

CHAPTER X

AGRICULTURE

The contribution of agriculture to the Gross Domestic Product increased from SR 866 million in 1382-83 to SR 974 million in 1388-89. A level of about SR 1,000 million is expected to be reached in 1389-90. Since other sectors of the economy grew at a more rapid rate, the production of GDP contributed by agriculture, which was 10.1 percent in 1382-83 and 6.1 percent in 1388-89, was expected to be about 6 percent in 1389-90.

There were great variations in the rate of growth within the agricultural sector.

1. Vegetable production increased markedly, as farmers responded to a strong market demand by expanding the area devoted to vegetables, and by combining more purchased inputs with improved skills.
2. Field crops also increased but at a lesser rate than vegetables.
3. Range livestock production, which is dependent on precipitation-influenced desert grazing, declined in the drouth years early in this period, but made a good recovery in the later years.
4. Poultry production increased markedly with the help of protective tariffs during the past five years, and its increase tends to mask the effect of the drouth on aggregate livestock production.

The importance of agriculture in the economy of the Kingdom is indicated by the proportion of the population engaged in agriculture:

1. About 65 percent of the total national population was estimated to be rural in 1389, with 51 percent of the total settled and 14 percent nomadic, although not all of these are employed in agriculture.
2. Only 46 percent of the total labor force was estimated to be employed in the agricultural sector in 1386, including forestry, fishing, livestock production, and crop husbandry.

The number of workers in agriculture has been declining as farm workers have found more remunerative work in urban areas. The proportion of the labor force in agriculture is expected to continue to decline as additional labor now surplus to agriculture moves into other sectors. The agricultural sector can probably continue to supply additional labor to other sectors without loss of productivity.

Agriculture's contribution to development also includes benefits to the country not readily apparent from data on GDP or employment:

1. Increases in agricultural production tend to increase employment in other sectors, as the agricultural output is transported, processed and marketed.
2. Domestic production of crops and livestock reduces the need for imports.
3. There are substantial opportunities for production of commodities (for domestic consumption) at costs lower than those of foreign-produced substitutes.
4. Self sufficiency is attractive because of its strategic implications and because of the resulting reduction in dependence on foreign exchange.

POTENTIAL FOR DEVELOPMENT

The potential for agricultural development in terms of measurable output may be considered three-dimensional: area, yield, and value.

1. **Area.** Area studies and resource inventories reveal that Saudi Arabia has additional land resources which can be used for the increased output of crops, and subterranean water resources which can be exploited for irrigation. The amount of irrigated cropland in the Kingdom can be expanded by 5 to 10 percent over the next five years without exhausting this potential.
2. **Yield.** Impressive increases can be achieved in the yield of crops in Saudi Arabia. Substitution of improved varieties and application of new techniques (particularly the use of fertilizer and plant protection measures, plus timely and efficient tillage, irrigation and harvesting) can double the yield of wheat during the Plan without exhausting the potential for further increase. The potential for certain other crops may be even more dramatic.

3. **Value.** High value crops can be used to replace lower value crops: for example, the replacement of cereals by vegetables selected for higher values per unit area of land. In some instances mechanization of crop production may reduce costs to such an extent that profit can be increased, even with a simultaneous reduction in sale price per unit of production.

Another aspect of area and yield is the efficiency of water use. Much of the irrigation of crops in the Kingdom is wasteful of water. Certain changes in methods, equipment and timing of applying water to crops would permit the same or better results with significant reduction in the quantity of water for irrigation. The water thus saved could be applied to additional cropland, thus increasing the area of cultivation as well as increasing the yield of crops per unit of water used.

The outlook for agriculture in Saudi Arabia is good, not only because of the potential for expansion of production but also because of the growing domestic demand for agricultural products, (see Fig. 38). The population is continuing to grow; the level of income per worker is rising; and per capita food consumption and expenditures are increasing. Projections of demand, based on expected increases in population and in per capita income and the income elasticity of demand, indicate that aggregate demand for food will increase by about 25 percent during the period of the Plan, or about 4½ percent per year. For certain commodities, increased per capita income is reflected in nearly proportionate increases in demand. For these commodities — meat and dairy products for example — demand may increase by as much as 6½ percent per year. This anticipated expansion of the domestic market for agricultural products provides a sound basis for encouraging expansion of agriculture.

OBJECTIVES AND TARGETS

Objectives

The objectives of national development are rapid, sustained, and broadly based growth with increased participation by, and greater rewards to, indigenous resources. Sectoral objectives and development goals that are consistent with the national objectives can be summarized as:

1. Improvement in efficiency and increase in output of the agricultural process; and,
2. Sound distribution and utilization of resources for the welfare of this and future generations.

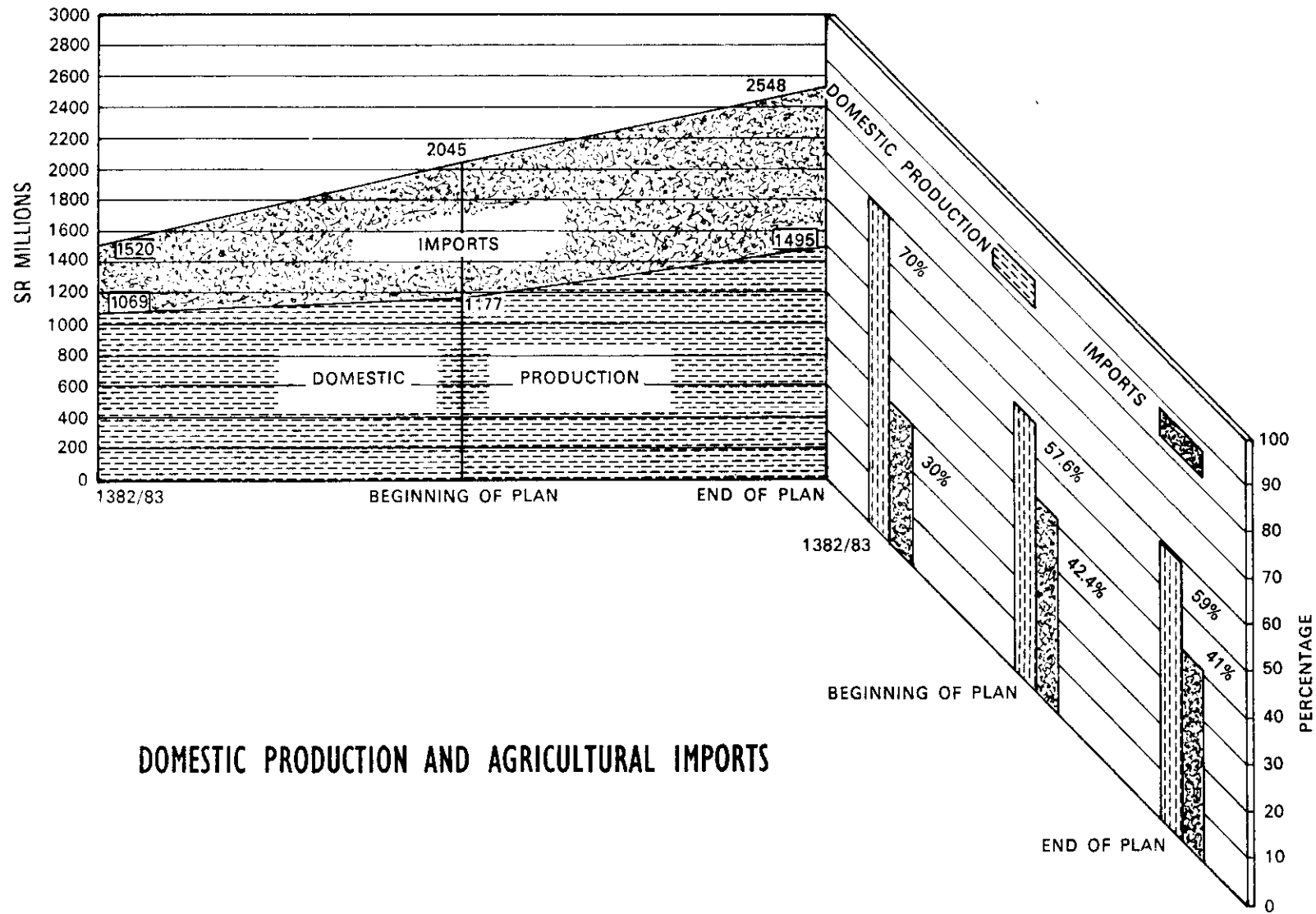
Improving the efficiency of the agricultural production process would provide increased income and improved living conditions for the producers. These changes would establish for both the entrepreneurs and the workers opportunities commensurate, at least, with those available in other economic sectors. In addition, such changes would provide an abundance of food supplies for the domestic consumers at lower cost.

Sound distribution and utilization of resources would include:

1. Finding and adopting improved technology that would be appropriate to the needs of cropping patterns;
2. Encouraging and promoting, through strengthened extension and training programs, the adoption of selected production systems and improved farm and ranch practices;
3. Implementing rational investments in basic production and distribution facilities;
4. Providing for the efficient use of water for domestic as well as agricultural consumption according to the needs of a growing population and the expanding requirements for the development of feed and food supplies;
5. Fostering and encouraging the rational organization of public and private infrastructures and, particularly, the establishment of market support institutions and distribution practices;
6. Establishing economic and effective conservation and control measures;
7. Encouraging and establishing a strong and independent private entrepreneurship concurrent with the strengthening of public services to the private sector.

Targets

Targets for increases in the domestic production of wheat, vegetables, meat and other products are shown in Table 62, which compares estimated production for 1389-90 with the production targets for the final year of the Plan, (see Fig. 39).



DOMESTIC PRODUCTION AND AGRICULTURAL IMPORTS

END OF PLAN

ANNUAL PRODUCTION OF AGRICULTURAL PRODUCTS, MEAT, AND POULTRY

(SR MILLIONS)

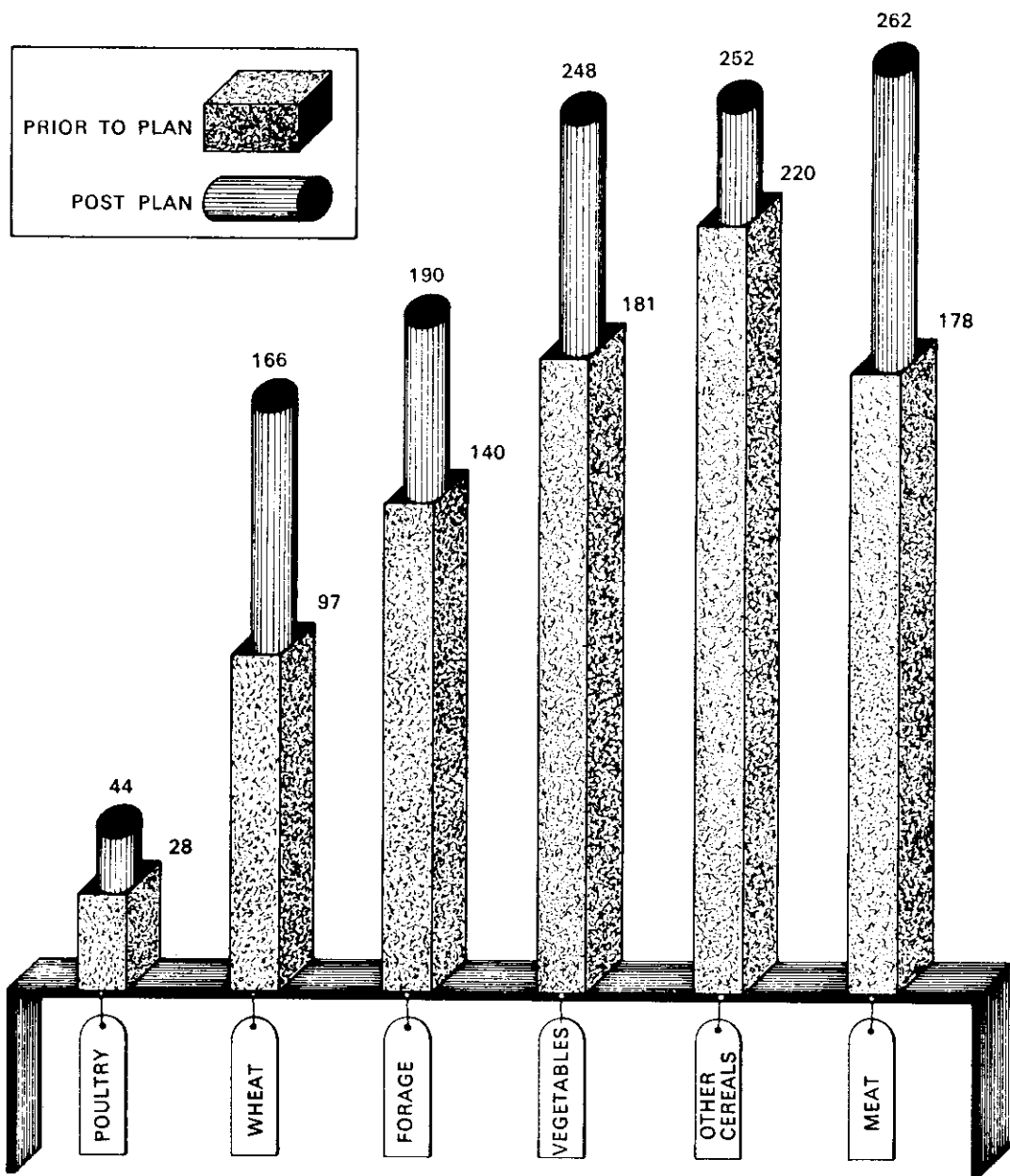


Fig. 39

TABLE 62

GROWTH OF THE AGRICULTURAL SECTOR DURING THE DEVELOPMENT PLAN
(production in thousands of tons; value in millions of Saudi riyals)

C r o p	Constant Price SR/Ton	Current Year 1389-90 Estimated(a)		Final Plan Year Targets		Percentage Increase in Value	
		Production	Value	Production	Value	Plan	Annual(b)
Wheat	720	135	97	231	166	71	11
Barley	608	37	22	56	34	55	9
Rice	700	3	2	7	5	150	20
Sorghum	734	112	82	131	96	117	3
Millet	734	155	114	160	117	3	1
Alfalfa	80	1,760	141	2,380	190	35	6
Vegetables	354	510	181	693	245	35	6
Dates	500	250	125	240	120	-4	-1
Fruit	834	94	78	100	83	6	1
Total Crops(c)	—	—	701	—	866	24	4.3
Meat	3,700	48	178	71	262	47	8
Broilers	4,500	4	18	6	29	61	10
Eggs(d)	2.4	50	10	75	15	50	8
Fish	2,000	30	60	36	72	20	4
Dairy Products(e)	1,000	210	210	252	252	20	4
Total Animal Products	—	—	476	—	630	32	5.8
Total Agriculture	—	—	1,177	—	1,496	27	4.9

- (a) *Estimates of botanical crops are based largely on Saudi Arabian census area and FAO yield data for the Middle East, applicable to a common base period; prices from the area studies; and subjective assessment of changes in area and yield since the base period. Estimates of animal products are derived by subjective assessment from a variety of source materials.*
- (b) *Rate of growth which compounds annually from the current period would achieve the targeted increase by the final plan year.*
- (c) *Total excludes alfalfa which is almost altogether an input for animal products.*
- (d) *For eggs, price is per dozen and production is in millions of eggs.*
- (e) *Dairy products are shown as milk equivalent.*

Grains

Wheat production is expected to reach 231,000 metric tons per year in the last year of the Plan, compared to current production of perhaps 135,000 tons. This represents an 11 percent annual increase in production. Barley production will increase to 56,000 tons compared to 37,000 tons in 1389-90. Barley production thus will increase by about 9 percent per year. Rice production may achieve an annual increase of 20 percent but it starts from a small base (3,000 tons of estimated production in 1389-90, increasing to 7,000 tons). Other cereals are expected to make smaller increases in production.

Forage

Forage production, chiefly alfalfa and berseem, will show the largest incremental output, from 1,760,000 tons in 1389-90 to 2,380,000 tons. This is the green-weight equivalent; the actual market weight of the product will be less because of the expected increase in the proportion of dried and baled, or otherwise processed forage. The annual increase will be about 6 percent.

Vegetables

Vegetable production will also expand at about 6 percent per year, from an estimated 510,000 tons in 1389-90 to 693,000 tons in the final year of the Plan.

Livestock

Animal products will increase, due in part to the stimulus of increased forage production. The output of meat is expected to reach 71,000 tons compared to the 1389-90 level of 48,000 tons; this represents an annual increase of 8 percent.

Poultry

Poultry production will increase in terms of broilers as well as eggs. An overall increase exceeding 60 percent is expected in broiler production by the final year of the Plan. Egg production will increase at about 8 percent per year and by the last year of the Plan domestic sources will supply more than half the national requirement.

Others

Production of fish and dairy products will increase but at a moderate rate; targets are set at levels of increase comparable to expected population increase — nearly 4 percent per year.

Overall

Overall crop production is predicted to increase at a rate of 4.3 percent per year, and animal products are expected to increase 5.8 percent annually. The production of the agricultural sector as a whole is predicted to grow at a rate of 4.9 percent per year, corresponding approximately to an average annual growth in added value of 4.6 percent per year.

Estimates of GDP by sector of origin in recent years suggest that these targets are not unrealistic. While growth of the agricultural sector between 1382-83 and 1388-89 averaged only 0.8 percent per year, in several of these years the severe drought caused a sharp fall-off in growth. In the last two years of this period, growth averaged 3.5 percent in the agricultural sector.

Foundation for Development

In addition to the targets for increases in output of agricultural commodities, another target exists that is less readily quantifiable but nonetheless important to agriculture's continued growth: It is to undertake the research and acquire the experience in operating programs and projects that will provide the foundation for further development of agriculture.

The fulfillment of this target depends on the following:

1. Research into the location and availability of resources will be broadened and deepened through continuation of hydrological, geological and land resources studies.
2. Feasibility studies will reveal ways to develop newly inventoried resources.
3. Knowledge about optimal use of resources and desirable technology will be gained through experimental and analytical research.
4. Supporting services will be modified to improve their impact on agricultural production.
5. Existing development projects will be implemented to increase the base for production.
6. Experience will be acquired in management and operation of these projects to guide further investment in large scale irrigation projects.
7. Investment by the private sector in further expansion will be encouraged in order to increase this growth.

PROGRAMS AND PROJECTS

To achieve the targets just described, interrelated action programs are planned in a number of different areas.

Policies

The Ministry of Agriculture and Water plans policy revisions to:

1. Assist and encourage private investment in agriculture and agroindustries, and to use public investment for supporting and augmenting private investment to the fullest extent possible.
2. Emphasize and promote the commercialization of agriculture and to assist further penetration by farms into the market economy through increases in both efficiency and scale of operations.

3. Strengthen the capabilities of all departments of the Ministry so as to provide greater assistance to the farmers of the Kingdom, particularly in mobilizing manpower and technical resources.
4. Devote greater emphasis to programs and projects designed to increase near term agricultural output and return high payoffs to the farmers.
5. Utilize the reports and findings of the land and water resources area surveys as a basis for establishing sound and equitable economic plans, programs, and projects: Such plans should also include provisions for increasing the efficiency of available human and physical resources, and for obtaining improved efficiency in production and output.
6. Bring into production at the earliest possible date the three large publicly sponsored irrigation projects on which construction is being completed but which are not yet in operation: Additional large scale agriculture investment projects should not be undertaken until these are operational and until adequate financial, administrative and manpower resources are available to implement old and new projects.
7. Terminate the provision of free farm production services and materials as soon as possible: Systems of subsidy, if needed, should encourage individuals to do things for themselves; more technical assistance and technical training should be made available through extension, teaching, and demonstration work. In addition, the supporting infrastructure (that is, roads, marketing and processing facilities, and additional services which indirectly support the efforts of individual farmers) should be strengthened.
8. Establish fair rates of user charges on public services and investment projects: Comprehensive studies would be conducted where necessary to set the schedules of costs to be borne by users and by the public.
9. Establish, if need is determined, a price support system for wheat, and conduct studies on grains storage or other facilities needed to implement the price support program: Wheat, however, is the only crop that should be considered for price support now because it alone has been adequately studied. Proposals for price supports and marketing systems for other commodities should be based on thorough studies of needs and requirements.
10. Encourage integration of the Bedouins into the economic and social structure through helping them strengthen their technical and economic activities.

Crops and Livestock

Agricultural development is a process involving the decisions of a host of farmers, as well as of government officials and the many individuals engaged in marketing, processing, transportation, and other needed functions. An important component of the program to further development is the execution of policies and programs which induce farmers and other individuals to make monetary and non-monetary investments in agriculture and related industries, thus promoting growth. Government programs must also provide essential services which supplement the investments of individuals and which support specific changes in technology and in the efficiency of its use.

Programs now to be undertaken will encourage production of agricultural commodities whose production and growth can be most affected in the near future. Success with these programs will establish a pattern which can be repeated later with other commodities.

Wheat, vegetables and meat are the commodities selected for particular encouragement. These are major commodities in terms of acreage and production, and thus any increases in their production will have significant impacts on agriculture, and will affect large numbers of farmers. The technology whereby increased yields and production can be obtained is already developed and tested, and needs only application. These commodities are or can be profitable to farmers, as shown in Table 63 and the increase in domestic production through these programs can be competitive with imports*.

* *Subsidies on imports of wheat and rice are placing domestic producers at a price disadvantage. The recent removal of the import subsidy on meat and the future elimination of other such subsidies should be expected to result in increasing the price levels of the commodities, to the benefit of domestic producers.*

TABLE 63

ESTIMATED PRESENT AND POTENTIAL RETURNS FOR SELECTED MAJOR CROPS

	Yield (Tons per hectare)	Price (SR per ton)	Value, SR per hectare		
			Gross Returns	Production Costs(a)	Net Returns(b)
Present Production					
Wheat	1.5	600	1,350(c)	835	515
Vegetables	15.0	300	4,500	3,150	1,350
Forage	80.0	80	6,400	4,700	1,700
Potential Production					
Wheat	3.5	420	2,045(c)	1,175	870
Vegetables	20.0	325	6,500	3,900	2,600
Forage	110.0	50	5,500	3,300	2,200

(a) Cash and non-cash costs except imputed rents.

(b) Net returns to management and landownership.

(c) Includes value of straw.

Source: Derived and generalized from the Area Studies and from studies by the Statistical Department of the Ministry of Agriculture and Water.

Wheat Production

The wheat program, developed by the Ford Foundation, undertakes to revolutionize wheat production technology. High yielding varieties of wheat will be introduced through a seed multiplication-demonstration program which combines the efforts of the Extension and Research Departments. Participating farmers are expected to increase their use of fertilizers encouraged by a 50 percent subsidy on all fertilizers in the Kingdom. The adoption of a price support system for wheat is recommended in the second or third year, if studies show a need for such price support, (see Fig. 40).

Because of the different characteristics of Mexipak and other wheat varieties which have yielded best in tests, these varieties must be sold at lower prices than traditional varieties during the transition period. Price support might be needed to maintain profitability of these new varieties. Varieties now being developed show promise of yield capability equal to Mexipak with flavor and other characteristics comparable to traditional varieties, which will reduce the level, or possibly eliminate the need, for price support during their introduction.

The introduction of new varieties must be accompanied by improvements in production technology; therefore, a "package of practices" (including land preparation, mechanical planting, fertilizing, better water application, weed control, and improved harvesting) will be introduced along with the new seed. "Multiplication-Demonstration Teams" of Ministry technicians, two or three per team, will work with selected farmers to multiply the seed needed. Each team would be expected to work with about five farmers having at least five hectares per farm for multiplication and demonstration. These selected farmers in turn would demonstrate to other farmers in the area how to grow the new varieties with the recommended production practices.

An increase in wheat production of approximately 60,000 tons could be achieved if the new varieties are properly grown on about 40,000 hectares. In addition, It may also be possible to produce about 20,000 tons of improved durum wheat through similar introduction of new varieties.

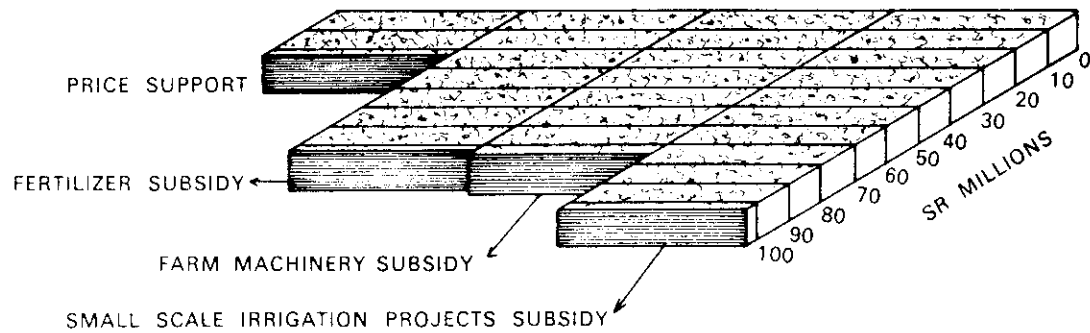
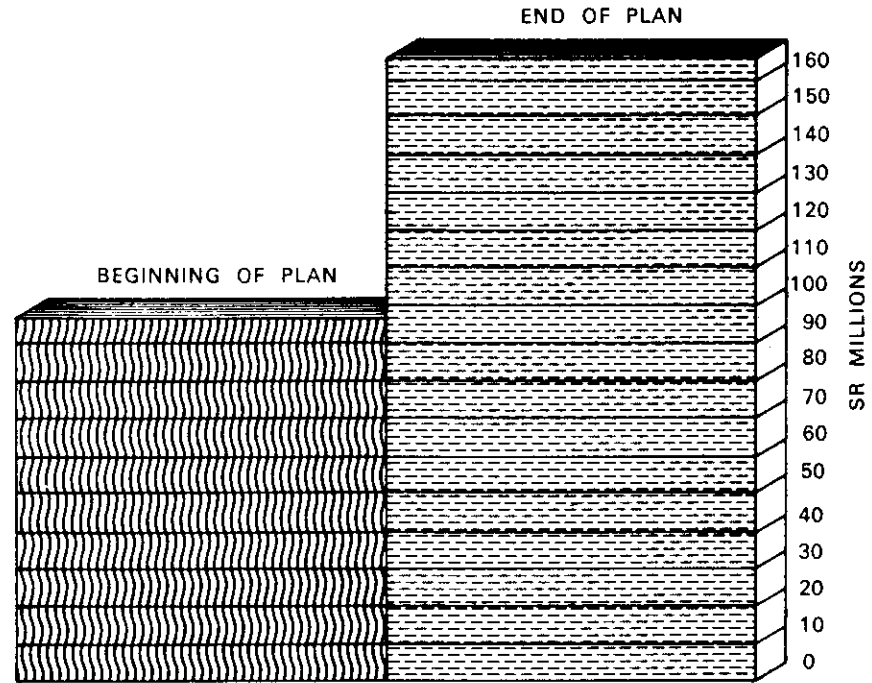
A program of this type could produce a significant breakthrough in the entire agricultural economy by increasing agricultural productivity and incomes in an important segment of the Kingdom's agricultural sector.

Vegetable Production

Domestic production of vegetables has increased rapidly in response to buoyant market demand. In view of demand projections indicating increases of 25 percent or more in the demands for vegetables during the plan period, continued opportunities to increase production for the domestic market may be expected.

WHEAT PRODUCTION AND AGRICULTURAL SUBSIDY PROGRAMS

END OF PLAN	BEGINNING OF PLAN	PRODUCTION IN TONS
231.000	135.000	



The domestic market may, within a few years, include canneries and processing plants; such agroindustries would further encourage increased production of vegetables. In addition, as markets continue to develop, it may be possible to increase the quantities of selected vegetables exported to neighboring countries.

The program to boost production of vegetables has three components:

1. An extension teaching or demonstration program in vegetable production;
2. Subsidy on fertilizer equal to half its cost; and,
3. A marketing program, including provision of better facilities, assistance to producers in organizing for better marketing, price reporting and dissemination of market information, and, if indicated by research, certain measures to stabilize prices.

Meat Production

The program to encourage meat production is less fully developed than the programs for wheat and vegetables, partly because meat production is more complicated. The basic elements are evident, however:

1. Extension teaching and demonstration work in improved and expanded livestock production, and,
2. A program to expand forage production, forage being the most important livestock feed and therefore the major cost component in production of livestock.

Existing private farms at several strategic locations near urban areas will be used to demonstrate improved practices for animal production, and farmers will be encouraged to visit them; also, the private sector will be assisted in planning and establishing commercial feed lots for large-scale fattening of livestock.

An increase in forage production will be reflected in meat production. Increases in both dry-land range and irrigated forage production are desirable. The former will be achieved primarily by control of grazing intensity on the range, supplemented by water spreading projects in certain valleys. Irrigated forage (chiefly berseem) will benefit from the subsidy on fertilizers, and will in addition be encouraged through extension teaching and demonstration of modern technology and methods. These methods, including reorganization of irrigation and mechanization of harvesting, can maintain or improve the yields while vastly reducing labor requirements; the increased efficiency will permit reduction of selling price, thus encouraging wider use as livestock feed, and simultaneous increase in profit per hectare. A proposed machinery subsidy program, to be discussed subsequently, will also be of importance in the mechanization of forage production.

Dates

Dates represent an important and traditional agricultural commodity in Saudi Arabia for which there are major problems in marketing as well as production. Studies in depth on various facets of date production, processing, marketing, and consumption are needed to form the bases for the design of sound action programs.

Subsidy and Price Support Programs

A major part of the expected development of resources for agricultural production, and practically all of the production itself, will be done by the private sector and will result from decisions by private entrepreneurs.

To induce the necessary participation by the private sector, monetary encouragement must be provided. Four types of such encouragement are planned: (see Fig. 40).

1. Subsidy on fertilizer;
2. Subsidy on machinery and farm modernization;
3. Support of prices for a limited number of agricultural commodities; and,
4. Grants for development of new land and water resources.

Payment of government funds to agricultural producers has not been practiced in Saudi Arabia; however, importers of wheat, live animals, medicines and other commodities have received subsidies. About SR 15 million of subsidies for imported agricultural commodities were authorized in 1389-90. The new subsidies included in the Plan will encourage increases in domestic production, and will benefit Saudi rather than foreign farmers.

Other countries have had less conflict and controversy in establishing subsidies than in removing them. The subsidies proposed here are intended to ease specific and temporary, rather than general or chronic, hardships and thus are intended to be temporary rather than permanent. To reduce the likelihood of subsidies becoming permanent they should be reviewed annually by a joint committee representing the Ministries of Agriculture, Commerce, and Finance. A schedule for reduction of each subsidy should be included in the authorization so that the subsidies will be eliminated at a specific time.

Fertilizer Subsidies

A subsidy amounting to 50 percent of the cost of fertilizer will be paid to facilitate the trial and testing of chemical (manufactured) fertilizers by farmers and to encourage use of fertilizer on all crops throughout the Kingdom. The Extension Department will teach farmers and conduct demonstrations, concentrating initially on wheat with a lesser emphasis on vegetables, thus promoting the most rapid increases in the rate of fertilizer application on these crops.

Chemical fertilizers potentially will produce increases in yield with nearly any crop, and the resulting boost in production will demonstrate that a government subsidy on fertilizers is good investment.

The purpose of the fertilizer subsidy is to accelerate the adoption of this tested agricultural input rather than simply to transfer a share of agricultural production costs to the government; thus a limit is to be placed on the amount of subsidy which can be paid. Wider use of fertilizer will diminish the need to encourage its adoption through subsidies, and the proportion of fertilizer cost eligible for subsidy can be reduced. The subsidy should be eliminated altogether after some time, probably between 5 and 10 years.

Mechanization and Modernization Subsidy

The Extension Services Department has performed earthmoving and tillage for farmers at subsidized rates. This program will be terminated and the machinery sold; however, the program has generated a demand for such services. An alternative source of mechanical services will be encouraged by assisting farmers and custom-hire operators (contractors) who can perform such services to acquire their own machinery. The assistance will be an outright subsidy amounting to one-third of the purchase price provided conditions relating to the grant of the subsidy are met.

In addition, the Agricultural Bank will offer equipment loans, and the used equipment owned by the Ministry of Agriculture and Water will be sold at reduced prices.

While mechanization may be an impressive aspect of farm modernization, other aspects may be equally important in solving such farm problems as labor shortages, glutted markets at harvest, or high production costs. Such investments as water storage structures, reorganized irrigation systems, and crop handling and storage facilities, will also qualify for support. Subsidies and loans will be extended to appropriate types of modernization as rapidly as the necessary guidelines can be prepared and the programs implemented.

Price Support

The profitability of the new varieties of wheat can be enhanced while being introduced by market price supports. If studies indicate consumer resistance to the taste and cooking characteristics of the new varieties, price supports will be established for them. In addition, price support for vegetables will be studied and a program developed if a need is perceived.

The Planning Unit of the Ministry is expected to establish an Agricultural Economics Section to develop and analyze data as the basis for decisions on price supports and related questions. Production, distribution, and consumption of wheat, vegetables and other commodities, including meat, will be studied.

Irrigation and Drainage Projects

Repair and Protection

Maintenance of irrigation and water supply systems now in operation has first priority among production projects. Emergency maintenance cannot be foreseen, but normal maintenance (that is repair and protection of dams, drainage systems and irrigation networks) has been estimated through the final year of the Plan.

Completion of Current Projects

Second priority in allocation of funds for production projects goes to projects which are under construction and in which substantial sums have been invested. Outstanding projects are the al-Hasa recultivation scheme, King Faisal Settlement Project at Haradh, and the dam and irrigation project at Jaizan.

Completion of Approved Projects

Commitment to new projects has been withheld so that the only "approved" projects are extensions of projects under construction or additional needs of existing projects.

Large Scale Irrigation Projects

Much of the potential for increased agricultural production can be realized through development projects of a scale feasible only with government sponsorship; however, the major projects in progress have not yet begun to increase agricultural output. New major projects will be deferred so that the experience of implementing and operating projects can be utilized to guide selection, design and implementation of future projects. Studies will be continued so that well-conceived and soundly planned schemes will be ready to take advantage of available resources later on.

Small Scale Irrigation Projects

Area Studies have revealed land and water resources suitable for development as small projects or small increments to existing agricultural areas. These small projects present opportunities for harnessing private capital, under the profit incentive, to increase agricultural capacity and production through private investments in land and irrigation facilities.

A public land distribution law gives priority in land distribution to adjacent landowners, local inhabitants, and those most capable of utilizing the land. Distribution of public land will thus present greater opportunities to persons engaged in agriculture who wish to expand their operations. Development of this land for irrigated farming is the purpose of the small scale irrigation projects program.

Under this program, Ministry of Agriculture technicians would prepare specifications for wells, irrigation and drainage systems, machinery requirements, and initial operation of land parcels allocated by the Public Lands Management Department. These specifications would support the owner's application to the Agricultural Bank for a loan for well drilling and installation, land preparation, equipment and similar expenses. A subsidy or grant could be given for some predetermined proportion of development costs; payment would be conditional on adherence to specifications for well location and installation.

The recipient of the subsidy would be required to participate in the costs of new operations. The financial benefits would encourage investment and development wherever in the Kingdom prospective profits appeared largest and most rapid.

Estimates derived from Area Studies indicate that such private development projects would probably cost around SR 300,000 each for 20 hectares of cropland served by one well (Table 64). Benefit-cost analysis of such a project by the Planning Unit of the Ministry of Agriculture and Water indicates a B/C ratio of approximately 2/1, using a 6 percent discount rate.

TABLE 64

DEVELOPMENT COSTS OF SMALL SCALE PRIVATE IRRIGATION PROJECTS (SR Thousands)

<u>Item of Expense</u>	<u>Suggested Source of Funds</u>			<u>Cost per Hectare (a)</u>
	<u>Loan</u>	<u>Subsidy or Grant</u>	<u>Total</u>	
Drilling, pump, engine, etc.	100	100	200	10
Associated services, facilities and equipment	60	20	80	4
Farm Planning	0	20	20	1
Total Cost of Development(b)	160	140	300	15

(a) Based on 20 hectares per well.

(b) Operation and maintenance charges are included in cost of production estimates.

IMPLEMENTATION

Supporting Services

These priority production programs and the land development projects will require strong support from several agencies and institutions, both governmental and non-governmental. This section discusses the responsibilities of the Ministry of Agriculture and Water. The next section discusses the program of the Agricultural Bank.

The contribution to development expected from the private sector should not be overlooked, although it cannot be planned and implemented by government agencies in a way comparable to the work of the Ministry. This contribution is:

1. The increasing mechanization of crop production will require expansion of machinery sales and service, machinery repair facilities, stocks of spare parts, machinery available for hire, and many more trained mechanics.
2. The expected crop increases will require increased capacity in the marketing channels; improved transport at lower costs; additional warehousing, cold storage, grading and packing plants; and improved communications within and between the marketing and producing sectors.
3. Further land development will require additional well drilling contractors, distributors and repairmen for pumping machinery, land levelling technicians and contractors, and the like.

Other examples could be cited, but the important point is that the private sector is an indispensable partner and participant in agricultural development.

Administrative Reform

The managerial, organizational and functional arrangements within the Ministry's various technical and operational departments have been intensively reviewed by the Organization and Management Unit. Department directors have been urged to suggest improvements in existing management and organizational arrangements which would facilitate execution of their responsibilities and of the plans that are being developed. These suggestions are being incorporated into refined program and project plans, the details of which will necessarily be developed as the programs are prepared for implementation.

Priority will be given to the needs for:

1. More effective use of the scarce resource of technically trained manpower, thus allowing the concentration of a higher proportion of staff time on field work and technical programs;
2. Clearer job specifications for individuals as well as for administrative units thus providing criteria for evaluation of performance and elimination of overlapping authority;
3. Reduction in the compartmentalization of departments and other administrative units, thus improving the coordination of tasks and facilitating the interchange of information; and,
4. Conception and implementation of administrative procedures which will, at minimum cost, eliminate bottlenecks in supplies, transportation, typing and report reproduction and other critical services.

Administration and Planning

Overall responsibility for implementing the governmental program in agriculture, other than in the credit sub-sector, lies with the Ministry of Agriculture and Water. Effective implementation and coordination is the function of administration: Coordination in the time dimension, the preparation of projects, completion of feasibility studies and annual revision and updating of plans are the duties of planning.

An essential component of administration and planning is the acquisition of information on which to base sound administrative and planning decisions; but the current planning effort has been plagued by a grave deficiency of information. One of the highest priority tasks in the Ministry of Agriculture and Water will be improvement of the data base of agriculture by means of a full and complete census of agriculture. Preparation for the census will begin in the first year of the Plan, and field work will be undertaken the second year. Tabulation, analysis and publication will follow so that the entire cycle is completed by the end year of the Plan. Surveys to determine a variety of facts (such as yield levels, use of various inputs, prices received, and production intentions) will supplement the census. Data gathering programs for retail prices in the several markets will be continued or expanded and the data gathered will be published in a series of widely distributed documents.

Ready access to accurate, up-to-date information will greatly facilitate future planning and will improve the caliber of resulting plans.

General Services

This division of the Ministry is responsible for personnel, logistics, finances, and support of continuing programs. Its role is supporting rather than technical, but the nature of the organizational structure requires budgeting large sums to General Services.

Land and Water Management

Supervision of the publicly owned range and forest lands and responsibility for their protection is only part of the work of the Public Lands Management Department. This Department also administers distribution of public lands, the first step in the small scale development projects discussed earlier. The Department's activities also include projects to facilitate optimal use of the range, and experimental work in range improvement.

Research and Technological Studies

Much research is needed to develop solutions to agricultural problems. Research is not confined to the Research and Development Department; it is performed in several departments of the Ministry.

Resource inventorying will continue to provide information about natural resources, through contracted studies as well as explorations of geology and hydrology by the Ministry. Systems will be developed to utilize the data being accumulated. Feasibility studies, marketing research and other economic analyses will seek the best allocation of resources, the most desirable policies, and the best solutions to marketing difficulties. On the technical side, research will continue on locust control, testing of plant varieties, formulation of better packages of crop production practices, improved nutrition and disease control for livestock, and many other subjects.

Effective organization remains one of the important problems of research. Consolidation of the Research and Development Department's network of experimental farms into research centers is planned to provide more effective research administration.

1. The station at Qatif will focus on horticulture;
2. The Hofuf-Dirab complex will concentrate on animal production;
3. The newly founded Jaizan station will pursue more general studies; and,
4. The Marine Biology Research Institute at Jiddah will be concerned with fisheries research and development.

A communications system, whereby the results of research are transmitted to extension agents in the field, for prompt introduction or implementation, is needed.

Agricultural Extension

The recent focus of the Extension Services Department has been on free pest control, and subsidized land-levelling and plowing. The focus will shift to teaching of farmers, primarily through demonstration. Teams of extension workers will begin this work for multiplication of new varieties of wheat and demonstration of the package of practices for wheat production. Other workers will focus on work with farmers in the production of vegetables, forage and animals. Eventually this work and the preparation and dissemination of information will represent the major thrust of the Extension Department.

Manpower and Training

The Training Department is charged with the in-service training programs for ministry personnel. In view of the expanded need for trained personnel, and particularly for extension teachers and agricultural demonstration workers, the work of the Training Department looms as critical in achieving the planned objectives and targets.

Agricultural Credit

The lending program of the Agricultural Bank will be sharply increased under the national development plan. Agricultural credit will become a major development tool, used to:

1. Stimulate mechanization;
2. Encourage adoption of innovations such as new seeds and fertilizer; and,
3. Facilitate expansion of farms through adding new land and new irrigation systems.

The services of the bank will be made readily available to more farmers through opening new branches and offices. Certain changes will be considered in lending procedures, types and purposes of loans, security requirements and other features influencing the impact of the credit program on agricultural output.

The scale of the credit program in the Plan represents an expansion at a rate disproportionate to the past growth of the bank. In view of this expected rapid expansion of the bank's services, a number of difficulties in terms of personnel, accounting procedures, efficiency, and so on, may be expected. Measures to overcome these difficulties are incorporated in the Plan.

In the past, farmers' repayments of borrowed funds have been circulated in new loans, so that additional capital was required for only part of the loans; however, the expansion asked of the bank in the Plan exceeds the capacity of recirculated funds, and all of the additional loans must be funded by additions to the bank's capital.

The increase in lending activities will be distributed among short, medium and long term loans to support the priority programs of the MAW.

The relation between the two programs will be as follows:

1. The wheat program and the fertilizer subsidy are expected to increase farmers' demands for operating funds for fertilizer, seed, hired labor and other inputs suited to short term loans.
2. The liquidation of the MAW's stock of agricultural machinery and the planned subsidy on tractors and related agricultural production equipment will stimulate demand for medium term loans.
3. The small scale private irrigation and development program, including distribution of new lands and grants for part of the cost of land and water development, will result in increased demand for longer term loans.

The magnitude of these expenses and the time-lag before production can begin indicates that at least part of such loans should be on a long term basis, and the balance probably should be made for the maximum term allowed under the medium term category.

FINANCIAL ALLOCATIONS

The Ministry of Agriculture and Water and the Agricultural Bank have experience in administering applicable programs and projects, thus providing a sound base for estimation of the costs of achieving the targets for the sector of agriculture.

The financial allocations for the agricultural sector through the plan period aggregate SR 1,467.7 million (Table 65). This is divided between recurrent expenditures (SR 973.8 million) and project expenditures (SR 493.9 million).

The expenditures for agriculture are administered chiefly through two governmental agencies, the Ministry of Agriculture and Water and the Agricultural Bank. About 90 percent of the total funds for the agricultural sector are channeled through MAW, and about 10 percent through the bank; however, about 19 percent of the total is subsidies which may be disbursed through other agencies.

Viewed over the period of the Development Plan, the scheduled expenditures increase with the need and the absorptive capacity of the sector, and the administrative capacity of the agencies. The distribution of the total financial requirements over the period covered by the Plan varies with the program and its needs. Most of the supporting services of the MAW increase 10 to 15 percent each year. The spending planned for subsidies begins at a low level and increases in accordance with expected need or capacity for implementation of the program.

Existing major projects have declining requirements for financing as they are completed and put into operation; other projects are permitted to expand to use part of the funds thus freed. The Agricultural Bank's accelerated expansion calls for major increases in capital as well as operating funds.

TABLE 65

FINANCIAL ALLOCATIONS FOR AGRICULTURE
(SR Millions)

	<u>Recurrent</u>	<u>Project</u>	<u>Total</u>
MINISTRY OF AGRICULTURE AND WATER			
Administration and Planning	61.6	—	61.6
General Services	71.3	—	71.3
Water Resource Development and Conservation of Forests	20.5	—	20.5
Public Lands Administration	5.6	—	5.6
Research and Development	51.6	—	51.6
Extension and Agricultural Services	331.1	—	331.1
Training and Manpower Development	5.0	—	5.0
Price Support Subsidies	23.0	—	23.0
Fertilizer Subsidies	73.8	—	73.8
Farm Mechanization and Modernization Subsidies	75.0	—	75.0
Farm Development Subsidies	105.0	—	105.0
Existing Major Projects	—	178.9	178.9
Other Projects(a)	—	315.0	315.0
Ministry of Agriculture and Water Subtotal	823.6	493.9	1,317.5
AGRICULTURAL BANK			
Operating Expenses (Difference between net cost and revenues)	33.4	—	33.4
Expansion Programs, Use of Automatic Machinery, Training and Scholarship	6.1	—	6.1
Building New Branches and Offices(b)	2.0	—	2.0
Increase of Capital to Meet Rising Demands on Loans	108.7	—	108.7
Agricultural Bank Subtotal	150.2	—	150.2
GRAND TOTAL	973.8	493.9	1,467.7

(a) *Projects related to supporting services.*

(b) *Considered as recurrent expenditures as all bank allocations are listed under Chapter III of the Ministry of Finance Budget.*

CHAPTER XI

TRADE AND SERVICES

The contribution of the sector of Trade and Services (excluding education and health services) to Gross Domestic Product increased from SR 714 million or 8.4 percent of total GDP in 1382-83 to SR 1,529 million or 9.6 percent in 1388-89.

Wholesale and retail trade accounted for 77 percent of trade and services in 1388-89; banking, insurance and real estate for 7 percent; and other services (personal services, broadcasting, services rendered to pilgrims, professional services, religious services, etc.) for 16 percent, (see Fig. 41).

As measured by its contribution to GDP the sector of trade and services is expected to grow at an annual average rate of 12.2 percent over the period of the Plan, i.e. higher than the annual growth rate of 9.8 percent which was its rate of growth during the years up to 1388-89, (Fig. 42 shows the relative growth of the components of this sector).

CONTRIBUTION TO DEVELOPMENT

Trade performs a dual function in development. It provides the means by which the output of increasingly productive, specialized, and diversified industrial and agricultural production is channelled to domestic and international markets; and by which the growing and diversified demands of the economy for investment goods, raw materials, and intermediate and final products generated by development are satisfied, according to the natural requirements of the development process. Hence, the contribution of trade to development is measured not by the direct quantitative contribution of the sector to GDP, but by the efficiency with which it performs this function of integrating the growth in production of industry and agriculture with the growth in demand for investment, production and consumption goods; and by the quality and price of the products supplied to meet this demand.

The contribution of trade to the process of development can be increased by the following measures:

1. Improvement of the infrastructure of transport and communications;
2. Elimination of time consuming customs procedures;
3. Proper use of tariffs, tariff exemptions, and subsidies as instruments for encouraging economic development and the elimination of non-fiscal barriers to international and domestic trade;
4. Improving and increasing market information;
5. Enforcement of standard measures and specifications and quality control of products entering into trade;
6. Greater emphasis on measures to improve business practices, including the juridical base for the settlement of commercial disputes; and,
7. Improvement of the means for the supply of trained and skilled manpower.

Services may be divided into two classes: the first satisfies consumer demand, and the second, such as banking, advertising, and consulting services, meets intermediate demand. The availability and quality of the first contribute directly to welfare of the populace, whereas the second contributes to improvement in the productivity of other sectors.

Both classes of services have developed rapidly in recent years in response to rising incomes and the growth of the economy; however, standards of consumer services, particularly with respect to hygiene and hotel accommodations require — as in all countries — continuous and persistent efforts for improvement so that the standards of service are raised to a level consistent with the development of other sectors.

OBJECTIVES AND TARGETS

The objectives for the development of trade and services are to:

1. Improve the efficiency of trade in the performance of its functions of directing production to domestic and international markets and satisfying the needs of all production and consumption sectors for primary, intermediate, and final products from whatever source;

2. Influence the growth of trade in such a way as to encourage the development of economically viable agricultural and industrial production and, hence, to support the plans for these sectors for diversification and expansion of production;
3. Improve the range and quality of consumer and intermediate services.

The specific targets are summarized in the following:

1. Targets to be achieved during the first year of the Plan:
 - a. Establishment of a Planning Bureau in the Ministry of Commerce and Industry with a highly qualified staff to plan and coordinate the work of its division and provide coordination with other agencies of Government;
 - b. Improvement of the system of collection of information on matters of interest to consumers and the commercial community;
 - c. Continuation of participation in international fairs and exhibitions.
2. Targets to be achieved during the second year:
 - a. Establishment of a commercial bulletin and commercial news services on radio and television;
 - b. Establishment of a practical training program to meet the needs of the business community;
 - c. Review of the present tariff structure in cooperation with relevant agencies, with a view to simplifying it and making it contribute effectively to the level of protection sought for domestic industry and agriculture.
3. Targets to be completed during the remainder of the plan period:
 - a. Strengthening of the juridical framework for the settlement of commercial disputes;
 - b. Review of the regulations relating to the investment of foreign capital;
 - c. Implementation of all necessary measures to protect the interests of consumers and producers and to ensure fair business practises, including enforcement of standards of hygiene in public facilities.

PROGRAMS AND PROJECTS

Attainment of the objectives and targets specified above depends partly on implementation of programs of other sectors already described and partly on programs and projects within the purview of the Ministry of Commerce and Industry. These are summarized in the following discussion.

Planning Bureau

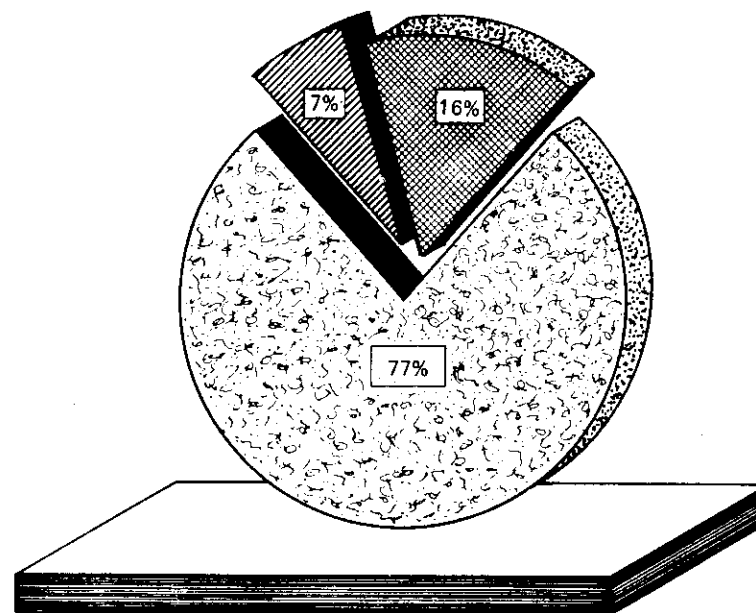
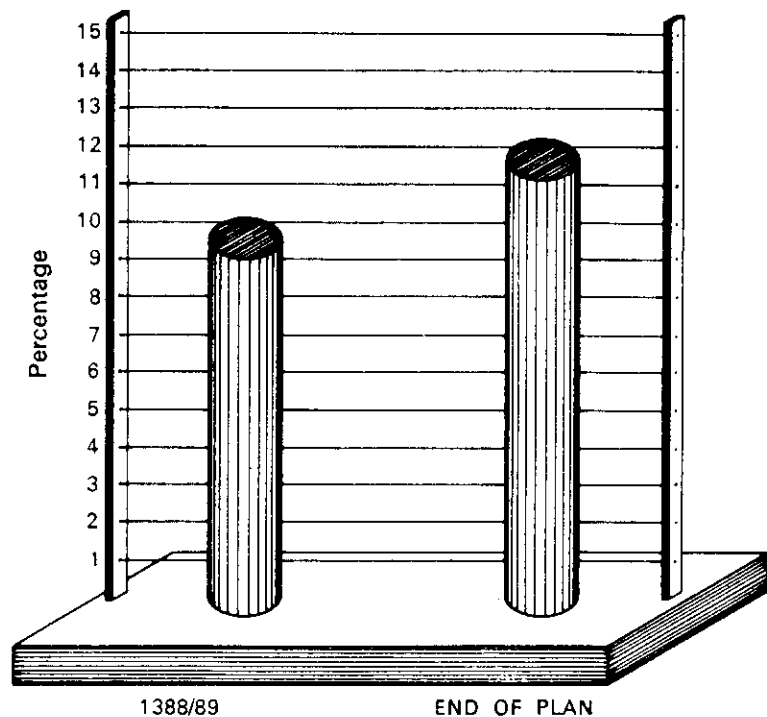
The Ministry of Commerce and Industry is responsible for all matters relating to the development of trade and services. On the one hand, it is concerned with service to, and protection of, consumers; on the other it must seek through the use of tariffs, tariff rebates, subsidies and other devices to protect and stimulate the development of domestic industry and agriculture. The interest of the consumer in the price and quality of a product frequently conflicts in the short-run with the interest of producers in the sectors of agriculture and industry, and hence the interest of the national economy as a whole. This last might give priority to the diversification of the economic base and thus dictate replacing imported products by similar domestic products.

As reconciling these interests is a complex and demanding task, the most important program of the Ministry is to increase its technical capacity to perform effectively its functions of protecting the interests of consumers, encouraging development by tariffs, tariff rebates, subsidies, and other devices for the protection of domestic industry and agriculture, and stimulating the growth of domestic and external trade. This program calls for the establishment of a Planning Bureau of a high standard of technical competence to be attached to the Deputy Minister's office and to undertake the following tasks:

1. Coordination of the Ministry's efforts for consumer and merchant protection with the programs for the encouragement of industry and agriculture; and,
2. Surveying the views of the business community in an organized manner and taking the necessary measures to forward them to concerned government agencies.

RELATIVE CONTRIBUTION OF TRADE AND SERVICES TO G. D. P.

COMPONENTS OF TRADE AND SERVICES



- WHOLESALE AND RETAIL TRADE
- BANKING AND REAL ESTATE
- OTHER SERVICES

THE GROWTH OF THE COMPONENTS OF THE TRADE AND SERVICES SECTOR IN PROPORTION TO GROSS DOMESTIC PRODUCT

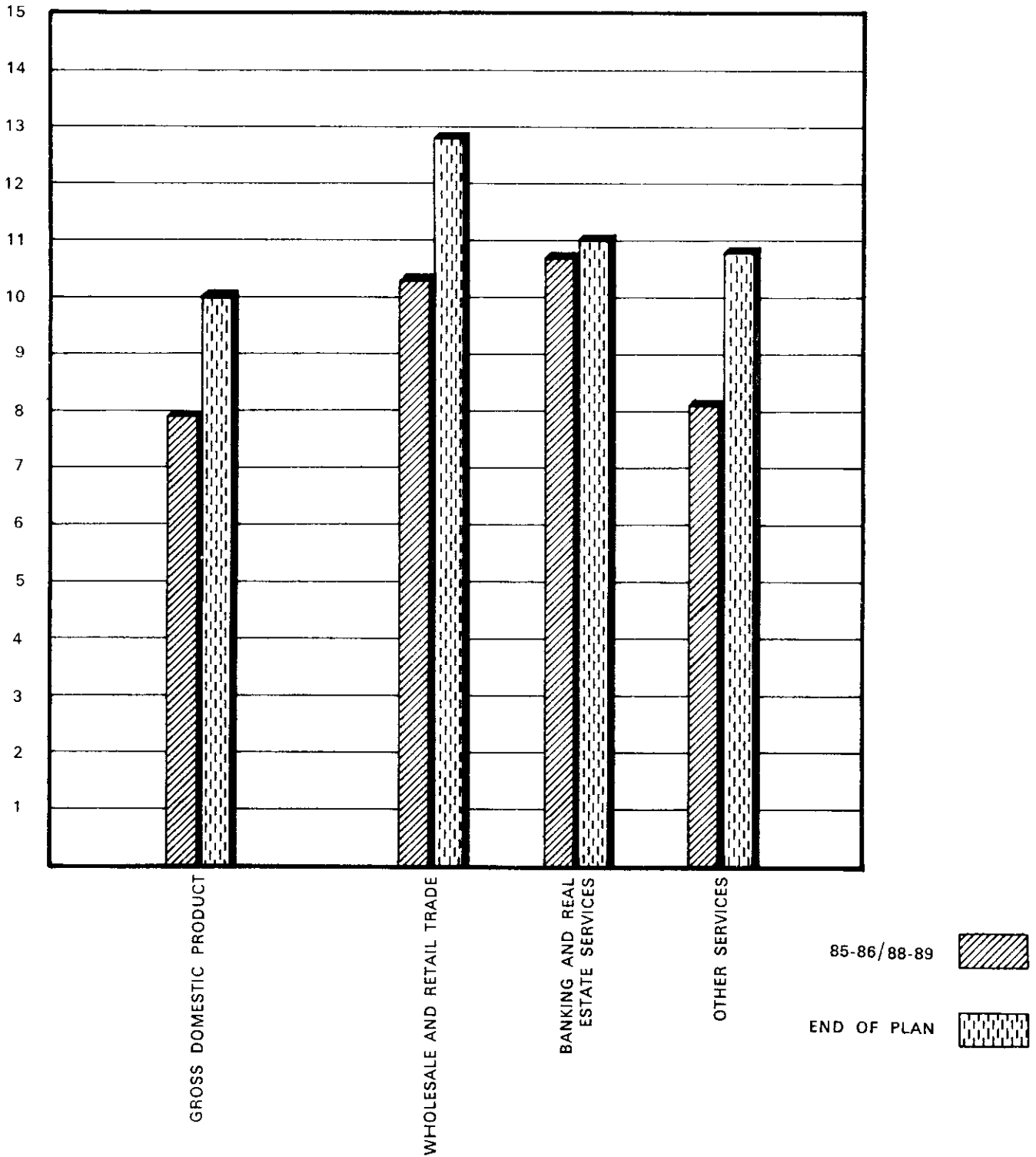


Fig. 42

This bureau, in collaboration with other agencies of Government, will also design, for each industry that is nationally desirable but not commercially viable during the initial period of operation, an appropriate combination of protective measures. In so doing it will keep the interests of consumers to the forefront. The sum of incentives will at all times allow some imports to enter the country, making domestic producers contend with that degree of competition which will progressively push their prices towards international levels.

A task that will be undertaken by the bureau early in the plan period is the complete review of the present tariff structure with a view to simplifying it and seeing that it provides a sufficient level of protection for domestic industries. Such a review of the Kingdom's tariff will be carried out as part of a comprehensive assessment of the Kingdom's protective structure, including regional preferential arrangements in respect of trade and economic cooperation.

Information

The most pressing need of the trade sector is the availability of a precise periodic supply of information upon which businessmen could depend. To meet this need it is proposed to improve the existing procedures of data collection, to broaden the range of data collected on matters of interest to consumers and the commercial community, to publish a weekly commercial bulletin, and to broadcast commercial news programs by radio and television two or three times weekly.

Trade Promotion

The Ministry will increase its participation in international seasonal exhibitions and fairs and will make maximum use of commercial attaches and international organizations concerned with the development of trade. These steps will expand commercial contacts between Saudi businessmen and businessmen from the rest of the world and will inform other countries about the Kingdom's economic potential.

Practical Training

In response to the acutely felt needs of the business community for additional secretarial, accounting, and managerial skills, the Ministry will organize and operate a training program designed to complement the courses available in existing vocational and academic institutions. The course content of the program, to be finalized after consultation with the Ministry of Education and the Chambers of Commerce, will be chosen from among the following topics: accounting; commercial and labor laws; legal requirements of labelling and trademarks; technical marketing techniques; customs regulations; weights and measures; "Zakat" and income taxes; the roles of the Ministry, the ISDC, and the Chambers of Commerce; and public relations.

Use will be made of existing accommodations and equipment, including those of branch offices. Instructors recruited from among the ministry staff, and guest lecturers from academic and business circles will receive remuneration. No admission fees will be charged. The courses will be given after normal office hours.

Standardization and Quality Control

During the plan period, the Ministry will take a variety of measures to protect the interests of consumers and producers and to ensure fair business practices. The use of the decimal system of weights and measures will be enforced throughout the Kingdom, and closer control exercised over the weighing and measuring instruments used in the country's markets. A Central Metrology and Standardization Laboratory will be established as the national reference center for weights and measures.

The ground will be prepared for the development of the Saudi Arabian Standards Organization. Standard specifications are essential prerequisites for more intensive trade and economic cooperation between countries and are important ingredients of any commercial policy. A Central Specification Laboratory will be constructed and provided with the necessary technicians and equipment, initially with the aid of an international specialized agency, such as the International Standards Organization in Geneva.

Consumers will receive wider protection than now available under the present controls over the quality of imported foodstuffs. The technical staff of branch offices will be expanded and additional laboratory equipment will be supplied which will allow the testing of all types of agricultural products and of building materials. The staff will receive training in latest techniques and in correct sampling procedures. They will procure samples from local markets and warehouses in addition to those from dockside or from inland frontier posts. A Quality Control Inspectorate will be organized in implementation of this project.

Periodically, the work on testing the quality of products by the Central Laboratory will be made known to the public. The quality control inspectors will also participate occasionally in the Ministry's program for educating local consumers.

Arrangements for inspection of standards of hygiene in public facilities will be reviewed and measures formulated for providing increased protection for the public.

Price Stabilization and Controls

The Ministry will abide by the principle that intervention in the free play of market forces should be kept to the minimum, but it will use its regulatory powers to the extent warranted by movements of domestic prices.

Thus, in the light of the recent experience with some cereal prices and their local supplies, an integrated grain storage and milling facility will be built as described in Chapter IX for the purpose of maintaining a five to six-month reserve of wheat. This stock will be carefully managed so as to keep down and to stabilize the domestic price of flour; simultaneously the present system of subsidy payments on imports of certain other staple foodstuffs (rice and livestock) will be reviewed.

The welfare of consumers will be safeguarded by the enforcement, to the extent necessary, of ceiling prices on some of the major food items. On the other hand, necessary measures will be taken to stop abrupt price-cutting by some domestic producers aimed at eliminating competitors. Although producers of exportable goods will continue to be expected to satisfy domestic demand for their products in the first instance, a flexible policy will be followed.

Importers will be provided with up-to-date information on domestic inventories and will be relied upon to forestall shortages in local supplies.

Judicial Framework

The present judicial framework of the Ministry for the adjudication of commercial disputes will be strengthened. Past judgements will be analyzed and codified in the form of principles adequate for the needs of modern business. An appeals procedure will be instituted. The legal staff of the Ministry will formulate model contracts for dissemination among the Chambers of Commerce as well as criteria for penalties and indemnification for breaches of contract.

Foreign Investment Promotion

The investment climate in the Kingdom for non-Saudi capital is very favorable and includes, among other things, stable law and order, freedom to repatriate profits and an absence of exchange restrictions, assurance against expropriation by virtue of the Islamic Sharia Law, and exemptions from customs duties and taxes on certain imported industrial raw materials and equipment. However, at present competition is very keen among developing countries for foreign investment capital and consequently the existing regulations of the Kingdom will be reviewed in the light of the following possible incentives:

1. Permission for foreign industrial establishments to own property within the Kingdom;
2. Rapid issuance and renewals of visas and work permits covering two-year periods;
3. Conclusion of bilateral agreements with capital exporting countries against double taxation;
4. Tax exemption for companies until profits begin; and,
5. Income tax exemption of foreign staff for a limited period.

More energetic efforts will be made abroad to publicize investment opportunities in Saudi Arabia. The sphere of economic activity in which foreign capital will be welcome will not be circumscribed by manufacturing or mining but will be extended to certain services, such as refrigerated warehousing, catering, hotels and tourism.

FINANCIAL ALLOCATIONS

The financial requirements of the Ministry of Commerce and Industry for the sector of trade and services are shown in Table 66.

TABLE 66
FINANCIAL ALLOCATIONS FOR TRADE AND SERVICES

(SR Millions)

	<u>Recurrent</u>	<u>Project</u>	<u>Total</u>
Existing Programs	55.0	—	55.0
Planning Bureau	0.5	—	0.5
Commercial Information	0.8	—	0.8
International Fairs and Exhibitions	17.3	36.8	54.1
Training	4.0	0.3	4.3
Standardization and Quality Control	5.9	6.7	12.6
Total	83.5	43.8	127.3

