AGRICULTURAL DEMAND, SUPPLY AND PRICES WITH SPECIAL REFERENCE TO ARAB COUNTRIES

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Demand for Agricultural Products

The demand for agricultural products, particularly food, in Arab Countries, as well as other Developing Countries, increases at relatively high rates. This is due mainly to :

1 — The high rates of population growth.
   Table 1 shows the average annual rates of population growth in Arab Countries during the period 1965 - 1971. These rates are high relatively to the rates of population growth in Developed Countries.

2 — The increases of per capita disposable income.
   Table 2 shows the average annual rates of growth of per capita gross national product (of which the per capita disposable income is a part) in Arab Countries during the period 1965 - 1971 at market prices.

Not all the increase in cash income, of course, is reflected in the demand for food since only a part of the increment in income is spent on food. The proportion of the increment which is spent on food is determined by the income elasticity of demand for food.[1] The income elasticity of demand for food in

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(1) Income elasticity of demand is measured by determining either the relative change in the quantities of food consumed with a relative change of income or the relative change in the expenditures for food with a relative change in income. Due to the better accuracy of private consumption expenditures data compared to disposable incomes data in most cases, the former replaces the latter in the measurement. The income elasticities of demand vary by product, levels of income and national or cultural differences.

developing countries is clearly higher than in the developed countries. Therefore, a given rate of increase in cash income has a strong impact on the demand for food in developing countries. Engel's Law states that the demand for food for the community as a whole will, in general, increase as income rises to higher levels, but the proportion of income spent on food decreases as income rises. A number of statistical studies since Engel's time clearly testify this statement.

Table 1

Average Annual Rates of Population Growth in Arab Countries (1965 - 1971)

Country	Average Annual Rate of Population Growth
Arab Republic of Egypt	2.5
Sudan	2.8
Morocco	2.7
Algeria	3.2
Iraq	3.2
Saudia Arabia	1.7
Syrian Arab Republic	3.3
Arab Republic of Yemen	2.2
Tunisia	2.1
Lebanon	2.6
Jordan	3.4
Arab Republic of Libya	3.4
People's Democratic Republic of Yemen	2.9
Kuwait	9.8
Oman	2.6
United Arab Emirates	9.5
Bahrain	2.8
Qatar	9.6
Somalia	2.4
Mauritania	2.1

Source: International Bank for Reconstruction and Development "World Bank Atlas. Population, Per Capita Product and Growth Rates", Washington, D.C., 1973.

Table 2
Average Annual Growth Rates of Per Capita Gross National Product at Market Prices in Arab Countries (1965 - 1971)

Country	Average Annual Growth Rates of Per Capita GNP
Arab Republic of Egypt	0.2
Sudan	—0.9
Morocco	2.5
Algeria	4.8
Iraq	1.4
Saudi Arabia	7.4
Syrian Arab Republic	3.1
Arab Republic of Yemen	2.4
Tunisia	3.6
Lebanon	0.8
Jordan	—3.5
Arab Republic of Libya	8.1
People's Democratic Republic of Yemen	—7.2
Kuwait	—2.1
Oman	25.1
United Arab Emirates	17.8
Bahrain	7.1
Qatar	5.8
Somalia	0.8
Mauritania	0.9

Source: Ibid.

It must be stressed that although the demand for food increases as population increases and/or cash income rises, a shift in the demand for food due to a growth of population is different from a shift due to a rise in incomes. In case of population pressure, the shift of demand is towards cheap food (fats, starchy foods and low cost carbohydrates), and in case of rising incomes the shift is towards expensive food (more fresh vegetables, better cuts of meat and fresh and canned fruits). With growth of income expenditures turn in the direction of the quality and services of food. In U.S.A. the income elasticity

of demand for marketing services has been estimated to be five times as large as for food itself (0.7 for marketing services and 0.15 for food[1]).

3 — The transfer of part of rural population to urban areas which characterises most of the Arab Countries, as a result of industrialization and education, and which makes or creates special or additional demands on food supply.

4 — In most developing countries many policies and measures have been put into force to realize a satisfactory distribution of wealth and income (such as land reforms). This stimulates and puts more pressure on food products. The redistribution of income is most probably moving in favour of the lower income groups, making for a rise in the average income elasticity of demand for food.

Projections of Domestic Demand for Human Consumption

Theoretically, the demand for a commodity, at the individual level, is a function of its own price, prices of its substitutes and complements, private consumption expenditure (which replaces disposable income due to the better accuracy of private consumption expenditures data compared to disposable incomes data in most cases, as we mentioned before) of the individual and his tastes and preferences.

However, for the projection of individual demand it is assumed that only per capita private consumption expenditures is the only factor that changes over time, while other factors such as prices of commodities, prices of its substitutes and complements, as well as individual taste and preferences, do not change. That is, the individual demand for a commodity is affected by per capita private consumption expenditures, and the interaction between income and consumption in terms of income elasticity of demand for the commodity.

From the above, it follows that for estimating the domestic demand for a certain commodity in a given future period of time, the following independent variables have to be identified :

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(1) E.O. Heady, "Agricultural Policy under Economic Development", Iowa State University Press, 1962, p. 244.

a) Population at a base period and future (projected) population.

b) Per capita private consumption expenditures at a base period and future (projected) per capita private consumption expenditures.

c) Income elasticity of demand for the commodity in concern (at a base period) which is derived usually from family budget surveys.

d) Per capita consumption of the commodity at a base period which could be derived from food balance sheets by dividing the available supply for domestic human consumption (production + imports ± change in stocks — exports — quantities for seeds — quantities for feed — quantities used as raw materials for processing — waste) by total population.

Per capita domestic demand for a certain commodity could be projected by applying the appropriate demand function : semi-log, double log, log-inverse, log-log inverse, etc. These functions are shown in Table 3.

The use of any of these functions depends on the economic interpretation of the function in the framework of demand theory, the statistical accuracy of the fitting and the simplicity of computations.

Then projected total domestic demand for human consumption for the commodity could be calculated.

It is advisable, wherever the necessary data are available, to make separate demand projections for agricultural commodities in the rural and urban areas.

FAO projected the domestic demand for some main food items in some Arab Countries in 1980 and 1985[1].

Also, the Arab Organization for Agricultural Development projected the domestic demand for some main food items in Arab Countries in 1980 and 1985. 1969 - 1971 was selected as the projection base period. This is shown in Table 4.

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(1) FAO, "Agricultural Commodities Projections for 1975 and 1985, Volume I and Volume II" and "Agricultural Commodities Projections for 1970 and 1980, Volume I and Volume II".

Table 3

Functions used for the calculation of increase in per caput demand

Demand functions	Increase in per caput demand*
Double-logarithmic $\log_e y = a + b \log_e x + zt$	$\log \dfrac{y^1}{y0} = \eta 0 \log \dfrac{x^1}{x0} + 0.4343$ $z(t_1 - t_0)$
Semi-logarithmic $y = a + b \log_e x + zt$	$\dfrac{y^1}{y0} = 2.3026 \ \eta 0 \ \log \dfrac{x^1}{x0} +$ $z(t_1 - t_0) + 1$
Log-inverse $\log_{-e} Y = a - \dfrac{b}{x} + zt$	$\log \dfrac{y^1}{y0} = 0.4343 \ \eta 0\left(1 - \dfrac{x0}{x1}\right) +$ $0.4343 \ z(t_1 - t_0)$
Log-log-inverse $\log_e y = a - \dfrac{b}{c} - C \log_e x + zt$	$\log \dfrac{y^1}{y0} = \dfrac{\eta 0}{1 \ \dfrac{x \ 0}{xM}} \left[0.4343 + \right.$ $\left(1 - \dfrac{x0}{x1}\right) - \dfrac{x \ 0}{xM} \log \dfrac{x \ 1}{x \ 0} \Big] +$ $0.4343 \ z(t_1 - t_0)$

Note : x0, y0, t0, $\eta 0$ refer respectively to per caput Private Consumption Expenditure, per caput consumption, time and elasticity coefficient at the base period :

x1, y1, t1 refer to the corresponding values at the end of the projected period. In function (4) there is an additional parameter, which is represented by xM, corresponding to the value of Private Consumption Expenditure, for which the maximum level of consumption is reached. Formulas are expressed in decimal logarithms, therefore the coefficient 0.4343 (or its inverse 2.3026) is used as a correction factor and corresponds to the transformation of decimal into natural logarithms.

Table 4
Projected Total Domestic Demand for Human Consumption for Some Main Food Items in Arab Countries in 1980 and 1985

Food Item	Actual Demand 1969 - 1971 Average	Projected Demand in 1980	Projected Demand in 1985
	000's Metric tons	000's Metric tons	000,s Metric tons
Wheat	12601	17265	20211
Rice	1632	2236	2618
Maize	3142	4305	5040
Sugar & Sugar Preparations	2287	3572	4472
Legumes	812	1123	1321
Meat	1202	1786	2226
Eggs	239	397	511
Milk	7500	11102	13507

Source: Arab Organization for Agricultural Development.

AGRICULTURAL SUPPLY

There are two main sources of agricultural supply: (a) stocks and (b) agricultural production. In the short run stocks become the main source of agricultural supply, and therefore supply depends on quantities of stocks and the will of their owners to sell. The latter depends upon the available prices and responsiveness of owners of stocks to these prices.

In the long run, agricultural supply depends, however, more on agricultural production and, therefore, agricultural supply becomes a function of agricultural production.

Agricultural production depends on area (or animal number) and yields. The latter depends on various factors such as weather, technology, quantity and quality of inputs (fertilizers, pesticides, seeds, livestock breeds, etc.), prices of output and inputs and agricultural policies. Cultivated area depends upon many variables such as technology, availability of irrigation water, inputs, prices etc. Also, the number of animals depends on various factors such as technology, availability of livestock breeds, prices of inputs and outputs etc.

The volume of production which farmers try to produce depends upon the **anticipated relative** prices and costs of output and the responsiveness of the farmers to these prices and costs.

Table 5 shows total area, cultivable area, cultivated area and unutilized area in Arab Countries. It is clear that while cultivable area is about 382 millions hectares[1], only about 51 millions hectares are cultivated under field crops, vegetables and fruit crops. Not only this, but also only about 8 millions hectares out of these 51 millions hectares are irrigated areas, while the rest are rain fed. Agricultural production in the latter areas is, therefore, subject to changes in rainfall from one year to another, and within the same year from one season to another.

(1) Hectare = 2.274 feddans = 2.471 acres.

Table 5
Land Resources in Arab Countries, 1970
000's hectares

Country	Total Area	Cultivable Area	Cultivated Area			
			Field crops, vegetables and fruits	Forests	Pasture	Unutilized land
Arab Republic of Egypt	100145	3576	2851	2	—	723
Sudan	250681	160716	7100	91500	24100	38016
Morocco	44400	28969*	7501*	5337*	7650*	8481*
Algeria	237575	48516*	7066*	3045*	38405*	—
Iraq	43845	14345	7537	—	—	5898
Saudi Arabia	214969	90002	462	1600	85000	2940
Syrian Arab Republic	18518	14745	5909	468	5450	2918
Republic of Yemen	19000	5400	5000	400	—	—
Tunisia	16415	10827*	4334*	841*	5652*	—
Lebanon	1040	496	391	95	10	—
Jordan Arab Republic	9514	1112	600	110	100	302

Table 5 (continued)

Country	Total Area	Cultivable Area	Cultivated Area			Unutil-ized land
			Field crops, vege-tables and fruits	Forests	Pasture	
of Libya	180000	4177	2517	532	1120	—
People's Dem. Rep. of Yemen	28768	—	—	—	—	—
Kuwait	1782	153.8	0.7**	2.2***	134	16.9
Oman	21238	—	—	—	—	—
United Arab Emirates	8360	—	—	—	—	—
Bahrain	60	—	—	—	—	—
Qatar	1036	—	—	—	—	—
TOTAL	1197346	382124.8	51268.7	103932.2	167629	592294.9

*) Data of 1964.
**) Field crops and vegetables only
***) Wooden and fruitful trees
(—) Not available.

Source: Economic Department of Arab League, "Agricultural Bulletins".

The yields per hectare from some agricultural products in the main Arab producing countries are shown in Table 6. The productivity differs from one country to another. However, it is, in general, lower than the productivity in developed countries.

Table 7 shows the total numbers of the main animal wealth components in the main Arab producing countries.

Table 6
Yields for some Agricultural Products
in the Main Arab Producing Countries, 1969
Ton/Hectare

Country	Wheat	Rice	Cotton	Tomates	Potatoes	Onions
Arab Republic of Egypt	2.40	5.10	0.79	6.42	6.86	21.70
Sudan	1.08	2	0.37[a]	—	12.50*	—
Morocco	0.82	5	1.47	17.65*	10	8.33*
Algeria	0.80**	3	0.20*	7.67*	6.38*	5.57*
Iraq	0.71	3	1.32	2.59	—	5.86
Saudi Arabia	1.3**	3	—	12.50*	—	—
Syrian Arab Republic	0.82	3	1.28	—	—	9.60
Arab Republic of Yemen	1	—	0.50	—	8.83	—
Tunisia	0.45	—	—	11.77	15.25	24.50
Lebanon	0.77	—	—	11.67	9.67	15
Jordan	0.97	—	—	7.14	2.50	4.60
Arab Republic of Libya	0.29	—	—	18.43	6	5.25
Average	0.85	4.72	0.75	7.80	7.81	13.44

*) Data of 1967.
**) Data of 1968

Source: Ibid.

Table 7

Total Numbers of the Main Annual Wealth
Components in the Main Arab Producing Countries

000's Heads

Country	Year	Cows and Buffaloes	Sheep	Goats	Poultry
Arab Republic of Egypt	1971	4180	2023	1203	31067
Sudan	1969	12056	11358	9804	—
Morocco	1970	3062	13078	6387	10500*
Algeria	1969	850	7300	2557	12057**
Iraq	1970	1889	13099	2301	6274
Saudi Arabia	1967	160	2800	2900	—
Syrian Arab Republic	1971	508	6112	701	4785***
Arab Republic of Yemen	1971	957	10627	—	—
Tunisia	1969	600	3300	585**	5700**
Lebanon	1969	86	213	348	17463
Jordan	1971	34	691	361	2230**
Arab Republic of Libya	1971	101	2284	1141	1049
Kuwait	1971	5	89	69	2043

*)　　Data of 1966.
**)　 Data of 1967.
***)　Chickens only.

Source: Ibid.

Projections of Agricultural Production

While it is possible to project demand on specific assumptions of population and income growth, the projection of agricultural production raises more difficult problems. First, the influence of weather which can only be partly eliminated by considering three-years averages. Second, it is difficult to assess quantitatively the relationships between agricultural output and various inputs used in agriculture, especially in view of the influence of technical progress ; these difficulties are already significant when dealing with aggregage agricultural production, but become even greater when dealing with specific commodities. Third, changes in relative prices of inputs and especially outputs, and more generally, modifications in agricultural policies may greatly influence the volume of production and specially that of specific commodities. To overcome this last type of difficulty, it has been generally assumed that prices and agricultural policies will remain unchanged.

In projecting production by commodities, a distinction has usually been made between area (or animal numbers) and yields. Projections have been largely based on the study of the trends in yields, areas or animal numbers by commodities. There is, however, a call for a great deal of critical judgment as well as knowledge of the specific problems of each commodity.

FAO projected the domestic production for some main food items in some Arab Countries in 1980 and 1985[1].

Also the Arab Organization for Agricultural Development projected production of some main food items in Arab Countries in 1980 and 1985. 1965 - 1971 was selected as the projection base period. This is shown in Table 8. Table 9 shows the balance between projected domestic food demand and production, and it reveals that Arab Nation is facing a great deficit in food items.

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(1) FAO, op. cit.

Table 8

**Projected Production of Some Main Food
Items in Arab Countries**

Food Item	Actual Production 1969 - 1971 Average	Projected Production in 1980	Projected Production in 1985
	000's Metric tons	000's Metric tons	000's Metric tons
Wheat	7344	8158	8642
Rice	1870	2516	2852
Maize	2855	3591	3982
Sugar and Sugar Preparations	870	1395	1613
Legumes	980	1333	1508
Meat	1150	1388	1521
Eggs	221	281	310
Milk	7200	9741	11226

Source: Arab Organization for Agricultural Development.

Table 9

The Balance between Projected Domestic Food Demand
and Production of Some Main Food Items in
Arab Countries

Food Item	Actual Balance 1969 - 1971 Average	Projected Balance 1980	Projected Balance 1985
	000's Metric tons	000's Metric tons	000's Metric tons
Wheat	—5257	—9170	—11569
Rice	+ 238	+ 280	+ 234
Maize	— 287	— 714	— 1058
Sugar and Sugar Preparations	—1408	—2177	— 2859
Legumes	+ 168	+ 210	+ 187
Meat	— 52	— 398	— 705
Eggs	— 18	— 116	— 210
Milk	— 300	—1361	— 2281

Source: Tables 4 and 8.

One of the reasons behind the shortage of agricultural production in Arab Countries is the lack of coordination and integration between them in the fields of agricultural development. Agricultural resources are unbalanced within each country (the lack of balance between human resources and land resources which is shown in Table 10 is a clear example for this) and this leads to underutilization of available agricultural resources. At the same time, it could be said that there is a balance between agricultural resources (labour, land and capital) within the Arab Nation as a whole. Coordination and integration among Arab Countries in the field of agricultural development could, therefore, help in achieving better utilization of resources, increasing agricultural production at adequate rates and attaining mutual benefits to all partners. While Arab Countries are importing, at present, about half of their domestic consumption of food, they could become not only self-sufficient, but also net exporters of food.

Table 10
Cultivated land, Agricultural Labour Force and Per Capita of Land in Some Arab Countries

Country	Cultivated Land 000's hectares	Agricultural Labour Force, 000's	Per Capita of Land in hectare
Arab Republic of Egypt	2853	3965	0.72
Sudan	122700	4426	27.72
Morocco	20488	1834	11.17
Algeria	48516	1293.4	37.51
Iraq	7537	1386	9.69
Saudi Arabia	87062	1355	64.25
Syrian Arab Republic	118223	1308	9.04
Tunisia	10827	448.3	7.50
Lebanon	496	453	1.09
Jordan	810	178	4.55
Arab Republic of Libya	4177	377	10.55

Sources : (1) — Economic Department of Arab League, "Labour and Wages Bulletins".

(2) — Table 5.

AGRICULTURAL PRICES

I — Where domestic food production is not expanding at an adequate rate — as it is the case in most, if not all, Arab Countries — and food imports are somewhat restricted in favour of capital imports, and do not fill the gap between demand and supply — as it is the case in non-oil producing countries which are likely to be already facing balance-of-payments difficulties, and whose exports earnings are not expanding at an adequate rates — food prices are bound to rise sharply leading to serious inflationary pressure with its well known unfavourable effects on industrialization and economic development. Table 11 shows the increase in food prices in Egypt during last years. It should be mentioned that a given rise in the price of food in developing countries is likely contribute to a greater inflationary pressure than an equal rise in the price of manufactures. This is due to the fact that the large portion of income is spent on food, and that the price elasticity of demand for food is lower than that for manufactures.

Table 11

Wholesale and Retail Food Price Indices in Egypt

(1959/1960 = 100)

Years	Wholesale Price Indices	Retail Price Indices
1965/66	131.8	145.7
1966/67	150.1	152.7
1967/68	158.1	147.7
1968/69	141.5	147.7
1969/70	146.6	147.7
1970/71	155.7	165.2
1971/72	172.3	183.1
1972/73	175.2	196.2
1973/74	190.3	220.6

Source: Central Agency for Public Mobilization and Statistics, "Statistical Yearbook of A.R.E.," Cairo, Several Issues.

While the large part of increase in domestic food prices is due to the shortage of domestic production, a certain part of that increase is due to the rise in world food prices, the lack of efficient marketing apparatus and the lack of planning food consumption.

Regulating and controlling food prices could help — to a certain extent — in avoiding the inflationary pressure. However, the real solution of the problem is to increase food production and regulate its marketing and consumption as well.

II. — A specific characteristic of agricultural prices is that they are subject to different types of fluctuations under conditions of free market mechanism. The major type of these fluctuations are :

1. Short-time fluctuations
2. Seasonal fluctuations
3. Cyclical fluctuations
4. Episodic fluctuations
5. Secular trend.

In fact, agricultural prices are so much more subject to frequent fluctuations than prices of non-agricultural commodities. This is due to the relative weak responsiveness of agricultural supply to fluctuations in demand.

Violent fluctuations in agricultural prices are unfavourable to farmer's incomes, agricultural production development as well as to working class and the branches of industry utilizing agricultural raw materials. Therefore, it is of a great importance to attain a relative stabilization of prices. But it must be stressed here that stabilizing agricultural prices must not mean that these prices are to be rigid regardless of the size of the crop since this conflicts with stabilization of incomes which is rather important to farmers than stabilization of prices.

Tasks of Agricultural Price Policy

I. Stimulating agricultural production, directing its development in the direction socially desirable, and allocating agricultural resources in an optimum way. Here we have to take into consideration both the general agricultural price level and price relations between agricultural products.

The response of production to price stimuli is likely to vary considerably in magnitude according to the type of farm and the level of agricultural development of the country.

Price is an important instrument for influencing the expansion of agricultural production, but it is by no means the only or most important one. In order to "steer" the development of agriculture it is not enough to manipulate the prices, it is necessary to use a wide variety of complementary measures : prices and marketing, investments, credits, extension services, land reforms, technical progress, supply of inputs, research, administrative directions and so on.

A good price policy affects the production favourably only when objective conditions conductive for the growth of agricultural output are existing or may be created.

II. Influencing the consumption of agricultural commodities and directing its structure in the direction socially desirable.

The demand for food in developing countries is more responsive to price movements, particularly downward movements, than in developed countries. This would suggest that price level and price ratios do play an active role in determining consumption of agricultural commodities in developing countries.

It is worthwhile to mention here that though price is an important factor in influencing consumption and directing its structure, it is by no means the only one. Influencing consumption effectively necessitates the application of certain additional nonprice means of influencing consumer behaviour.

III. Influencing in a determined way the distribution of the national income between agricultural and non-agricultural population as well as between different rural social groups.

The level of agricultural prices in relation to the prices of industrial goods has an important effect upon the division of the national income between agricultural and non-agricultural population. Also, price relations between different agricultural commodities affect income distribution among different rural groups.

Of course, the price system by itself is not in a position to solve the problem of income distribution. Other measures such as taxes and subsidies should also be used. Price system is, however, and must be an essential element in the joint determination of the national income distribution by several factors.

One often meets the opinion that there is a contradiction between the task of influencing the distribution of the national income and the other tasks enumerated before (regulating production and consumption). Harmonizing price policy with other forms of influencing agriculural production — taxation system, credits, rural production, etc. is necessary or indispensable in order to reconcile such conflict or contradiction.

Methods of Setting Agricultural Prices

The methods most used in setting or establishing the agricultural prices are :

a) Cost of production formula
b) Parity price formula
c) Parity income formula
d) Multiple factor formula
e) Ad hoc (non-formula) method
f) Production-redistribution formula.

The functioning of these methods is found and explained in many textbooks of economics. Each of these methods has its advantages and disadvantages. No formula provides a hard-and-fast answer to the question of the desirable level of prices for different agricultural products.

Production-redistribution formula seems, however, to be more adequate than the others in the field of setting agricultural prices. But, the application of this formula as a base for setting agricultural prices requires accurate and continuous statistical data regarding agricultural production, prices, costs, incomes, investments, consumption, taxes and subsidies. It also requires a significant role of the state in allocating and carrying out agricultural investments and planning agricultural development. This is why the adoption of such formula as a base for setting agricultural prices in developing countries may, now, face serious

difficulties. But in spite of this, the fact remains that some general ideas of the concept on which this formula is based could be of some use in the developing countries, that is :

1 — the general level of agricultural prices should be set in close connection with the planned increase in agricultural production and the planned proportions of distributing the national income among different sectors of the economy/agriculture, industry, etc. ;

2 — in shaping agricutural prices, all the interconnected magnitudes : production, prices, incomes, costs, accumulation consumption, taxes and subsidies should be taken into consideration ;

3 — There must exist a close link between the level of agricultural prices and the various forms of carrying out agricultural investments. Suppose, for example, that in accordance with the general principles of economic policy the greater part of investments in agriculture is made by the state e.g. in the form of tractor stations. In that case the prices paid to the farmers should be lower than they would have to be if the farmers took care of their own investments. It follows that any changes in the system of finance must be accompanied by well defined changes in the general level of agricultural prices ;

4 — in the field of agricultural price policy it is necessary to take into consideration the whole set of prices and not only the prices of some particular products :

5 — the empirical way to determine the correct relations between prices of different products may be of some use if the matter is only analysed in a correct way.

In the field of agricultural price policy, the prices should not be rigid, they have to deviate, within certain limits, from the base according to the conditions of the harvest. Primary prices have to be set and announced as a rule before the farmers make production decisions, the purchase prices (secondary prices) have to be more elastic (move within a certain range).

Control of the Agricultural Prices

An efficient control of the agricultural prices, in order to ensure that the set or established prices are in fact operative and in turn to fulfil and achieve the tasks of agricultural price policy, requires a wide variety of measures.

One of the most important measures in this field is regulating and organizing marketing of agricultural produce. Besides controlling the prices, organizing agricultural marketing could achieve :

1 — Providing urban population with regular supplies of food at fair prices.

2 — Providing industry with regular supplies of agricultural raw materials at stable prices.

3 — Improving marketing efficiency (providing more and/ or better services with lower costs).

4 — Increasing agricultural exports.

5 — Stimulating agricultural production.

6 — Setting some sort of integration between agriculture and industry.

7 — Coupling the agricultural purchase policy with investment policy and technical progress.

Regulating and organizing agricultural marketing requires not eliminating middlemen administratively but activizing and strengthening trading cooperatives and state organizations which compete with those middlemen in the purchase of agricultural produce.

These organizations could achieve better economic results. The transformation of a possibility into reality depends upon the efficiency of these organizations. Experience shows that the most important obstacles here are :

1 — The lack of knowledge of the market and flexibility.

2 — The tendency to give preference to vested interests that sometimes appears in commercial policy.

3 — The lack of Member's participation in directing and managing the organization.

4 — The tendency towards bureaucracy.

The most used forms of trading cooperatives and state organizations in purchasing agricultural products are :

1 — Free market purchases
2 — Contract purchasing
3 — Obligatory or compulsory deliveries.

Two fundamentally different situations should be considered when we speak of controlling agricultural prices :

a) Where the state is the only purchaser of certain agricultural products (e.g. industrial crops), and has at its disposal sufficient stocks allowing it to control the market, the state is, then, able to control the prices directly through price fixation and worries only about at what level the prices should be fixed.

b) Where the state purchases a certain quantity of products, but a substantial part of these products goes through the free market, the state can influence the prices only indirectly. (Attempts to fix prices under conditions where the state does not control the markets do not usually yield positive results).

The main measures through which the prices could be indirectly influenced are :

1 — area restrictions
2 — supply of inputs
3 — providing farmers with market information
4 — purchasing and selling certain quantities of certain crops at fixed prices
5 — regulating the flow of certain quantities of certain commodities in time and space.
6 — export and import policies
7 — taxes and subsidies
8 — direct payments
9 — rationing of some commodities
10 — the prohibition of the sale of certain commodities on certain days
11 — propaganda.

The above discussion shows that controlling agricultural prices consists of direct fixing of the prices of certain basic products and influencing indirectly, through different forms of market intervention, the prices of remaining products with the aim of maintaining them with defined limits. Controlling agricultural prices does not need fixing prices for all agricultural products. Besides being needless, it is rather difficult, if not impossible, to fix prices for all agricultural products.

It should be stressed that the relative stability of price within the range established or set, is not necessarily a measure of the "correctness" of the range in any absolute sense. It does, however, reflect its realism in relation to the means used for defending it. The correctness of the set or established prices should be measured through their influence on production and the market as well as on the real income of different groups.

Setting producer price (farm gate price) for export crops

Agricultural products entering world trade from the developing countries have shown heavy price fluctuations on the international market. A major source of such instability lies in the cyclical variations that continue to characterise the demand for primary products in industrially advanced countries which constitute by far the dominant markets for primary commodities entering international trade. In addition to variations in demand, variations in supply have also contributed to the instability of primary commodity markets. Accordingly, it would be thought better not to let the national prices follow automatically the violently fluctuating world prices, since this would lead to an instability in the incomes of the producers, and perhaps induce farmers to production patterns which, in the following year, when the products become available, would no longer be considered attractive. Stabilization of national prices for these products is favourable to producers incomes and production patterns. But stabilizing domestic prices for export agricultural products does not mean that we can neglect the international prices, for this will create barriers in adopting the production pattern to the profitability of world market prices (producing more when export prices are high, and contracting production when prices are

low), will lead to a bad allocation of resources and will be in conflict with general optimization targets.

Therefore, producer prices for export crops should be set in a way to smooth out the fluctuations in prices, and at the same time to keep them in touch with world market trends.

To fulfil this, producer price could be set as follows :

1 — Computing a weighted f.o.b. export price for the current year from the actual export quantities and price for the current year, and the export quantities and prices for a number of previous years[1]. And if the computed price is lower than the actual price, the difference will be kept as a fund to cover the deficit when the computed price is higher than the actual price.

2 — Deducting an export tax — if there is an economic necessity for this — from the computed price.

3 — Deducting the costs of marketing (marketing costs between farm and port gate + all port charges including loading).

4 — After taking into account the conversion ratio and the value of secondary products, we can reach at the price which would be paid to the producer. This price may be revised in the light of costs of production, price relations between different products and the general agricultural price level.

To control the prices of export primary products and the income of the producers at the national level, governments have made use of a wide variety of measures, ranging from licensing the acreage under cultivation to interposing an official agency[2] or fund to absorb external fluctuations and thereby insulate domestic producers from the harmful effects of instability. In general, marketing boards and similar trading agencies creat-

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(1) The weight to be given to the previous years in relation to the current year depends upon the elasticity of supply of the product. The higher the elasticity of supply, the lower the weight to be given to the previous years, i.e., the smaller the number of the previous years to be used and wise versa.

(2) Such as Coffee Board in Ethiopia, Rice Board in Burma, Coffee Board in Uganda, Grains Board in Argentina, Jute Board in Pakistan, Cocoa Board in Nigeria and Cotton Commission in Egypt.

ed for this purpose assume full responsibility for the purchase and physical handling of produce within the country and its sales in foreign markets. While the producers are paid a fixed price — usually announced at the beginning of the season — the profits or losses resulting from changes in export prices remain with boards. Stabilization funds, though serving an essentially similar purpose, do not generally engage in the physical handling of the commodities ; their operations are based on a system of "levies" and "premiums" on exports through which they endeavour to smooth out short-term fluctuations in prices on external markets. Buffer stock policies are also used in this respect. In many developing countries, governments also make use of the conventional instruments of commercial policy for internal stabilization purposes — variable export taxes or exchange rates, for example. Some primary exporting countries tend to favour long-term bilateral contracts with major importing nations as an additional instrument of stabilization.

However, the control of the domestic prices of export agricultural products in the developing countries requires the existence of some sorts of state monopoly in the field of foreign trade.