad hoc (non-formula) method

Under this method, the weight of the various factors is not predetermined but is divided largely on ad hoc basis in accordance with current requirements and policy. Generally, formula methods, have advantage of giving a greater degree of security to farmers. They also have the advantage that, if it is known how prices will respond to movements in a limited number of economic indicators, farmers can make their foreward plans more security. While in ad hoc method as a base for setting agricultural prices, much scope is left for ad hoc decisions.

Generally, no formula provides a hard - and fast answer to the question of the desirable level of prices for different agricultural products. So it seems to me that, the most proper formula for developing countries are cost of production and production distribution, to be as a bases for setting agricultural prices.

(1) F.A.O. - "An Enquiry into the problems of Agricultural Price Stabilization and Support Policies" - Rome, 1960, p. 173.

II. Methods of Controlling Agricultural Prices.

After the determination of the price by using one or more of the preceding criteria, for setting agricultural prices, it is important to ensure that the set or established prices are in fact operative.

When these set or established prices will be operative, or pravail in the market, either producer or consumer or both benefit, and benefits will be for national economy as a whole.

There are a lot of classifications dealing with the methods of controlling the set or established prices.

F.A.O.[1] for example - classifies these method to:

(1) Regulating the folow of supplies to the market by:

a - Regulating buffer stocks,

b - Regulating of imports,

c - Regulating of exports,

d - Restrictions of output,

e - Diversion of excess supplies to alternative uses.

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(1) Food and Agriculture Organization - "An Enquiry into the Problems of Agricultural Prices Stabilization and Support Policies" - Rome - 1960, pp. 46-64.

(2) Financial methods by:

a - Deficiency payments,

b - Equalization or stabilization funds,

c - Export taxes and multiple exchange rates, and

d - Long-term contracts.

The study classified it as follow: 1) Fixing price, 2) Supply control by; a) Control of production: a-1) Control of land, a-2) control of other inputs.
b) Control of distribution: b-1) Market organization, b-2) Buffer stocks policies, b-3) Exports and imports control, b-4) Rationing and subsidies.

2.1 The direct fixing of the prices

The direct fixing of the prices appears, as a rule, to be operated by state trading, or by a system under which a central agency undertakes to buy all supplies offered at a fixed price. When a state monopoly exists decreased prices are a matter of fact, this means that existence and maintenance of fixed state prices lie in the possibility of state regulation of supply and demand.

Fixed prices became very widespread during the war and early postwar years and were often introduced initially as a mean of preventing inflationary rises in price.

In Egypt, direct fixing of prices is followed, in connection with the purchase policy of certain agricultural products, cotton, flax, sesame and ground - nuts, since the state is the only or main purchase of these products. Attempts to fix prices under conditions where the state does not control the markets do not usually yield positive results. They lead to reducing sales on the legal market and their expansion on the so-called black market. Direct fixing of the prices by the state benefits consumers, producers or both. In some cases fixed price results from the necessity of the commodity and to justify its distribution between the different classes of the society. Also from the aim of limiting sort of production and/or to direct resourses to produce other commodity.

For example, in Egypt the state has fixed maximum prices for most food-stuffs: wheat, maize, rice, cattle-meat...etc since the Second World War and strict control measures are practiced now by the government. These administrative means have been effective to a certain extent in spite of that a substantial part of these products goes through the free market trade.

In fact the state, to ensure that these measures of prices control would be effective, has taken measures to influence the demand for and supply of food stuffs. From these measures, rationing and subsidized which will now discuss at some length.

It is important to bear in mind that, within a fixed price system, there may be some price variation to cover, e.g. differences in transport costs to the main consuming centres or mills, or differences in quality, or differences in estimated production costs in different areas, so that farmers do not necessarily receive exactly the same price.

Coming to the end of this discussion it should be mentioned that price fixation of one commodity or some commodities, without controlling production and consumption of these commodities, is doowed to fail unless the fixed price is equal to the free market price. In other words fixing the price of one commodity without taking into consideration prices of other commodities and setting a general price policy is also doubtful.

2.2 Supply control

Supply control means the conscious adjustment of supply to demand, commodity by commodity, year after year, to bring prices in the market that have already been determined as fair by some responsible agency or by the state. The role of supply control in the short run is to achieve a rate of growth in farm output, commodity by commodity equal to the rate of growth in demand commodity by commodity. The task of comprehensive supply control in the long run is to keep aggregate farm output from inching ahead of aggregate demand in the long run race between expanding demand and expending supply.

Reasonably effective supply control over one commodity means that the productive resources relased through the controlling action in that commodity are shifted to other commodities. Thus it is clear that effective supply control in one commodity must intensify the supply - price problem of substitute commodities. And it is reasonably to conclude that the acceptance and imposition of supply control by producers of one important commodity, in the context of general over - production, would create a heavy pressure on producers of substitute commodities to accept supply control. The adoption of supply control would sweep swiftly through commodity substitutes with inelastic demands to protect the producers involved from drastic price declines. And it (supply control) would probably encompass those production substitutes with elastic demands too.

The effects of supply control program on price depend upon the elasticity of demand for the commodity. Any given percentage reduction in output will have a different absolute and percentage effect on price, depending upon the price elasticity of demand for the commodity.

Upon this elasticity, therefore, depend the effects of a given production adjustment upon farmers income. If the price elasticity - for t range of quantities covered by the production base and the adjusted outpu is less than unity, the gross income from sales will be increased. But i it is greater than unity, gross income for the smaller output will be les

than for the unadjusted output, even though the price is increased. It is to be feared that both farmers and the government have been more concerned over the effects on prices than upon incomes.

It had been argued that stable prices and satisfactory income under a comprehensive supply control program will increase the rate of adoption of technology. It seems abundantly clear that a supply control program for any commodity subject to important yield variations, (e.g. wheat, cotton) would require an ancillary purchase, starage and sales programs. A supply control program would require some kind of storage program for storable products.

The storage program would absorb the income shock of declines or increases in demand.

Supply control for agriculture has certain advantages for farmers. Firstly, comperhensive supply control can take hold and support the present farm price level. Secondly, supply control can provide gross income protection - economic security - to farmers by stabilizing the price level. Finally, farmers would know with certainty the set of alternatives confronting them; resources would be used to produced rationally planned quantities at pre-determined fair prices, rather than in response to guess regarding the future.

It would be added to these comments that no one believes that comprehensive supply control even if tried, would be applied to all products, especially if a vote of approval by the effected producers is required. A program of general supply control for agriculture would not be adopted by all producers. Some resources engaged in producing those crops or products adopting a supply control program would be pushed into the production of other crops, increasing the output of those crops until the marginal value product of some of the resources in farming would be blow the salvage value outside agriculture.

Supply Control and Efficiency

Productive efficiency in agriculture, in the output per unit of input, increases more rapidly under good and stable prices than it does in distressed and unstable situation. Under good and stable prices, farmers have the incentive, as well as the financial capacity, to make the cash outlays or financial commitments that are associated with the adoption of new and improved production techniques.

Now, the primary objective of supply control is good and stable farm prices, it will allow the individual producers to combine the inputs under his control in the best possible way so as to maximize his income under the announced prices.

Hence, it should be concluded that the rate of increase in efficiency in agriculture would be exceedingly rapid under comprehensive supply control.

Such a program of supply control has some limitations. Some economists have the opinion that such a program of supply control will substantially reduce the freedom of farm operator. But, the freedom that actually would be restricted is the freedom of the individual to expand aggregate output in a competitive market.

On other hand, supply control is not a useful policy tool to deal with the problems of stability in agriculture arising from shifts in aggregate demand due to changes in employment and income, nor it is a usful solution to the problems of fluctuations in income arising from unplanned changes in output due to weather. It would, of course, reduce the uncertainty and instability arising from internal instability of production cycles in agriculture.

Also these economists have the opinion that, not only would a supply control program be ineffective in dealing with unplanned changes in farm output, but such changes would be a serious problem for an effective supply control program. This is why a supply control program would require a storage and price support program if it were to be effective. The storage program would provide protection to farmers incomes from unplanned changes in output.

Coming to the end of this discussion it should be mentione that supply control program includes both control of production and control of distribution.

2.2.1 Production control

Production control that maintain farm output at a level where the market price will provide satisfactory incomes for resources in agriculture. The reasoning behind this approach is as follows; since the demand for almost all individual farm products and for farm products in total is inelastic, a smaller quantity of farm products will produce a higher total revenue for farmers. Thus, an effective supply control program could maintain a satisfactory price and income level for agriculture without direct government intervention in the market of farm products - as rationing for example.

A. The Control of land

When there are inequities in supply, over production or surplus occures or shortage of one-or more-commodity. These inequities will be a result either for increased production with no offsetting increase in demand or from a decline in demand without any corresponding decrease in production, or from a shortage in production with higher demand. A surplus or overproduction is a supply in excess of the quantity which can be sold at a price sufficient to induce farmers to attempt to produce that quantity. On other hand shortage of supply - production - with a higher demand will increase the consumers prices of that commodity.

Generally, agricultural surpluses have been primarily a result of changes in demand, or the general price level, following which the existing production could not be sold at satisfactory prices.
So that, the initial objective of land control, would be to reduce farm output of one - or more - commodity. In other cases the objective of land control would be to maintain the production of the commodity.

A system of land control has been adopted in Egyptian agriculture in connection with cotton production and wheat production. A minimum area of wheat production had been restricted (33 per cent of the total cultivated area) in order to maintain the production of wheat. At the same time a maximum area of cotton production has been restricted (33 per cent of the total cultivated area) in order to limit the production of cotton.

Attempts at production control in agriculture have, ingeneral , concentrated upon the quantity of land used to produce a specific crop. The other inputs used in agricultural production - capital and labour - were considered complements to land in production. Thus, it was reasoned, if this area of land under cultivation could be controlled, it would be possible to control the output of farm products. If fewer acres were used, less labour and capital would be used and the output reduced.

Controlling farm output by controlling the land input for a few commodities has two problems. First, it has been difficult to reduce the output of the controlled crop, and second, acreage allotments on a few crops have no effect upon total farm input. The inability of acreage reductions to control the output of the specific crop rests largely upon the fact that land is only one input, and not a major one at that for most crops. There are another inputs, which are substitutes for land in crop production. The effects of the substitution of other inputs for land can be seen in virtually every crop for which output control by acreage reduction has been attempted.

In U.S.A. for example - the seeded acreage of wheat was reduced from 78.9 million acres in 1953 to 58.2 million in 1955, despite this huge reduction, the production of wheat only declined from 1.2 bilion bushels. In 1958, 1.5 billion bushels were produced on only 56 million acres and in 1960, 1.4 billion bushels were produced on only 54.9 million

acres. In cotton production, harvested acreage declined from 24.3 million acres in 1953 to 15.5 million acres in 1960, while the production droped from 16.5 million bales to 14.4 million bales. (1)

From the above data we concluded that acreage reduction have not been very effective in reducing the output of the controlled crop. In virtually most cases, the result has been the rapid rise in the use of land substitutes, which have increased yields per acre and required continued reductions in acreage allotments. (2) This has led to continued reductions in the acreage per farm of the controlled crop, sometimes to the point where the acreage is too small for the efficient use of machinery and operator labor.

These and other problems have led many to suggest the abondonment of the use of acreage as a method of production control, and the use of quantity controls over marketing as an alternative.

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(1) Hathaway D. - "Government and Agriculture"- The Macmillan Company, New York - First Printing - 1963 p. 298.

(2) In U.S.A. agriculture, only about 17 per cent of all farm resources are land and buildings, farm labour 29 per cent.power and machinery 22 per cent - real estate 15 per cent - feed seed and livestock 11 per cent - fertilizer and lime 6 per cent - other about 17 per cent - Wilcox W.W. - "Agricultural Income and Adjustment Problems"- Joint commitee print - U.S.A. 1960.

Under the land control programs, the excess production of some of the controlled crops merely was transferred to other crops not having acreage allotments. Farmers are free to put the land diverted from allotment crops to other uses.

Despite the possibilities of substitution of other inputs for land, at any given price level there is some points at which such substitution is no longer profitable and total output will be reduced if enough land is retired. Obviously, the higher the price that it attempt to be maintained under the program, the more profitable substitution of other inputs will be and the greater quantity of land that will have to be retired to achieve a given reduction in input. The retirement of entire farms tends to reduce the substitution of other inputs of land, because some of the other inputs associated with the land that is retained usually also are withdrawn from production. Any system of land retirement will reduce not only land use, but also labour, and machinery use.

The economic effects of a land control program are to reduce the marginal value product of labour and capital in agriculture and to increase the marginal value product of land. Thus, real output in the economy would be lower than it might be in the absence of land - control program. If the elasticity of demand is higher for the products which recieve the additional inputs of land, than for the controlled crops, total gross and net farm income will be increased by the production controls of few crops. The higher total net income was due to a rise

in the income from the controlled crops and a decline in the income of other commodities where output was increased when resources were diverted from the controlled crops. Therefore, selective crop controls involve a redistribution of income within agriculture even though they may increase total income, and those farmers whose income will be reduced are not likely to favor them.

In the same time, it would distribute income among farmers in relationship to their output of farm products. At the same time, it reduces the efficiency of resource allocation within agriculture and between agriculture and the rest of the economy. While it might achieve some improvements in the incomes of many farmers it will do so only at the cost of considerable economic loss to the economy as a whole.

B. Controlling farm output by controlling other inputs

The substitutability of the various inputs in agriculture brings widespread recognition of the difficulties in any attempt to control total farm output via the restriction of a single input.

Resources "fixed" in agriculture have a supply close to zero down to the point where their returns in agricultural production are less than their salvage value outside agriculture. The supply elasticity of variable inputs is somewhat higher, and thus the initial impact of the adoption of a production control program which reduced the absolu level of output would be to reduce the use of such inputs as fertilizer, irrigation insecticides, etc. .. Since the salvage value of land outside agriculture is low, the supply elasticity of land is very low and most of it would continue in production.

So that, the short-run use of variable inputs would decline. The lower farm output, thus would be produced on about the existing quantity of farm land, but with some what less labour and less purchased inputs. Eventually, the net marginal return to labour and land would be no higher under the program of production control, than it would be if there were no program at all. It might even be lower, depending upon the size of the reduction in output and whether, in the absence of a program, the marginal value product of the fixed assets exceeded their saluage values.

So it seems, that , controlling farm output by controlling other inputs-than land is doubtful. It is useless to control one or more of variable inputs, in the same time leave the main fixed resources of production without control. Controlling farm output by controlling the amount of land is more useful and has positive results in developing countries.

2.2.2. Control of distribution

A. Market organization

The organization of agricultural marketing considers one of the effective instruments for controlling agricultural prices. But, it depends upon the institutional framework of the economy, the strenguh of trading state organization and cooperatives and other factors.

Trading state organizations could play an active role in purchasing agricultural products, eliminate the middle men and speculators in the marketing of farm produce and increase its efficiency.

Also, organizing of agricultural market by the state has many other aims. The most important one of these aims is mobilizing the agricultura marketed surplus to consumers centers, and industrialization.

The most used methods or forms of organization agricultural marketing are:

1- Cooperative marketing

2- Compulsory or obligatory deliveries.

3- Contract purchasing, and

4- Purchases on the free market (non-obligatory deliveries).

So, it seems to me that, the contract purchasing of agricultural products is the more convenient one for developing countries. The contract system

is used as a means of adjusting the structure of output to the social and economic structure of agriculture. It reduce certain risks in marketing, in that it assure the farmer an income from his product, and assure the contracting agent a source of supply.

B. Buffer stocks policies(1)

These are a sort of discrimination in time. Wherefrom, the price is stabilized at the average level in both years, by storing crops in time of plenty for use in times of scaroity. There are two kinds of buffer policies: buffer stocks and buffer funds. By buffer stock policies the prices of primary products could be stabilized through the buffer stock agencies by open market operations. These agencies conntract short term fluctuations in prices by buying the products from the primary producers at a certain support price, whatever the minimum actual prices may be. The products stocked until demand is improved and prices increase, the agencies start to sell the stocks at a good prices. The agencies tend to store its stocks in years of slack demand, and sell it in years of strong demand and shortage of supply.(2) The support prices and the selling prices could be adjusted from year to year according to the conditions of supply and demand in domestic and international market. The buffer stock policy can best be started in periods of slack demand to accumulate stocks. However the main

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(1) Nurkse, R.- "Trade Fluctuations and Buffer Policies of low Income Countries" - Ky klos 1958 - pp. 141 - 154.

(2) Parter, R.S. - "Buffer Stocks and Economic Stability" Oxford economic paper - vol. II. 1950 - p. 95.

disadvantage which is usually maintained is that buffer stocks prosses rather high storage and administrative costs, and that the accumulations of idle commodity stocks would be for more urgent development projects. Buffer stocks may be operated under complete or partial state trading. That is to say, a central agency is able to buy any supplies offered to it at the minimum guaranteed price, to supervise the management of the stock and to make sales. In developing countries, it is necessary, that the governmental agencies do storage.

The second sort of buffer policies is the buffer funds, it consis of accumulating funds or foreign exchange through taxing exports of primary products in period of excess demand and subsidising them in slack period. The aim of such policies is not to reduce the fluctuations in the international prices, but to soften impact on the domestic market, to keep the income of primary producers rather stable. This can be reached through three ways. The three methods function in a way that the stock of foreign exchange is accumulated, when demands for export and prices are high and is decreased when export prices are low.
Buffer funds is better started in boom periods, to begin with accumulating foreignexchange. This can be done through:

Firstly: establishing a central agency whose main function is to guarante a certain fixed price to domestic producers, this fixed price is formulated in such a way as to represent an amount of tax in good years and a subsidy in bad years. This central agency sells the primary products

whatever the price in the international market may be.

Secondly: this function could also be realizing by formulating variable export taxes or export subsides, such that if international market prices are high an export tax is introduced, and in slack periods subsides are imposed.

Thirdly: An exchange central agency can do the same job as the first two, by raising the exchange rate in good periods and lowering it in slack periods, on the other hand if the agency fixed the foreign exchange rate it can operate through making profit in periods of high exports and loss in other times.

1. Buffer policies of Egyptian Cotton

Egypt has used five policies to influence cotton prices and stabilize it not only domesticly, but also to influence the international prices in a manner optimal to the country:

1) area restrictions,
2) cotton export taxes,
3) buffer stock policies,
4) export subsidies, and
5) foreign exchange rate policies.

Concerning the buffer stock policy, it was introduced during the second Warld War by establishing the Egyptian cotton commission ECC. The ECC fixed each year certain support prices at which it guaranteed to buy the cotton from the farmers. During the Second Warld War, Egypt was isolated from her cotton export market, large amount of cotton were bought by the ECC and was stocked till the end of the war. When prices and demand improved, the stocks were sold. The ECC has also announced the selling prices of cotton trying to influence domestic and international market, this particularly happend in 1951/52 to provent cotton prices from falling after the korean boom. The ECC has in general tried to smoothen the fluctuations in the prices of cotton. Stocks of cotton tended to increase in bad years and decrease in good periods. In certain years the stocks reached one third of the total production, in others they were rather negligihle.

Concerning buffer funds for Eguptian cotton, export taxes were introduced in 1933 and abolished in 1945, latter in 1948, a new export tax was introduced. When export prices increased to a certain level, which made it difficult for domestic industries to continue production, part of this export taxes was used for subsidizing the domestic textile industries produced by the big companies[1]. The tendency for the export tax to vary with short term changes in international prices was weak. In 1950-51 the export tax reached its maximum and in this concern

(1) Shabana, Z. and El-Atre, A.K. - "An Introduction to International Cotton Economy" - Dar El Maref - Cairo - 1965 - p. 459. (in arabic)

it served as an alternative method of controlling production. The high export tax remained at a high level till 1954-55 in spite of lower export prices. From 1955-56 export taxes are progressively reduced and domestic textile prices increased. In 1959-60 the export tax on the extra long staple cotton was completely abolished and a lowexport tax on medium staples is kept in force. These has been done to keep farmers income stable in spite the fall in cotton prices. Thus it can be generally concluded that the cotton export tax, has followed demand conditions abroad and has to some extent served to stabilize producers prices.(1)

Subsidies on exports and especially to the hard currency countries have been extensively used particularly during the period 1952 in order to accumulate foreign currency. Combining taxes and subsidies have been considered as some kind of price differntiation in which Egypt has tried to adjust the price to the conditions in each particular market. Since 1962/63 fixed uniform prices were used to all foreign buyers and price discrimination used during the fifties came to an end.

The government closed the future market in Alexandria in 1961 for good. In 1962 a low was issued which declare that the ECC has to buy and sell the Egyptian cotton production in the year 1962-63 and the following periods. The buying prices of ECC are fixed yearly while the selling prices are fixed every week according to the international price

(1) Hansen. B. - & Marzok, G.A. - Op. cit. p. 102.

situation. The prices paid to the farmers are lower than the fixed supp prices, by an amount equal to the margins of the ginning, merchants and transport costs. To minimize these margins cooperative socities, and the cooperative and agriculture credit bank, took part in marketing the cotton to competet with private merchants. From 1964 all trade of cotton is carried through the cooperative societies.

C. Controlling imports and exports

The control of imports is an important method for controlling prices, and is necessary even the controlled price internal is difference than those ruling on international market. The regulation of imports may be achieved by financial methods, such as import duties, protective exchange rates, etc... by quantitative restrictions, or by state or cooperative trading.

In United Kingdom, the deficiency payment system used extensively as a mean of implementation, which gives no artificial attraction to foreign supplies.

In the Netherlands, for example, the guaranteed minmimum price for course grains is assured by a variable tax on imports equivalent to the difference between the import prices and guaranteed minimum prices(1

(1) F.A.O.- "An Enquiry Into the Problems of Agricultural Prices Stabilization and Support Policies" Rome - 1960. p. 51.

The proceeds are paid into an agricultural equalization fund and they are refunded on any quantities reexported. In this way, Netherlands farmers get the benefit of cheap coarse grains for animal feeding, since no taxes on imports are paid unless import prices are below the guarnateed minimum.

In Japan the government exercises on overall control over imported rice, barley and wheat. Imported foodstuffs are managed together with domestic food grains. No person is allowed to import rice.

The government decides the quantity of rise to be imported and buy it from importers. The quantity to be imported is determined according to the amount necessary to meet the requirements of the rationing system.

In Egypt, the government took in hand importing wheat to face domestic consumption. The import prices of what were above domestic prices which hand been fixed by the government. So that, the government subsided imports of wheat to reduce the cost of living which represents more than 40 millions L.E. yearly. Wheat imports increased year after year to reach the domestic production in 1950-51 and exceeded it in 1958-59 till 1967-68. Tables 3 shows domestic production, imports and its percentage of domestic production in 1949-50/1967-68.

Price level for agricultural products are often supported premarily by regulating the volume of imports or exports.

The result may be to reduce or to expand the volume of world trade. Where domestic prices are maintained or guaranteed above "World maket levels", as in many economically more developed countries, it may be necessary to restrict imports in order to support the market. In net importing countries the effect is thus to reduce the volume of world trade. Conversely, however, in approximately self-sufficient or in net exporting countries domestic prices are often maintained by exporting any quantities which cannotbe sold on the home market at the support price level. Such exports will often necessitate government subsidies, or the provision of special terms in order to compete with other exports or to enlarge the export market.

In other cases losses on export markets are re-couped by charging higher prices to domestic consumers. In all these casses the result is to increas the volume of world trade, though this effect may be minimized when only part of the output, e.g. sufficient for the domestic market, is eligible for price guarantees.

On the other hand where, for example, in the interests of consumers, prices are held below market levels, or at least below the level which would otherwise obtain, the situation is reversed. It may be necessary for importing countries to increase their imports and for exporting countries to restrict their exports to avoid shortage on domestic

Table No. (3): Net Domestic Production and Imports of Wheat in Egypt in 1949/50-1967/68 - (in thousand Tons).

Years	Net domestic production	Imports	
		Amount	% of net domestic production
1949/50	1017	315	31
1950/51	865	814	94
1951/52	1056	890	84
1952/53	912	921	101
1953/54	1351	228	17
1954/55	1535	62	4
1955/56	1274	537	42
1956/57	1372	684	50
1957/58	1302	1061	81
1958/59	1245	1445	116
1959/60	1276	1288	101
1960/61	1335	1017	76
1961/62	1269	1785	141
1962/63	1429	1708	120
1963/64	1356	1892	140
1964/65	1304	1775	136
1965/66	1124	1912	170
1966/67	1313	2109	161
1967/68	1123	2479	221

Source: Computed from : Bulletin of Agricultural Economics - Several Issues - (in Arabic).

markets and to prevent prices from rising above the controlled level.

In exporting countries, if the producers - guaranteed - price is above the export price, the loss must be met by the state, when the whole crop is covered by the guarantee, e.g. as for wheat exports from turkey.

The maintenance of a guaranteed price on the home market by exporting excess supplies becomes correspondingly more difficult where the export market bulk is larger, specially if the country is economically dependent on agricultural export, as in Egypt.
In cases where a large part or even the major part of the output is exported, a guaranteed price covering only domestic sales becomes of less value to farmers. But the alternative of making good any losses on exports by state payments will be difficult for large - scale exporters, unless the economy is very strong and not heavily dependent on agricultural exports.

Because of the extreme difficulty of regulating international supplies, exporting countries tend to rely on such financial methods. They include deficiency payments, so far used mainly for import products, equalization funds, used largely but by no means exclusively for export products, and the adjustment of export taxes or exchange rates which apply only to supplies moving in international trade.

Export tax on cotton is used in Egypt as a mean to limite its production, instead of area restrictions.

During the years 1950 and 1951, when no area restrictions were in force, the export tax rose and reached its maximum. By combining area restrictions with a moderate export tax we can ensure the implementation of area restrictions policy. At the same time by imposing an approprite export tax, the revenue of which is accured to the government decides upon its use, we may secure raising farmers selling prices, through less than export prices, and preventing cotton prices for domestic consumers from increasing.

From the view - point of land allocation the export tax is superior to area restrictions, which depending on their nature and administration, may happen to push intra-marginal cotton land out of cotton cultivation, and keep extra - marginal cotton lands in. The possibilities of evasion are smaller in the case of export taxes than in the case of area restrictions (in particular after the nationalization of the cotton trade where the "tax" is simply the possible difference between the cotton authorities buying and selling prices). Export tax is also superior to area restrictions from an encome distribution point of view. With area restrictions the whole benefit to the country will go to cotton growers while domestic consumers of cotton are lossing. With the cotton export tax the whole benefit will accure to the government who will then have to decide upon its use. At the same time prices from domestic consumers are prevented from increasing.

It will be understood that, it may be rational to let export tax move up and down according to foreign demand.

In Egypt also direct subsidies to cotton exporters are used. As it was discussed at the start of this part.

1. Export dumping

If the market for a product can be divided into two or more separate portions and a limited amount sold in that portion where demand is most inelastic, the revenue from a given output can be increased.

In other words, there must be two separate markets for the product, each with a different elasticity of demand. One of the markets may be the domestic market and the other the foreign market (or also domesticly), or one may be the market for human consuption and the second the market for feed or industrial uses.

Export dumping plans need several proceedings such as:

1) there must be two separate markets for the products, the domestic and foreign markets.

2) rising the demestic price.

3) reducing the quantity consumed domestically, to that amount which had been planned to consume at the price established for the domestic market.

4) taxing domestic consumption to finance payments to farmers and subside exports.

The greatest total revenue from a given volume of total sales is obtained when the marginal revenue in each of the separated markets is the same.(1)

As a matter of fact, unless the marginal revenue in each market is the same, gains can be made by shifting sales from one market to the other.

That is to say, that the effects of export dumping depend upon the relative elasticities of the domestic and foreign demands. If the foreign demand is more elastic than the domestic demand, dumping goods at lower prices abroad increases the total returns from the sale of the goods in the two markets, the reverse is true.

And if the foreign demand has the same elasticity as the domestic demand, dumping goods at lower prices abroad has no effect on total return.

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(1) If P_1 and P_2 , Q_1 and Q_2 , MR_1 and MR_2 , represented prices, quantities sold, and marginal revenues in the two markets, respectively, and Q_T the total production, the conditions for the most profitable division of supplies between the two markets are: $Q_1 + Q_2 = Q_T$ and $MR_1 = MR_2$.
Hallett G. - "The Economic of Agricultural Policy"- Oxford- 1968. p.75.

There are several problems which will arise through market discrimination - or export dumping. For instance, if the domestic price is maintained above the export price, an important control or tariff is required to maintain the higher domestic price.

Also, in some market discrimination programs, the size of the primary market has been difficult to maintain and more of the products ha to be diverted to the lower price secondary market. This of course causes reduction in the producers revenue.

A special attention should be paid to the necessity of controlling production of the crop. In the absence of production control, resources would be shifted to the production of the crop with the two-price programs until returns from producing that crop were no higher than from producing other farm crops.

On other hand, without stabilization of production, it will be difficult to realize stabilization of farm income from the commodity.

D. Rationing and subsidies

The government may control the distribution of a good, when there is a great shortage in its supply, and the price rises above the required level, in such a situation the government may take two actions.

1. Since the price fixed by the government is usually in this case below the price prevailing in the free market, and consequently the quantity supplied will be less than the quantity demand at this price. The state distributes the limited quantity through rationing. Rationing considers one of the proper methods to restrict purchasing and decreasing demand for the commodity. That is by determining the amount for each consumer. This determined amount is distributed on consumers, so that the total amount distributed is equal to the supply of that commodity. The state introduces rationing; for each consumer limited quantity to concume.

In Egypt, commodities distributed by rationing also is supplied in the market with a fixed price above its rationing prices.

2. The second action the government may take is to fix the price at a low level, through subsidies and let the forces of demand and supply react freely to the low price. Subsidies leads to increase in production of total commodity, consequently increase in supply. In some cases subsidies are given to encourage exports - as it was discussed before-from commodities or to direct consumption.

Both consumers and producers benefit from subsidies. The producers consider subsidies as a decrease in the cost of production, while for consumer it is a decrease in the price of the good; The benefit that goes to each part depends upon the elasticity of supply and demand. Both of them

share the subsidy by an amount related to the elasticities. Whenever the elasticity of supply is greater in absolute term than the elasticity of demand the producers will benefit more from the subsidy and vise versa.

Moreover the total amount of subsidy paid to decrease the price increase when the elasticities of supply and demand are high, than when they are low.

To reduce the cost of living in Egypt the government fixes the prices of the necessary food stuffs at a low level, and pays a considerable amount of subsidies. In 1966/67 the subsidies reached 36 million pounds. The subsidies are paid to the imported food stuffs such as wheat and flour and to some agricultural products produced in Egypt such as Beans, Lentille and Sugar.(1) From table 4 it is clear seen that subsidies for wheat and flour represent on the average more than 70 per cent of the total food-stuffs subsidies.

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(1) Fouzy H.R. - "Price Control for Selected Foodstuffs in Egypt" - Institute of National Planning - Cairo, 1966. p.p. 210-213. in Arabic.

Table No. 4

Subsidies Payed by the Government to Reduce the Cost of Living on 1950/51 to 1966/67 in Egypt

(in thousands L.E.)

Year	Flour	Wheat	Maize	Beans	Lentille	Barley	Millet	Sugar	Total
1950/51		4585	2274						7956
1951/52		12914	2321	29	3	100	54		18046
1952/53		12930	2390						15500
1953/54		5680	405			100			6250
1954/55		1694							1734
1955/56		1900							1917
1956/57		2000	607	163					3000
1957/58		535	225						2072
1958/59		2500	500					2440	6715
1959/60		2500	500					3500	7911
1960/61		2000	3000					3946	9000
1961/62	7000	2200	350					4200	16646
1962/63	15432	7308	4037					4745	36512
1963/64	8100	9800	4000					4920	32400
1964/65	9000	9050	3600	616	15			5900	35000
1965/66	1000	12500	7000					6343	35000
1966/67	3674	11867	3553	885	21				36000
Average	7368	5998	2124	342	13	100	54	4499	15983

Source: Fouzy, H.R. "Price Control for Selected Foodstuffs in Egypt" - Institute of National Planning Cairo - 1966. p. 425.

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