



RESEARCH REPORT NO. 5

**THE GRAIN-LIVESTOCK  
ECONOMY AND  
TRADE PATTERNS  
of the European  
Economic Community**

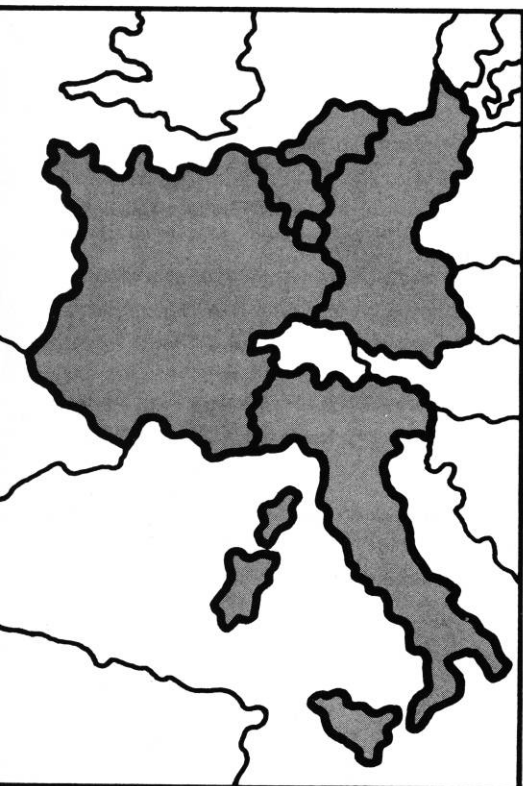
**WITH PROJECTIONS  
TO 1970 AND 1975**

**Vernon L. Sorenson  
and Dale E. Hathaway**



INSTITUTE OF  
**INTERNATIONAL AGRICULTURE**  
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## Foreword

This report is one of a series of five. The other reports are:

*The Grain-Livestock Economy of West Germany with Projections to 1970 and 1975* by George E. Rossmiller

*The Grain-Livestock Economy of Italy with Projections to 1970 and 1975* by Fred A. Mangum, Jr.

*The Grain-Livestock Economy of France with Projections to 1970 and 1975* by Michel J. Petit and Jean-Baptiste Viallon

*Changes in Regional Grain and Livestock Prices Under the European Economic Community Policies* by Donald J. Epp

This research was carried out in cooperation with the Economic Research Service and the Foreign Agriculture Service, U.S. Department of Agriculture. The views expressed in this study are the authors' and do not necessarily reflect those of the USDA.

The studies of the grain-livestock economy of West Germany, Italy, and France and the study of regional grain and livestock prices were undertaken in cooperation with the following research institutes respectively:

Institut für Landwirtschaftliche Betriebslehre, Göttingen, Germany, under the direction of Professor E. Woermann

Istituto di Economia e Politica Agraria della Università di Perugia, Italy, under the direction of Professor G. Guerrieri and Istituto Nazionale di Economia Agraria, Rome, Italy, under the direction of Professor M. Bandini

Institut National de la Recherche Agronomique, Paris, France, under the direction of Professor D. Bergman

Institut für Landwirtschaftliche Marktlehre, Göttingen, Germany, under the direction of Professor A. Hanau

Direct supervision of each subproject was with the listed author(s) and overall leadership of the project was in the hands of Dr. Dale E. Hathaway and Dr. Vernon L. Sorenson at Michigan State University.

The EEC countries recently have purchased in excess of \$1.0 billion annually of U.S. farm products and collectively account for an important share of total U.S. cash farm exports. Implementation of the Common Agricultural Policies among the six member countries will cause changes in farm price levels and regional relationships. These changes, together with technological and structural changes in agriculture, will affect quantities of grain and livestock products produced and consumed in the Community and potentially alter trading relationships among EEC countries and influence imports from external suppliers including the United States.

This study, along with those listed above, has sought to provide improved information on EEC agriculture and to estimate for the Community as a whole prospective changes in agricultural prices, production and utilization of grain and livestock products and to gain insights into the impact of Com-

mon Agricultural Policies on imports of U.S. agricultural products.

This project could not have been completed without the assistance of many people. In particular we want to acknowledge the cooperation of numerous persons in the Economic Research Service and Foreign Agricultural Service of the USDA including the Agricultural Attachés in the EEC countries. We also owe special thanks to those in the institutes in Europe who assisted in the research and to the leaders of each of the subprojects. We, of course, are responsible for the total project including the conclusions and recommendations.

Michigan State University  
August 1968

Dale E. Hathaway  
Vernon L. Sorenson

## HIGHLIGHTS OF PROJECTION RESULTS

One objective of this study was to project grain-livestock production and requirements in the EEC to 1975. The results of these projections are as follows:

### 1. Beef and Veal

In 1964 the EEC as a whole had a deficit in beef and veal production and consumption exceeded internal production by about 10 percent. The major deficit areas were Italy and Germany, with the production in The Netherlands and France slightly exceeding their domestic consumption. Thus, beef and veal imports were significant in 1964, especially into Germany and Italy, and they came primarily from countries outside the EEC. The trend toward an increasing deficit in beef and veal in the EEC appears likely to continue through 1975. Our projections show it nearly doubling between 1970 and 1975 despite marked increases in production in every country. The deficit in Italy appears likely to continue to increase, and so does that of Germany and Belgium. The current surplus production of The Netherlands is projected to turn to a slight deficit by 1975, leaving France as the only surplus producer of beef and veal in the EEC by that time. The French surplus, however, will fall increasingly short of the consumers' demand in the EEC.

### 2. Dairy

In 1964 the EEC had a substantial supply of dairy products in excess of human consumption needs. Part of this was exported in the form of cheese, especially from The Netherlands, Italy, and France. There also were some exports of milk and cream. And in 1964, large quantities of milk were fed on farms. It appears that by 1970 the excess of milk production over human consumption in the EEC will grow by about one-third from 1964 levels. This trend will likely continue through 1975 and the net excess of milk supply over human consumption requirements will continue to rise rapidly, especially in France. By 1975, Italy will be close to meeting its domestic human consumption needs and Belgium-Luxembourg will be the only region with a deficit. The exact nature and magnitude of future surpluses is impossible to predict, but it appears that the problem will continue to intensify. The EEC will become a significant exporter of some manufactured dairy products and create pressures upon the world market for these products.

### 3. Pork

In 1964 the EEC as a whole was about self-sufficient in pork production. Germany had a large deficit, which was about balanced by surpluses in all of the other countries. The Netherlands was a major producer for export and was a major supplier of the German market. Our projections suggest that by 1970 this situation will be altered. It appears likely that Ger-

many will become nearly self-sufficient in pork and Italy may shift to a modest deficit position. The surplus of production over domestic consumption needs in The Netherlands and France is expected to decline while those in Belgium-Luxembourg may increase slightly. In total, the EEC will continue near self-sufficiency in pork through 1975.

#### 4. Poultry and Eggs

By 1964, total poultry meat production approached 90 percent of consumption. The largest deficit was in Germany and a smaller one existed in Italy. Surpluses were being produced in The Netherlands and Belgium, while France and Luxembourg were nearly self-sufficient. Approximately the same situation existed in eggs. Our projections are for continued rapid increases in both egg and poultry meat production to 1970 and 1975. We expect that egg and poultry meat production and consumption will about balance with excess Dutch and Belgian supplies moving to Germany and Italy.

#### 5. Food and Feed Grains

In 1964 domestic production of food grains exceeded human consumption needs. The EEC produces mostly soft wheat thus requiring imports of high quality hard wheat for mixing purposes in order to produce the desired types of flour. In 1964, every country in the EEC had a net deficit in feed grains. The deficit was largest in Germany and smallest in France; but in total, if only conventional feed grains had been used for feed, the EEC would have had a feed-grain deficit of more than 17 million metric tons. But, a great deal of wheat was fed and the net deficit in total grains amounted to 7 million metric tons, although total feed grain imports exceeded this figure. Our projections for 1970 show recent trends continuing. Food grain production is projected to exceed human consumption by an even wider margin, growing to nearly 12 million tons. At the same time, we expect that the net deficit in feed grain production will increase in every country and exceed 23 million tons in 1970. In total, the EEC deficit in grains is projected at 11 million metric tons by 1970 and nearly 12 million metric tons by 1975.

#### 6. Summary

In summary, the prospects for third-country exports of poultry, dairy, pork and soft wheat to the EEC in the years ahead look dim. Those sales now being made are likely to be lost, and moreover, the EEC is likely to become a significant competitor in the world market for food grains and manufactured dairy products. On the other hand, the prospects for third-country exports of feed grains and beef to the EEC look bright. It is unlikely that the EEC can meet the rising demands of its population for beef and veal without rising imports of both meat and feed grains.

## Chapter 1

### Economic Structure in the EEC

#### Introduction

The purpose of this report is to evaluate current conditions and project to 1970 and 1975 production-consumption and trade prospects in the grain-livestock economy of the EEC. Precedent and methodology for making agricultural projections have largely been established in a framework where the basic institutional and political components of the economy can be taken as given. Formation of the EEC has involved bringing together economies where differences in overall size, level of per capita income, national characteristics and policy exist. Thus, economic trends in individual countries may be changed under the new institutional and political framework.

This chapter: 1) provides a brief perspective on recent overall developments in the total economies of EEC member countries and the changing position of agriculture within each country, and 2) indicates some of the economic policies that have influenced change in the past and are apt to influence change in the future. These evaluations will, in turn, be used to indicate the nature of the basic assumptions concerning the total economy and general economic policy that will underlie the analysis of the grain-livestock sector.

#### Overall Economic Structure of the EEC

In composite, the economy of the EEC generates a Gross National Product of substantially less than 50 percent of that in the United States. Within the EEC, GNP in 1964 at constant 1958 prices ranged from a high of approximately \$86 billion in Germany to a low of approximately \$14 billion (excluding Luxembourg) in Belgium and The Netherlands. (Table 1) Per capita GNP was highest in Germany at \$1,482 and lowest in Italy at \$772, both in 1964. The agricultural sector as a component of total GNP varies from approximately 6 percent in the Benelux area and Germany to more than 15 percent in Italy. In all countries, however, this proportion has been declining and the increase in output of the agricultural sector, while substantial, has been well behind that in either the service or industrial sectors.

Total employment approaches that in the United States while, in general, agricultural employment is substantially higher. Sixteen percent of the total employed persons are employed in agriculture as compared with slightly over 6 percent in the United States. Variation within the EEC is relatively wide, ranging from approximately 6 percent in Belgium and Luxembourg to over 24 percent in Italy.

Economic growth in the EEC during the period 1955-64 has provided a favorable climate for change and expansion in agriculture. Total GNP in the EEC, measured in constant 1958 prices, increased by 58 percent -- a growth

rate substantially greater than in the United States over the same period. The most rapid rates of increase occurred in Germany, France, and Italy with a somewhat slower rate in the Benelux area. When viewed in terms of sectoral contribution to expansion in GNP, the most rapid rates of increase have occurred in industry in all EEC countries. Rather rapid rates of increase have also occurred in the service sector with agriculture substantially below these industries in all countries.

In general, expansion in the major components of demand (Table 2) indicates some diversity in patterns among EEC countries. An important consistency is to be found, however, in that rates of capital investment have been relatively high in all countries. This has been the most rapidly growing demand area and is in sharp contrast to the U.S. where it has been the slowest.

As would be expected, food expenditure as a percent of total consumption expenditure has been declining, though it still remains relatively high for the total EEC in comparison with the U.S. level. Variation between countries in food expenditure as a percent of total consumer expenditure reflects both the level of per capita income and the general level of food prices. The highest value is found in Italy and reflects the relatively low level of per capita income. On the other hand, Germany, which has the highest level of GNP per capita, also has the second highest level in percentage of total consumer expenditures that go to food. Netherlands, which has the next to lowest per capita GNP, in turn, has the next to lowest total percentage of expenditures for food due to relatively low farm and agricultural prices and efficient markets.

Despite a declining proportion of income spent for food, the increase in food expenditures measured in constant prices has been relatively rapid, and for the EEC as a whole has been approximately twice the rate of that in the United States. The increase has been above the average for the area as a whole in Germany and Italy and below the average in other member countries.

Any effort to explain the sources of economic growth in the EEC is fraught with certain difficulties. Rapid economic growth can occur under a variety of circumstances and numerous forces are jointly reflected in the measurable growth statistics in such a way that causal relations can rarely be identified. Thus, at best, in explaining past developments with a view toward their implications for the future, only a few of the major changes that have occurred can be taken into account.

First, in looking at the growth experience of the EEC countries it needs to be recognized that it is based almost entirely on expansion in capacity to produce. Growth may occur in this way or through expansion in the use of unemployed resources if such exist. Virtually no slack capacity has existed in EEC countries. With the exception of Italy and the Benelux area, unemployment has been less than 1 percent.<sup>1</sup>

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<sup>1</sup>OECD *Manpower Statistics, 1955-64*, Paris, 1966.

Table 1. 1964 Level of Output and Employment and Change Since 1955 in the EEC. (Values at 1958 prices)												
	Belgium-Luxembourg		France		Germany		Italy		Netherlands		EEC	
	Value	Index	Value	Index	Value	Index	Value	Index	Value	Index	Value	Index
Total GNP (billion dollars)	13.7	137	67.7	157	86.4	174	39.2	165	13.6	146	225.1	158
GNP Per Capita (dollars)	1,416.0	130	1,398.0	141	1,482.0	150	772.0	154	1,125.0	130	1,256.0	142
Sectoral Output:												
Services (billion dollars)	6.3	138	27.4	152	34.0	168	12.9	152	5.6	138	68.9	156
Industry (billion dollars)	11.5	299	33.8	172	47.8	184	16.5	194	5.6	163	92.2	188
Agriculture (billion dollars)	0.75	119	6.3	118	4.8	128	5.2	119	1.2	124	11.9	122
Total Employment (thousands)	3,726.0 <sup>1</sup>	103 <sup>1</sup>	20,080.0	102	27,148.0	112	20,348.0	96	4,482.0	104 <sup>2</sup>	75,794.0	104 <sup>3</sup>
Agricultural Employment As Percent of Total	5.8 <sup>1</sup>	68 <sup>1</sup>	18.2	71	11.4	64	24.4	65	9.4	100.1 <sup>2</sup>	16.3	66 <sup>3</sup>

Sources: OECD, *National Account Statistics, 1955-64*, Paris, 1966; and OECD, *Manpower Statistics, 1955-64*, Paris, 1966.

<sup>1</sup>Excluding Luxembourg

<sup>2</sup>1962 = 100

<sup>3</sup>1962 data for Netherlands was added to 1955 data for the rest of the EEC countries (excluding Luxembourg) to get the base period value used in the computing index.



Table 2. Major Demand Components and Food Consumption, 1964 Level, and Change Since 1955 in the EEC. (Values at 1958 Prices)												
	Belgium-Luxembourg		France		Germany		Italy		Netherlands		EEC	
	Value	Index	Value	Index	Value	Index	Value	Index	Value	Index	Value	Index
Private Consumption (billion dollars)	9.0	132	44.1	155	50.5	177	25.5	161	8.2	153	140.7	157
Government Expenditure (billion dollars)	1.8	156	8.2	138	12.4	179	5.2	167	1.8	121	29.6	156
Capital Investment (billion dollars)	2.6	151	14.6	197	22.2	202	8.3	179	3.7	169	52.3	185
Total Food Expenditures (billion dollars)	2.4	122	13.2	134	18.5	162	10.6	150	2.4	134	47.9	141
Food Expenditures as a Percent of Total Consumption Expenditure	26.4	92	30.0	86	36.5	91	41.8	93	29.3	88	34.0	90.1
Percent of GDP Accruing To Agriculture <sup>1</sup>	6.0	86	8.8	71	5.59	73	15.3	73	9.6	84	9.6	74
Percent of GDP Spent for Food, Not Accruing to Agriculture	13.2	89	10.3	98	15.8	103	16.1	121	9.8	100	13.4	100.7

Source: OECD, *National Account Statistics, 1955-64*, Paris, 1966.

<sup>1</sup>GDP at factor cost.

From the viewpoint of the labor input, two factors: the increase in size of the labor force, and the change in its distribution among industries have been the major variables in explaining increased output. The principal change that has occurred in the distribution of the labor force is the shift from agricultural to nonagricultural employment. The decrease in active agricultural population has been sufficient in all the EEC countries to provide a large part of the increase in nonagricultural active population.<sup>2</sup> With productivity per man substantially lower in agriculture than in other sectors for the three larger countries of the EEC,<sup>3</sup> this shift in itself has had a substantial influence in output. This shift has occurred internally within all countries and, in addition, has been reflected in the movement of workers from the South of Italy into other areas of the EEC for employment.

As indicated in Table 1, total employment has not increased rapidly in EEC countries. The largest increase is in Germany and reflects a substantial movement of refugees from Eastern Germany. For the area as a whole, the increase in total employment has been only one-third the rate in the United States. This reflects lower birth rates, but also, in part the nature of population composition which was influenced by World War II and to some degree changes in labor force participation rates. In particular, average entry age into the labor force has been rising due to changing educational patterns.<sup>4</sup> In total, then, a relatively small proportion of the output expansion can be associated with increasing employment and as indicated in a recent OECD study, approximately 15 to 20 percent of the annual increase in average per capita productivity can be attributed to the changing occupational distribution as between agriculture and nonagricultural pursuits.<sup>5</sup>

The most important factor in increasing total output in the EEC countries has been change and improvement in worker productivity unrelated to structural shifts in employment. For the area as a whole, output per employed person increased by more than 4 percent per year for the period 1955-64. While the average rate for 1960-64 is approximately equal to that for 1955-60, this obscures a significant relationship for future estimating of expansion in that, for most countries, there has been a steadily declining

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<sup>2</sup>OECD, *Agriculture and Economic Growth*, Paris, 1965, Table 4, page 37.

<sup>3</sup>OECD, *Economic Growth 1960-70, A Mid-Decade Review of Prospects*, Paris 1966, Table VI, page 31.

<sup>4</sup>Theda Bolle, *Bevölkerung und Arbeitskräftepotential der Europäischen Wirtschaftsgemeinschaft 1960 bis 1975*, Deutsches Institut für Wirtschaftsforschung, Institut für Konjunkturforschung, Nr. 69, 1965.

<sup>5</sup>OECD, *Economic Growth*, *op. cit.* This study points out, however, that structural shifts in employment may be more important than shown by the data since the effect is computed using average productivity. Agricultural workers who move to other employment might well be producing a great deal less than the average prior to their move and, thus, obscure the true effect.

level of productivity increase during the 1960's.

Historically, high investment rates, combined with the fact that the industrial sector is the largest in each economy and the most rapidly expanding, have provided a very favorable framework for expansion in output per worker. In sharp contrast with conditions in the United States, all member countries of the EEC have increased capital investment at a rate greater than the increase in GNP, and, in general, have increased this demand component as a share of Gross National Product. A major question exists as to whether these rates can be maintained in the future, particularly as these countries move toward a larger component of GNP in service sectors. A further question exists as to whether the direct effect of capital investment on output per worker will decline as an increasing share of investment represents modernization as opposed to plant expansion. To a substantial degree, the slower growth rate in Belgium during recent years can be attributed to this phenomenon. Some further evidence of this effect is indicated by the fact that the decreasing rate of growth in worker productivity during the 1960's has occurred despite continued high levels of capital investment.

#### Foreign Trade

One of the striking features in recent change in EEC countries has been the rapid expansion in international trade. (Table 3) For all countries this expansion has substantially exceeded the rate of increase in Gross National Product. For the area in total, both imports and exports have increased by approximately 20 percent per year. While Germany is the largest trading nation in the area, the most rapid rates of increase have occurred in Italy. The agricultural share of both imports and exports, in general, reflects the food balance within individual countries, but, in total, this component has tended to become relatively less important since 1955. In total, trade within the EEC area has tended to increase somewhat faster than that between the EEC and other parts of the world.

While the data for the EEC countries do not necessarily prove a direct association between expansion in trade and growth, it is apparent that international demand has been an important element of expansion, particularly in Germany and Italy. More generally, when governments successfully pursue policies of full employment, conditions may be such that rapid trade expansion is likely to occur.<sup>6</sup> With full employment, periodic excess demand pressure for either consumer or producer goods can be met quickly only through imports. Ensuing needs to balance international accounts, in turn, can lead to pressures to increase exports and, thus, establish a sequential cause and effect relationship that is biased toward a rate of increase in international trade exceeding the rate of general economic growth.

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<sup>6</sup>A. Schoenfeld, "Modern Capitalism, the Changing Balance of Public and Private Power," Oxford University Press, 1966, Part 1.

Table 3. Foreign Trade Patterns, 1964 Level, and Change Since 1955.

	Total Imports	Index 1955=100	Agricultural Imports		Total Exports <sup>1</sup>	Index 1955=100	Agricultural Exports	
			% of Total in 1964	Change 1955=100			% of Total in 1964	Change 1955=100
Belgium-Luxembourg	5,952	210	12.7	71	5,618	202	6.1	120
France	10,067	201	18.7	68	8,990	177	16.3	104
Germany	14,613	240	21.6	68	16,215	247	21.1	212
Italy	7,239	267	19.7	96	5,962	321	12.1	51
Netherlands	7,057	220	14.5	73	5,808	216	24.9	69
EEC	44,928	226	18.4	73	42,594	225	10.2	76
U.S.	18,600	161	22.0	73	26,086	169	19.1	114

<sup>1</sup>Millions of Dollars

Sources: OECD, *Commodity Trade, Export Detailed Analysis by Product*, Series C, 1964, Paris, 1966; and OECD, *Commodity Trade, Import Detailed Analysis by Product*, Series C, 1964, Paris, 1966.

A major question exists concerning the relation of trade to growth after internal EEC trade barriers are dismantled. The formation of the Common Market implies the expansion of trade and a direct contribution to growth by improving allocation of resources within the area. These gains would be associated with increased specialization and the extension of market for exports and improvement in sources of imports within the area. The extent to which these internal competitive adjustments and expansion in the size of the market will directly influence economic growth are difficult to assess, but, nonetheless, can be assumed to be of importance. Whether this positive element in future economic growth patterns will be further supported by competitive pressures external to the EEC will, of course, depend on EEC common tariff policy. While it is generally assumed that external competitive pressures will increase productivity and output in industrial sectors, it is, on the other hand, generally assumed that the elimination of competitive pressures through border restrictions and high prices will increase output and productivity in the agricultural sector. Both of these conditions would appear to be in the offing as EEC policy is being developed in its initial phases. The validity of these two assumptions is of crucial importance in evaluating future import requirements in total as well as in the feed-grain, livestock economy.

#### Economic Policy

As indicated at the outset, one of the important determinants of economic change is the policy framework promulgated by governments. During the historical period under review, each government has made more or less independent decisions concerning policies related to the rate of expansion, maintenance of full employment, price stability, wage and income policy, balance of payments, and other factors that influence overall economic change. Important to assessing future developments is the extent to which these policies have been different as between countries, the extent to which conflict exists, and the degree to which the formulation of the EEC will involve change in individual country policy and adjustment toward common objectives and procedures.

The EEC treaty deals specifically only with those policies necessary to implement the "common market" principle, comprising the free movement of goods, services, people and capital within the union. This involves: 1) establishment of common external border restrictions and elimination of those between member countries, 2) development of common rules of business competition within the area and elimination of all forms of discrimination and unfair competitive practice, 3) development of a common agricultural policy, and 4) development of a common transport policy. These common policies as they relate to the feed-livestock sector are treated in the following chap-

ter. It should be noted here, however, that the EEC treaty specifically deals only with those policies essential to "horizontal" adjustment and coordination as between member countries. It does not deal with policies that are basic determinants of change through time related to stability, growth, resource use, demand, etc. Our purpose here is to briefly discuss these aspects of economic policy as an element in establishing assumptions concerning the overall economic framework for agricultural projections to 1970 and 1975.

#### Short-term Economic Policy

All governments in the EEC maintain a policy aimed at full employment, price stability, and improvement of personal income levels.<sup>7</sup> As indicated in Table 4, substantial changes and improvements have been made in wage levels, and the overall index of consumer prices has increased much more rapidly than in the United States. Maintaining adequate expansion and improvement of incomes without rapid increases in price levels has been a difficult problem of policy adjustment within the EEC area.<sup>8</sup> At one time or another during the period under review, strong inflationary pressures have existed in France and Italy. These pressures to some degree have been exported and have had an impact on other countries, particularly The Netherlands where markets are closely tied to external outlets. The interactions among countries will become closer under the EEC.

Though the main instruments and aims of short-term economic policy are similar in general aspects, the emphasis on their use, the specific objectives followed, and methods of implementation differ between countries, and a fully coordinated policy will be difficult to attain. In Germany, for example, because of the independence and taxing power of the *Länder*, greater emphasis is placed on monetary and export-import policy than on fiscal policy as instruments of achieving short-term objectives. An important difference in objectives, particularly in the Benelux countries, results from the fact of their heavy reliance on export markets and extreme sensitivity to short-term adjustments that influence balance of payments. In France and Italy, on the other hand, emphasis is placed on maintaining a high level of employment even at the expense of price and wage stability.<sup>9</sup>

Despite these differences, steps have been taken toward coordination of short-term economic policy. The EEC has established a committee structure to explore and analyze economic problems and, thereby, lay the foundation for

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<sup>7</sup>See OECD *Economic Surveys*, various issues, 1965 and 1966.

<sup>8</sup>OECD. *Economic Surveys*, *Ibid.*

<sup>9</sup>Committee 4.1: "Harmonization Problems" in *The Market Economy in Western European Integration*, Seventh Flemish Economic Congress, Louvain, May 8-9, 1965, Editions Nauwelaerts, Louvain, 1965.

closer coordination. These committees consist of a Monetary Committee established under the treaty whose task is to seek coordination in monetary and international payments policies as between countries and an Economic Policy Committee consisting of representatives of the commission, the Monetary Committee, and the ministries of economic affairs and finance and the central banks of individual member countries.

A number of activities are entered into that are intended to affect coordination. These activities include common research and analysis of country economic situations, recommendations by the Commission to the governments on actions to be taken, evaluation and study of short-term policy devices, recommendations on measures to be taken in the case of recession or inflation, recommendations for improvements in developing economic forecasts and budget policy as well as certain other activities.

Table 4. Wages and Prices, 1964 Level, and Change Since 1955.			
Country	Average Hourly Wage 1964 <sup>1</sup>	Index of Wages (1955 = 100)	Index of Consumer Prices (1955=100) <sup>2</sup>
Belgium	6.6 <sup>3</sup>	152	119
France	0.58	187	130
Germany	0.93	196	121
Italy	0.59	187	164
Luxembourg	----	---	115
Netherlands	0.75	201	131
EEC	0.76 <sup>4</sup>	190	141 <sup>5</sup>
U.S.	2.46	185	115

Source: United Nations, *Statistical Yearbook*, 1965.

<sup>1</sup> Per hour wage rates in U.S. dollars

<sup>2</sup> 1958 = 100, Index includes all items covering consumer expenditures.

<sup>3</sup> Per day

<sup>4</sup> Weighted by multiplying total manufacturing labor force for each country by the per hour wage rate. The sum for the individual country, thus, obtained was divided by the total manufacturing labor force for the EEC (excluding Luxembourg).

<sup>5</sup> Calculated by dividing GNP at current prices by GNP at constant 1958 prices.

Thus, while for political reasons the EEC does not envisage a common short-term income and stabilization policy, it is apparent that informal leadership by the EEC can and probably will be of considerable importance.<sup>10</sup>

<sup>10</sup> Committee 3.3: "Economic and Financial Policy in a Common Market" in *The Market Economy in Western European Integration*, Seventh Flemish Economic Congress, Louvain, May 8-9, 1965, Editions Nauwelaerts, Louvain, 1965.

## Long-term Economic Policy

The most complete system of economic planning exists in France where five-year indicative plans are established to cover both the public and the private sector. These plans are developed jointly by government and private institutions and in theory represent the collective judgment formulated by all interested parties. The plans are not considered imperative nor do they set specific goals that must be reached, but are intended to provide guidelines for decisions by both industry and government. Despite the coordination between government and private interests in developing the plans, it must be kept in mind that a heavy weight of influence both in developing and executing plans is in the hands of government. This follows in part from the very large role played by government through its importance in direct investment, the role of national enterprises included in the plan, and the government's importance in guiding housing construction where direct control of lending procedures exists. In addition, the government influences economic activity through its general control of credit, through loans for special purposes, through fiscal relief given to certain operations that conform to the recommendations of the plan, and finally through the large number of subsidies and special programs in its regional development activities.<sup>11</sup>

While not as fully developed, both Belgium and Italy have undertaken overall planning of the general type practiced in France.<sup>12</sup> In Belgium, indicative planning was established in 1959. A first and tentative five-year plan to 1965 was established and this, in turn, has been followed by a second program to 1970. Traditional economic policy during the postwar period in Italy had been based on sectoral programs and the overall role of government had been largely that of coordination. A commission for overall economic programs however, was established in 1962 under the Minister of the Budget.<sup>13</sup> An initial comprehensive five-year plan was developed in 1964 in a framework of government-industry consultation. Programming differs from the French and Belgian cases in that each year marks the beginning of a new five-year plan. This provides the basis for annual review and updating.

National economic planning in The Netherlands and particularly in Germany is substantially less complete than in the Latin member countries of the EEC.<sup>14</sup> In The Netherlands no long-term planning as such exists, although

<sup>11</sup> Pierre Masse, "La Programmation en France," in *La Programmation Economique Europeenne et la Programmation Economique Nationale dans les pays de la CEE*, Actes du Colloque de Rome, November 30 - December 2, 1962.

<sup>12</sup> EEC, *Politique Economique et Problemes de la Concurrence dans la CEE et dans les Pays Membres de la CEE*, Serie Concurrence 2, Bruxelles, 1966.

<sup>13</sup> Pasquale Saraceno, "La Programmation en Italy," *Acts du Colloque de Rome*, *op. cit.*, and EEC, *Politique Economique et Problemes de la Concurrence dans la CEE et dans les Pays Membres de la CEE*.

<sup>14</sup> *Acts du Colloque de Rome*, *op. cit.*, General Report.



studies of potential long-term developments in the Dutch economy are prepared. Detailed econometric studies to 1970 and 1980 have been formulated such that they permit evaluating the consequences of a number of alternative economic policies. Long-term national economic objectives or goals, however, have not been established. In Germany, postwar experience with planning as related to the Marshall Plan created an attitude of skepticism toward long-term planning on a national basis. This combined with the federated type of structure and the substantial responsibility of the *Länder* for many elements of policy has prevented the development of any national level long-term plan.<sup>15</sup>

The methods and attitudes toward longer term economic policy in the EEC member countries vary widely, and the potential for coordinated EEC policy is more remote than in the case of short-term policy.

#### Regional Development Policy

In total, overall regional development policy in the EEC member countries is linked to national long-term policy and has developed to a roughly similar degree in most countries. Rather wide differences in objectives and instruments for policy implementation exist.<sup>16</sup> In The Netherlands where emphasis on national policy has been toward industrialization to increase employment, supplementary regional policy has focused on questions of industrial location. The location program is aimed at creating expansion outside of the western seaboard megalopolis and is encouraged by providing the necessary infrastructure, assisting the construction of plants and housing for the required workers, and other direct and indirect subsidies. In Belgium where national economic planning has recently begun, the same is true for regional development planning. An experimental program has been initiated in the southern part of the country designed for overall industrial-agricultural development in a traditionally agricultural area.

In Germany regional development policy is largely the domain of the highly autonomous *Länder*. Programs vary between regions, but in general, have a major component aimed directly at the restructuring and improvement of agriculture including the development of necessary infrastructure.<sup>17</sup> The federal government participates in regional development on two bases: In one case, assistance is granted to regions and *Länder* where the local population is extremely poor and financing of regional development would be difficult without federal assistance. In these cases, loans and planning assistance

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<sup>15</sup> Helmut Meinhold, "Die Programmierung in Deutschland," in *Acts du Colloque de Rome*, *op. cit.*

<sup>16</sup> EEC, *Rapports de Groupes d'Experts sur La Politique Regionale dans la Communauté Economique Européenne*, Annexes I - VI, Bruxelles, 1964.

<sup>17</sup> G.E. Rossmiller, *The Grain-Livestock Economy of West Germany with Projections to 1970 and 1975*. Number 1 in this series.

are given to encourage increased industrialization, agricultural improvement, and, where relevant, to improve the basis for tourism. A second form of federal assistance is given in the case of special activities which serve to decentralize capacities and disperse population, particularly in the western congested areas.

Regional policy in Italy is centered on the problems of economic development in the southern part of the country and in the islands of Sicily and Sardinia. These areas are all basically underdeveloped and are characterized by inadequate industrial capacity, poor agricultural structures, excess population, chronic unemployment and underemployment, inadequate infrastructures to service either agriculture or industry, and inadequate social services. The basic program for these areas is aimed at adaptation and improvement of the general infrastructure and social milieu, revision and modernization of agriculture, and encouragement of industrial activity. The programs aimed directly at agriculture have sought to increase total output and revenue in the area, and at the same time, increase agricultural employment. The principal forms of assistance to agriculture include development of irrigation, investment and other help to farmers to adapt production largely toward more intensive fruit and vegetable culture, and general programs for the improvement of land productivity and livestock quality. Specific agricultural programs are supported where necessary by the development of infrastructure, particularly roads.<sup>18</sup>

Nonagricultural development programs have taken basically two forms: a general program in all areas which attempts to stimulate small industries, artisans, fishing, tourism, and other forms of complementary activity, and a second program is aimed at developing major centers of industrial activity and employment for excess labor in rural areas. To promote these "centers of industrial development" direct assistance is given to industries through tax subsidies and loans as well as direct actions taken to provide the atmosphere necessary for industrial development through improvement of roads, railroads, water systems, electrification, improvement of ports, and any other particular action needed in given locations.

In addition to the specific programs aimed at agriculture and industry, a third major thrust is aimed at developing education at all levels. To 1963 the construction of school facilities had been assisted in 800 separate localities.<sup>19</sup> This includes general education, assistance to professional and technical schools, including agriculture at various levels, as well as the

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<sup>18</sup>For a more detailed discussion, see F. Mangum, *The Grain-Livestock Economy of Italy with Projections to 1970 and 1975*, Number 2 in this series.

<sup>19</sup>EEC, *La Politique Regionale dans la Communauté Economique Européenne*, op. cit. Annex IV.

development of necessary supporting research facilities.

Regional planning in France is a direct outgrowth of national planning and, as such, is the most thoroughly institutionalized and broadest in scope of any of the EEC countries.<sup>20</sup> Regional development programs have grown steadily in number from an initial plan undertaken in 1955 aimed at the improvement of 250 thousand hectares of land in the lower Rhone valley. Since then, new initiatives have been developed through the organization of aid programs for regional industrial expansion and by the establishment of action programs for general regional development coordination, the establishment of a national fund for territorial improvement, and the limiting of excessive expansion in the Paris region. Since 1960, development planning has taken on a longer term focus and an elaborate system of institutions has been built up to coordinate and execute various kinds of programs.

Special agricultural programs in several areas of France have been developed with the aim of improving agricultural productivity and resource utilization and to "rationalize" production in view of the land and human resources in the region. Emphasis is given to improving the form of land and farm structure, improving the infrastructure of the area and encouraging various forms of group activity by farmers to acquire inputs and facilitate production processes. In addition to these basically production-oriented programs, regional programs exist to improve market facilities. Encouragement is given to the development of farmer cooperatives and regional groups of producers whose principal objectives are aimed at improved marketing of agricultural products. All of these developments are encouraged by direct financial aid, loans, reduced interest charges, government guarantees, an assortment of fiscal aids, and diverse forms of assistance and advice in establishing facilities and programs.

These major agricultural programs which cover total production, marketing and rural structure in a number of areas throughout France are, in turn, supplemented by programs aimed at industrial development with particular emphasis on expansion in overpopulated, low-income rural areas. Through a program initiated in 1964, direct subsidies related to the amount of new employment created are available to businesses that establish new industrial units or expand existing units in the West or Southwest of France.

#### Coordination and EEC Policy

A central issue in attempting to evaluate the economic environment for agriculture in EEC countries over the period to 1975 is the question of whether the directions of economic policy will change due to formation of the EEC. The previous broad review of general and regional economic policy indicates

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<sup>20</sup>*Ibid.*, Annex III.

approximately the following situations: 1) The broad objective of economic policies are relatively consistent as between countries. 2) The choice and priorities placed on the attainment of specific objectives, however, varies rather widely. While full employment is of central concern in all countries, considerable variation exists as between the emphasis placed on specific objectives. 3) Important differences exist among countries in the relationship between the public authorities and the economic milieu of the country. In France and Italy, governments own and control major economic enterprises. In Italy, this includes two major diversified industrial complexes, the IRI, the ENI, and in France direct government control exists over the production of energy, a major component of the automobile industry, aviation, and several other areas. Public ownership of productive capacity is much less important in Belgium, The Netherlands, and Germany, and for the most part consists of railroads and general public services. 4) An important difference between countries also exists in the emphasis on instruments of economic policy. This is reflected in such phenomena as the greater use of monetary, credit and export-import policy in Germany and in The Netherlands as compared with the general and rather complete economic planning and the broad range of institutions and policy instruments used in France and Italy, and to a lesser extent in Belgium.

These specific differences are, in turn, supplemented by distinct and pervasive differences in attitude toward the role of government, particularly as this relates to medium and longer term economic planning. Thus, no clear trend of EEC involvement in this kind of policy has emerged.

Though a medium-term policy committee has been established, its activities at this stage have been restricted to encouraging voluntary coordination of policies and encouraging individual governments to develop medium-term (1966 to 1970) economic forecasts, but expressed only as alternatives of possible future trends. These alternative trends, purposefully devoid of any content suggesting indicative planning, are submitted to the member states and the community. Presumably this will lead to greater coordination between general economic policy and policy on agriculture, transportation, etc. that are jointly determined on a common basis. While this may also encourage voluntary coordination of general national economic policy, no formal coordination or common policy has developed. On the other hand, differences of attitude in regard to short-term economic policy are less pervasive and the need for coordination is more critical. This has led to common research and analysis of policy devices, anti-inflation and anti-depression measures and advice by the commission to governments that appears to have been of consequence. The question of short-term policy is closely tied to monetary policy and in this case the treaty provides specifically for coordination.<sup>21</sup>

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<sup>21</sup> Committee 4.1, "Harmonization Problems," in *The Market Economy in Western European Integration*, *op. cit.*

Regional economic planning by its very nature can be expected to remain largely in the framework of individual country policy. The EEC, however, does have two instruments that can be of some importance. These are the guidance portion of the Agricultural Guidance and Guarantee Fund and the lending activities of the European Investment Bank<sup>22</sup> established by the EEC specifically for the purpose of financing regional development programs. While the funds available to date from both of these sources have been dispersed somewhat throughout the EEC, emphasis has been placed on complementing the development program in southern Italy. Despite these sources of funds, no formal coordinating efforts at the policy level have been undertaken and no "common" policy appears to be developing.

#### Assumptions

This overall perspective on recent economic trends and the general economic policy situation in the EEC countries leads to the following working assumptions concerning the environment for agricultural development in future years: 1) Because of the emphasis in all countries on full employment and because of the exportability of inflation, it can be assumed that formation of the EEC will lead to progressively closer coordination of short-term economic policy. This, in turn, will lead to greater general price stability, and a relative equalization of prices as between countries. With greater stability and more effective control of inflation, reduced pressures will exist for adjustment in agricultural prices as compared with the period since 1955. 2) Longer term economic policy and regional policy will continue to be largely the responsibility of individual governments and only nominal coordination will be achieved. A supplementary role, but one that will not be of sufficient magnitude to greatly influence change will be played by the EEC through the European Investment Bank and the Agricultural Guidance and Guarantee Fund. 3) Full employment and sustained economic growth will prevail throughout the projection period. Economic growth will to some degree be encouraged by expansion in the size of the market, but adequate demand had not been a problem to individual countries in the recent past (except for short periods in France and Italy due to anti-inflation policies) and basic adjustment in demand will not greatly influence future growth rates. Further, the retaining of regional and sectoral policy in the hands of national governments will mitigate much of the potential competitive effect of economic union on methods of production, allocation of investment, and hence on overall productivity. The multiplicity of taxes, subsidies and other aids that favor marginal producers will in general be retained both in industry and agriculture. 4) Structural shifts in employment will be of lesser importance in stimulating growth in the future than has been true since 1955. Also,

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<sup>22</sup>EEC Rapports de Groupe d'Experts, *op. cit.*, appendix VII.

within sector increases in productivity will be difficult to sustain at historical rates due to the increasing shift of investment from expansion to modernization and from industrial areas to service industries. A gradual decline in the average annual growth in output per worker seems probable for the period to 1975.

Thus, in looking at the impact of the EEC on the environment for agriculture, it would appear that its potentially greatest effect will be on economic stability. Basic economic conditions in individual countries and national policies will continue to dominate longer-term growth and change. The EEC through widening the market will provide a demand stimulus, but this will not overshadow conditions on the supply side that will basically determine overall rates of economic growth.



## Chapter 2

### Agricultural Policy in the EEC

#### Introduction

EEC agricultural policy is based on objectives and attitudes previously worked out at the national level by the six member countries and necessarily represents compromises required to arrive at a common market organization. National policies took shape in part during the 1930's to offset competition from cheaper foreign sources of supply and were extended during the postwar period to provide incentives to farmers to increase output and overcome war induced shortages. During this latter period, shortages of foreign exchange also provided a motive for increased protection. These objectives have since declined in importance and the concept of income protection and market stability for agriculture has become the dominant objective of national agricultural policies. Other objectives related to maintaining balanced production, adjusting labor resources in agriculture, improving farm structure and improving social conditions in rural areas are also included in national measures.

In shaping a common agricultural policy, European countries were faced with institutions, situations and trends resulting both from long historical development and more immediately from the application of national policies. The task of developing a common policy, thus, not only is that of enabling agriculture to pass from its individual country policy framework to that of a common market competitive structure, but also is that of solving basic problems facing agriculture in the various member countries. In establishing the framework within which policy will be developed, the EEC has taken a broad approach. The major objectives of the agricultural policy are: 1) To increase agricultural productivity by developing technical progress and by insuring the rational development of agricultural production and the optimum utilization of the factors of production, particularly labor. 2) To insure thereby a fair standard of living for the agricultural population, particularly by increasing the individual earnings of persons engaged in agriculture. 3) To stabilize markets. 4) To guarantee regular supplies, and 5) To insure reasonable prices in supplies to consumers.

These general guides are to be implemented under three broadly oriented program frameworks. These are: structural policies, market and trade policies, and social policies in the field of agriculture. Social policies imply largely the incorporation of farmers and rural communities into broader programs aimed at unemployment security, income during retirement years, etc., and do not have specific content insofar as agriculture is concerned. Structural reform in agriculture is interpreted broadly. In addition to the central question of creating larger, more efficient farms to replace small and,



in some cases, scattered holdings that currently exist in many countries, structural policy visualizes improving the mobility of agricultural labor and the basis on which desired capital improvements necessary for individual farm adjustment can be made. Thus, the development of an adequate agricultural credit system and the coordination of markets for both inputs, including labor, and the products of agriculture are included as a part of structural adjustment. Problems of structural reform are also visualized to include questions related to transportation facilities, education, and the development of service industries and infrastructure needed by agriculture. These programs if implemented, obviously have long-term implications both for costs of production, quantity and composition of output and overall welfare of farm people.

The more direct question in EEC policy, however, is that which centers around market and commercial policies. The first major action taken by the EEC has been to establish a market with a common level of agricultural prices. This has called for: 1) progressive elimination of obstacles to trade in agricultural products within the community, 2) establishment of rules governing competition, 3) coordination of national market organization, and 4) coordination of trade policies among member states and gradual introduction of the system of common external protection.

In its broadest sense, then, EEC policy provides a framework to deal with the fundamental problems of agriculture arising out of market and production conditions; while at the same time achieving a common policy from closely regulated national markets with widely divergent methods, institutions, and techniques for implementing both internal and trade policies. While the stated objectives of national policies are comprehensive, it is apparent that structural and social policies have been implemented with considerably less vigor than measures aimed directly at income improvement and price stability. The same is, and likely will continue for some time, to be the case for EEC policy.

The question of relevance to this project is what the impact of the change to EEC policy will be over the period to 1975 and what progress will be made in adjusting national policies to a common or EEC-wide focus. These are considered below in the framework of policies for price support and market coordination and policies aimed at structural and technological improvement in agriculture or direct subsidy to inputs.

#### Price Support and Market Policy in the EEC

Implementation to date of the common market organization for agricultural products has involved the gradual movement toward common price levels, the elimination of internal trade barriers, and the development of a common external trade barrier. Final implementation of the market program will occur

Table 5. The EEC Market Regulation Scheme

Arrangements

Target Price  
Threshold Price  
Sluice Gate Price  
Free at Frontier Price  
Import Levy  
Supplementary Levy  
Import Duty  
Provision for Market Intervention  
Provision for Export Refunds  
Quota  
Quality Standards  
Producers Organization  
Initial Date  
Date of Unification<sup>11/</sup>

Commodities

Grain and grainproducts	x	x	x	x	x	x	x	x	x	x	x	1-8-'62	1-7-'67
Rice and riceproducts	x	1/	x	x	x	x	x	x	x	x	x	1-9-'64	1-9-'67
Pigs and pigmeat			x		x							1-8-'62	1-7-'67
Poultry and eggs			x		x							1-8-'62	1-7-'67
Milk and dairyproducts	x $\bar{2}$ /	x	x	x	x	x	x	x	x	x	x	1-11-64	1-4-'68
Beef and veal	x	x	x $\bar{3}$ /	x	x	x	x	x	x	x	x	1-11-64	1-4-'68
Sugar and Sugarbeets	x	x	x	x	x	x	x	x	x	x	x	1-7-'67	1-7-'68
Oilseeds	x	x	x	x	x	x	x	x	x	x	x	1-7-'67	1-7-'67
Olive oil	x	x	x	x	x	x	x	x	x	x	x	1-11-66	1-11-66
Fruit and vegetables	x	x	x $\bar{6}$ /	x	x	x	x	x	x	x	x	1-8-'62	1-7-'68
Wine												1-8-'62	1-11-69

<sup>1</sup>In France and Italy  
<sup>2</sup>Only in case of milk  
<sup>3</sup>Guide price

<sup>4</sup>Levy free import  
quorum for frozen  
beef

<sup>5</sup>Production quorum

<sup>6</sup>Reference price

<sup>7</sup>Import quorum applicable  
only through a safe guard  
clause procedure

<sup>8</sup>Import quorum  
<sup>9</sup>In case of carcasses, backs  
and bellies

<sup>10</sup>Only in case of butter

<sup>11</sup>From 1 July 1967 the European Guidance and Guarantee Fund  
takes full responsibility for financing the common agricul-  
tural policy, the income of the fund will then consist of:  
a) 90% of the proceeds of the levies on imports from outside  
the community;  
b) direct contributions by national governments on the fol-  
lowing scale (in percentages of the required sum in 1967/  
1968 and 1968/1969): France 32.0%, Italy 20.3%, Belgium  
8.1%, W. Germany 31.2%, Netherlands 8.2%, Luxembourg 9.2%.

Source: Netherlands Agricultural Ministry, Selected Agri-figures of the EEC. August 1967, p. 47.

with variation between commodities from 1967 to 1970, and will involve the methods shown in Table 5. The generation of a common market organization inevitably involves change in certain institutional patterns, methods of implementing price policy, and the adjustment of price levels as between countries. Because of relatively wide differences between countries, the transition was begun in 1962 for gradual implementation over a period of about eight years.

#### Grains

The most closely regulated market under the EEC, as has been the case in pre-existing national markets, is that for grains.

French national grain policy involved government fixing of prices, government support purchases, export subsidies, import protection, and a two-price system based around a quantum procedure that sought to assure farmers one price for quantities needed in the domestic market and the world price for quantities exported. Farmers were required to sell grain at designated points, and prices for products for human consumption were strictly regulated at all market levels including consumer prices. Completely regulated internal trading and state trading in international markets were in effect. As a deficit producer, Germany relied largely on import control operated through a marketing board to protect domestic prices. These were supplemented in the case of bread grains by percentage requirements for utilization of domestic grains and, where necessary, temporary stockpiling schemes and in certain instances by granting subsidies on transportation from surplus to deficit regions. Italian grain prices were fixed each year by the government to apply to deliveries made under compulsory collection arrangements for a given quota of the crop. Prices on quantities which fell outside of the quota were in turn maintained near the quota level through direct control over foreign trade exercised by a government trading monopoly. Support to grain was implemented in The Netherlands and Belgium through establishing target prices, government purchases, and close control on import and export trade along with domestic use requirements for bread grain.

The variety of methods utilized at the national level not only involved price protection for income purposes, but often also included strictly regulated state trading in export and import markets. For bread grains specified use requirements and in some cases quota systems for delivery or price differentiation purposes were in effect. These will be supplanted by a system under the EEC which relies largely on price to direct market flows and production patterns.

Prices are applied internally through a set of target prices that vary as between regions in the EEC and are adjusted seasonally to cover storage costs and help assure a more even flow of grain to market. These prices are implemented in two fashions. In areas or crops where production exceeds re-

quirements, support purchases are made at intervention prices and in the case of deficit crops price guarantees are assured through computed threshold prices below which grain cannot be imported. Specific import prices are computed for grain as such and for all grain products by taking into account the value of the grain in the product, a milling margin, and an allowance for protection of the domestic milling industry, as well as the value of by-products obtained in making the product.

The basic price structure established for grains is well above recent world levels. The key element in establishing grain prices is the decision on the target price to apply at Duisburg, Germany, the point established as the principal deficit area. From this, based on transport and marketing costs, derived threshold prices are computed for import grains. For internal prices, derived target prices in other areas of the EEC are computed largely in relationship to transport costs. Intervention prices, while somewhat below the target prices, are closely related to them in all areas.

The estimated regional distribution of grain prices within the EEC is illustrated by those for wheat as shown in Figure 1. While some variation exists, this same pattern applies for other widely produced crops, particularly barley and rye. The regional implications for corn is considerably less pronounced principally because of their limited distribution throughout the territory. The extent to which EEC policy has changed pre-existing prices and price relationships is indicated in Table 6. The dominant overall change to be noted from this table is that prices decline substantially in Germany, and increase substantially in France.

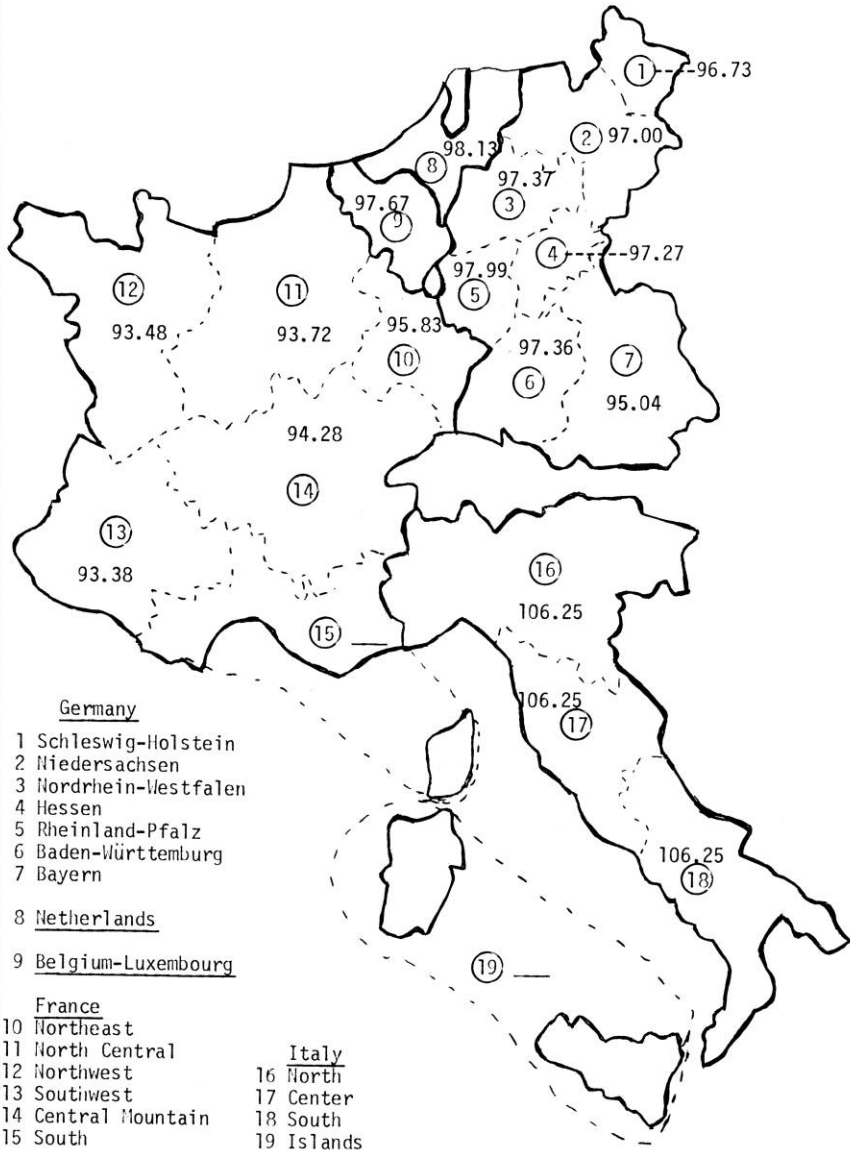
The base period prices (1960-1964) for all grains were relatively stable in Germany. The decline due to EEC price policy will range from about 5 to 10 percent in most areas. The largest base period price increases since 1960, in general, have occurred in Netherlands and France, and these two countries will have substantial further price increases through implementation of EEC prices. In general, the shifts that occurred during the period 1960-64 indicate that in regions where EEC policy was expected to result in major increases much of the adjustment occurred. In the case of wheat, only a small increase from 1964 to 1970 occurs in The Netherlands and that which occurs in France can be attributed in considerable part to the elimination of the quantum tax system. Barley prices increased considerably during the base period except in West Germany and considerable additional adjustment will occur during the period 1964-70. Major increases occur during both periods in France, Netherlands, and in Italy. The intercommodity effect of these price adjustments as shown in Table 7 indicates a small increase in the price of barley relative to corn and a substantial increase in barley price relative to wheat, particularly in France, and Italy.

Table 6. Percentage Change in Prices Received by Farmers for Principal Grains 1960-64 and estimated 64-70, by Regions in the EEC.

Regions <sup>1</sup>	Soft Wheat		Barley		Corn		Rye		Malting Barley		Durum Wheat	
	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70
1	4.2	-8.4	1.8	-5.5	----	----	5.4	-8.0	-1.7	-7.5	----	----
2	4.6	-10.4	3.5	-7.5	----	----	4.3	-8.7	-1.7	-9.8	----	----
3	5.8	-10.6	3.1	-8.3	----	----	5.3	-7.8	-2.7	-13.1	----	----
4	1.9	-5.5	2.0	-6.4	----	----	2.5	-5.4	-3.1	-15.0	----	----
5	0.4	-6.9	2.5	-5.5	----	----	-0.8	-4.5	-2.5	-15.8	----	----
6	1.9	-10.8	1.4	-7.2	----	----	2.5	-9.8	0.9	-14.9	----	----
7	0.9	-10.4	1.3	-7.3	----	----	1.8	-9.4	-1.1	-16.1	----	----
8	13.9	2.7	9.7	15.9	----	----	16.5	24.3	5.8	14.1	----	----
9	2.3	2.0	7.1	7.8	----	----	5.6	16.4	7.1	11.8	----	----
10	11.4	11.2	10.6	29.5	3.5	18.8	9.9	38.6	----	----	----	----
11	4.6	15.8	10.0	27.2	3.5	16.8	9.0	35.3	----	----	----	----
12	13.2	6.7	16.2	22.4	3.5	20.5	10.6	35.5	----	----	----	----
13	12.5	7.3	15.4	21.2	1.6	18.8	11.6	32.1	----	----	----	----
14	13.0	7.8	16.3	23.8	7.3	15.4	10.4	37.5	----	----	----	----
15	----	----	----	----	----	----	----	----	----	----	----	----
16	4.3	-4.3	0.7	3.9	18.1	11.8	30.1	20.1	----	----	----	----
17	4.7	-5.3	9.6	9.3	----	----	----	----	----	----	----	----
18	6.1	-5.8	11.3	10.6	----	----	14.7	-1.3	----	----	8.0	0
19	----	----	4.5	7.0	----	----	----	----	----	----	6.4	0

<sup>1</sup> See Figure 1 for map of regions.

Figure 1. 1970 Estimated Average Wheat Price by Region in the EEC.  
(U.A. per Metric Ton)



## Livestock Products

Among EEC member countries national measures of protection were in effect for most livestock and livestock products. The most comprehensive were those applied to dairy products. All countries assured farmers a minimum level of price for milk. This was achieved through a variety of domestic programs and programs applying to imports and exports. Belgium, France, Germany and Netherlands all implemented domestic purchases of butter and/or other dairy products when necessary to maintain price. Export aids were used in The Netherlands, Belgium, and France whenever this became necessary to clear markets. Domestic consumption subsidies were used to some extent in Belgium and The Netherlands, while in Germany a delivery subsidy was paid to dairies for milk delivered by farmers and both wholesale and retail prices of liquid milk were fixed. Strict import controls were maintained either through quota systems or, as in the case of France and Germany, through monopoly control of all import and export transactions by a single organization operating under government auspices.

Region	Wheat/Barley		Wheat/Corn		Barley/Corn	
	60-64	64-70	60-64	64-70	60-64	64-70
1	2.3	-3.1	----	----	----	----
2	1.1	-3.1	----	----	----	----
3	2.7	-2.5	----	----	----	----
4	-0.1	0.9	----	----	----	----
5	-2.0	-1.5	----	----	----	----
6	0.5	-3.9	----	----	----	----
7	-0.4	-3.3	----	----	----	----
8	3.8	-11.4	----	----	----	----
9	-4.5	-5.4	----	----	----	----
10	0.7	-14.2	7.6	-7.1	6.8	10.0
11	-5.0	-9.0	1.0	-1.0	6.3	8.9
12	-2.5	-12.9	9.4	-11.7	12.2	1.1
13	-2.6	-11.5	10.7	-12.2	13.6	2.1
14	-2.9	-12.9	5.3	-6.4	8.4	7.6
15	----	----	----	----	----	----
16	3.6	-8.0	-11.7	-14.1	-14.8	-7.5
17	-4.5	-13.4	----	----	----	----
18	-4.7	-14.9	----	----	----	----
19	----	----	----	----	----	----

Although, somewhat less comprehensive and varied in method, substantial protection was also provided for beef, veal, and pork. In France, minimum guaranteed prices existed along with quantitative control on imports and, when necessary, export assistance was provided. In Germany, monopoly control over imports and exports was maintained and storage and stockpiling was undertaken when necessary by a single import and storage agency. Protection in Italy was provided largely through import quotas as was the case for beef in The Netherlands. In Belgium, import controls and export aids were operative on both meat products and live animals. Because of extensive exports of Dutch pork products and a tendency for international prices to fluctuate independent of Dutch supplies, a comprehensive export program was in operation. Farmers and slaughter houses received an agreed price set periodically. If export prices were below this level, a government allowance was made to cover the difference; and if export prices were above this level, the government collected an export levy to cover the difference. Much less comprehensive protection was provided for eggs. France provided seasonal minimum prices with government intervention if necessary and an equalization tax to offset differences in prices of import eggs. Belgium had a direct production subsidy through a deficiency payment on eggs delivered, and Germany provided a direct production subsidy through a payment equal to the differential in cost of feed grain at German prices vs. world price levels. It appears that no direct market supports have been provided for poultry meat, although it was protected through import regulations in most countries.

As is the case for grain, EEC policy will sweep away a maze of quotas, subsidies, state trading relationships, export programs, import controls and will rely exclusively on price to allocate internal EEC trading and production relationships. These, in turn, will be supplemented by import levies and export subsidies to third countries where this is necessary. Some variation will exist among the individual livestock commodities.

The internal price for beef is based on a guide price computed to represent a weighted average of the beef price for each country adjusted to account for seasonal and quality differences. Direct internal support is provided through intervention purchases between 93 and 96 percent of the guide price, but the decision to make such purchases will rest with individual member governments. Basic protection from imports will be provided by customs duties that will apply equally to all member countries. These, in turn, can be supplemented by import levies whenever import prices plus the custom duty is less than 105 percent of the guide price.

Internal support for dairy product prices follow much the same form as those for beef. A target price is computed to apply equally throughout the EEC, and intervention agencies will remove manufactured products, principally butter, from the market when desirable to maintain farm prices for milk. Im-



port levies are computed weekly for 16 different products or product categories. Import levies are set at a level that will protect the target price on milk.

The support mechanism for pork, eggs and poultry is less comprehensive than for cereal and other livestock products. A sluicgate price is computed and an import levy assessed to offset the difference in costs of grain based on internal EEC prices as compared with external prices, plus a fixed factor to allow for difference in production efficiency within the EEC as compared with external sources and to provide protection to processing industries in the case of processed products. No direct internal support mechanism or support buying is currently included in the EEC regulations for eggs and poultry. A purchase arrangement for pork that provides for the purchase of carcasses or sides and solid outer fat has been instituted. Market intervention takes place whenever the price of slaughtered pigs has fallen to the basic price or lower and is expected to remain there. Intervention would be discontinued when price is again above the basic price and expected to stay there.

The effect of decisions taken to date by the EEC on farm price relationships for livestock products is shown in Tables 8 and 9. For the period 1964-70, the changes shown are those that will come about as a result of established EEC support levels for beef, veal, and milk. In the case of pigs, poultry, and eggs, the changes reflect computed prices based on the assumption that prices of these products will be closely related to production costs.<sup>1</sup>

The most important changes that have occurred are the increases from 1960 to 1964 in beef and veal prices in Italy, France, Netherlands, and Belgium. German beef prices, on the other hand, remained relatively stable from 1960-64. From 1964 to 1970, however, German beef and veal prices increase substantially as compared with those in other countries. Milk prices, on the other hand, have increased substantially in all countries during the period 1960-64, but will increase only in France, Belgium and The Netherlands by an appreciable amount to 1970. If hog, poultry and egg prices follow the patterns estimated, declines will occur in all countries to 1970 with the exception of hogs in Italy and The Netherlands.

This represents an important reversal of recent price trends for pork and eggs in France where substantial increases occurred from 1960 to 1964. The greatest declines are those indicated for poultry in France and for eggs in Germany. Since these computed prices are based on efficient producing costs, very little decline is recorded in The Netherlands either for poultry or for eggs. This reflects the fact that Dutch production costs are

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<sup>1</sup>For a discussion of how these prices were estimated see D. Epp, *Changes in Regional Grain and Livestock Prices Under the European Economic Community Policies*, Number 4 in this series.

Table 8. Percentage Change in Prices Received by Farmers for Principal Livestock and Products 1960-64 and Estimated 1964-70, by Regions in the EEC.

Region	Beef		Veal		Milk		Pigs		Poultry		Eggs	
	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70
1	2.7	30.0	-0.7	22.4	13.9	6.0	6.3	0.2	-13.6	-16.8	-2.3	-34.8
2	3.5	29.9	0.7	22.3	10.5	6.6	5.0	-1.8	-10.8	-18.9	-4.0	-33.2
3	3.8	29.8	-1.9	22.1	7.6	-1.7	6.1	-7.6	-11.2	-19.2	-1.0	-42.3
4	2.6	29.8	1.5	22.1	10.9	2.9	4.2	-6.7	-11.2	-19.7	1.1	-43.9
5	2.8	29.9	0.7	22.1	9.3	1.4	5.4	-8.5	-10.5	-19.8	1.0	-46.4
6	1.8	29.9	3.3	22.0	14.4	3.7	3.3	-5.5	-11.4	-18.9	-1.0	-42.2
7	3.7	30.1	4.9	22.3	11.0	7.7	-0.9	-1.1	-12.5	-19.6	-0.6	-35.0
8	18.9	6.9	24.2	2.0	16.7	12.2	16.5	11.0	-2.6	6.6	-4.2	-0.9
9	20.6	21.9	18.7	-2.3	15.0	24.5	26.3	-3.7	-1.4	3.1	0.6	-13.1
10	26.0	14.2	31.3	-4.6	24.8	24.3	20.1	-5.0	-3.2	-4.0	21.1	-11.2
11	33.4	14.2	31.3	-4.6	24.6	22.2	21.6	-1.2	-3.2	-41.3	21.1	-13.1
12	40.7	14.1	31.3	-4.7	24.8	20.4	22.1	1.8	-3.2	-39.9	21.1	-11.6
13	40.8	13.9	31.3	-4.8	-----	-----	20.7	-5.0	-3.2	-41.4	21.1	-13.2
14	23.6	13.5	31.3	-5.1	24.9	8.4	20.8	-2.2	-3.2	-40.0	21.1	-11.1
15	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
16	45.3	-1.4	13.1	-0.5	34.2	1.5	17.6	8.8	-2.9	-16.4	-5.0	-20.2
17	22.6	-1.1	20.6	-0.5	20.9	-5.7	-----	-----	-----	-----	-----	-----
18	26.3	-1.1	24.1	-0.3	24.6	5.2	-----	-----	-----	-----	-----	-----
19	22.6	-1.2	31.7	-0.4	-----	-----	-----	-----	-----	-----	-----	-----

Source: D. Epp, No. 4 in this series.

already low and adjustment to efficient producing units does not have to take place. The larger adjustments in Germany and France reflect the existence of large numbers of inefficient production units in those two countries. Substantial price reduction on poultry and eggs are also anticipated in Italy, but these cannot be compared directly with those in other countries since different production cost relationships were used in estimating future price developments.

Table 9. Percent Change in Selected Livestock and Product Price Ratios, 1960-64 and Estimated 1964-70 in the EEC.				
Region	Calf/Beef		Beef/Milk	
	60-64	64-70	60-64	64-70
1	-3.3	-5.9	-9.9	22.7
2	-2.8	-5.9	-6.3	21.9
3	-5.5	-5.9	-3.5	32.1
4	-1.1	-5.9	-7.4	26.2
5	-2.0	-6.0	-6.0	28.1
6	1.5	-6.0	-11.0	25.2
7	1.1	-6.0	-6.6	20.7
8	4.4	-4.6	1.9	-4.8
9	-1.6	-19.8	4.9	-2.1
10	4.2	-16.4	1.0	-8.1
11	-1.6	-16.5	7.0	-6.5
12	-6.7	-16.5	12.7	-5.2
13	-6.8	-16.4	----	----
14	-6.2	-16.4	-1.0	4.8
15	----	----	----	----
16	-22.2	0.8	8.2	-2.8
17	-1.7	0.7	1.4	4.9
18	-1.7	0.9	1.4	-6.0
19	7.4	0.9	----	----

Source: D. Epp, No. 4 in this series.

Other features of livestock price developments that are relevant to future production and consumption relationships include the fact that beef prices in general are increasing relative to veal (Table 9). This may have an impact on numbers of veal vs. beef that are slaughtered. Further, in Germany beef and veal prices are expected to increase substantially relative to milk, whereas in the other countries milk prices will increase relative to beef and veal. In general, the prices of grain consuming livestock and products will decline relative to beef, veal and milk.

Table 10. Percentage Change in Selected Livestock Grain Price Ratios 1960-64 and Estimated 1964-70 by Regions in the EEC.

Region	Hog/Barley		Poultry/Barley		Eggs/Barley		Beef/Barley		Hog/Corn	
	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70	60-64	64-70
1	4.4	6.1	-15.1	-11.9	-4.0	-31.0	0.9	38.0	----	----
2	1.5	6.3	-13.8	-12.4	-7.2	-27.8	0.1	40.4	----	----
3	2.9	0.7	-13.8	-11.9	-4.0	-37.1	0.7	41.9	----	----
4	2.2	-0.4	-12.9	-14.3	-0.9	-40.1	0.6	38.9	----	----
5	2.9	-3.1	-12.7	-15.1	-1.5	-43.3	0.3	37.5	----	----
6	1.9	1.8	-12.6	-12.7	-2.4	-37.8	0.4	40.0	----	----
7	-2.2	6.7	-13.6	-13.3	-1.9	-29.9	2.3	41.2	----	----
8	6.2	-4.2	-11.3	-8.0	-12.7	-14.5	8.4	-8.5	----	----
9	18.0	-10.7	-7.9	-4.3	-6.0	-19.4	12.6	14.7	----	----
10	8.6	-26.6	-12.4	-53.8	9.5	-31.5	14.0	-13.5	16.0	-20.0
11	10.6	-22.4	-12.0	-53.8	10.1	-31.7	21.3	-12.4	17.5	-15.5
12	5.1	-16.9	-16.6	-50.9	4.2	-27.8	21.1	-8.2	17.9	-15.4
13	4.5	-21.6	-16.1	-51.6	4.9	-28.4	22.0	-7.3	18.8	-20.0
14	3.8	-21.0	-16.8	-51.5	4.1	-28.2	6.3	-8.9	12.5	-15.4
15	----	----	----	----	----	----	----	----	----	----
16	16.8	4.7	-3.5	-19.6	-5.6	-23.3	44.4	-7.4	-0.4	-2.7
17	----	----	----	----	----	----	11.8	-10.6	----	----
18	----	----	----	----	----	----	13.4	-12.1	----	----
19	----	----	----	----	----	----	17.4	-9.1	----	----

Source: D. Epp, No. 4 in this series.

## Livestock-Grain Price Relationships

An additional important set of price adjustments that can influence production are those between livestock and grain products (Table 10). In general, because Germany is the only country in the EEC where a substantial downward adjustment in grain prices will take place, the relationship between livestock and feed prices will improve relative to those in other countries. The most important deterioration in livestock-grain price relationships is that which occurs in France. The beef-barley ratio, for example, in Germany has been relatively stable from the period 1960-64, but will improve considerably in the period 1964-70. On the other hand, in both France and Italy beef prices have been rising rapidly relative to barley prices during the period 1960-64, but will deteriorate substantially during the period 1964-70.

While much less pronounced, the same general pattern of relative improvement in Germany for the hog-barley ratio also occurs. The major change in the hog-barley price ratio is the substantial decline in hog prices relative to barley prices during the period 1964 to 1970 in France. Poultry and egg prices, in turn, are expected to deteriorate relative to barley prices in all countries, but with the greatest decline occurring in France followed by Italy and also with a substantial decline in the case of eggs in Germany. The deterioration of the ratio of hogs, poultry, and egg prices to barley prices in Germany reflects the net effect of a decline in the price of both livestock and barley. In the case of Belgium, Italy and France, they reflect a decline in the price of livestock products and a substantial increase in the price of barley. For The Netherlands the most important factor in the change in these ratios is the increase in barley prices.

If future market prices are close to those established by the EEC then, in the overall, for the period 1960-70 the most important changes are: 1) For the period 1960-64 grain prices have increased in all areas. From 1964 to 1970 grain prices will decline in Germany and increase in all other countries with the rather minor exception of soft wheat in Italy; 2) For the period 1960-64 there was substantial increase in absolute level of beef, veal and milk prices in all areas except Germany. For the period 1964-70, the major increases that will occur are in beef and veal prices in Germany, milk and beef prices in France, and milk prices in Belgium and The Netherlands. Except for Germany and Netherlands, veal prices will decline some between 1964 and 1970. The overall effect of the related adjustment between beef, veal, milk and cereal prices for the period 1964 to 1970 will be to improve the relative competitive position of beef and veal production in Germany and to improve the relative competitive position of cereal production in other areas, particularly France. 3) In the case of grain-consuming livestock, (hogs and poultry) the price of livestock and products decline relative to grains in all areas, with the exception of hogs in

Italy. Since this reflects movement toward efficient production, these price changes cannot be assumed to affect the level of production, but rather reflect the rate at which methods of production are expected to change.<sup>2</sup>

These major price changes as well as those between individual products are relevant for estimating the consumption level and the production balances in the chapters that follow. From the viewpoint of consumption, the major impact that would be expected will be for the increase in beef prices to dampen the rate of expansion in consumption and for the expected decline in pork, poultry and egg prices to accelerate the rate of expansion in consumption of these products. In the case of cereals and dairy products, price elasticities of demand are low. In total, the estimated price change is less than for other products, and the price effects on consumption should be nominal. These major price changes have been taken into account in the following chapter in making consumption estimates, and are reflected in the production and trade balance estimates in Chapter 5.

#### Nonprice Policies in the EEC

While as indicated above, the operation and implementation of price and market policy within the EEC will pass entirely to central control, an additional element of policy that is more basic in terms of its potential long-term impact on agricultural conditions will remain largely with national governments. This is the set of nonprice policies aimed at subsidizing and improving the general organization of agriculture. These policies have been implemented by national governments within an overall framework of government policy aimed at agricultural education and extension as well as the broader regional policy framework discussed in the previous chapter. As indicated, overall regional policies are probably most extensively developed in Italy and France, but it would appear that the research, extension and educational backdrop for government policies are most highly developed in The Netherlands and Germany.

In general, these nonmarket programs can be classified under four major headings: 1) Direct subsidies on annual expenditure items such as fuel and fertilizer, transport costs, credit costs, etc. 2) Assistance on capital investments such as farm buildings, water supply systems, drainage systems, etc., and direct programs of assistance for improved farm structure through consolidation and farm amalgamation, 3) Assistance to improve markets and market organization. 4) General social welfare and labor mobility schemes to promote rural welfare in general and to assist in achieving the required mobility to improve farm structures.

<sup>2</sup>The implications for producers in France are obscured because a large part of the increase in grain prices is due to elimination of the quantum system. Much of the poultry and hog production has been based on purchased feed that had absorbed this tax. The change in price ratios to these producers will be less -- by the amount of the quantum tax -- than is indicated by the computed ratios based on changes in prices to farmers.

In Germany and Italy, these programs are included in overall green plans, and in France they become part of the general five-year planning program. While comprehensive plans of this kind do not exist in Belgium and The Netherlands, each maintains funds for reorganization and rationalization of agriculture and provides certain tax and credit benefits. Programs that provide direct farm production subsidies and assistance to various investments in the form of grants or low cost loans exist in all EEC countries.<sup>3</sup> While it is not possible to discuss all of these programs in any detail, their nature and comprehensiveness is indicated by Tables 11 through 13.

These programs all have general similarities in seeking improvement in income, structure and productivity in agriculture, but some major differences exist. In Germany for example, considerable emphasis is placed on direct income subsidies such as indicated in Item II in Table 11. Direct income subsidies of this kind are nominal or near nonexistent in The Netherlands. The land consolidation program in Germany is important though possibly modest in terms of the scope of the problem and, in general, has to seek simultaneous farm amalgamation along with the consolidation of individual plots for a given farm and the resettlement and improvement of villages in farming areas.

The French farm consolidation program, on the other hand, is aimed simultaneously at increasing small farms to a minimum size and regulating the growth of very large farms. While variations exist between regions within France, farmers with 50 hectares or more of land are often at a disadvantage in buying new land that can be used for consolidating other smaller farms into total units of something less than 50 hectares.

In The Netherlands, transfer of farmland is under strict government control and emphasis in the program for farm consolidation is placed on voluntary discontinuation by small holders and providing incentives for older farmers to retire at an earlier age. In general, farm consolidation is encouraged through credit grants and often through grants to provide additional farm facilities needed such as buildings and machinery.

The agricultural development program for Italy has to be somewhat distinguished from those that exist in other EEC countries. At this stage it is heavily embedded in the regional development program centering around the Cassa per il Mezzogiorno and places only nominal emphasis on land consolidation as such. Emphasis is placed on capital investment and the development of intensive-type agriculture which in the South is aimed at improvement in land productivity and labor utilization. In the North investment is aimed largely at improvement in livestock output and development of irrigation systems for better crop production.

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<sup>3</sup>OECD, *Trends in Agricultural Policies Since 1955*, Fifth Report on Agricultural Policies in Europe and North America, Paris, 1961; OECD, *Low Incomes in Agriculture*, Paris, 1964.

Table 11. Federal Expenditure Under the Green Plan in Germany.<sup>1</sup> (million U.A.)

Measures	1963	1964	1965
<b>I. Improvement of Agricultural structures and of living and working conditions in agriculture.</b>			
Land consolidation	51.3	65.2	70.0
Transfer of farmsteads, enlargement of farms	89.0	92.5	92.5
Transfer of land	----	----	2.5
Depressed rural areas	27.5	27.5	27.5
Construction of farm roads	20.0	25.0	25.0
Water supply, drainage, etc.	12.5	----	----
Settlement of married agricultural workers	6.3	6.3	6.3
Aid for farm households	12.5	10.0	10.0
<b>Total, I</b>	<b>219.1</b>	<b>226.3</b>	<b>233.8</b>
<b>II. Improvement of incomes of the Agricultural Population</b>			
1. Rationalization of production			
Fertilizers	20.0	----	----
Technical equipment	5.0	5.0	5.0
Joint Use of Machinery	3.8	3.8	3.8
2. Quality production and sales promotion			
Quality improvement of milk	160.06	162.5	167.5
Milking machines and refrigeration	1.5	1.5	1.5
Productivity and sales	2.4	3.6	5.5
Quality control and standardization	1.6	1.6	2.6
Horizontal integration and cooperation	4.9	7.9	8.1
Vertical integration	17.4	18.9	21.9
3. Fuel-oil production	30.9	31.7	33.0
4. Reimbursement of refugee resettlement tax	3.5	3.5	3.5
<b>Total, II</b>	<b>251.0</b>	<b>240.0</b>	<b>251.4</b>
<b>III. Credit Schemes</b>			
Reimbursement of previous commitment	42.3	46.4	51.7
General reduction of interest rates	22.4	4.8	4.3
Reimbursement of commitments from the 1956 consolidation scheme	0.3	0.2	0.1
Support for capital repayment	10.7	9.1	11.5
<b>Total, III</b>	<b>75.7</b>	<b>60.5</b>	<b>67.6</b>
<b>IV. Improvement of the Social Situation of Agriculture</b>			
Old age pension scheme	60.5	62.5	52.5
Accident insurance scheme	25.0	25.0	25.0
<b>Total, IV</b>	<b>85.5</b>	<b>87.5</b>	<b>77.5</b>
<b>TOTAL OF ALL MEASURES, I - IV.</b>	<b>631.3</b>	<b>614.3</b>	<b>630.3</b>

Source: OECD, *Agricultural Policies in 1966: Europe, N. Amer, Japan, Paris, 1967*<sup>1</sup>These are Federal Government expenditures only. Expenditures by the *Länder* not included. These are estimated to be about 40 percent of Green Plan Expenditures.



Type of expenditure	Calendar Year				
	1960	1961	1962	1963	1964
I. Action dealing with the structure and conditions of agricultural production					
- Research and education	14.8	20.6	29.2	56.3	----
- Advisory services	10.0	12.2	17.7	18.2	----
- Improvements of farm structures and farm equipment	255.4	262.2	309.2	416.0	----
- Other action	82.1	84.9	109.2	109.8	----
Total I	362.3	380.0	465.3	600.3	607.5
II. Action on Agricultural Markets					
- Cereals	53.7	60.7	131.6	90.2	118.9
- Sugar	12.3	14.2	18.4	19.6	19.6
- Milk	59.3	118.7	140.0	126.2	136.1
- Meat	26.9	74.9	36.9	35.7	1.0
- Other products	15.2	24.9	48.0	34.6	49.4
Total II	167.4	293.4	374.9	306.3	324.0
III. Social Action in the Farmers' Behalf					
- Social security benefits to farmers	327.1	351.7	504.8	626.2	----
- Others	0.6	1.3	0.2	1.6	----
Total III	327.7	353.0	505.0	629.8	739.1
GRAND TOTAL	857.4	1,026.4	1,345.2	1,536.4	1,670.6

Source: OECD, *Agricultural Policies 1966: Europe, N. America, Japan*, Paris, 1967.

### Agricultural Marketing

With the exception of the general encouragement of cooperatives and improvement of marketing for export purposes in The Netherlands and Italy, agricultural marketing programs have not been pursued vigorously by national governments in the EEC. This is an area where EEC agricultural policy could potentially have considerable impact on distribution as well as retail and farm prices.

Another element of concern in the market is the extent to which farmer bargaining and marketing groups can be developed. The pattern for development along these lines has been established in France. Market organization has been generated around the development of producer marketing groups and agricultural marketing committees. Producer groups are formed to deal with a single commodity or a group of closely related products within specified regions and for specific purposes. In general, it is required that members of the group commit themselves to a set of production and marketing practices. In production, members must agree to maintain certain kinds of quality standards, production methods, etc., while from the viewpoint of marketing, they

Table 13. Average Annual Allocation of Funds by Major Use, Green Plans I & II in Italy. (Millions of U.A.)				
Use	First Plan 1961-66	Percent Of Total	2nd Plan 1966-71	Percent Of Total
Mechanization	7.8	4 <sup>1</sup>	33.9	11 <sup>1</sup>
Land Reform and Improvement	82.1	28	68.2	23
Insect and Disease Control	3.8	2	4.2	1
Livestock Improvement	11.4	6	24.2	8
Credit	6.4	3	9.3	3
Market Research	0.5	2	1.1	4
Research Experimentation and Technical Assistance	25.9	14	39.6	13
Reclamation and Irrigation	12.8	7	37.1	12
Mountain Reclamation and Forest Development	20.8	11	44.2	15
	171.5		262.3	
<sup>1</sup> Table omits items of lesser importance and therefore does not sum to 100 percent. In addition to the Green Plan, annual expenditures totaling about 36 million U.A. are being made for agricultural improvement under the Cassa per il Mezzogiorno in Southern Italy. Sources: Istituto Nazionale di Economia Agraria, <i>Annuario</i> Vol. XLV (Rome: 1960) p. 320; <i>Macchine e Motori Agricoli</i> , Anno XXIV, No. 2, (Feb. 1966).				

must agree to sell a predetermined share of their product through the organization, eliminate low quality products, follow a specified time table of marketing and, if deemed desirable, participate in the withdrawal of surplus supplies from the market. The operations of these producer groups are assisted and implemented through agricultural economic committees that operate on a regional basis. Once these committees have recognized a legitimate producer group, they assist the group through attempts to develop sales outlets, operate marketing pools and subsidize technical improvements at the production level. Government assistance to producer groups and marketing committees is made available in the forms of assistance in promulgation, aids for reduction of operating expenditures, aids for capital investment and employment of necessary technical personnel and loans to cover required investment and expenditures needed to implement desirable market regulation. These organizations have a basis for market regulation; they operate with strong financial and legal backing from the government. While this kind of marketing program has not spread throughout the EEC yet, the EEC commission has developed a set of recommendations based on the French model for the more general organization of agricultural markets throughout the EEC. Within

France both producer groups and agricultural economic committees have been organized most extensively in fruit and vegetable markets, but also have been organized to cover livestock, meat, poultry and other lines of production.<sup>4</sup>

Within this overall complex of nonprice policies, the important question is the extent to which EEC policy on competition, its transport policy and the guidance section of the EEC Agricultural Guidance and Guarantee Fund will have an effect on overall future developments.

#### Transportation and Competition

Neither the EEC transport policy nor its policy related to competition in agriculture has been formulated at this stage. It can be assumed, however, that transport policy will have an immediate effect when implemented and at a minimum will influence interregional price relationship by eliminating national transport subsidies. This has been taken into account in this study by attempting to estimate interregional transport costs on the basis of existing transport facilities and costs assuming free mobility and transport prices related to cost. The assumption, thus, is that when developed, the EEC transport policy will establish uniform methods and move toward a competitive transport price structure. Further, this assumes that transport subsidies providing for certain groups of farmers under pre-existing national policy will be eliminated.

The aspects of competitive policy that can influence production relationships in the short run are subsidies such as tax rebates, reduced prices on fertilizer, etc., aimed at reducing current production costs. The basis for regulation of these kinds of subsidies to agriculture is included in Articles 92 to 94 of the treaty that deal with the general problem of government aids that unfairly influence competitive relationships among regions or countries. While no specific council decisions have been taken at this time, the EEC commission has listed aids that can be considered compatible with the common market on condition that they do not become excessive and jeopardize the objectives of the agricultural policy. It is also considering a list that it considers to be incompatible with the operation of the common market and in particular for agricultural products. These would include aids of which the amount is decided in relation to area under cultivation, to price, quantity, or number of product units. The commission has proposed that aids of this kind be forbidden and that other aids be examined on a case by case basis.

#### The Guidance Fund

EEC policies on transport and competition are regulatory. Positive action toward change can, however, be taken under the guidance section of the Agricultural Guidance and Guarantee Fund. Nominally the investment fund

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<sup>4</sup>OECD, *Sixth Report on Agricultural Policies*, Paris, 1967.

is not large, and as indicated above, plays a secondary role to the guarantee portion of EEC financing. At this stage of development it is apparent that individual member countries are not willing to place full responsibility for agricultural investment and leadership in structural programs in the EEC office. Management committees have been created consisting of a member from each individual country which must be consulted by the commission on investment and structural programs. Those concerned with the guidance expenditures include two important committees, the standing committee for agricultural structures and the fund committee proper, which has general responsibility for overseeing all fund expenditures.

The procedure for handling grants is as follows: Individual countries make applications for assistance in financing projects and these are reviewed by the Commission and the Structure Committee and recommendations for expenditures are made. The most recent decision on expenditures to cover outlays for the guidance section for the period 1960-64 was divided approximately 50-50 between production and mixed projects and marketing projects despite the fact that two-thirds of the applications were for production and one-third for marketing projects. For the years 1962-63 and 1963-64 the largest expenditures by a country were those made in Italy followed by Germany, France, The Netherlands, Belgium and Luxembourg. The reimbursements on the second set of applications by member countries, allocated in July 1966, were as follows:

#### Breakdown in Guidance Section Expenditure

A. Improvements in production	
Consolidation of holdings	733,000 u.a.
Water management, drainage, irrigation, etc.	1,990,000 u.a.
Miscellaneous (of which 4 million u.a. alone went to the building of factories for animal feedstuffs)	6,000,000 u.a.
B. Improvements in marketing	
Silo construction	1,640,000 u.a.
Powdered-milk factories and other milk-processing plants, cheese-making plants, etc.	595,000 u.a.
Slaughterhouses, cold stores and the like, for the meat trade	1,316,000 u.a.
Cold stores for fruit and vegetables, auction installations, packing and dispatch centers and other aids to marketing	2,063,000 u.a.
Miscellaneous	2,578,000 u.a.

As a criteria for allocating funds, no specific policies seem yet to have emerged in the EEC. Individual projects are evaluated on a project by project basis and to date the amount contributed by a member state into the guidance section and the amount that it has received in assistance has not

diverged appreciably.

Initially the Guidance and Guarantee Fund was administered such that guidance expenditures automatically became one-third of expenditures in the guarantee section. As the result of a council decision on May 11, 1966, this no longer holds, and an absolute limit has been placed on expenditures from the guidance section equal to 285 million U.A. in any given year. Another important change permits the maximum contribution by the fund to any given project to increase from 25 percent of the total cost up to as high as 45 percent of the total cost.

Two points have to be looked at in estimating the potential future impact of the guidance fund. First, it appears that the EEC investment policy places greater emphasis on improvement in agricultural marketing than has been the case under national policies. Second, investments from the guidance section have leverage effect in their influence. If, for example, the 285 million units of account maximum contribution is maintained, and the investment for any individual project is restricted to 25 percent, the EEC will directly influence approximately 1.15 billion U.A. of investment. These investments, in turn, can be supplemented by expenditures under the European social and development funds and loans through the European Development Bank to create a leverage impact of substantial proportions. The decisions on how these investment funds are handled, however, rest ultimately with delegations from the individual member countries and not with the EEC commission. This, in turn, may be the most important single factor in attempting to project the impact of EEC policies on agricultural development in the future.

## Chapter 3

### Consumption and Demand Prospects to 1970 and 1975

#### Introduction

The purpose of this chapter is to estimate probable developments in consumption and total requirements within the EEC for livestock and cereal products. While the projections reflect past patterns and trends in food consumption, a number of reasons exist for major adjustments from estimates that would have occurred merely by extrapolating past relationships. Population and employment data for an extended historical period, for example, include major migratory movements that will not be repeated. Population growth rates also have shown historical patterns--largely as a result of wartime disruption--that require specific demographic evaluation to project prospective change. Changes are also occurring in the pattern of business expansion and growth. Also, and of some considerable consequence, is the fact that the development of a common agricultural price policy will have a direct impact on farm prices and to a lesser degree on retail food prices that will vary among commodities and countries.

Insofar as feasible, these diverse trends have been taken into account in the projections developed here. This has required the assembling and evaluation of a number of studies both at the national level and by international organizations. In some cases, the results of other studies have been used directly (i.e. specific income elasticities) in other cases, other studies have helped guide the selection of coefficients used in computation (e.g. assumed labor productivity gains). The projections, however, are not tied closely to any single previous study, but rather reflect a composite of these studies along with the methodology and judgment attributable to the author.

As indicated in Chapter 1 recent economic growth rates in the EEC have been both rapid and sustained. The overall increase in GNP for the area as a whole for the period 1955 through 1964 measured in 1958 prices and exchange rates has been 58 percent. This reflects an increase of approximately 7 percent in employment and a total gain of approximately 48 percent in productivity per worker.

One of the significant consequences of this expansion has been its effect on the demand for farm products. A continuing increase in the general demand for agricultural products has occurred (Table 2). This has been associated with a substantial change in the composition of diets (Table 14). In the period 1952-53 to 1962-63, the major increases for the total EEC were as follows: Total meat (46.39 percent) to 58.3 kg/person, beef and veal (49.8 percent) to 23.3 kg/person, cheese (38.4 percent) to 8.2 kg/person, refined sugar (33.7 percent) to 30.4 kg/person, eggs (32.7 percent) to 11.3 kg/person, butter (30.4 percent) to 5.3 kg/person, other fats and oils (34.1 per-

Table 14. Food Consumption in Kilograms Per Person Per Year 1962/63 and Index 1952/53 = 100.

Commodity	Belgium-Luxembourg		France		Germany		Italy		Netherlands		EEC <sup>1/</sup>	
	Kg.	Index	Kg.	Index	Kg.	Index	Kg.	Index	Kg.	Index	Kg.	Index
Bread Grain	83.0	83.7	92.6	79.3	72.3	76.2	121.7	97.5	71.1	79.0	92.6	84.5
Coarse Grain	0.7	16.6	0.7	23.3	2.6	78.7	7.0	82.3	4.2	120.0	3.3	69.4
Rice	0.8	72.7	1.7	113.3	1.9	158.3	5.1	86.4	2.4	141.1	2.7	101.0
Potatoes	112.6	76.5	110.1	91.9	127.0	73.4	48.5	129.3	99.0	86.8	96.9	86.0
Refined Sugar	30.0	103.4	30.3	124.6 <sup>2</sup>	33.1	134.0	23.7	160.1	47.7	124.8	30.4	133.7 <sup>2</sup>
Pulses	2.8	147.3	3.6	144.0 <sup>2</sup>	1.6	94.1	6.9	140.8	1.9	126.6	3.7 <sup>2</sup>	71.2
Vegetables	74.7	116.7	92.3	66.8	49.3	112.3	135.1	154.9	69.5	114.4	88.5	104.8
Fresh Fruit (including citrus)	42.3	53.0	58.5	128.5	85.6	121.2	97.5	146.3	60.9	105.5	72.4	116.1
Total Meat (carcass weight)	64.3	128.0	79.3	131.0	64.5	154.6	33.5	173.5	47.7	149.0	58.3	146.3
Beef & Veal	22.5	119.6	33.1	133.4	21.4	152.8	16.7	198.8	22.1	147.3	23.3	149.8
Eggs	12.3	97.6	11.3	103.6	12.6	159.4	9.6	139.1	12.2	210.3	11.3	132.7
Fish	8.1	63.2	11.5	106.0	11.1	160.8	7.8	113.0	5.8	63.7	9.2	109.5
Milk	111.8	127.0	105.4	124.5	110.3	85.4	62.0	125.5	122.6	62.5	95.9	92.4
Cheese	6.0	115.3	10.4	160.0	7.5	138.8	7.2	118.0	8.0	150.9	8.1	138.4
Butter (fat content)	8.2	83.6	6.3	123.5	7.4	145.0	1.5	115.3	4.8	228.5	5.2	130.4
Other Fats & Oils	30.4	235.6	17.5	165.0	18.3	102.2	16.2	150.0	26.6	109.9	18.6	134.1

Source: OECD Food and Agricultural Statistics, Paris 1965; and  
 OECD Manpower Statistics, Paris 1963.

<sup>1</sup> Computed from country data using population weights.

<sup>2</sup> Food consumption data 1962/63 not available, 1961/62 data used for France.

cent) to 18.7 kg/person, and fruits and vegetables (9.1 percent) to 161.0 kg/person. A decline in per capita consumption during this period occurred in: bread grains (-15.5 percent) to 92.6 kg/person, coarse grains (-30.6 percent) to 3.4 kg/person, potatoes (-14.0 percent) to 96.9 kg/person, and pulses (-28.8 percent) to 3.8 kg/person.

In general, these trends are consistent with what one would expect and indicate that rising incomes have created an increased demand for nonstarch food groups and a decreasing demand for starches. The major items that decline as a proportion of total food consumption are cereals and potatoes, while the most rapidly increasing item is meat. While the level of starch consumption in the EEC is still relatively high by U.S. standards, the gap is narrowing due to a relatively more rapid decline of starchy food consumption in the EEC. The gap in nonstarch groups shows the same sort of narrowing. The logical conclusion is that eventually the EEC countries will closely approximate the levels of food consumption in the U.S. Considerable variation, however, still remains between consumption levels in individual EEC countries, and, in consequence, in their relationship to U.S. consumption levels.

#### Projections of Population and Income

To develop projected increases in consumption of livestock and cereal products to 1970 and 1975, it is necessary to look at the major demographic and economic variables that provide the framework within which change in consumption will occur. These variables include general population growth, change in employment levels, change and productivity per worker, and estimates of the relationship between changes in income and prices and the consumption of individual commodities.

#### Population Growth

Population growth rates in the EEC during the period 1955-64 have been substantially below those in North America and many other regions of the world. The region recorded a 1.2 percent annual increase in population over the period (Table 15). However, the range between countries was considerable, varying from a high of 1.6 percent per year in Netherlands to a low of .6 percent per year in Belgium and Luxembourg. Among the three larger countries of the area, variation in population growth was affected, in part, by the level of net migration. France and Germany had net positive migration, while Italy had a substantial negative migration. In the three smaller countries, migration has been of negligible influence. Since 1962, migration has not been a major factor in population change. The construction of the Berlin Wall and the strengthening of border defenses by the Communists cut off part of the pre-existing source of immigrants to Germany. The major sources of immigration to France from outside the EEC especially Algeria, but also Spain and Portugal, have diminished in importance.



Also, net migration within the community has declined and will likely be of negligible importance in the future. Though all other EEC countries absorbed Italian workers during the period 1955-64, the pattern has not been consistent. Between 1960 and 1962 relatively large net in-movements (65 to 70 thousand annually) occurred into West Germany. This movement fell sharply during 1963, however, and a reverse net movement began. In mid-1964 there were about 12,000 fewer Italian workers in Germany than in mid-1963. A reduction in the flow of Italians to other EEC countries also occurred. While for the period 1960-64 a net movement to Germany remains on balance, the change in balance for other EEC countries was very small and exerted no perceptible change on population structure.<sup>1</sup> For these reasons, and because rates of migration are extremely difficult to project, assumed migrations are not included in the population projections used here.

The projections of future population in each country are based on levels existing in 1964 as reported in the OECD *Manpower Statistics*, and on growth rates as computed for each country for the periods 1965-70 and 1970-75 by T. Bolle in the most recent available comprehensive population and labor force study completed for the EEC.<sup>2</sup> To obtain the 1965 population for each country, the annual rates of growth over the 1960-64 period were computed from OECD statistics and this value was applied to project the one-year change. The estimates for 1970 and 1975 were obtained by applying compounded growth rates to the 1965 value. To get a value for the whole of the EEC, the projections for the individual countries were simply aggregated.

The 1965-70 and 1970-75 growth rates generated by T. Bolle are based on the joint evaluation of earlier studies completed in 1961 and 1962 and a more recent study completed for France in 1964, along with an evaluation and adjustments based on recent trends in all countries of the EEC. They incorporate initial estimates of the age specific structure of the population, and this, in turn, is used to estimate expected death rates and birth rates. A gradually decreasing infant mortality rate is included in the projections. Because they have shown no recent significant change, fertility rates are assumed constant for Italy, Luxembourg and France. Fertility rates for Germany, Netherlands and Belgium are figured using a rising rate for the age group of women between 30 and 35 and a declining rate for others within the total age span 14 to 49 years. Since net migration is not included in com-

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<sup>1</sup>T. Bolle, *Bevölkerung Und Arbeitskräftepotential der Europäischen Wirtschaftsgemeinschaft 1960 bis 1975*, Deutsches Institut für Wirtschaftsforschung, Sonderheft No. 69, Dunker/Humbolt/Berlin, 1965.

<sup>2</sup> *Ibid.*

Table 15. Population Growth and Projections 1955-75 (In Thousands).

Country	Population					Percent Change			
	1955	1960	1965	1970	1975	1955-60	1960-65	1965-70	1970-75
Belgium	8,869	9,154	9,410	9,608	9,828	3.2	2.8	2.1	2.3
France	43,424	45,684	49,142	50,861	52,845	5.2	7.6	3.5	3.9
Germany	50,187	55,433	59,000	60,770	62,228	10.5	6.4	3.0	2.4
Italy	47,390	48,967	51,186	53,131	54,990	3.3	4.5	3.8	3.5
Luxembourg	305	314	331.6	340.2	347.6	3.0	5.6	2.6	2.2
Netherlands	10,751	11,486	12,295	13,070	13,920	6.8	7.0	6.3	6.5
EEC	160,926	171,038	181,365	187,780	194,159	6.3	6.0	3.5	3.4

Sources: OECD Manpower Statistics 1955-64, Paris 1966,  
 Bevölkerung Und Arbeitskräftepotential der Europäischen Wirtschaftsgemeinschaft 1960 bis 1975,  
 Deutsches Institut Für Wirtschaftsforschung.

1965 = Linear extrapolation of data from 1955-64.

Table 16. Employment Growth and Projections 1955-75 (In Thousands).

Country	Employment						Percent Change			
	1955	1960	1965	1970	1975	1955-60	1960-65	1965-70	1970-75	
Belgium-Lux.	3,622	3,634	3,820	3,881	3,975	.3	5.1	1.6	2.4	
France	19,355	19,483	19,993	20,547	21,258	.7	2.6	2.8	3.5	
Germany	23,230	26,247	27,167	26,977	27,352	13.0	3.5	- .7	1.4	
Italy	19,721	20,374	19,621	20,212	20,762	3.3	-3.7	3.0	2.7	
Netherlands	4,125	4,347	4,466	4,812	5,118	5.4	2.7	7.7	6.4	
EEC	69,920	74,081	75,067	76,429	78,465	6.0	1.3	1.8	2.7	

Sources: OECD *Employment Statistics 1955-64*, Paris 1966,  
 Deutsches Institut für Wirtschaftsforschung, *Bevölkerung und Arbeitskräftepotential der  
 Europäischen Wirtschaftsgemeinschaft 1960 bis 1975*.

1965 value = Linear extrapolation of data from 1960-1964.

puting projected rates of change, the estimates generated are those that would occur on the basis of birth propensity and mortality assumptions.

The projected total population resulting from this two-step process is comparable with or somewhat higher than those from other sources. Recent FAO and U.N. projections are lower in total, but not by more than a maximum 2.7 percent for any individual country.<sup>3</sup> The most recent EEC projections are much the same as those developed here with deviations of less than .5 percent for individual countries.<sup>4</sup>

#### Labor Force and Employment

Rapid industrial expansion in the postwar period put a strain on the available labor force especially in Germany and France thereby causing workers to migrate into the area. The migration into Germany from Southern and Eastern Europe and the migration into France from Algeria and the Iberian Peninsula provided a significant part of the increase in total labor force during the late 1950's and through about 1962. As was indicated in the discussion of population, this migration has diminished and is not expected to be a major factor in the future. Future employment will be determined by domestic growth in the employable labor force and by levels of labor force participation.

In projecting total employment to 1970 and 1975 (Table 16), it was necessary first to estimate rate of change in total employable labor. This was obtained from the study completed at the Deutsche Institut für Wirtschaftsforschung. These rates of change then were used in conjunction with employment figures (i.e. total employable population adjusted to take account of unemployment rates) to obtain projected future level of total employment in each country.

To obtain rates of change in employable labor force by age bracket, the following hypotheses were used:<sup>5</sup> 1) An overall decline in the labor force participation rates of males 20 years old and less would occur due to a ten-

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<sup>3</sup>U.N. "World Population Prospects as Assessed in 1963," *Population Studies* No. 41, New York, 1966; and FAO, "Agricultural Commodity Projections for 1975 and 1985," CCP67/3 Vol. I and II, 1966.

<sup>4</sup>The EEC in reviewing its agricultural projections to 1970 has revised its population estimate for 1970 upward from 184 million to 190 million. This appears to have been done on the basis of an overview of trends without formal demographic analyses and might be somewhat high. See: *Comparaison entre les trends actuels de production et de consommation et ceux prevus dans l'etude des perspectives 1970*, CEE, Information Internes sur L'Agriculture No. 7, June 1966.

<sup>5</sup>T. Bolle, *Op. Cit.*, pp. 31-36.

dency toward longer school and training. On the same ground the percent of 20 to 24 age group men participating in the labor force was reduced somewhat. The heaviest reduction in the percentage for the 15 to 19 age group was applied in France for the period 1965 and 1970 due to an expected extension of the school obligation from 15 to 16 years sometime in 1967 or 1968. 2) The percentage of employability among men 25 to 64 years of age was assumed to remain constant with the exception of minor increases in Italy and Germany. 3) An overall increase in the employability of women 20 to 64 years of age was assumed. This increase was only very small for the 20 to 29 and 60 to 64 year age groups. For the middle age groups, with the exception of France, a greater increase was assumed primarily because of the increase in employment of married women who, after children are somewhat older, can take up employment. The employment rate among German women 20 to 24 years of age, which has been high relative to other EEC countries, was slightly reduced and the percentage for the age group 25 to 29 was held constant. This reflects a tendency in recent years for Germans to marry at a younger age and, thus, a higher proportion of women in these brackets will be rearing families. For the age groups beyond 30, the most rapid rate of increase in employability is expected to occur in Germany and the Benelux countries. Due to already high employment levels, the rate is expected to decrease slightly in France and to increase only very slowly in Italy, largely due to social attitudes toward women. 4) A reduction in employability for the population over 65 years of age is assumed. The total population in this age group is expected to increase, but employment possibilities are expected to decline largely due to the shrinking of the proportion of total employment in agriculture.

The above estimates indicate that participation rates for females will decline in Germany, France and Italy while they will increase somewhat in the Benelux countries. A small decline in male participation rates will range between 1 and 2 percent for individual countries. In total, including both males and females, a net gain of about 1 percent will occur in the Benelux countries, while a decline of about 4 percent is expected in France. Germany and Italy will remain approximately at pre-existing levels.

Using these assumptions and rates of change based on them, future levels of employment were estimated in a way similar to that used for projecting population. To obtain a value for 1965, the annual percentage change in employment over the period 1960-64 was applied to the 1964 data for each country. The levels of employment used are based on levels existing during the period 1960-64 adjusted to take account of declining unemployment in Italy, Belgium and Luxembourg.<sup>6</sup>

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<sup>6</sup>Assumed unemployment rates for 1970 and 1975 are Belgium-Lux, 1.9%; France 1.2%; Germany .6%; Italy 2.8%; and Netherlands .7%.

Employment levels in the EEC increased from 1955 to 1960 by an average of approximately 1.2 percent per year and this declined to an increase of approximately .3 percent per year for the period 1960-64. The increase for the total period was about .8 percent per year. The large increase for the area as a whole for the period 1955 to 1960 can be directly attributed to rapid increases in Germany. An increase of 2.5 percent per year was registered and this was 2.5 times higher than in The Netherlands which had the second highest rate. The slower rates of increase during the period 1960-64 reflect a decline in Germany, but also some decline in The Netherlands and a significant decline in Italy due to economic recession. As has been true of historical change, the projected employment rates for 1965 to 1975 show considerable variation among countries. The most striking feature of the projection is the high rate of increase in employment expected for The Netherlands.

#### Productivity Per Worker

Productivity per worker in the EEC has increased rapidly in recent years, particularly in Germany, Italy and in France. These increases reflect both the shift of population from lower to higher productivity occupations, and intraindustry increases in productivity due to increased training, education, automation and mechanization. While the importance of each of these respective components cannot be measured precisely, it is clear that the large outmigration from agriculture to other industries has been a substantial contributing factor, particularly in those countries with the highest rates of productivity gain.

Of basic concern in projecting productivity for the future is the question of whether the differentials between the large and small countries of the EEC will persist; particularly whether the high rates of productivity gain in France, Germany and Italy will be maintained at or above 5 percent per year. If these high levels are assumed to continue, the rate of growth in real GNP for the EEC in total will be extremely high. On the assumption that problems of maintaining aggregate demand in the future may become somewhat more difficult, that within-industry technological progress will decline somewhat, and that the gains in productivity from the transfer of agricultural labor will be less due to the smaller numbers involved even if the rate of transfer between agriculture and industry remains at its present level, it would appear that historical rates of productivity gain for these countries are higher than can be expected in the future. For the smaller countries where productivity gains have been smaller, it can be expected that scale economies due to reduced EEC tariffs and the strong competitive position of the smaller countries due to their highly developed technical capacity and the favorable investment climate would result in some increase in the rate of productivity gains. Thus, the assumption that the opening of the EEC market will tend to equalize growth rates among countries is used.

Using this assumption, two estimates of GNP per man in 1970 and 1975 are developed. The high estimate is based on a continuing increase in GNP per man for each country in the EEC equal to that of the average for the EEC in total during the period 1955-64. This results in a projection based on an assumed increase in GNP per employed person of 4.4 percent annually. To obtain a low estimate for each period, an assumed decline in the growth rate equal to that which has occurred from 1960-64 was used. This results in a projected productivity increase of 4.1 percent per year for each country for the period 1965-70 and a projected increase of 3.7 percent for the period 1970-75. The results of these projections are indicated in Table 17.

Total GNP projections for each country and for the EEC were obtained by multiplying projected levels of employment by projected GNP per man. Since only one projection of the level of employment for each country has been included, the variation in projected GNP within each country is associated entirely with the different rates of change in output per man. Variations among countries in total GNP, however, (Table 18) reflect substantially different rates of expected increase in employment. Estimated growth rates are somewhat lower than recent historical rates in France, Germany and Italy and higher than recent growth rates in Belgium-Luxembourg, and particularly in The Netherlands where a higher rate of productivity gain as well as a substantial increase in employment is anticipated.

Country	Unit	Actual			Projections <sup>1</sup>			
		1955	1960	1965	1970 Low	1970 High	1975 Low	1975 High
Belgium-Lux.	BF.	143,279	162,041	194,063	237,145	240,638	284,337	298,391
France	FF.	10,975	13,893	17,643	21,560	21,877	25,850	27,127
Germany	DM.	8,549	10,908	13,331	16,290	16,530	19,532	20,497
Italy	L(000)	751	962	1,316	1,608	1,631	1,928	2,022
Netherlands	G	8,170	9,469	11,570	14,138	14,347	16,951	17,790
EEC	U.A.	2,034	2,485	3,153	3,853	3,910	4,620	4,848

<sup>1</sup>High value computed using an assumed increase in productivity of 4.4 percent per year. Low value based on an assumed growth in productivity of 4.1 percent per year for 1965-70 and 3.7 percent per year for 1970-75.

Sources: OECD National Account Statistics 1955-64, Paris, 1966; and OECD Manpower Statistics 1955-64, Paris, 1966.

#### Per Capita Food Consumption and Total Requirements

Total food requirements in the EEC in 1970 and 1975 will reflect change in population on an approximately 1 to 1 basis. Changes attributable both to income and price, on the other hand, can be estimated only through the devel-

Table 18. Gross National Product and Projections 1955-75. (At Market Prices and in 1958 Prices)

Country	Unit	Actual			Projections			
		1955	1960	1965	1970 Low	1970 High	1975 Low	1975 High
Belgium-Lux.	BF	519.0	588.8	741.3	920.4	933.9	1,130.2	1,186.1
			(13.4) <sup>2</sup>	(25.9)	(24.2)	(25.9)	(22.8)	(27.0)
France	FF	212.4	270.7	352.7	443.0	449.5	549.5	576.7
			(27.4)	(30.3)	(25.6)	(27.4)	(24.0)	(28.2)
Germany	DM	198.6	286.3	362.1	439.5	445.9	534.2	560.6
			(44.2)	(26.5)	(21.4)	(23.1)	(21.5)	(25.7)
Italy	L	14,818.0	19,607.0	25,821	32,501.0	32,966	40,029.0	41,981
			(32.3)	(31.7)	(25.9)	(27.7)	(23.2)	(27.3)
Netherlands	G	33.7	41.2	51.7	68.0	69.0	86.7	91.0
			(22.1)	(25.5)	(31.7)	(33.6)	(27.5)	(31.9)
EEC	U.A.	142.2	184.1	236.7	294.5	298.8	362.5	380.4
			(29.5)	(28.6)	(24.4)	(26.2)	(23.1)	(27.3)

<sup>1</sup>In billions

<sup>2</sup>Numbers in parentheses are five-year average growth rates.

Sources: OECD *National Account Statistics 1955-64*, Paris, 1966; and OECD *Manpower Statistics 1955-64*, Paris, 1966.

opment of logical coefficients. While a number of previous studies provide a basis for estimating the income effect on food consumption, very little previous work has been done to provide price elasticity relationships in EEC countries. Though the empirical basis is limited, the importance of price changes on consumption to 1975 is liable to be of such magnitude that judgments concerning total requirements will be improved through a systematic effort to evaluate the most likely consumption consequences of the EEC price policy. These estimates are presented in the following two sections.

#### The Income Effect

The income elasticities used to estimate the effect of increasing levels of income on per capita food consumption in the EEC are shown in Table 19. Table 20 indicates the change in per capita consumption that would occur in individual countries to 1970 and 1975 with the estimated changes in income and with price relationships held constant. Overall, the consumption effect of increased income is expected to be negative on cereals, strongly positive on beef and poultry meat, positive but at a lower level on butter, cheese, pork and eggs, and nearly neutral on fluid milk consumption except in Italy and France. These elasticities were arrived at through a compilation of elasticities in available studies that have attempted to directly measure income-consumption response or have used income elasticities for projection



Table 19. Income Elasticities for Selected Food Products					
Item	Belgium-Lux.	France	Germany	Italy	Netherlands
Cereals	-.4	-.3	-.3	-.2	-.3
Beef and Veal	.7	.5	.7	1.3	.8
Poultry	1.0	.6	1.0	1.0	1.5
Pork	.45	.35	.4	.6	.6
Eggs	.4	.4	.4	.6	.5
Fluid Milk	.03	.4	.0	.5	.1
Butter	.3	.35	.4	.6	.4
Cheese	.2	.47	.19	.5	.45

Sources: Weber, A. "Struktur und Dynamik des Fleischverbranche in den Ländern der Europäischen Wirtschaftsgemeinschaft," *Agrarwirtschaft*, Sonderheft 11/12; H. Gollnick and P. Maciej, "Die Projektion der Nachfrage nach Nahrungsmitteln in der Bundesrepublik Deutschland bis 1965, 1970 and 1975," *Agrarwirtschaft*, February, 1965; Hans Stamer and Rudolf Wolffram, "Die Nachfrage nach Agrarprodukten, 1965," *Agrarpolitik und Marktwesen*, Heft 5; C.R.E.D.O.C. *Production and Uses of Selected Farm Products in France, A Projection 1960-1975*, Paris, 1967; USDA, *Italian Agriculture, Projections of Supply and Demand in 1965 and 1970 and 1975*, ERS-Foreign, 68; Vera Cao-Pinna, *Le Prospettive dei Consumi Alimentari in Italia 1965, 1970 and 1975*, Dott. A. Guiffre, Milano, 1962; E. Wohlken, "Elastizitäten der Mengennachfrage nach Geflügel-fleisch," *Agrarwirtschaft*, November, 1963; C.E.E. *Le Marche Commun des Produits Agricoles, Perspectives 1970*, Etudes, No. 10, Brussels, 1963; FAO, "Commodity Review 1962," Special Supplement, *Agricultural Commodities -- Projections for 1970*; Studiecentrum voor Economisch en Sociaal Onderzoek, *Long Term Development of Supply and Demand for Agricultural Production, Belgium, 1970-1975*, Second Progress Report, June 1965; IFO - Institut für Wirtschaftsforschung, E.V. "Long Term Development of Demand and Supply for Agricultural Products in the Federal Republic of Germany," München, June 1966.

purposes. These, in turn, were compared with several studies in the U.S. that were done with data reflecting income levels close to those that will apply in the EEC during the projection period. On the basis of these two sets of data and also reflecting to some degree pre-existing and known taste patterns and levels of consumption the assumed elasticities only partially repeat values used on other studies. In general, the elasticities used tend to be somewhat lower than in prior studies.

#### The Price Effect

Two factors suggest that prospective consumption of cereal and livestock products can be widely in error if price changes are not taken into account. First, with the implementation of EEC policy, some major farm price shifts will occur; and second, the supply-demand balance and technological factors suggest that some price shifts independent of direct policy decisions might occur. Further, these price changes probably will be most pronounced in products where change in consumption in response to price is substantial, principally poultry meat and beef, and, to a lesser degree, eggs and pork.

Table 20. Per Capita Consumption of Selected Food Commodities 1962, and Projections to 1970 and 1975 Based on Estimated Income Changes. (Kg)

Belgium-Luxembourg					
Item	1962*	1970 High	1970 Low	1975 High	1975 Low
Cereals (in flour equivalent)	84.5	72.8	73.4	65.8	67.5
Meat					
Beef & Veal	22.5	33.8	33.4	39.5	38.1
Poultry	9.0	11.7	11.6	14.5	13.9
Pork	25.0	22.4	22.3	24.8	24.3
Eggs	12.3	13.6	13.5	14.9	14.6
Milk & Milk Products					
Milk	111.8	138.2	138.1	139.2	138.9
Butter	8.2	9.6	9.6	10.3	10.2
Cheese	6.0	6.5	6.5	6.8	6.8
France					
Cereals (in flour equivalent)	95.0	83.5	83.9	77.6	80.7
Meat					
Beef & Veal	33.1	36.5	36.2	40.8	39.7
Poultry	8.9	14.3	14.2	16.3	15.8
Pork	22.0	27.1	27.0	29.3	28.8
Eggs	11.3	12.7	12.6	13.9	13.6
Milk & Milk Products					
Milk	105.4	120.0	119.3	131.3	128.6
Butter	6.4	7.2	7.2	7.8	7.7
Cheese	10.3	12.7	12.6	14.1	13.7
Germany					
Cereals (in flour equivalent)	76.8	68.0	68.4	63.3	64.6
Meat					
Beef & Veal	21.4	24.7	24.4	28.6	27.6
Poultry	5.4	8.1	8.0	9.9	9.5
Pork	31.9	36.6	36.3	39.9	39.0
Eggs	12.6	14.9	14.8	16.2	15.9
Milk & Milk Products					
Milk	110.3	105.6	105.6	105.6	105.6
Butter	7.4	7.8	7.7	8.5	8.3
Cheese	7.5	8.4	8.4	8.8	8.7
(continued)					

Table 20 continued					
Item	1962*	1970 High	1970 Low	1975 High	1975 Low
<b>Italy</b>					
Cereals (in flour equivalent)	133.8	123.3	123.8	116.5	119.1
<b>Meats</b>					
Beef & Veal	16.7	21.8	21.5	28.3	26.8
Poultry	5.0	9.2	9.1	11.3	10.8
Pork	6.9	9.3	9.2	10.6	10.2
Eggs	9.6	11.6	11.5	13.2	12.8
<b>Milk &amp; Milk Products</b>					
Milk	62.0	73.2	72.7	81.6	79.6
Butter	1.5	1.9	1.9	2.2	2.1
Cheese	7.2	8.5	8.4	9.5	9.2
<b>Netherlands</b>					
Cereals (in flour equivalent)	77.7	65.7	66.1	61.0	62.2
<b>Meat</b>					
Beef & Veal	22.1	23.0	22.7	27.4	26.3
Poultry	2.8	6.2	6.1	8.4	7.9
Pork	17.7	31.0	30.7	35.4	34.3
Eggs	12.2	14.9	14.8	16.7	16.2
<b>Milk &amp; Milk Products</b>					
Milk	122.6	119.6	119.4	122.4	121.8
Butter	4.8	4.4	4.4	4.8	4.7
Cheese	8.0	8.6	8.5	9.5	9.2
*Source for 1962 data: OECD "Food and Agricultural Statistics 1952-1963," and "Food Consumption in the OECD Countries," Paris, 1966.					

Optimally, estimates of the price effect on consumption of a commodity or groups of commodities should rely on a fully specified matrix of price and cross price elasticities that encompass total consumption. Further, these should be based on estimates of consumer level price shifts. Since neither of these sets of data are available for European countries, an approximation based on data that are available became necessary. Retail price shifts are estimated from price data that apply at the farm level plus estimated marketing margins. Price elasticities were developed using limited European sources and information from compilation studies done in the United States.<sup>7</sup>

<sup>7</sup>See especially R. Foote, *Price Elasticities of Demand for Non-Durable Goods, with Emphasis on Food*, USDA, AMS-96 (processed) 1956; and G. Brandow, *Interrelationships Around Demands for Farm Products and Implications for control of Market Supply*, The Pennsylvania State University, Bulletin 680, August 1961.

Price changes necessarily must be expressed in real terms. If the base period price is increased as a result of EEC policy, the real price will increase, stay constant or decline depending on the general inflation rate for the period. It is the change in real price at the retail level that is relevant to estimating change in consumption not the change in nominal price. Additionally, price changes at the farm level become reflected in retail prices in terms of a factor related to the proportion of consumer expenditures. Thus, if the farmers' share of consumer expenditure is 25 percent and the shift in farm prices is relative to all other prices -- including marketing services -- a decline of 4 percent in real farm price would be reflected in a change of 1 percent ( $4 \times .25$ ) at the retail level. In turn, if the price elasticity of demand at the retail is .50, the decline of 1 percent in retail will result in a .5 percent adjustment in quantity consumed. Using this general format for computation and assuming a basic inflation rate of approximately 3 percent per year, a price adjustment factor to 1970 and 1975 was computed for each commodity using the price changes developed by D. Epp as basic data. The data on percent of consumer expenditure accruing to farmers and the matrices of price elasticities used as guides in arriving at final estimates are indicated in Appendix Tables A-1 and A-2. Commodity price elasticities were used directly in making computations, while the cross price elasticities were used without direct computation as a basis for final judgments on consumption patterns.

The resulting price-adjusted per capita consumption levels and total requirements by country are shown in Table 21. The implication of these estimates through time for consumption of all cereal and livestock products and for two subgroups are shown in Table 22. As already indicated, the use of a well-defined computational procedure did not circumscribe the need to make judgments in arriving at the final estimates. Because of the limited impact of price on consumption of cereal products due both to a low elasticity and high marketing margin, no price adjustment was made. The higher level of consumption based on income change alone is used as a final estimate for cereals. Dairy products also exhibit a limited price effect, but may be affected somewhat by declining prices and increased consumption of eggs and poultry and to some extent pork. This is reflected by assuming the lower rate of increase generated through analysis of income adjustments alone.

The principal cases where direct price adjustment will have an effect are in meats and eggs. Beef prices in real terms are expected to rise and have a depressing effect on consumption. The estimated per capita consumption levels will be near the low range or in some cases will be below the range of estimates based on income effects. The depressing effect of increased beef prices will be greatest in Germany due to the substantial price increases that follow directly from the change to EEC prices.

Table 21. Per Capita Consumption and Total Requirements of Selected Food Commodities Projected 1970 and 1975.

Germany				
Item	Annual Per Capita Consumption in Kg.		Total Requirements in 1000 Metric Tons	
	1970	1975	1970	1975
Cereals <sup>1</sup>	68.0	63.3	4,132.4 5,206.8	3,939.0 4,963.1
Meat				
Beef & Veal	22.6	26.2	1,373.4	1,630.3
Poultry	8.4	10.1	510.5	628.5
Pork	37.4	40.9	2,272.8	2,545.1
Other Meat	6.1	6.5	370.7	404.5
Total Meat	75.6	86.3	4,594.2	5,370.2
Eggs	16.4	18.0	996.6	1,120.1
Dairy Products				
Milk	105.6	105.6	----	----
Butter	7.7	8.3	----	----
Cheese	8.4	8.7	----	----
Total Milk Equivalent <sup>2</sup>	364.3	379.6	22,138.5	23,631.7
France				
Cereals <sup>1</sup>	83.5	77.6	4,246.9 5,818.2	4,100.7 5,618.0
Meat				
Beef & Veal	35.0	37.0	1,780.1	1,955.2
Poultry	14.7	16.0	747.6	845.5
Pork	27.9	29.2	1,419.0	1,543.1
Other Meat	12.6	10.7	640.8	565.4
Total Meat	90.2	92.9	4,587.6	4,909.9
Eggs	13.1	14.3	666.3	755.7
Dairy Products				
Milk	119.3	128.6	----	----
Butter	7.2	7.7	----	----
Cheese	12.6	13.7	----	----
Total Milk Equivalent <sup>3</sup>	439.9	472.8	22,373.7	24,985.1
continued...				

Table 21 continued				
Item	Annual Per Capita Consumption in Kg.		Total Requirements in 1000 Metric Tons	
	1970	1975	1970	1975
Netherlands				
Cereals <sup>1</sup>	65.7	61.0	858.7 1,159.2	849.1 1,146.3
Meat				
Beef & Veal	22.8	27.2	298.0	378.6
Poultry	6.6	9.8	86.3	136.4
Pork	30.9	35.1	403.9	488.6
Other Meat	6.2	6.9	81.0	96.0
Total Meat	66.5	79.0	869.1	1,099.7
Eggs	15.3	17.2	200.0	239.4
Dairy Products				
Milk	119.4	121.8	----	----
Butter	4.4	4.7	----	----
Cheese	8.5	9.2	----	----
Total Milk Equivalent <sup>2</sup>	325.0	341.0	4,247.7	4,746.7
Belgium-Luxembourg				
Cereals <sup>1</sup>	72.8	65.8	724.2 1,006.7	669.5 930.7
Meat				
Beef & Veal	32.2	37.7	320.3	383.6
Poultry	13.0	15.0	129.3	152.6
Pork	23.0	25.5	228.8	259.5
Other Meat	9.4	10.2	93.5	103.8
Total Meat	77.6	88.4	772.0	899.5
Eggs	14.0	15.2	139.2	154.7
Dairy Products				
Milk	138.1	138.9	----	----
Butter	9.6	10.2	----	----
Cheese	6.5	6.8	----	----
Total Milk Equivalent <sup>2</sup>	409.1	425.2	4,069.8	4,326.7
continued...				

Table 21 continued				
Item	Annual Per Capita Consumption in Kg.		Total Requirements in 1000 Metric Tons	
	1970	1975	1970	1975
Italy				
Cereals <sup>1</sup>	123.3	116.6	6,311.1 8,204.3	6,411.2 8,334.5
Meat				
Beef & Veal	23.1	30.0	1,227.3	1,649.7
Poultry	9.8	12.0	520.7	659.9
Pork	9.5	10.5	504.7	577.4
Other Meat	5.4	5.9	286.9	324.4
Total Meat	47.8	58.4	2,539.7	3,211.4
Eggs	11.9	13.5	632.2	742.4
Dairy Products				
Milk	72.7	79.6	----	----
Butter	1.9	2.1	----	----
Cheese	8.4	9.2	----	----
Total Milk Equivalent <sup>2</sup>	196.5	215.8	10,440.2	11,866.8
<sup>1</sup> Larger figure is grain equivalent, the smaller total and per capita values are flour equivalent. <sup>2</sup> Includes fluid milk, butter, cheese, condensed and evaporated milk only. Conversion factors used in converting to milk equivalents: Butter 20.5; Cheese and Cream 10.0; Condensed and Evaporated Milk 2.1; Powder 11.0. <sup>3</sup> Milk equivalent estimates for France include fluid milk, butter, cheese, condensed and evaporated milk plus an adjustment factor based on 1962 supply and distribution balances to allow for large consumption of other dairy products.				

Pork, poultry meat and egg consumption, after price adjustment, are estimated at higher levels than those suggested by income change alone in most cases. The most important effect will occur in poultry meat and for Germany in eggs. The smallest proportional adjustment occurs in pork and, in general, price adjustment tends to suggest per capita consumption levels at the high level or only slightly above those suggested by income estimates alone. Insofar as the net effect of price change in beef, pork, and poultry, the least change from consumption levels estimated without taking price into account occurs in Netherlands. This reflects the fact that as the most efficient producer of pork and poultry during the base period, the least room for reduced production costs exists in The Netherlands. The greatest shift occurs in Italy where price elasticities are higher and prices, particularly of

Table 22. Recent Per Capita Consumption and Projected Change to 1970 and 1975						
Country	1962	Index 1952=100	1970	Index 1962=100	1975	Index 1962=100
	ALL MEAT					
Netherlands	47.7	149	66.5	139	79.0	166
Germany	64.5	155	74.5	116	83.7	130
France	79.3	131	90.2	113	92.9	117
Belgium-Lux.	64.3	128	77.6	121	88.4	137
Italy	33.3	173	47.8	143	58.4	175
U.S. Consumption 1964	----	---	----	---	88.1	---
	LIVESTOCK PRODUCTS (Meat, Eggs, Butter, and Cheese)					
Netherlands	75.6	167	94.7	125	105.1	139
Germany	82.0	136	107.0	130	118.8	145
France	106.2	128	123.1	116	128.7	121
Belgium-Lux.	90.8	117	107.7	119	120.6	133
Italy	51.6	154	70.0	136	83.2	161
U.S. Consumption 1964	----	---	----	---	119.0	---
	LIVESTOCK PRODUCTS AND CEREALS					
Netherlands	153.3	109	160.4	105	171.1	112
Germany	158.8	99.6	175.0	110	182.0	115
France	204.3	100	206.6	101	206.2	101
Belgium-Lux.	175.3	96.2	180.5	103	186.4	106
Italy	185.4	107	193.3	105	199.8	108
U.S. Consumption 1964	----	---	----	---	184.6	---
Source of 1962 data: OECD <i>Food and Agricultural Statistics</i> , Paris 1965; and OECD <i>Food Consumption in the OECD Countries</i> , Paris 1966.						

poultry and pork, are expected to decline. The largest single price change expected is for poultry in France. Retail poultry prices (in real terms) in France could decline from the base period (1963-65) by as much as about 30 percent to 1970 and by up to 40 percent by 1975.

In general, these estimates can be checked in two ways: First, they can be compared with pre-existing trends in the individual countries; and second, they can be compared with consumption levels in other countries where income levels are higher. The comparisons showing the relationship of projected changes for the 13-year period, 1962 to 1975, for the EEC countries as com-



pared with recorded changes from 1952 to 1962 and the relationship of estimated EEC consumption levels to comparable 1964 consumption levels in the U.S. are shown in Table 22.

#### Conclusion

In general, the rates of increase in consumption on an annual basis are expected to be somewhat lower than has occurred in the past and this is true despite the reflection during the projection period of a net real price effect that will in the overall tend to accelerate meat and egg consumption. In comparison with current U.S. consumption levels, the only apparently high projected value is meat consumption in France.<sup>8</sup> Yet, by an absolute standard, this is not excessive and French diets have traditionally contained a high meat component and the proportion of income allocated to food purchase has traditionally been very high. This high level is attained for France despite the slowest overall (1962 to 1975) projected rate of increase for any of the EEC countries. For the area as a whole, a decline in the relatively high level of potato consumption in the four northern countries and in the very high level of fruit and vegetable consumption in Italy indicate that the projected expansion in livestock product consumption as well as the relatively small overall increase in livestock product-cereal consumption could feasibly occur. In any event, a relatively strong pattern of increased consumption of livestock products, especially meat, is likely to continue during the projection period. Further, unless major unforeseen changes in EEC policy occur, farm price developments are likely in net to encourage rather than retard consumption as compared with that which would occur under constant real price relationships.

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<sup>8</sup>The estimated per capita levels for France are below the levels indicated by strict adherence to the income and price elasticity matrices. Because of high existing levels of consumption, it is unlikely that future increases in relation to either income or price will be as rapid as in other EEC countries with comparable income levels.

## Chapter 4

### EEC Production -- Past and Projected

This chapter describes in broad terms, the nature of agriculture in the EEC and some of the climatic, environmental, and economic factors that influence it. It will also describe recent production levels and project them to 1970 and 1975. In order to do this we have divided the EEC into 19 regions, and our production patterns and projections are done on a regional basis (Figure 1).

The use of so few regions to describe production systems in EEC agriculture will almost certainly bother European readers, because the regions are far from homogenous either in environment or type of farms. On the other hand, U.S. readers may be surprised to find countries much smaller than some of our states divided into half a dozen or more regions. We felt that, due to the heterogeneity of EEC agriculture, regional analysis should be attempted. At the same time, the regions had to be delineated using governmental unit boundaries to enable us to obtain the necessary statistics. Thus, in West Germany, the regions used are the *Länder* or states. In France, they are groups of *departements* which, according to our French cooperators, have roughly similar natural conditions and types of farming. In Italy, the regions used also are groups of provinces, grouped along the lines of environment and location. The Netherlands was taken as a single region, and Belgium and Luxembourg were treated as one region.

Climatic conditions vary widely within the EEC ranging from the dry, semi-tropical areas of Southern Italy to the areas of Germany bordering on the North Sea. Even so, the climatic conditions of EEC agriculture vary much less than for the United States. For instance, there is no significant region of the EEC which has a mean temperature in January below 0°C (32°F) nor any that have a mean temperature of more than 35°C (95°F) in July.<sup>1</sup> These ranges are significantly less than found between, say, Southern California's Central Valley and Northern Minnesota.

With the exception of relatively few areas, annual rainfall in the EEC falls within a range of 600 to 900 millimeters (24-35 inches) and is fairly well distributed throughout the year. The number of days with frost rarely exceeds 90 and this is only in regions of high altitude.<sup>2</sup>

Thus, in general, with the exception of parts of Southern France and Italy, the climate in the EEC is favorable to agriculture. This is especial-

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<sup>1</sup>Organization for European Economic Cooperation, *Agricultural Regions in the EEC*, Documentation in Agriculture and Food No. 27, Paris, 1960, p. 45.

<sup>2</sup>*Ibid.*

ly true for grass and grains as evidenced by the relatively high grain yields in most areas. Corn production, however, is limited due largely to the lack of enough warm nights and dry weather to insure maturity.

Several features distinguish EEC agriculture and are important to its future development. First is the large number of farms for the agricultural land area and the consequent small size of most of the farms. Moreover, in some areas these small farms are highly fragmented containing, in some cases, as many as 50 to 100 separate pieces. For historical reasons and because of the extreme pressure of population on the land, land prices generally are extraordinarily high relative to earnings and the land market does not appear to be well developed. Thus, farm consolidation and enlargement is an extremely slow process depending largely upon death and retirements.

Much of the agricultural land in the EEC is sloping, so that it is not suitable for cultivation and remains in permanent pasture. Even much of that which is cultivated is not suitable for mechanization and would not be cultivated under U.S. conditions. Such land in Southern Germany, Southern France, and in the mountains of Italy is being slowly abandoned or reverting to permanent pasture, a trend that is likely to continue with the retirement of the present operators.

These factors together with the outside employment conditions in the areas are strong determinants of the way farms in the EEC are organized and of the rate and direction in which they will change. A study by the EEC found that the single most important determinant of farm organization and profitability was the farm size relative to the labor force.<sup>3</sup> These conclusions are substantiated by the studies by Peterson and Petit, Rossmiller, and Mangum.<sup>4</sup>

Thus, farms in the EEC tend to be organized around the labor force available relative to the size and terrain of the farm. Where the labor-land ratio is high, farms tend to have mixed production or what would be termed "general" farms in the U.S. These farms have some pasture, some grain -- both food and feed grains -- hogs, and dual-purpose cattle which produce both milk and meat. Where the labor-land ratio per farm is more favorable (lower) as in The Netherlands, Northern Germany, and North Central and Northwest

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<sup>3</sup>EEC Commission, Informations Internes sur L'Agriculture, *Les conditions de Productivite et la Situation des Revenues d'Exploitations Agricoles Familiales dans les Etats Membres de la CEE*, Study No. 13, August, 1966.

<sup>4</sup>G.A. Peterson and Michel Petit, *Current Changes in the Livestock and Grain Economy of France and Their Effect Upon Foreign Trade Patterns*, Dept. of Agricultural Economics, University of Wisconsin; George E. Rossmiller, *The Grain-Livestock Economy of West Germany with Projections to 1970 and 1975*, Number 1 in this series; and Fred A. Mangum, *The Grain-Livestock Economy of Italy with Projections to 1970 and 1975*, Number 2 in this series.

France, the farms may specialize in forage and milk production or in cash crop production. Where the labor-land ratio is very high and climate is more moderate as in parts of Italy and Southern France, the farms specialize in labor-intensive vine, fruit, and oil crops.

In a sense, farm organization in the EEC is the product of several centuries of history. It shows up in farm size, farm fragmentation, the location and nature of farm buildings, land prices, and type of farming. Even marked changes in governmental price policy and relative prices are not going to wrench EEC agriculture out of its historical pattern and convert it to a model of midwestern U.S. agriculture. This is not to imply that rapid change has not and will not occur, but that change in EEC farm production patterns must overcome significant economic, institutional, and historical barriers.

One of the greatest impacts is upon mechanization -- the rate at which capital is substituted for labor in EEC farming. Probably the greatest contrast one can find in EEC farming is in this area. In some areas it is not uncommon to see draft cattle and self-propelled combines working in close proximity. Small size, slope, and fragmentation make mechanization physically and economically impossible for many farms in the EEC, especially in the mountain regions.

Despite these many obstacles, farming in the EEC has been rapidly mechanized in the past few years. Indeed, considering the small farm size, the rapid pace of mechanization has resulted in what might be regarded as over-mechanization in some areas. For example, West Germany has the largest number of tractors for the land area under cultivation of any country in the world.<sup>5</sup>

The substitution of capital for human effort has been large and is expected to continue at a rapid pace, but the end result is usually still an agriculture that requires a relatively high farm product price in order to provide even low returns to the majority of the operators of small farms.

#### Grain Production in the EEC

Most observers believe that the greatest influence of switching to the common price policy will be on grain production. In order to evaluate these probable shifts, some recent perspective upon sown areas, yield, and production is necessary.

#### Grain Surface in the EEC

Tables 23 and 24 show the surface sown to the major grains by regions in 1955 and 1964. These years were used because they appeared to be about normal as far as weather influence was concerned and because they appear to rep-

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<sup>5</sup>Rossmiller, *op. cit.*

Table 23. EEC Grain Surface For 1955

Region	Distribution of Grain Area in 1000 Hectares)													
	Total	%	Wheat	%	Other Food Grains <sup>1</sup>	%	Barley	%	Oats	%	Corn	%	Other Grains <sup>2</sup>	%
1	--	-	59	0.5	--	-	36	1.4	77	2.0	--	-	--	-
2	--	-	140	1.3	--	-	69	2.8	216	5.7	--	-	--	-
3	--	-	157	1.4	--	-	84	3.4	143	3.7	--	-	--	-
4	--	-	106	1.0	--	-	38	1.5	106	2.8	--	-	--	-
5	--	-	78	0.7	--	-	67	2.6	96	2.5	--	-	--	-
6	--	-	235	2.2	--	-	152	6.1	87	2.3	--	-	--	-
7	--	-	395	3.6	--	-	339	13.5	235	6.2	--	-	--	-
1-7	4791	22.0	1170	10.7	1475	88.6	785	31.3	960	25.2	--	-	401	31.7
8	513	2.4	89	0.8	--	-	70	2.8	171	4.5	--	-	183	14.5
9	556	2.5	215	2.0	--	-	89	3.6	169	4.4	2	0.1	81	6.4
10	--	-	260	2.4	--	-	114	4.6	217	5.7	8	0.5	--	-
11	--	-	1759	16.2	--	-	563	22.5	964	25.3	22	1.3	--	-
12	--	-	1095	10.1	--	-	318	12.6	408	10.7	30	1.8	--	-
13	--	-	631	5.8	--	-	108	4.3	154	4.0	334	19.7	--	-
14	--	-	696	6.4	--	-	162	6.5	283	7.4	39	2.3	--	-
15	--	-	114	1.0	--	-	48	1.9	51	1.3	21	1.2	--	-
10-15	8936	41.0	4555	41.9	20	1.2	1313	52.4	2077	54.5	454	26.8	517	40.9
16	--	-	1416	13.0	--	-	28	1.1	46	1.2	717	42.4	--	-
17	--	-	1148	10.0	--	-	42	1.7	86	2.3	224	13.3	--	-
18	--	-	1376	12.6	--	-	90	3.6	252	6.6	286	16.9	--	-
19	--	-	912	8.4	--	-	87	3.5	49	1.3	8	0.5	--	-
16-19	7019	32.1	4852	44.6	169	10.2	247	9.9	433	11.4	1236	73.1	82	6.5
EEC	21815	100.0	10881	100.0	1664	100.0	2504	100.0	3810	100.0	1692	100.1	1264	100.0

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grain.

Table 24. EEC Grain Surface for 1964

Region Total	(Distribution of Grain Area in 1000 Hectares)												
	%	Wheat	%	Other Food Grains	%	Barley	%	Oats	%	Corn	%	Other Grains <sup>2</sup>	%
1	--	87	0.8	--	--	87	2.2	83	3.3	--	--	--	--
2	--	183	1.7	--	--	204	5.2	173	7.0	--	--	--	--
3	--	188	1.8	--	--	158	4.0	94	3.8	--	--	--	--
4	--	132	1.2	--	--	72	1.8	86	3.5	1	--	--	--
5	--	129	1.2	--	--	88	2.2	83	3.3	1	--	--	--
6	--	251	2.4	--	--	151	3.9	74	3.1	10	0.6	--	--
7	--	475	4.5	--	--	394	10.0	171	6.9	6	0.3	--	--
1-7	4994	1445	13.6	1145	88.5	1154	29.3	765	30.9	18	0.9	467	41.3
8	481	151	1.4	--	--	87	2.2	103	4.2	--	--	140	12.4
9	549	244	2.3	--	--	137	3.5	120	4.8	--	--	48	4.2
10	--	259	2.4	--	--	203	5.2	125	5.0	11	0.6	--	--
11	--	1787	16.8	--	--	1133	28.8	420	16.9	165	8.3	--	--
12	--	1001	9.4	--	--	517	13.1	253	10.2	75	3.8	--	--
13	--	564	5.3	--	--	154	3.9	97	3.9	522	26.3	--	--
14	--	659	6.2	--	--	309	7.9	183	7.4	93	4.7	--	--
15	--	123	1.2	--	--	45	1.1	17	0.7	26	1.3	--	--
10-15	9188	4393	41.3	29	2.2	2361	60.0	1095	44.1	892	45.0	418	37.0
16	--	1290	12.1	--	--	22	0.6	33	1.3	619	31.2	--	--
17	--	1079	10.1	--	--	46	1.2	78	3.1	188	9.5	--	--
18	--	1275	12.0	--	--	72	1.8	238	9.6	261	13.2	--	--
19	--	764	7.2	--	--	56	1.4	47	1.9	5	0.2	--	--
16-19	6250	4408	41.4	120	9.3	196	5.0	396	16.0	1073	54.1	57	5.1
EEC	21462	10641	100.0	1294	100.0	3935	100.0	2479	100.0	1983	100.0	1130	100.0

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grains.

resent the trends that are apparent in the year to year data.<sup>6</sup>

In 1955, approximately one-half of the 21.8 million hectares planted to grain was wheat. The importance of wheat varied considerably from region to region. It dominated the area sown to grain in Central Italy (Region 17) and the Islands (Region 19) and made up half of the total grain area in the rest of Italy and most of France. Wheat was much less important in the grain areas in the Northern EEC. Looking at the total surface planted to wheat in 1955 in the EEC, Italy and France dominated, accounting for respectively 45 and 42 percent of the total acreage of wheat planted. The largest acreage of wheat was in the Paris Basin area of France which contained more than one-third of the wheat acreage planted in France.

The grain crop occupying the second largest acreage in 1955 on EEC farms was oats. Here again the area in France was largest by far, accounting for more than one-half of all the oats acreage. Germany was relatively more significant in oats than wheat in 1955, while oats were significant in only one region of Italy, the South (Region 18).

The third most important grain crop in 1955, according to planted area, was barley. Here again, France had more than half of all the barley acreage, Germany was next in terms of area planted and Italy was relatively significant. The most important barley areas were in Southern Germany and North and Central France.

Corn, another feed grain, occupied the fourth place in acreage planted in the EEC in 1955 despite the fact it was grown in only four regions in France and Italy in any great quantity. The north of Italy alone had over 42 percent of the area planted to corn in the EEC in 1955 and Italy had 73 percent of the total. Outside of Italy only Region 13 in southwestern France had any significant area in corn in 1955.

The acreage in rye is shown separately only for Germany where its planted acreage in 1955 exceeded other grain crops since it was used both for food and feed. In the other countries it is generally produced as a feed grain and is included in the "other grain" category.

The other grain acreage also was heavily concentrated in France in 1955, especially in the southwestern and northwestern areas. In Germany it was largest in the northern regions.

Thus, the distribution of area planted to grain in the EEC in 1955 illustrates the major importance of France in the production of all grains except rye and rice. France had more than half of the planted area in the major feed grains -- barley, oats, and mixed grains -- and was significant in corn area and major in wheat area. Therefore, recent trends and future pro-

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<sup>6</sup>For the annual data see the reports in this series by Rossmiller, Mangum, and Petit, *op. cit.*

jections for France are of crucial importance to the shape of EEC agriculture.

Turning to 1964, we find that total area planted to grain in the EEC changed little in a decade. A decline in Italian grain area was about offset by small increases in France and Germany. The change in distribution of area between grains has been highly important.

In general, the proportion of area planted to food and feed grains changed very little although there were major shifts within each category. In Germany, every region increased its wheat acreage, but there were roughly offsetting decreases in the area planted to rye. In France, the area planted to wheat declined by about ten percent largely due to declines in the areas where wheat already was less important. In Italy wheat acreage declined in every region as hill and mountain farms were abandoned or converted to grazing.

The greatest change occurred in the acreage devoted to feed grains. In all but a few areas in Germany and in Southern Italy there was a marked decline in the area planted to oats. This reflects both the mechanization of agriculture and the recognition that other feed grains are much more productive in most areas of the EEC. The area devoted to mixed grain production in Germany expanded, whereas it generally declined elsewhere in the EEC.

The most rapid increases from 1955-64 were in the area devoted to barley and corn production. Barley area increased by nearly one-half in Germany with the increase general throughout the country. The area planted to barley in France almost doubled, with major increases in every region except the South. In Italy there was a decline in barley area, but it was small relative to the increases elsewhere in the EEC. The area devoted to corn production in France also almost doubled between 1955 and 1964. The expansion was heavily concentrated in the Paris Basin, where area increased almost eight-fold, and also in the Southwest. There was a decline in the area planted to corn in Italy over the decade as corn production moved to irrigated areas and contracted in nonirrigated areas. Thus, at present France rivals Italy in terms of the area devoted to corn production.

Over the decade 1955-64 in the EEC, France increased modestly in relative importance of land area in grains. And the relative importance of France in the area devoted to feed grain production increased markedly. Some of the shift has been encouraged by the increase in barley price relative to wheat price, but the increased area devoted to corn production has occurred in the face of a lower price relative to wheat.

Thus, the past decade prior to the adoption of the common price policy has seen marked shifts in grain production in the EEC. The shift from horsepower to tractors, the rising demand for feed grains, and the development of better adapted varieties have expanded the area in the major feed grains at



the expense of other grain crops. The total area in grains has remained quite stable, but there has been a continuing change in the mix of grains planted.

#### Grain Yields in the EEC

The yields of small grains in the EEC are generally high by North American standards<sup>7</sup> (Table 25). These high yields can be attributed to the generally ample rainfall and to very heavy applications of commercial fertilizers. Yields were quite high in 1955 and they have advanced more or less steadily (apart from weather) since then. For instance, the wheat yield in Bavaria (Region 7), the largest grain region in Germany, was 26 quintals per hectare in 1955 and exceeded 34 quintals per hectare in every year but one in the 1960-64 period. In the Paris Basin of Northern France (Region 11), which alone has one-sixth of the total EEC area planted to wheat, the yield was 29.9 quintals per hectare in 1955 and 40.2 quintals per hectare in 1964.

In general, for the small grains the yields are highest in the Northern EEC and tend to decline as one moves South. Thus, the highest yields are in the areas of Northern Germany, The Netherlands, Belgium-Luxembourg, and Northern France. The lowest yields are in Southern France and Southern Italy, with Northern Italy (Region 16) also having good yields, especially for corn. This is partially due to differences in climate and soil as one moves from North to South and partially due to the progressiveness of the farmers in the regions.

A comparison of grain yields in 1955 and 1964 show that yields of all grains increased appreciably in almost all of the regions except Southern Italy.<sup>8</sup> Even though yields have generally risen there still is an appreciable gap between the yields in regions with the more advanced technology, suggesting that future yields may rise considerably in some regions of the EEC.

#### Grain Production 1955 and 1964

Grain production in the EEC in 1955 was just over 47 million metric tons (Table 26). France was the largest producer, producing 36 percent of all grain in that year. Italy was second with 30 percent of total production, and West Germany accounted for 26 percent of grain production in 1955.

Wheat was dominant in 1955, amounting to nearly one-half of the grain produced. Other food grains accounted for 9 percent of grain production, so

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<sup>7</sup>For the U.S. reader the following multiplication factors may be used to convert yields from quintals per hectare to bushels per acre: Wheat-1.4870; Corn, rye, sorghum-1.5932; Barley-1.8587; Oats-2.7881.

<sup>8</sup>Corn yields in France in 1964 were lower than the preceding two or three years due to an unusually dry summer in the major producing areas.

Table 25. EEC Grain Yield for 1955 and 1964

Region	Yields per Hectare (100 kg. per Hectare)												
	Wheat	Other Food Grains <sup>1</sup>	Barley	Oats	Corn	Other Grains <sup>2</sup>	Wheat	Other Food Grains <sup>1</sup>	Barley	Oats	Corn	Other Grains <sup>2</sup>	
	1955							1964					
1	35.8	--	34.7	--	--	--	42.2	--	38.9	37.2	41.6	--	
2	29.5	--	31.1	--	--	--	34.5	--	38.4	34.6	33.7	--	
3	32.7	--	32.0	--	--	--	38.0	--	36.0	30.5	49.0	--	
4	32.2	--	29.2	--	--	--	34.0	--	32.0	27.3	34.6	--	
5	30.5	--	31.0	--	--	--	33.9	--	27.3	23.9	--	--	
6	26.3	--	23.1	--	--	--	34.2	--	16.8	29.1	33.5	--	
7	26.3	--	23.6	--	--	--	34.8	--	22.2	27.0	36.9	--	
1 - 7	28.9	23.7	26.7	25.6	29.8	25.7	36.0	31.5	30.1	34.0	34.6	31.1	
8	39.3	--	37.7	34.0	--	30.6	47.1	--	43.2	40.8	--	34.4	
9	35.9	--	38.0	30.9	40.0	28.9	38.9	--	39.0	33.6	--	31.0	
10	22.5	--	20.6	--	35.6	--	25.4	--	22.4	--	22.0	--	
11	29.9	--	25.6	--	40.7	--	40.2	--	34.8	--	31.4	--	
12	20.4	--	16.7	--	23.6	--	27.2	--	26.8	--	19.8	--	
13	14.6	--	13.0	--	22.4	--	25.0	--	20.4	--	22.0	--	
14	17.4	--	16.3	--	31.1	--	24.8	--	20.2	--	22.4	--	
15	8.1	--	12.1	--	24.0	--	20.0	--	17.1	--	22.4	--	
10-15	22.8	40.5	20.3	17.5	24.1	12.1	31.5	42.1	28.8	21.1	23.5	20.1	
16	32.1	--	19.5	18.9	35.8	--	30.4	--	21.3	21.5	49.4	--	
17	20.0	--	14.1	13.7	14.7	--	20.6	--	14.7	14.5	22.2	--	
18	12.1	--	9.8	10.6	10.0	--	13.4	--	10.9	10.2	17.0	--	
19	10.7	--	10.1	10.0	12.2	--	9.2	--	10.2	10.4	13.9	--	
16 - 19	19.6	50.8	12.0	12.1	25.9	15.2	19.5	51.4	12.8	12.1	36.6	19.5	
EEC	21.2	26.7	22.4	19.7	25.7	20.4	27.4	33.6	28.6	29.2	30.7	26.9	

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye except in Germany they include sorghum and mixed grains.

Table 26. EEC Grain Production for 1955

Region	(Production in 1000 metric tons)													
	Total	%	Wheat	%	Other Food Grains	%	Barley	%	Oats	%	Corn	%	Other Grains <sup>2</sup>	%
1	--	0.9	212	--	--	2.2	125	--	--	--	--	--	--	--
2	--	1.8	415	--	--	3.8	215	--	--	--	--	--	--	--
3	--	2.2	514	--	--	4.8	269	--	--	--	--	--	--	--
4	--	1.5	343	--	--	2.0	111	--	--	--	--	--	--	--
5	--	1.0	238	--	--	3.7	208	--	--	--	--	--	--	--
6	--	2.7	619	--	--	6.3	351	--	--	--	--	--	--	--
7	--	4.5	1038	--	--	14.3	800	--	--	--	--	--	--	--
1-7	12482	26.1	3379	3495	78.4	37.1	2079	2477	31.9	20	0.5	1032	40.1	
8	1756	3.7	350	--	--	4.7	264	582	7.5	--	--	560	21.8	
9	1833	3.8	772	--	--	5.3	296	523	6.8	8	0.1	234	9.0	
10	--	2.5	585	--	--	4.2	235	--	--	29	0.7	--	--	
11	--	17.5	4028	--	--	25.7	1441	--	--	90	2.1	--	--	
12	--	9.7	2234	--	--	9.5	531	--	--	71	1.6	--	--	
13	--	4.0	921	--	--	2.6	140	--	--	748	17.2	--	--	
14	--	5.2	1211	--	--	4.7	264	--	--	121	2.8	--	--	
15	--	0.4	92	--	--	1.0	58	--	--	50	1.2	--	--	
10-15	17193	36.0	9071	81	1.8	47.7	2669	3640	47.0	1109	25.6	623	24.2	
16	--	19.7	4555	--	--	1.0	55	87	1.2	2577	59.4	--	--	
17	--	10.0	2297	--	--	1.0	59	118	1.5	329	7.6	--	--	
18	--	7.2	1670	--	--	1.6	89	270	3.4	287	6.6	--	--	
19	--	4.3	981	--	--	1.6	89	49	0.7	10	0.2	--	--	
16-19	14506	30.4	9503	859	19.4	5.2	292	524	6.8	3203	73.8	125	4.9	
EEC	47770	100	23075	100	4435	100	5600	7746	100	4340	100	2574	100	

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grains.

the food grains amounted to well over one-half of total grain production. Oats was the most important feed grain in 1955, followed in order by barley, corn, and mixed grain.

The effect of yield can be seen by noting that, in general, areas in the northern EEC and the Po Valley of Italy had a higher proportion of production than of surface planted to grain.

Turning to 1964, we find that total grain production in the EEC increased markedly over the decade and amounted to over 61 million tons (Table 27). Wheat still accounted for almost half of all grain produced (48 percent). Other food grain production declined as a proportion of total grain production but remained at the same absolute levels as yield increases offset the decline in planted area. Thus, food grain production declined slightly as a proportion of total grain production.

During the decade France increased her position accounting for 45 percent of total grain production in the EEC in 1964. The relative position of Germany remained almost unchanged, while that of Italy declined markedly as the result of lower output of wheat, barley, and rice. Both The Netherlands and Belgium and Luxembourg declined in their relative proportion of grain production despite substantial absolute increases in output due to higher yields.

Perhaps the most striking element by 1964 was the great importance of the Paris Basin (Region 11) in total grain production in the EEC. In 1964 this region produced a quarter of all the wheat produced in the EEC, 35 percent of all the barley, and 8.5 percent of the corn. Northern Italy, which produced 13.5 percent of the wheat and 50 percent of the corn in the EEC, was the only region in the Community of major importance and it was a distant second to the Paris Basin.

#### Projection of Grain Production to 1970 and 1975

One of the major purposes of this research is to provide projections of EEC agricultural production to 1970 and 1975 and to estimate the resulting changes in trade patterns. The detail underlying these projections has been covered in the supporting studies for the individual countries and will not be repeated here.

In general, crop production was projected by first projecting total land area planted to grains, then estimating the proportion of total area in grains planted to individual grains, and finally estimating individual grain yields. The proportion of land planted to grains is probably the most crucial element in this process, for there has been concern in some quarters that the higher grain prices in several of the countries would induce the plowing up of pastures for grain production.

As will be seen, we do not anticipate significant increases in the total

Table 27. EEC Grain Production for 1964

Region	(Production in 1000 metric tons)											Other Grains <sup>2</sup>	%		
	Total	Wheat	%	Other Food Grains	%	Barley	%	Oats	%	Corn	%				
1	--	369	1.3	--	339	3.0	304	4.2	--	--	--	--	--	--	--
2	--	619	2.1	--	784	7.0	599	8.2	1	--	--	--	--	--	--
3	--	714	2.4	--	569	5.1	287	4.0	1	--	--	--	--	--	--
4	--	448	1.5	--	233	2.1	237	3.3	3	--	--	--	--	--	--
5	--	437	1.5	--	241	2.1	199	2.8	2	--	--	--	--	--	--
6	--	857	2.9	--	253	2.2	215	3.0	34	0.6	--	--	--	--	--
7	--	1655	5.7	--	875	7.8	461	6.4	21	0.4	--	--	--	--	--
1-7	15816	5099	17.4	3606	83.0	3294	29.3	2302	31.9	62	1.0	1453	47.9	15.6	4.9
8	1989	712	2.4	--	376	3.3	420	5.8	--	--	--	481	15.6	--	--
9	2036	950	3.3	--	534	4.7	403	5.6	--	--	--	149	4.9	--	--
10	--	658	2.3	--	454	4.0	--	--	--	24	0.4	--	--	--	--
11	--	7184	24.6	--	3943	35.0	--	--	--	518	8.5	--	--	--	--
12	--	2723	9.3	--	1386	12.3	--	--	--	149	2.4	--	--	--	--
13	--	1410	4.8	--	314	2.8	--	--	--	1148	18.8	--	--	--	--
14	--	1634	5.7	--	624	5.6	--	--	--	208	3.4	--	--	--	--
15	--	246	0.8	--	77	0.8	--	--	--	58	1.0	--	--	--	--
10-15	27364	13858	47.5	122	2.8	6798	60.5	3640	50.3	2105	34.5	841	27.8	--	--
16	--	3929	13.5	--	47	0.4	72	1.0	3061	50.2	--	--	--	--	--
17	--	2231	7.6	--	68	0.6	113	1.6	417	6.8	--	--	--	--	--
18	--	1717	5.9	--	79	0.7	231	3.2	444	7.3	--	--	--	--	--
19	--	704	2.4	--	59	0.5	49	0.6	7	0.1	--	--	--	--	--
16-19	13955	8581	29.4	617	14.2	252	2.2	465	6.4	3929	64.5	111	3.8	--	--
EEC	61160	29200	100	4345	100	11254	100	7230	100	6096	100	3035	100	--	--

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grains.

acreage devoted to grain in the EEC. Our expectations are based upon the research results of the effects of changes in farm structure and labor force, farm budget and linear programming analysis, and regression analysis of past relationships. None of these appear to support a widespread switch from grass-livestock to cash grain production in those areas where conditions might be amenable to such shifts. Indeed, as shown in Chapter 3 on the expected shifts in price under EEC policy, the relative price shifts are in favor of forage-consuming livestock.

Most of our analysis suggests that the total area planted to grain is not very sensitive to price changes, at least not price changes of the magnitude that appear likely under the proposed EEC policies.

Grain yields in the EEC appear likely to be almost exclusively a function of technology and shifts in the location of production. Improved knowledge and management is more likely to influence fertilizer use and other production practices than are changes in grain prices.<sup>9</sup> Our yield projections are based upon the best information available to us regarding recent trends and possible future developments in technology and management.

The major anticipated effect of the EEC price policies is the impact of shifts in relative prices upon the proportion of total grains planted to a specific grain. It appears that individual grain acreage is quite sensitive to relative grain prices and we have used our projected prices accordingly.

In order to understand the basis for our projections of EEC grain production in 1970 and 1975, a brief review of the price assumptions is in order. For 1970 the grain price policies set by the EEC which took effect in 1967 were projected as the most probable policy for 1970. The present policies were achieved after considerable political difficulty and the enthusiasm to change them quickly is likely to be low. Moreover, it will take at least a few years experience to determine how the new policies are working.

For the 1975 projections we have used two price levels. One is a continuation of the same absolute price as in 1970. This would represent a declining real price and represents, in our judgment, the lower price limit which would be politically feasible. The second grain price used for 1975 represents a constant real price, assuming an increase of about three percent annually in consumer prices.

Looking at the total grain surface projected for the EEC in 1970 and 1975, we believe that the forces to contract grain acreage will overshadow those to expand grain acreage sufficient to bring a modest decline in the grain surface (Tables 28 and 29). Encouraging contraction will be the gradu-

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<sup>9</sup>U.S. readers are reminded that fertilizer use in the U.S. and yields of grain have climbed rapidly in recent years with stable or falling product prices.

al abandonment of hillside and mountain farms in Southern Germany, The Central Mountains of France and in the Central, South and Islands of Italy to permanent pasture. These farms, where mechanization is very difficult, will decline with the retirement of the present generation of farmers, and many that are there now are leaving. On the other hand, increasing farm size and rising labor costs will tend to encourage the expansion of grain production in areas of mixed farming in Germany, France, and the valleys of Central Italy.

The available evidence, from farm budgets and linear programming, do not indicate that it would be profitable to convert either permanent grassland or annual forage land in North and Northwest France and in Northern Italy to grain production. Therefore, we anticipate that total grain acreage in the EEC will continue a modest downtrend, with considerable variation by area and crop.

It appears that the surface devoted to wheat in the EEC will continue to decline slowly. This will not be true in all regions, however. Thus, every region in West Germany appears likely to expand its acreage in wheat until 1975, although the rate of expansion is likely to be less than experienced between 1955 and 1964. Much of this expansion will come at the expense of rye, so that the total surface in food grains will actually decline.

Wheat acreage appears likely to continue to expand very slowly in The Netherlands and also in Belgium-Luxembourg.

The total surface in wheat is projected to contract appreciably in both France and Italy in the years until 1975. It should be noted, however, that the contractions are projected to be in the regions with low wheat yields, whereas acreage in the major producing regions with high yields is projected to remain about unchanged. The total acreage of food grains is projected to decline as the surface planted to rye declines. Thus, by 1975 we project that 53 percent of the EEC grain area will be planted to food grains, compared with 57.4 percent in 1955. (Table 30).

In total then, wheat acreage is expected to remain stable or expand in the highest yielding regions of the EEC and contract in the regions having lower yields. This shift alone will result in a markedly higher average yield for wheat in the EEC even if there were no technical changes; but as we shall point out later, it also appears that the yield in each region is likely to increase, so both factors will tend to push up the output of wheat.

Among the feed grains the shift to barley and corn production and away from oats and mixed grain production appears likely to continue. Barley acreage is projected to increase in every region of the EEC except Southern France and Italy. As a result, barley surface in 1975 is projected to be more than twice that in 1955.

Table 28. EEC Grain Surface Projections for 1970

Region	(Distribution of Grain Area in 1000 Hectares)										Other Grains <sup>2</sup>	%		
	Total	%	Wheat	%	Other Food Grains	%	Barley	%	Oats	%			Corn	%
1	--	--	94	0.9	61	6.0	141	2.9	82	4.7	--	--	39	5.0
2	--	--	206	2.1	323	31.7	324	6.7	159	9.1	--	--	118	15.2
3	--	--	187	1.9	228	22.4	223	4.6	77	4.4	--	--	87	11.1
4	--	--	127	1.3	77	7.5	102	2.2	69	4.0	--	--	17	2.2
5	--	--	154	1.6	59	5.8	98	2.1	72	4.1	--	--	23	2.9
6	--	--	247	2.5	23	2.2	162	3.3	63	3.6	--	--	47	6.0
7	--	--	500	5.1	111	10.9	427	8.9	119	6.8	--	--	74	9.5
1-7	4934	24.2	1515	15.4	882	86.5	1477	30.7	641	36.7	14	0.6	405	51.9
8	493	2.4	143	1.5	--	--	163	3.4	88	5.0	--	--	99	12.7
9	538	2.6	237	2.4	--	--	179	3.7	95	5.4	--	--	27	3.4
10	--	--	250	2.5	--	--	259	5.4	--	--	15	0.7	--	--
11	--	--	1760	17.8	--	--	1300	27.0	--	--	250	11.4	--	--
12	--	--	900	9.1	--	--	667	13.9	--	--	103	4.7	--	--
13	--	--	480	4.9	--	--	160	3.3	--	--	670	30.4	--	--
14	--	--	510	5.2	--	--	394	8.2	--	--	121	5.5	--	--
15	--	--	148	1.5	--	--	43	0.9	--	--	32	1.4	--	--
10-15	8862	43.4	4048	41.0	--	--	2823	58.7	600	34.5	1191	54.1	200	25.6
16	--	--	1106	11.3	--	--	19	0.4	25	1.4	603	27.4	--	--
17	--	--	998	10.1	--	--	51	1.1	71	4.1	161	7.3	--	--
18	--	--	1177	11.9	--	--	59	1.2	182	10.5	232	10.6	--	--
19	--	--	635	6.4	--	--	37	0.8	44	2.4	--	--	--	--
16-19	5588	27.4	3916	39.7	138	13.5	166	3.5	322	18.4	996	45.3	50	6.4
EEC	20415	100	9859	100	1020	100	4808	100	1746	100	2201	100	781	100

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grain and rye in all countries except in Germany they include sorghum and mixed grains.



Table 29. EEC Grain Surface for 1975

Region	(Distribution of grain area in 1000 Hectares)													
	Total	%	Wheat	%	Other Food Grains	%	Barley	%	Oats	%	Corn	%	Other Grains	%
1	--	--	98	1.0	43	5.0	182	3.4	77	5.9	--	--	26	4.2
2	--	--	228	2.4	271	31.2	422	7.8	151	11.6	--	--	107	17.4
3	--	--	194	2.1	209	24.1	276	5.1	59	4.5	--	--	80	13.1
4	--	--	133	1.4	56	6.5	127	2.3	62	4.8	--	--	13	2.1
5	--	--	169	1.8	50	5.8	107	2.0	63	4.8	--	--	22	3.6
6	--	--	237	2.7	22	2.5	170	3.1	58	4.5	--	--	36	5.9
7	--	--	501	5.3	73	8.4	451	8.3	101	7.8	--	--	57	9.3
1-7	4967	24.9	1580	16.7	724	83.5	1735	32.0	571	43.9	16	0.7	341	55.6
8	485	2.5	143	1.5	--	--	175	3.2	76	5.8	--	--	91	14.8
9	529	2.6	237	2.6	--	--	194	3.6	75	5.8	--	--	23	3.8
10	--	--	259	2.7	--	--	301	5.5	--	--	16	0.7	--	--
11	--	--	1750	18.5	--	--	1400	25.8	--	--	320	14.0	--	--
12	--	--	825	8.7	--	--	789	14.6	--	--	127	5.6	--	--
13	--	--	430	4.5	--	--	180	3.3	--	--	700	30.3	--	--
14	--	--	437	4.6	--	--	455	8.4	--	--	147	6.5	--	--
15	--	--	170	1.8	--	--	42	0.8	--	--	35	1.5	--	--
10-15	8774	44.0	3862	40.8	--	--	3167	58.4	300	23.1	1345	58.8	100	16.3
16	--	--	1016	10.7	--	--	15	0.3	16	1.2	582	26.1	--	--
17	--	--	963	10.2	--	--	54	1.0	61	4.7	137	5.3	--	--
18	--	--	1110	11.7	--	--	51	0.9	161	12.4	209	9.3	--	--
19	--	--	545	5.8	--	--	30	0.6	41	3.1	--	--	--	--
16-19	5192	26.0	3634	38.4	143	16.5	150	2.8	279	21.4	928	40.5	58	9.5
EEC	19947	100.0	9456	100.0	867	100.0	5421	100.0	1301	100.0	2289	100.0	613	100.0

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grains.

Table 30. Composition of EEC Grain Surface in Percent, By Years

	1955	1964	1970	1975
Wheat	49.9	49.6	48.3	47.4
Other Food Grains <sup>1</sup>	7.6	6.0	5.0	4.3
Barley	11.5	18.3	23.5	27.2
Oats	17.5	11.6	8.6	6.5
Corn	7.8	9.2	10.8	11.5
Other Grains <sup>2</sup>	5.7	5.3	3.8	3.1
Total	100.0	100.0	100.0	100.0

<sup>1</sup> Other Food Grains include Rice in all countries except in Germany they include Rice and Rye.

<sup>2</sup> Other Grains include Sorghum, Mixed Grains and Rye in all countries except in Germany they include Sorghum and Mixed Grains.

The projected increase in corn surface is at a much slower rate than for barley. This is because the climate is not suitable for corn in all of the EEC. In France, the acreage increase is expected to continue at a rapid pace except in the South and the 1975 acreage is projected at three times the 1955 area. In Italy, however, corn acreage is expected to continue to contract to irrigated areas and, therefore, where it is highly competitive with other crops and where very high yields are obtained.

#### Yield Projections for Grains

The prospective yields of grain in a given area for some period ahead is one of the most difficult items to project. This is because yields are subject to so many factors acting together that it is very difficult to separate them either historically or for the future.

We have projected continued increases in yields throughout the EEC until at least 1975 (Table 31). Part of this will be the result of continued improvement in seed varieties and cultural practices. Part will be due to increased fertilizer use which, although high, varies considerably by area. Part of the yield increase will be due to the continued expansion of farms controlled by the more progressive and better managers. And, part will be due to increased crop specialization by farm and by area as the adoption of common price policies allows the principle of comparative advantage to operate more fully over the entire area.

Table 31. EEC Grain Yield for 1970 and 1975

Region	Yields per Hectare (100 kg./Ha.)											
	Wheat	Other Food Grains <sup>1</sup>	Barley	Oats	Corn	Other Grains <sup>2</sup>	Wheat	Other Food Grains <sup>1</sup>	Barley	Oats	Corn	Other Grains <sup>2</sup>
	1970											
1	42.0	29.6	39.7	34.0	--	--	45.0	31.3	41.9	36.5	--	--
2	38.5	31.5	38.2	33.5	--	--	41.0	33.5	40.0	36.0	--	--
3	37.0	33.5	36.9	32.5	--	--	39.5	35.9	38.6	35.0	--	--
4	38.0	32.9	35.5	32.5	--	--	40.5	34.8	37.5	35.0	--	--
5	35.7	30.8	34.7	29.3	--	--	38.2	32.6	36.7	32.2	--	--
6	35.5	29.6	32.1	32.5	--	--	38.0	32.3	33.5	35.0	--	--
7	34.5	28.5	32.4	28.0	--	--	36.5	30.1	34.2	30.5	--	--
1-7	36.5	31.6	35.4	31.0	40.7	30.7	39.0	33.7	37.5	33.5	45.3	32.8
8	48.0	--	45.0	42.0	--	36.0	51.0	--	49.0	44.0	--	38.0
9	40.7	--	41.0	36.4	--	33.0	43.2	--	43.8	38.2	--	35.0
10	29.4	--	29.2	--	35.2	--	32.4	--	32.4	--	37.6	--
11	43.3	--	41.7	--	44.6	--	49.0	--	46.7	--	47.4	--
12	32.2	--	31.2	--	40.7	--	37.2	--	37.3	--	46.7	--
13	29.7	--	26.9	--	36.3	--	35.2	--	31.8	--	41.2	--
14	28.4	--	24.1	--	39.7	--	32.7	--	26.0	--	44.7	--
15	21.6	--	16.4	--	30.6	--	23.4	--	16.4	--	34.5	--
10-15	35.6	--	34.4	24.2	38.6	22.0	40.8	--	38.7	26.6	43.4	24.0
16	34.7	--	26.4	23.1	56.2	--	38.5	--	29.3	24.5	65.7	--
17	24.0	--	17.0	16.5	26.7	--	27.7	--	18.3	17.9	30.4	--
18	17.0	--	15.0	14.3	18.3	--	18.4	--	16.5	15.9	20.8	--
19	11.0	--	12.8	12.4	18.3	--	11.5	--	14.1	13.6	20.8	--
16-19	22.8	51.4	16.4	15.1	42.5	16.8	38.5	51.4	18.1	16.5	50.4	16.8
EEC	31.0	34.3	34.7	26.6	40.4	28.3	40.8	36.6	38.3	29.1	46.3	30.7

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye except in Germany they include sorghum and mixed grains.

Our projected yield increases are greatest for wheat, barley, and especially corn. This is anticipated because the probable increase in corn technology is greatest and because as a relatively recent crop in the EEC, there is undoubtedly room for significant improvement in cultural practices.

We have not tried to project a price influence upon yield. This is because there is no historical base for such measures and, because it is likely that improvements in technology will be such that they will require continuous adjustments in practices regardless of price effects. Moreover, it is doubtful that most farmers in the EEC are at their optimum adjustment level at present prices. Therefore, we expect a continuous series of adjustments in the years ahead and have projected a rate at which they might occur. As time passes, the users of these projections should check the yield experience and adjust the output projections accordingly if yields should deviate markedly from our projections.

#### Grain Production in 1970 and 1975

The projections of grain production are merely straightforward calculations based upon projected acreage and yield for the two periods. Both are projected on the basis of normal growing weather in the years concerned, although both acreage and yield of grain in the EEC can be markedly affected by weather.

The projections of total grain production in the EEC show continued increases in output (Tables 32 and 33). About 66 million metric tons is the grain production projected for 1970, and 73 million metric tons for 1975. Wheat and other food grain production are projected to increase at a slower rate than the total, so that by 1975 they are expected to constitute slightly less than half of total grain production.

Feed grain production is projected to continue to increase at a rapid pace. As in the recent past, barley production is expected to make up an increasing portion of the total and so is corn. Both the absolute and relative production of oats and mixed grains is expected to continue to decline. One feed grain deserving attention in the future is grain sorghum, which is relatively new in the EEC. At present not enough data are available to enable us to make a reasonable projection of its potential, but in certain areas of the EEC production is increasing rapidly.

Our projections indicate that the relative importance of France in the total EEC grain production will continue to increase. We project that by 1975 France will produce nearly half of all the grain in the EEC, compared with about 36 percent in 1955. The importance of France in feed grain production is likely to be especially great since it appears that the largest relative gain will be in this area. Thus, we believe that by 1975 France may be producing 60 percent of the barley and over half of the corn produced in the EEC.

Table 32. EEC Grain Production and Projections to 1970

Region	(Production in 1000 metric tons)													
	Total	%	Wheat	%	Other Food Grains	%	Barley	%	Oats	%	Corn	%	Other Grains <sup>2</sup>	%
1	--	--	395	1.3	181	5.2	560	3.4	279	5.9	--	--	--	--
2	--	--	691	2.6	1018	29.2	1237	7.4	534	11.4	--	--	--	--
3	--	--	763	2.3	763	21.8	823	4.8	250	5.3	--	--	--	--
4	--	--	481	1.6	254	7.3	362	2.2	226	4.8	--	--	--	--
5	--	--	550	1.8	182	5.2	341	2.1	211	4.5	--	--	--	--
6	--	--	876	2.8	68	1.9	520	3.1	206	4.4	--	--	--	--
7	--	--	1724	5.6	316	9.0	1384	8.3	334	7.1	--	--	--	--
1 - 7	16857	25.4	5509	18.0	2782	79.7	5227	31.3	2040	43.4	56	0.6	1243	57.1
8	2112	3.2	686	2.2	--	--	734	4.4	370	7.9	--	--	322	14.8
9	2132	3.2	964	3.2	--	--	734	4.4	346	7.4	--	--	88	4.0
10	--	--	735	2.4	--	--	756	4.5	--	--	53	0.6	--	--
11	--	--	7621	25.0	--	--	5421	32.5	--	--	1115	12.6	--	--
12	--	--	2898	9.5	--	--	2081	12.5	--	--	419	4.7	--	--
13	--	--	1426	4.7	--	--	430	2.6	--	--	2432	37.3	--	--
14	--	--	1448	4.7	--	--	950	5.7	--	--	480	5.4	--	--
15	--	--	320	1.0	--	--	71	0.5	--	--	98	1.1	--	--
10-15	30646	46.0	14448	47.3	--	--	9709	58.3	1452	30.9	4597	51.7	440	20.2
16	--	--	3841	12.6	--	--	49	0.3	58	1.2	3387	38.1	--	--
17	--	--	2396	7.9	--	--	87	0.5	118	2.5	429	4.8	--	--
18	--	--	1998	6.5	--	--	89	0.5	261	5.6	425	4.8	--	--
19	--	--	700	2.3	--	--	48	0.3	54	1.1	--	--	--	--
16-19	14732	22.2	8935	29.3	709	20.3	273	1.6	490	10.4	4241	47.7	84	3.9
EEC	56479	100.0	30542	100.0	3491	100.0	16677	100.0	4698	100.0	8894	100.0	2177	100.0

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grains.

Table 33. EEC Grain Production and Projections to 1975

Region	Total	(Production in 1000 metric tons)												
		%	Wheat	%	Other Food Grains	%	Barley	%	Oats	%	Corn	%	Other Grains <sup>2</sup>	%
1	--	-	440	1.3	135	4.2	762	3.7	279	7.3	--	--	--	--
2	--	-	934	2.8	909	28.6	1691	8.1	544	14.2	--	--	--	--
3	--	-	766	2.3	751	23.6	1067	5.1	206	5.4	--	--	--	--
4	--	-	540	1.6	195	6.1	476	2.3	217	5.7	--	--	--	--
5	--	-	645	1.9	163	5.1	393	1.9	203	5.2	--	--	--	--
6	--	-	975	3.0	71	2.2	570	2.7	203	5.2	--	--	--	--
7	--	-	1829	5.6	220	6.9	1546	7.5	307	8.0	--	--	--	--
1 - 7	18226	25.0	6129	18.6	2444	76.9	6505	31.3	1959	51.0	72	0.7	1117	60.6
8	2230	3.0	729	2.2	--	-	858	4.1	334	8.7	--	--	309	16.8
9	2238	3.1	1024	3.1	--	-	849	4.1	286	7.4	--	--	79	4.3
10	--	-	810	2.4	--	-	975	4.7	--	-	60	0.6	--	--
11	--	-	8575	27.1	--	-	6538	31.5	--	-	1517	14.3	--	--
12	--	-	3069	9.1	--	-	2943	14.2	--	-	593	5.6	--	--
13	--	-	1514	4.5	--	-	572	2.8	--	-	2884	27.2	--	--
14	--	-	1429	4.2	--	-	1183	5.7	--	-	657	6.2	--	--
15	--	-	398	1.2	--	-	69	0.3	--	-	121	1.2	--	--
10-15	34945	47.8	15795	48.0	--	-	12280	59.2	798	20.8	5832	55.1	240	13.0
16	--	-	3914	11.9	--	-	45	0.3	42	1.1	3823	36.1	--	--
17	--	-	2664	8.1	--	-	99	0.4	110	2.9	415	3.9	--	--
18	--	-	2043	6.2	--	-	83	0.4	257	6.7	435	4.2	--	--
19	--	-	628	1.9	--	-	42	0.2	55	1.4	--	--	--	--
16-19	15487	21.1	9249	28.1	735	23.1	269	1.3	464	12.1	4673	44.2	97	5/3
EEC	73126	100.0	32926	100.0	3179	100.0	20761	100.0	3841	100.0	10577	100.0	1842	100.0

<sup>1</sup>Other food grains include rice in all countries except in Germany they include rice and rye.

<sup>2</sup>Other grains include sorghum, mixed grains and rye in all countries except in Germany they include sorghum and mixed grains.

Barring drastic changes in agricultural price policy in the EEC, it appears that the Common Market policies will have had relatively little impact on total area planted to grain in the EEC. Sharp reductions in grain prices, which appear unlikely, might slightly increase the rate at which some of the less productive land is converted to permanent pasture. Further substantial increases in grain prices which appear equally unlikely might make it profitable to convert grassland in France to grains. The price levels now proposed do not appear likely to bring either result.

Changes in relative grain prices can have a substantial effect upon the mix of grain produced (Table 34). Our projections are based upon the assumption that the more favorable feed grain-food grain ratio that prevails under the price policies now announced will be continued. Further improvements in the relative prices of feed grains might induce an even greater diversion of wheat acreage to barley and corn production than is now projected. Conversely, a return to the price relationships existing in several countries before the common grain policy might retard the switch to feed grain production and induce greater wheat production.

	1955	1964	1970	1975
Wheat	48.3	47.7	45.9	45.0
Other Food Grains <sup>1</sup>	9.3	7.1	5.3	4.3
Barley	11.7	18.4	25.0	28.4
Oats	16.2	11.8	7.1	5.3
Corn	9.1	10.0	13.4	14.5
Other Grains <sup>2</sup>	5.4	5.0	3.3	2.5
Total	100.0	100.0	100.0	100.0

<sup>1</sup> Other Food Grains include Rice in all countries except in Germany they include Rice and Rye.

<sup>2</sup> Other Grains include Sorghum, Mixed Grains and Rye in all countries except in Germany they include Sorghum and Mixed Grains.

#### Livestock Production in the EEC

The organization of livestock production is of particular interest in this study and those underlying it. Livestock production is widespread on farms in the EEC and is, by U.S. standards, relatively small scale. The ex-

ception to this is in poultry and egg production where a rapid expansion of large-scale commercial production is occurring on specialized farms much like those that dominate U.S. poultry and egg production. These farms use the most advanced technology based upon purchased feed and their production per pound of feed fed appears roughly that of similar production units in the United States.

The production of beef in the EEC is of special interest because of its potential demand for feed grains. So far beef production in the EEC is primarily a joint product of the dairy industry. Some highly specialized dairy areas are found in The Netherlands and Northwest France, but in general cattle which produce milk are found widely throughout the EEC. Typically, the farm has a few cows which are fed with the farm's permanent pasture and/or rotation forage and the home-produced grains. The calves are fed on-the-farm-produced milk or in some areas milk substitutes, and many of them are sold as veal. Those calves that are kept to older ages consume the farm-produced forage supplemented with home-grown grains, fodder beets, and sugar beet tops in some areas. These animals, together with the culled dairy cows, constitute the bulk of the beef eaten by EEC consumers.

As yet there is no appreciable development of specialized beef cow herds because the small fragmented farms prevent a farmer from making an adequate living producing beef calves on extensive pasture or range-type production units. One exception to this generalization occurs in the Central Mountain area of France (Region 14) where the Charolais and Limousine breeds are found. These are fine beef breeds of cattle and their numbers are growing in this area where farm size allows the development of extensive cattle grazing. It is worth noting that until recently the cattle on many farms in the EEC were triple purpose -- draft, milk, and beef. Now the trend is toward dual purpose -- milk and beef; and where the single purpose cow is growing in numbers, it is the milk cow.

Beef cattle feeding, as it has developed in the U.S., is not common. It is limited by the European preference for lean beef, and the scarcity of suitable feeder calves. Where such feeder operations do occur, they are usually based on dual-purpose calves or limited numbers of beef-type calves. Given the farm structure of the EEC, it appears likely that beef production will be tied closely to dairy production during the period with which we are concerned. Unless a source of low-cost feeder calves can be found, the development of an extensive feeder-cattle industry using purchased feed seems unlikely. There are some of these enterprises in Northern Italy using calves from the East Bloc countries and imported feed. It is uncertain, however, whether these calves will be forthcoming at reasonable prices if the growing consumer demand in the exporting countries is to be met.



Pork production in the EEC also is largely from general farms with relatively few animals fed largely on farm-produced feeds. These feeds are potatoes and barley in Germany, and barley and corn in France, The Netherlands, and Italy. In Italy, there also is substantial pork production in conjunction with cooperative cheese plants with the animals providing an outlet for the whey.

#### Recent Livestock Production Patterns in the EEC

Detailed historical estimates of livestock numbers and production are not readily available on a uniform basis throughout the EEC. Therefore, the base data used were for the year 1964, and even these are not available uniformly on a regional basis.

Table 35 shows the data for pork production by region in 1964. It shows that pork production is widely dispersed throughout the EEC. In general, sows are kept on many farms and, except in Northern Italy, the pigs are fed on the farms with few farms specializing in pork production.

West Germany is the major pork producer in the EEC, accounting for an estimated 42.8 percent of the total carcass weight produced in 1964. The major producing areas are Region 2 and Bavaria, with the production extensive in the north and south and less in the middle regions.<sup>10</sup>

France is the second most important pork-producing nation in the EEC. Here pork production is concentrated in the feed producing areas although the northwest is the most important producing region, followed by the Paris Basin and the Southwest.

This suggests that to some extent the Northwest is probably importing feed from the Paris Basin for use in pork production. Alternatively, there may be some shipment of feeder pigs to the Paris Basin area for fattening.

The third largest producer of pork in the EEC in 1964 was The Netherlands with about 11 percent of the total EEC production. When this is compared with their feed grain production it can be seen that pork production in both The Netherlands and Belgium is heavily dependent upon imported feed-stuffs.

Italy followed close behind The Netherlands in pork production. However, many more sows were required to produce about the same quantity of pork, indicating the relative levels of efficiency involved in the two areas. In Italy pork production is heavily concentrated in the north and central regions. Production methods between the regions vary considerably. In the

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<sup>10</sup>The German data show production by the region in which the animal is slaughtered. Thus, the number of sows is probably the best indicator of regional production patterns. In regions outside Germany, the production is shown for the region where it is produced, regardless of where slaughtered.

Table 35. EEC Pork Production for 1964

Region	No. of Sows on Farms 1,000	No. Slaughtered 1,000	Slaughter Weight Kg.	Total Pork Production 1,000 m.t.	%
1	181.6	2104.7	88.0	186.2	4.6
2	512.5	4511.8	90.0	404.0	10.1
3	295.2	4824.5	85.0	411.9	10.2
4	108.5	1432.4	86.0	123.2	3.1
5	63.2	1027.7	84.8	87.1	2.2
6	187.7	2168.0	89.0	192.9	4.8
7	343.8	3859.4	88.0	338.5	8.4
1-7	1692.5	19928.5	87.5	1743.8	43.4
8	337.0	5280.0	82.0	433.0	10.8
9	207.8	3054.6	79.5	243.0	6.0
10	55.7			63.9	1.6
11	223.1			256.1	6.4
12	398.5			457.4	11.4
13	181.1			207.9	5.2
14	173.1			198.7	4.9
15	16.6			19.1	0.5
10-15	1048.1			1203.1	29.9
16	155.9	1496.1			
17	174.3	1672.4			
18	56.2	539.2			
19	66.6	639.0			
16-19	453.0	4346.7	91.3	396.9	9.9
ECC	3738.4			4019.8	100.0

north the young pigs usually are moved to cheese factories where they are fed the by-products. They are fed to relatively heavy weights and used largely for sausage and salami. In the other regions of Italy the pigs are more often fed on the farms where they are born, but the slaughter weight is lower and they are consumed as hams and fresh pork.

In general, the slaughter weights are highest in Italy where the average is increased by the heavier weights used for salami. Slaughter weights are quite high in Germany and Belgium-Luxembourg but somewhat lower in The Netherlands and France. These differences reflect differences in consumer preferences for fat and the form in which the pork products are consumed.

#### Beef, Veal, and Milk Production

Since they are joint products; beef, veal and milk need to be viewed together. The data in this area are particularly poor, especially insofar as milk is concerned. Virtually no reliable estimates of on-farm consumption of whole milk for feed are available; and as a result, data regarding production levels are highly suspect. Moreover, the classification of animals varies from country to country.

Looking at cow numbers in the EEC, it appears that almost one-half of all cows were in France in 1964. (Table 36) They were heavily concentrated in the Northwest, Paris Basin, and Central Mountain areas, although substantial numbers were found in other regions also.

West Germany had the second largest cow herd in the EEC in 1964, about one-half the number in France. The heaviest concentration of cows in Germany was in Bavaria although every region of the country had significant numbers.

Italy was third in the EEC in cow numbers in 1964. They are heavily concentrated in the North and as one goes south in Italy the cow numbers decline sharply.

Both The Netherlands and Belgium-Luxembourg have large numbers of cows relative to their land area; for, as mentioned earlier, this area and Northwest France along the coastal area have a heavy concentration of specialized cattle-fodder farms.

Milk production in the EEC is distributed quite differently than cattle numbers because of major differences in breeds of animals and in the productivity of the animals. Milk production per cow is highest in The Netherlands reflecting a predominance of specialized dairy breeds and advanced production practices. Production per cow also is high in Northern Germany and Belgium-Luxembourg for much the same reason. Production per cow falls off rapidly as one moves south in Germany and is even lower in France and Italy. This low milk production per cow is due to the use of dual or triple purpose breeds in many areas and reflects a generally less advanced technology than is found, for instance in The Netherlands.

Table 36. EEC Veal, Beef and Milk Production for 1964

Region	No. of Cows 1,000 hd.	Calving Rate	No. of Calves Born 1,000	Calf Slaughter No. 1,000	Veal Carcass wt. in kg.	Total Veal Prod. 1,000 m.t.	%	Beef Slaughter No. 1,000	Beef Carcass wt. in kg.	Total Beef Prod. 1,000 m.t.	%	Milk Prod. Per Cow in kg.	Total Milk Prod. 1,000 m.t.	%
1	485.2	98.1	476.0	88.1	60.0	5.3	0.9	358.9	234.0	84.0	2.8	4082	1952.8	3.0
2	1029.2	98.1	1009.6	160.3	60.0	9.6	1.5	457.5	258.0	118.0	4.0	4120	4200.1	6.4
3	795.1	98.1	780.0	292.3	67.0	19.6	3.1	782.1	272.0	212.7	7.4	4102	3253.3	5.0
4	377.5	98.1	370.3	158.9	61.0	9.7	1.6	338.2	276.0	93.3	3.2	3491	1350.4	2.1
5	334.1	98.1	327.8	89.1	67.0	4.7	0.8	256.6	264.6	67.9	2.4	3508	1121.2	1.6
6	832.6	98.1	816.8	393.0	59.0	23.2	3.7	619.2	278.0	172.4	6.0	3052	2591.6	4.0
7	1960.4	98.1	1923.2	708.0	50.0	35.4	5.6	792.4	279.0	221.4	7.7	3249	6370.7	9.8
1 - 7	5814.1	98.1	5703.7	1889.7	57.0	107.5	17.2	3604.9	269.0	969.7	33.5	3582	20840.1	31.9
8	1666.0	103.0	1716.0	716.0	82.0	59.0	9.4	724.0	273.0	197.7	6.8	4128	6956.0	10.7
9	1058.0	92.0	973.4	276.0	79.2	22.0	3.5	724.0	269.0	194.8	6.7	3201	4004.0	6.1
10	869.2	76.7	666.9	422.7	64.8	27.4	4.4	316.2	255.6	80.9	2.8	2542	2202.6	3.4
11	2199.8	76.7	1687.9	1069.8	64.8	69.3	11.1	800.2	255.6	204.6	7.1	2554	5617.8	8.6
12	3923.7	76.7	3010.6	1908.2	64.8	123.6	19.7	1427.8	255.6	364.9	12.6	2195	8612.5	13.2
13	1503.7	76.7	1153.8	731.3	64.8	47.4	7.6	547.0	255.6	139.8	4.8	1469	2209.3	3.4
14	2827.9	76.7	2169.8	1375.2	64.8	89.1	14.2	1028.7	255.6	262.9	9.1	1984	5609.5	8.6
15	147.7	76.7	113.3	71.8	64.8	4.7	0.8	53.7	255.6	13.7	0.5	1681	248.3	0.3
10-15	11472.0	76.7	8802.3	5579.0	64.8	361.5	57.8	4173.6	255.6	1066.8	36.9	2136	24500.0	37.5
16	2831.0	55.0	1557.0	497.3	96.0	47.7	7.6	1467.6	200.0	293.5	10.2	--	--	--
17	770.0	55.0	423.5	135.2	96.0	13.0	2.1	399.2	200.0	79.8	2.8	--	--	--
18	592.7	55.0	326.0	104.1	96.0	10.0	1.6	307.3	200.0	61.5	2.1	--	--	--
19	290.0	55.0	159.5	50.9	96.0	4.9	0.8	150.3	200.0	30.1	1.0	--	--	--
16-19	4483.7	55.0	2466.0	787.5	96.0	75.6	12.1	2324.4	200.0	464.9	16.1	2001	8970.9	13.8
EEC	24483.8	80.4	19641.4	9248.2	67.6	625.6	100.0	11550.9	250.5	2893.9	100.0	2642	65271.0	100.0

As a result of these productivity differences, France produces only 37 percent of the milk in the EEC although they had nearly half the cows in 1964. Conversely, Germany, The Netherlands, and Belgium-Luxembourg ranked higher in milk production than in cow numbers. Italy produced only 14 percent of the milk in the EEC in 1964, only slightly more than The Netherlands despite having two and one-half times as many cows.

Veal and beef production in the EEC varies depending upon the relative mix of slaughter. For instance, France produced 59 percent of the veal and 39 percent of the beef in the EEC in 1964. Germany produced a markedly different mix and accounted for 16 percent of the veal and 32 percent of the beef produced in the EEC in 1964. Thus, the number of calves slaughtered in France exceeded the number of beef slaughtered, whereas in Germany the beef slaughter was about twice the calf slaughter. In both The Netherlands and Belgium-Luxembourg beef slaughter slightly exceeded calf slaughter and in Italy beef slaughter was almost three times calf slaughter.

In general, veal carcass weights appear to be highest in Italy and lowest in Germany reflecting feeding methods and consumer preferences. Beef carcass weights appear highest in France as a result of a higher proportion of beef or dual purpose breeds. Beef carcass weights are relatively low in Italy in line with consumer preferences, and they are relatively low in the major dairy area of the EEC reflecting the fact that most of the beef comes from dairy animals.

France produced about 39 percent of the beef in the EEC in 1964 and Germany was second with 32 percent. Italy was third in beef production. In these countries beef production was heaviest in the major milk-producing regions, although in France the Central Mountain Region produces a relatively higher proportion of beef than milk because of the existence of specialized beef animals.

#### Poultry Meat and Egg Production

Reliable data on poultry meat and egg production are available only at the national level (Table 37). France is the largest producer of poultry meat and also a large producer of eggs. German egg production is high but in relation to utilization is at the lowest level of self-sufficiency of any country in the EEC. The principal surplus producer within the area is The Netherlands.

Rapid advances in methods of poultry meat production have been made so that most production is from large commercial units. Locational specialization of poultry meat production has occurred with major concentrations in the South and East of The Netherlands and into the Ruhr Valley of Germany in Northwestern France and Northern Italy. Location in The Netherlands-Ruhr area and Northern Italy seems to be largely a result of access to feed

Table 37. EEC Poultry Meat and Egg Production in 1964.

Region	Poultry Meat (1,000 metric tons)	%	Eggs (1,000 metric tons)	%
1				
2				
3				
4				
5				
6				
7				
1-7	146	11.7	628	29.6
8	128	10.2	290	13.7
9	89	7.1	182	8.6
10				
11				
12				
13				
14				
15				
10-15	550	43.9	560	26.4
16				
17				
18				
19				
16-19	340	27.1	458	21.7
EEC	1253	100.0	2118	100.0

through imports or domestic production while the location in France appears to have been influenced by vertical integration and labor availability. This pattern developed in France despite a transportation disadvantage both on feed and poultry meat.

While egg production has become increasingly specialized on larger farms, this change has not progressed as far as in poultry meat. As a corollary, locational specialization is much less complete.

In total the level of self-sufficiency for poultry meat in 1964 was 88.3 percent and 99.1 percent for eggs. Germany was the principal importer of both items.

#### Projections for 1970 and 1975

Due to the lack of adequate historical data the structural relationships in the EEC livestock industry cannot be determined. Therefore, our projections are based upon evaluation of trends taking into account the results of linear programming and farm budgeting studies. Since the structural relationships are changing, even an accurate measurement of past relationships is insufficient to project future trends.

The data for the recent past make it clear that there is room for vast improvement in livestock production methods on many EEC farms. Changes are occurring, although they are slow in many cases. But, the smallest farms will continue in their small-scale livestock production as long as they are in business, for it is only by raising livestock that they can employ their family labor productively.

#### Pork Production

Mention has already been made of the efficiency of pork production in The Netherlands and Belgium. These countries have traditionally been exporters of pork and their competitive position in the EEC will be improved by the move to a Common Market. Thus, it is expected that the Common Market for farm products will intensify competition among livestock producers in the EEC and tend to equalize prices at or near the levels that will bring forth production from the most efficient producers in the Community.

The common price policy is likely to result in absolute price increases over recent years for pork in The Netherlands and Belgium and in absolute price reductions from recent levels for most other regions. The hog-barley price ratio is expected to increase slightly in Germany from 1964 to 1970 and to decline elsewhere in the Community. The decline is likely to be modest in The Netherlands and Italy and relatively large in Belgium and France.

The greatest increase in pork production is projected for The Netherlands, where sow numbers are projected to increase and slaughter weights are projected to rise slightly. Significant increases in sow numbers are also

Table 38. EEC Pork Production Projections for 1970

Region	No. of Sows on Farms 1,000	No. Slaughtered 1,000	Slaughter Weight Kg.	Total Pork Production 1,000 m.t.	%
1	221.5	3144.6	84.8	258.1	5.1
2	583.5	6619.9	87.1	559.7	11.1
3	335.7	5734.7	81.7	510.2	10.1
4	127.7	1617.5	83.9	151.1	3.0
5	72.8	3020.3	78.8	102.9	2.1
6	224.7	2716.2	84.2	241.2	4.8
7	406.5	5060.9	85.7	430.9	8.5
1-7	1972.4	27914.1	82.8	2254.1	44.7
8	638.0	7018.0	82.0	575.0	11.4
9	284.0	3651.0	77.1	281.0	5.6
10	55.0			73.5	1.5
11	205.0			273.9	5.4
12	450.0			601.2	11.9
13	215.0			287.2	5.7
14	140.0			187.0	3.7
15	13.0			17.4	0.3
10-15	1078.0			1440.2	28.5
16	190.6	1744.7			
17	198.0	1812.6			
18	64.6	591.3			
19	76.3	697.9			
16-19	529.5	4846.5	102.2	495.3	9.8
ECC	4501.9	---	---	5045.6	100.0



Table 38 cont. EEC Pork Production Projections for 1975

Region	No. of Sows on Farms 1,000	No. Slaughtered 1,000	Slaughter Weight Kg.	Total Pork Production 1,000 m.t.	%
1	254.9	3953.0	83.0	304.5	5.4
2	641.6	8349.7	85.9	671.7	11.9
3	373.2	6419.3	80.2	583.1	10.3
4	142.8	1768.6	83.2	171.8	3.1
5	80.6	3682.1	75.1	116.2	2.1
6	258.1	3137.5	81.5	277.4	4.9
7	463.5	6016.1	85.5	501.8	8.9
1-7	2214.7	33326.3	80.8	2626.5	46.6
8	662.0	7475.0	80.0	598.0	10.6
9	288.0	3897.0	77.1	300.0	5.3
10	55.0			75.0	1.3
11	200.0			273.6	4.9
12	500.0			684.3	12.1
13	240.0			328.3	5.8
14	130.0			177.8	3.2
15	8.0			11.0	0.2
10-15	1113.0			1550.0	27.5
16	208.0	2009.1			
17	216.7	2092.9			
18	69.9	675.3			
19	83.2	803.6			
16-19	577.8	5580.9	101.1	564.3	10.0
EEC	4855.5			5638.8	100.0

projected for Germany by 1970, with modest increases for France, Italy, and Belgium. However, productivity per sow is expected to continue to increase as a result of improved production and feeding practices, so that both German and French pork production is expected to increase rapidly. In France, where linear programming indicates that pork production is highly profitable, a major determinant of the rate of expansion is likely to be the availability of capital to farmers.

In total, EEC pork production is projected to increase by almost 25 percent between 1964 and 1970. (Table 38) This projection is based upon an assumption of generally lower prices for most producers and might be subject to significant upward revision if policy action is taken to maintain pork prices at recent levels.

#### Milk, Beef and Veal Production

Milk prices received by farmers throughout the EEC have been rising throughout the 1960's and the shift to a common price policy will increase them above the 1964 level in virtually every region in the EEC.<sup>11</sup> Of equal or greater importance is the fact that beef prices have been rising throughout the early 1960's and, except in Italy, will rise even further due to demand pressures and the announced common price policy. In Italy the rise from 1960 to 1965 was very large so the 1965 to 1970 changes are close to the target price. Calf prices also have been rising in recent years, but generally not as fast as beef prices, nor do they appear likely to rise that rapidly under the new common price policy.

These price shifts are likely to have the following results: 1) they should encourage the maintenance or building up of the basic cow numbers in most regions of the EEC, thus encouraging the continuation of forage production and holding down grain acreage; 2) they should encourage a higher proportion of calves being raised for beef, and the feeding of both calves and beef to somewhat heavier weights.

Our projections are consistent with these shifts. (Table 39) Cow numbers are projected to increase from 1964 to 1970, with increases in almost every region. Also, milk production per cow appears likely to continue to increase, especially in those areas where it is now lowest. As a result, a very substantial increase in milk production is projected by 1970 in virtually every country even though some dairy product surpluses were already ap-

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<sup>11</sup>U.S. readers should recognize that milk prices in the EEC will not be high by U.S. standards under the new common price policy. For instance, in France they will be about \$4.25 per cwt in 1970. Given feed grain prices, which are well above U.S. levels and low output per cow, it is easy to see why cow rations contain much more forage and less grain than in the U.S.

Table 39. EEC Veal, Beef and Milk Projections for 1970

Region	Veal				Beef				Milk					
	No. of Cows 1,000 hd.	Calving Rate	No. of Calves Born 1,000	Calf Slaughter No. 1,000	Veal Carcass wt. in kg.	Total Veal Prod. 1,000 m.t.	%	Beef Slaughter No. 1,000	Beef Carcass wt. in kg.	Total Beef Prod. 1,000 m.t.	%	Milk Prod. Per Cow in kg.	Total Milk Prod. 1,000 m.t.	%
1	536.5	100.2	537.6	83.0	74.0	6.1	0.9	435.6	239.0	104.1	2.9	4433	2378.3	3.2
2	1071.4	100.2	1073.5	129.0	76.0	9.8	1.5	516.1	268.0	138.3	3.8	4422	4737.7	6.3
3	802.2	100.2	803.8	245.9	85.0	20.9	3.1	871.9	280.0	244.1	6.7	4272	3427.0	4.5
4	364.4	100.2	365.1	125.1	73.0	9.2	1.4	338.2	289.0	97.7	2.7	3938	1435.0	1.9
5	302.6	100.2	303.3	55.0	64.0	3.5	0.5	249.0	282.0	70.3	1.9	3731	1129.0	1.5
6	807.8	100.2	809.4	321.5	69.0	22.2	3.2	624.2	286.0	178.5	4.8	3433	2773.2	3.6
7	2065.9	100.2	2070.0	717.1	57.0	40.9	6.0	912.7	290.0	264.7	7.2	3550	7334.0	9.7
1-7	5950.8	100.2	5962.7	1676.6	67.0	112.6	16.6	3947.7	278.0	1097.7	30.0	3901	23214.2	30.7
8	1872.8	103.0	1929.0	631.0	94.0	59.0	8.7	1073.0	280.0	300.0	8.2	4220	7900.0	10.5
9	1107.0	95.7	1059.4	290.0	85.5	25.0	3.7	773.0	274.7	212.0	5.8	3928	4347.0	5.8
10	950.0	90.0	855.0	382.2	79.0	30.2	4.4	400.0	290.0	116.0	3.2	2840	2698.0	3.6
11	2425.0	90.0	2182.5	975.6	79.0	77.1	11.3	1021.2	290.0	297.1	8.1	2695	6535.3	8.7
12	4400.0	90.0	3960.0	1770.1	79.0	139.8	20.6	1852.9	290.0	539.3	14.7	2435	10714.0	14.2
13	1600.0	90.0	1440.0	643.7	79.0	50.9	7.5	673.8	290.0	195.4	5.4	1758	2812.8	3.7
14	3060.0	90.0	2754.0	1231.0	79.0	97.2	14.3	1288.8	290.0	373.8	10.2	2297	7028.8	9.3
15	150.0	90.0	135.0	60.3	79.0	4.8	0.7	63.3	290.0	18.4	0.5	1758	263.7	0.3
10-15	12585.0	90.0	11326.5	5062.9	79.0	400.0	58.8	5300.0	290.0	1540.0	42.1	2388	30052.6	39.8
16	3074.3	70.0	2152.0	561.9	96.0	53.9	7.9	1584.3	209.0	331.2	9.0	2526	7631.1	10.1
17	795.8	70.0	557.1	145.5	96.0	14.0	2.0	410.1	209.0	85.7	2.3	1180	960.2	1.3
18	882.7	70.0	407.9	106.5	96.0	10.2	1.5	300.3	209.0	62.8	1.7	(1486)	(1340.8)	(1.8)
19	284.2	70.0	198.9	51.9	96.0	5.0	0.8	146.4	209.0	30.6	0.9			
16-19	4737.0	70.0	3315.9	865.8	96.0	83.1	12.2	2441.1	209.0	510.3	13.9	2097	9932.1	13.2
EEC	26252.6	89.9	23593.5	8526.3	79.6	679.7	100.0	13534.8	270.2	3660.0	100.0	3026	75445.9	100.0

Table 40. EEC Veal, Beef and Milk Production Projections for 1975

Region	No. of Cows 1,000 hd.	Calving Rate	No. of Calves Born 1,000	Calf Slaughter No. 1,000	Veal Carcass wt. in kg.	Total Veal Prod. 1,000 m. t.	%	Beef Slaughter No. 1,000	Beef Carcass wt. in kg.	Total Beef Prod. 1,000 m. t.	%	Milk Prod. Per Cow in kg.	Total Milk Prod. 1,000 m. t.	%
1	565.7	100.8	570.2	77.0	86.0	6.6	0.9	473.3	243.0	115.0	2.9	4699	2658.2	3.1
2	1109.0	100.8	1117.9	114.3	92.0	10.5	1.5	557.8	276.0	154.0	3.8	4687	5197.9	6.1
3	808.2	100.8	814.7	203.9	105.0	21.4	3.0	928.8	290.0	269.4	6.7	4539	3668.4	4.3
4	347.6	100.8	350.4	106.3	87.0	9.2	1.3	355.7	301.0	107.1	2.7	4436	1542.0	1.8
5	270.3	100.8	272.4	37.6	74.0	2.8	0.4	236.8	298.0	70.6	1.8	4220	1140.7	1.4
6	790.7	100.8	797.0	269.9	79.0	21.3	3.0	660.7	295.0	194.9	4.8	3905	3087.7	3.6
7	2197.2	100.8	2214.8	696.6	63.0	43.9	6.1	1044.9	301.0	314.5	7.8	4055	8909.6	10.4
1 - 7	6088.7	100.8	6137.4	1505.6	77.0	115.7	16.2	4258.0	288.0	1225.5	30.5	4304	26205.6	30.7
8	1930.0	103.0	1987.9	562.0	103.0	58.0	8.1	1194.0	286.0	342.0	8.5	4360	8415.0	9.9
9	1116.0	95.7	1068.0	280.0	92.5	26.0	3.7	802.0	280.0	224.0	5.6	4073	4545.0	5.3
10	1035.0	90.0	931.5	385.4	85.0	32.8	4.6	433.8	296.0	128.4	3.2	2945	3048.1	3.6
11	2650.0	90.0	2385.0	986.9	85.0	83.9	11.8	1110.7	296.0	328.8	8.2	2754	7278.1	8.5
12	4850.0	90.0	4265.0	1806.1	85.0	154.2	21.7	2032.8	296.0	601.7	15.0	2587	12546.9	14.7
13	1750.0	90.0	1575.0	651.7	85.0	55.6	7.8	733.5	296.0	217.9	5.4	1915	3351.2	3.9
14	3260.0	90.0	2934.0	1214.0	85.0	103.7	14.5	1366.4	296.0	404.6	11.1	2490	8117.4	9.5
15	150.0	90.0	135.0	55.9	85.0	4.8	0.7	62.8	296.0	18.6	0.5	1771	265.6	0.4
10-15	13695.0	90.0	12325.5	5100.0	85.0	435.0	61.1	5740.0	296.0	1700.0	42.4	2527	34607.3	40.6
16	3250.1	80.0	2601.2	571.4	86.0	49.1	6.9	1485.3	223.0	331.2	8.3	2602	8816.2	10.3
17	885.5	80.0	708.7	155.7	86.0	13.4	1.9	404.6	223.0	90.2	2.2	1357	1100.8	1.3
18	660.3	80.0	528.4	116.2	86.0	10.0	1.4	301.7	223.0	67.3	1.7	(1687)	(1548.2)	(1.9)
19	322.4	80.0	258.0	56.6	86.0	4.9	0.7	147.4	223.0	32.9	0.8			
16-19	5118.3	80.0	4096.3	899.9	86.0	77.4	10.9	2339.0	223.0	521.6	13.0	2240	11465.2	13.5
EEC	27948.0	91.4	25615.1	8347.5	85.1	712.1	100.0	14433.0	278.0	4013.1	100.0	3050	85238.1	100.0

pearing in some EEC countries by the end of 1966.

Much the same trends are expected to continue to 1975 except that we project a slowing of the rate of increase in cow numbers in most regions and in the rate of increase in milk production per cow. (Table 40) The major exception to this is in Northern Italy where cow numbers are projected to continue to increase rapidly through 1975.

Milk production per cow is projected to increase through 1975, but the rate of increase will be lower in those regions already having a high production per cow. In southern France and Italy the output per cow should continue to increase as the gap between productivity in this area and the others slowly closes.

By 1975 milk production in the EEC is projected to about 90 million tons, up almost 50 percent from the level of 1964. The largest increases are projected for Germany, France, and Italy so that the relative importance of The Netherlands and Belgium in milk production will decline.

Although the number of calves born is expected to increase, it appears likely that a lower proportion of them will be slaughtered for veal and more kept for herd replacement and beef. Thus, veal production is projected to decline slightly as the heavier slaughter weights just about offset the decline in calf slaughter.

These same forces are expected to persist through 1975, so that projected veal production for that year is only slightly higher than in 1964 and 1970. It is expected, however, that calf slaughter weights will remain stable in Italy from 1970 to 1975, with a slower rate of increase than from 1964 to 1970 elsewhere in the Community.

Conversely, both the number of cattle slaughtered as beef and the slaughter weight are projected to increase throughout the EEC by 1970. As a result, total beef production in 1970 is projected to increase by 20 percent over 1964 levels.

While some shifts are occurring, it appears unlikely that a major specialized beef cow herd will be developed in the EEC by 1975. Outside the Central Mountain area of France it is difficult to find an area where the farm size and growing conditions would make this a profitable alternative for most farmers. Thus, we expect beef production to still be tied largely to dairying until 1975 and policy actions that affect one will affect the other. It is difficult to anticipate whether a significant number of specialized beef-feeding farms depending upon purchased feed will develop. The relative profitability of feeding to heavier weights suggests that such developments are possible, for most small farms do not produce enough grain to feed their cows and to grain feed their calves to heavier weights.

The projected declining rate of increase in the number of cows, coupled with some increase in beef slaughter weights, means that total beef produc-

tion will not increase as rapidly between 1970 and 1975 as from 1964 to 1970. Even so, total beef production is projected at just over 4 million tons (carcass weight) in 1975, up about 10 percent from the figure projected for 1970.

#### Poultry Meat and Egg Production

Large increases in production of both poultry meat and eggs are projected during the next decade. (Table 41) A 46 percent increase in poultry meat production is projected between 1964 and 1970 for the EEC and a further 31 percent increase is estimated between 1970 and 1975. Germany leads the production increase with a jump of 137 percent by 1970 and a further increase of 71 percent by 1975 due primarily to lower grain prices causing the least severe decline in the feed grain-poultry meat ratio in that country. The smallest production increases occur in Italy and France by 1970 with 26 percent and 33 percent respectively. In the 1970-1975 period, however, Italian production increases by 32 percent; and production increases in Belgium-Luxembourg, France, and The Netherlands level off at rates of 14 percent, 17 percent and 20 percent respectively.

Egg production increases in the Community at a lower rate than does poultry meat production -- 22 percent between 1964 and 1970 leveling off at 13 percent between 1970 and 1975. Germany again shows the largest increase with 41 percent and 14 percent in the two time periods respectively, at least in part for the same reasons as mentioned for poultry meat. The smallest increases are expected in the Benelux countries.

#### Summary

Major forces of change are at work in EEC agriculture and they will be intensified by the competition arising from the move to a common agricultural price policy. As a result we project total farm output in the EEC to continue to rise in the years ahead.

It does not appear likely that the shifts in grain prices will bring forth substantially larger grain plantings in the EEC. The profitability of cattle will encourage the continuation of large acreage in permanent pasture and annual forage. Moreover, a substantial shift in acreage to feed grains seems likely, together with a shift from oats to barley and corn within the feed grains.

Livestock numbers are projected to continue to increase to 1975. Substantial increases in milk, beef, pork, and poultry production are projected even though declining poultry and pork prices appear likely. It appears that milk, veal and beef production is likely to continue to be tied together, although the slow growth of specialized beef feeding operations may occur.

The dominant factor in the change in EEC agriculture until 1975 appears to be farm restructuring and technical change. These are likely to be so



significant that they will overwhelm the changes in price policy that are occurring. Thus, price changes play only a minor role in determining output projections; prices appear to have had a minor role in past changes, and, under the new system, they are likely to be no more important.





## Chapter 5

### Supply-Demand Balances and Trade Patterns

Previous chapters have described the recent past trends in production and consumption in the EEC and have projected their levels to 1970 and 1975 given certain assumptions. In this section the supply-demand balance will be examined for 1964, 1970, and 1975. This will serve to indicate some of the probable agricultural trade flows within the EEC and some of the potential trade opportunities for third countries. It also will begin to suggest some of the pressures that may arise under the new common price policies.

The discussion starts with livestock products because, in a sense, these are key to the future of EEC agricultural trends both on the consumption and production side. Livestock and poultry products not only are major items in themselves, but also are the determinants of the demand for feed grains.

#### Beef-Veal Balances

In our analysis of supply-demand balances we have considered beef and veal as a single product because they are close substitutes in consumption and because they substitute in part in production. The mix between the two can be altered by feeding to heavier weights, and it appears that the incentives are such that this is likely to occur.

In 1964 the EEC as a whole had a deficit in beef and veal production, and consumption exceeded internal production by about 10 percent (Table 42). The major deficit areas were Italy and Germany with the production in The Netherlands and France slightly exceeding their domestic consumption. Thus, beef and veal imports were significant in 1964, especially in Germany and Italy, and they came primarily from countries outside the EEC.

The trend toward an increasing deficit in beef and veal in the EEC appears likely to continue through 1975. Indeed, our projections show it nearly doubling between 1970 and 1975 despite marked increases in production projected for 1975 in every country (Table 42). The expected deficit in Italy appears likely to continue to increase, and so do those of Germany and Belgium. The current surplus production in The Netherlands is projected to turn to a slight deficit by 1975, leaving France as the only surplus producer of beef and veal in the EEC by that time. Even though the French surplus is projected to continue to rise, it appears likely to fall increasingly short of consumer demand in the EEC.

There are three ways in which the growing import needs projected for 1970 and 1975 can be met. These are: 1) Increased production within the EEC, 2) Reduced beef and veal consumption due to rising prices, and 3) Rising imports of beef and veal from third countries. It is quite possible that all three will operate to bring an equilibrium.

Several things appear quite likely as one looks at this balance and the prospect of a growing EEC deficit in beef and veal. First, the prices re-

Table 42. Supply-Demand Balances for Beef and Veal 1964 and Projections to 1970 and 1975 in the EEC. (thousand metric tons)					
	+ -	Veal Production	Beef Production	Veal-Beef Production	Veal-Beef Consumption
1964					
Total Germany	-142.8	107.5	969.7	1,077.2	1,220.0
Netherlands	+28.7	59.0	197.7	256.7	228.0
Belgium-Luxembourg	-53.2	22.0	194.8	216.8	270.0
Total France	+32.9	361.5	1,066.8	1,428.3	1,395.4
Total Italy	-298.4	75.6	464.9	540.5	838.9
TOTAL EEC	-432.8	625.6	2,893.9	3,519.5	3,952.3
1970					
Total Germany	-162.7	112.6	1,097.7	1,210.3	1,373.0
Netherlands	+61.0	59.0	300.0	359.0	298.0
Belgium-Luxembourg	-83.0	25.0	212.0	237.0	320.0
Total France	+159.9	400.0	1,540.0	1,940.0	1,780.1
Total Italy	-633.9	83.1	510.3	593.4	1,227.3
TOTAL EEC	-658.7	679.7	3,660.0	4,339.7	4,998.4
1975					
Total Germany	-288.8	115.7	1,225.5	1,341.2	1,630.0
Netherlands	+21.0	58.0	342.0	400.0	379.0
Belgium-Luxembourg	-134.0	26.0	224.0	250.0	384.0
Total France	+179.8	435.0	1,700.0	2,135.0	1,955.2
Total Italy	-982.7	77.4	521.6	599.0	1,649.7
TOTAL EEC	-1050.7	712.1	4,013.1	4,725.2	5,997.9

ceived by farmers for these products are likely to remain at or above the target prices, especially in Italy and Germany. This will provide the incentives we have discussed earlier for expansion of the cow herd and feeding to heavier weights. Second, the shift in relative prices at the consumer levels that we have assumed -- a rise in beef and veal relative to pork and poultry -- seems reasonable. Thus, only if the relative rise is greater than we have projected can we expect a market decline in the consumer demand for beef and veal.

These projections of growing import needs for beef and veal are in sharp contrast to the optimism of some EEC officials that the EEC may approach self-sufficiency in beef and veal by the mid-1970's. The only way this appears likely to us is by the large-scale importation of feeder calves from other countries to be fed and slaughtered within the EEC. This alternative will be discussed later in conjunction with the discussion of the feed grain situation.

Table 43. Supply-Demand Balance for Milk 1964 and Projections to 1970 and 1975 in the EEC (thousand metric tons)			
	Milk Production	Milk Consumption	+ -
1964			
Total Germany	20,840.1	19,189.0	+16,511.1
Netherlands	6,956.0	5,896.0	+1,060.0
Belgium-Luxembourg	4,004.0	4,160.0	-156.0
Total France	24,500.0	18,553.0	+5,947.0
Total Italy	8,970.9	8,985.3	-14.4
TOTAL EEC	65,271.0	56,783.3	+8,487.7
1970			
Total Germany	23,214.2	22,139.0	+1,075.2
Netherlands	7,900.0	4,247.7	+3,652.3
Belgium-Luxembourg	4,347.0	4,070.0	+277.0
Total France	30,052.6	22,373.7	+7,678.9
Total Italy	9,932.1	10,440.2	-508.1
TOTAL EEC	75,445.9	63,270.6	+12,175.3
1975			
Total Germany	26,205.6	23,632.0	+2,573.6
Netherlands	8,415.0	4,746.7	+3,668.3
Belgium-Luxembourg	4,545.0	4,326.7	+218.3
Total France	34,607.3	24,985.1	+9,622.2
Total Italy	11,465.2	11,866.8	-401.6
TOTAL EEC	85,238.1	69,557.3	+15,680.8

The belief that the EEC soon will become self-sufficient in beef and veal fails to recognize two important factors. First, beef production in the EEC is, and is likely to remain, closely tied to milk production for there simply does not appear to be the necessary farm size and structure in the EEC to develop a significant specialized beef-cow herd. Second, there seems to be a failure to recognize that feeding a population on an increasing diet of red meats requires a much greater input of agricultural resources per calorie or kilogram of food consumed than does a diet heavily weighted toward starches. There appears little doubt that the rapidly increasing income levels will cause consumers to demand the higher quality diet, but there is a serious doubt as to whether the EEC agricultural resources can supply all of it.

#### Dairy Product Balances

The beef-veal balance depends partially upon the dairy product balance

for they are joint products. Dairy product balances are difficult to judge because different dairy products require different quantities of milk; and, moreover, many manufactured dairy products are joint products for which the exact conversion ratios are not known. In addition, no estimates are available regarding the milk used on farms so this element represents a large unknown.

The balance between human consumption and total production of dairy products in the EEC in 1964 indicates a substantial supply in excess of human consumption needs. (Table 43) Part of this was exported in the form of cheese, especially from The Netherlands, Italy, and France. There also were some exports of milk and cream in 1964, although not nearly enough to account for the difference between production and human consumption. Thus, large quantities of milk must have been fed on farms in 1964.

Looking to 1970 it appears that the excess of milk production over human consumption in the EEC will grow by about one-third from 1964 levels. The increases are very large in Germany, France and The Netherlands; at the same time, Belgium-Luxembourg and Italy may have net deficits in dairy products. This suggests that there may be some trade in manufactured products within the EEC with Italy as the main importer and France, Germany, and The Netherlands as exporters. Even so, the net excess over human consumption appears likely to rise and the EEC appears likely to become a competitor in the world dairy products market.

This trend appears likely to be intensified by 1975. Our projections are that the net excess of milk supply over human consumption requirements will continue to rise rapidly, especially in France. By 1975 Italy will be close to meeting its domestic human consumption needs, and Belgium-Luxembourg is the only region with a deficit projected. The quantity of milk used on farms is expected to continue to decline over time with the sale of more mixed feeds for use in calf, hog, and poultry rations. This will release additional supplies for human consumption.

Thus, by 1975 it appears that the EEC may be in a significant surplus position in manufactured dairy products. The exact nature and magnitude of this surplus is impossible to predict, but it appears that the outlook is very dim for third-country exports of dairy products to the EEC after 1970. Indeed, the EEC may become a significant exporter of some manufactured dairy products in the 1970's, putting further pressures upon the world market for these products.

The potential milk surplus and the probable beef and veal deficit in the EEC highlights the dilemma of EEC policy makers. If they take action to discourage excess milk production, they are likely to increase their deficit of beef and veal. Conversely, if they take action to increase their domestic cow herd in order to reduce the beef and veal deficit, they will aggravate a

Table 44. Supply-Demand Balance for Pork 1964 and Projections to 1970 and 1975 in the EEC. (thousand metric tons)			
	Pork Production	Pork Consumption	+ -
1964			
Total Germany	1,743.8	2,000.0	-256.2
Netherlands	433.0	312.0	+121.0
Belgium-Luxembourg	243.0	203.0	+40.0
Total France	1,203.1	1,177.3	+25.8
Total Italy	396.9	404.1	-7.2
TOTAL EEC	4,019.8	4,096.4	-76.6
1970			
Total Germany	2,254.1	2,273.0	-18.9
Netherlands	575.0	404.0	+171.0
Belgium-Luxembourg	281.0	229.0	+52.0
Total France	1,440.2	1,419.0	+21.2
Total Italy	495.3	504.7	-9.4
TOTAL EEC	5,045.6	4,829.7	+215.9
1975			
Total Germany	2,626.5	2,545.0	+81.5
Netherlands	598.0	489.0	+109.0
Belgium-Luxembourg	300.0	260.0	+40.0
Total France	1,550.0	1,543.1	+6.9
Total Italy	564.3	577.4	-13.1
TOTAL EEC	5,638.8	5,414.5	+224.3

potentially troublesome milk surplus. The only way to avoid this problem would be to import calves for feeding, which presupposes large numbers of calves available from nearby countries at relatively low prices.

Two possible sources of feeder calves might be available to the EEC. One is Ireland which has ideal conditions for the production of feeding-weight calves. The second is the East Bloc socialist countries immediately bordering the EEC which have been exporting live calves to the EEC in recent years, especially to Italy. However, there is a question as to whether these countries can produce enough calves to meet their internal demands for higher levels of consumption and still provide any significant numbers for export. The export potential of these areas deserves attention, for the direction that is followed in this regard has important implications for feed-grain demand in the EEC.

If the EEC meets its probable beef and veal deficit by importing calves to be finished in the EEC or by allowing relative price changes that shift

consumption from beef and veal to pork or poultry, the demand for feed grains will be increased. Either alternative would increase the proportion of grain-fed livestock in the EEC. On the other hand, if their consumption needs are met by imports of carcass beef and veal, the demand for feed grains would not be increased, but the world market for beef would be strengthened.

#### Pork Balance

In 1964 the EEC as a whole was about self-sufficient in pork production (Table 44). Germany had a large deficit, which was about balanced by surpluses in all of the other countries. The Netherlands was a major producer for export and was a major supplier of the German market.

Our projections suggest that by 1970 this situation will be altered. It appears likely that Germany will become nearly self-sufficient in pork, and Italy may shift to a modest deficit position. The surplus of production over domestic consumption needs in The Netherlands and France is expected to remain or increase while those in Belgium-Luxembourg may increase slightly. In total, the EEC appears likely to become more than self-sufficient in pork by 1970. The import requirements of Germany will have been sharply reduced, leaving more of the Dutch production for exports outside the EEC.

The same trends are projected to continue to 1975. As a result the supply available for export is expected to grow and the internal trade likely to decline to relatively low levels.

These trends are consistent with our projected decline in pork prices to levels close to that required to keep efficient producers in the business. If the EEC should attempt to forestall these declines in pork prices by market intervention, they are likely to: 1) encourage even greater output than we have projected, 2) reduce pork consumption below projected levels, and 3) acquire substantial program costs in export subsidies.

In any case, traditional third country suppliers of pork to the EEC face the prospect of losing this market. Price pressures within the EEC are likely to be such to bring political demands for even greater protection for internal producers than now afforded by the EEC regulations. Indeed, outside producers are likely to face additional competition from EEC producers (aided by export subsidies) in non-EEC markets as well as the loss of the EEC market.

#### Poultry Products

One of the major structural changes occurring in EEC agriculture is the growth of "industrial" broiler and egg production at the expense of the traditional farm flock. These new production units have been expanding rapidly, using the most advanced technology and, primarily, imported feeds.

By 1964, total poultry meat production approached 90 percent of consumption (Table 45). The largest deficit was in Germany, a smaller one was in Italy with surpluses in The Netherlands and Belgium and the other countries

	1964			1970			1975		
	Meat Prod.	Meat Cons.	+	Meat Prod.	Meat Cons.	+	Meat Prod.	Meat Cons.	+
Total Germany	146	350	-204	307	511	-204	472	629	-157
Netherlands	128	47	+81	227	86	+141	282	136	+146
Belgium-Lux.	89	85	+4	140	129	+11	160	153	+7
Total France	550	572	-22	730	748	-18	855	846	+9
Total Italy	340	358	-18	425	521	-96	562	660	-98
TOTAL EEC	1,253	1,412	-159	1,829	1,995	-166	2,331	2,424	-93

	1964			1970			1975		
	Egg Prod.	Egg Cons.	+	Egg Prod.	Egg Cons.	+	Egg Prod.	Egg Cons.	+
Total Germany	628	785	-157	887	997	-110	1,008	1,120	-112
Netherlands	290	158	+132	309	200	+109	336	239	+97
Belgium-Lux.	182	123	+59	188	139	+49	201	155	+46
Total France	560	557	+3	650	666	-16	750	756	-6
Total Italy	458	514	-56	509	632	-123	626	742	-116
TOTAL EEC	2,118	2,137	-19	2,543	2,634	-91	2,921	3,012	-91

remaining nearly self-sufficient. Approximately the same situation existed in eggs (Table 46).

Our projections are for continued rapid increases in both egg and poultry meat production to 1970 and 1975. However, we believe that a fall in the relative price of poultry meat will induce an even faster rate of increase in consumption than in past years, so that our balance shows a modest net deficit in poultry meat in both 1970 and 1975.

Our projected continued deficit in poultry meat in 1970 and 1975 seems unlikely to be actually realized. The output of poultry meat appears highly responsive to price so that it appears very unlikely that the EEC will actually have a deficit in poultry meat by 1970. In general, our projections are that egg production and consumption will about balance with internal trade within the EEC moving the excess Dutch and Belgium supplies to Germany and Italy.

It is impossible to foresee where the additional production is likely to be forthcoming because it will depend upon the aggressiveness of individual firms, and national and EEC marketing policy. Thus, rather than arbitrarily



Table 47. Supply-Demand Balance for Food and Feed Grains 1964, and Projected to 1970 and 1975 in the EEC. (thousand metric tons)									
	Food Grains <sup>1</sup>			Feed Grains <sup>3</sup>			Total Grains		
	Prod.	Cons.	±	Prod.	Cons.	±	Prod.	Cons.	±
1964									
Total Germany <sup>2</sup>	8,705	6,057	+2,648	7,111	14,491	-7,380	15,816	20,548	-4,732
Netherlands	712	1,166	-454	1,277	4,078	-2,801	1,989	5,244	-3,255
Belgium-Lux.	950	1,066	-116	1,086	2,588	-1,502	2,036	3,654	-1,618
Total France	13,980	5,975	+8,005	13,384	14,197	-813	27,364	20,172	+7,192
Total Italy	9,198	8,853	+345	4,757	9,740	-4,983	13,955	18,593	-4,638
TOTAL EEC	33,545	23,117	+10,428	27,615	45,094	-17,479	61,160	68,211	-7,051
1970									
Total Germany <sup>2</sup>	8,291	5,815	+2,476	8,566	17,528	-8,962	16,857	23,343	-6,486
Netherlands	686	1,159	-473	1,426	5,098	-3,672	2,112	6,257	-4,145
Belgium-Lux.	964	1,007	-43	1,168	3,254	-2,086	2,132	4,261	-2,129
Total France	14,448	5,818	+8,630	16,198	17,200	-1,002	30,646	23,018	+7,628
Total Italy	9,644	8,204	+1,440	5,088	12,251	-7,163	14,732	20,455	-5,723
TOTAL EEC	34,033	22,003	+12,030	32,446	55,331	-22,885	66,479	77,334	-10,855
1975									
Total Germany <sup>2</sup>	8,573	5,565	+3,008	9,653	19,963	-10,310	18,226	25,528	-7,302
Netherlands	729	1,146	-417	1,501	5,419	-3,918	2,230	6,565	-4,335
Belgium-Lux.	1,024	931	+93	1,214	3,632	-2,418	2,238	4,563	-2,325
Total France	15,795	5,618	+10,177	19,150	19,400	-250	34,945	25,018	+9,927
Total Italy	9,984	8,334	+1,650	5,503	14,287	-8,784	15,487	22,621	-7,134
TOTAL EEC	36,105	21,594	+14,511	37,021	62,701	-25,680	73,126	84,295	-11,169
<sup>1</sup> Food grains are wheat and rice in all countries except in Germany where they are wheat, rice and rye. <sup>2</sup> 1964 figures for Germany are for economic year 1964-65. <sup>3</sup> Feed grain figures include feed, seed, and industrial use.									

adjust our individual country production estimates upward, we will only say that one or more of them is likely to be too low. It follows, automatically, that our feed-grain demand estimates are also going to be too low, although the magnitude is only on the order of one-half million tons at most.

#### Food and Feed Grains

The production of food grains in the EEC has been rising steadily in recent years and, as a result, the Community as a whole had reached a position in 1964 where domestic production exceeded human consumption (Table 47).

This fact taken alone is misleading on two counts. First, the EEC produces soft wheat in large part and, thus, requires imports of high quality hard wheat for mixing purposes in order to produce the desired types of flour. Also, a significant quantity of wheat has been and continues to be fed on farms where it was produced, and in France there has been some denaturing of wheat under the government programs for sale to farmers as feed.

Thus, it is necessary to look at the total grain requirements of the EEC as well as the component parts, for wheat and rye can easily be used as either human food or feed and the decision as to how it will be used in a particular year depends upon a host of unpredictable factors.

In 1964, every country in the EEC had a net deficit in feed grains. It was largest in Germany and smallest in France; but in total, if only conventional feed grains had been used for feed, the EEC would have had a feed-grain deficit of more than 17 million metric tons. But a great deal of wheat was fed and the net deficit in total grains amounted to 7 million metric tons although total feed grain imports exceeded this figure.

Our projections for 1970 show these recent trends continuing (Table 47). Food grain production is projected to exceed human consumption by an even wider margin, growing to 12 million tons. At the same time, our projections are that the net deficit in feed grain production will increase in every country and approach 23 million tons in 1970. This occurs in spite of our rather conservative estimates which are lower than in most previous projections.

In total, the EEC deficit in grains is projected at 11 million metric tons by 1970, up significantly from 1964. This appears likely despite the projected growing deficit in beef and veal and the grain deficit would increase even more if there were to be a large-scale importation of feeder calves for grain feeding in order to reduce the beef deficit. The grain deficit would also be increased if there were an expansion of cow numbers at rates faster than we have projected inasmuch as such an expansion would require both more forage area and heavier rates of grain feeding than we have projected.

The projections for 1975 show a continued increase in the surplus of food grain production over human consumption needs (Table 47). Concurrently, despite our projections for marked increases in feed grain production in the EEC, the deficit in feed grains appears likely to grow. The net position in grains, however, will be about the same in 1975 as in 1970 since the two factors are offsetting. The comments regarding the effects of the beef deficit apply in 1975 as in 1970.

Thus, in general, the supply-demand balance in grains in the EEC is likely to continue the trend of increasing net deficits until about 1970 and then level off. Only marked increases in yields above those we have pro-

Item	1955-57			1959-61			1963-65		
	Imports	Exports	Balance	Imports	Exports	Net	Imports	Exports	Net
Wheat	4,921.7	1,051.5	3,879.2	4,510.9	927.3	3,583.6	3,587.0	3,262.4	324.6
Wheat Equivalent of Flour	315.7	1,368.0	-1,052.3	278.8	1,536.0	-1,257.2	90.8	1,836.6	-1,795.8
Total Wheat Equivalent	5,237.4	2,419.5	4,922.5	4,789.7	2,463.3	4,840.8	3,677.8	5,149.0	-2,120.4
Corn	2,307.2	20.6	2,286.6	4,298.3	185.9	4,112.4	8,475.4	378.1	8,097.3
Barley	2,303.0	333.4	1,969.6	1,884.0	509.3	1,374.7	1,474.4	1,282.1	192.3
Other	1,545.7	193.7	1,352.0	2,346.8	90.5	2,256.3	509.1	162.9	346.2
Total Feed Grains	6,155.9	547.7	5,608.2	8,529.1	785.7	7,743.4	10,458.9	1,823.1	8,635.8
Milk and Cream	15.9	338.6	-322.7	36.0	468.5	-432.5	129.3	606.7	-477.4
Butter	45.2	27.7	17.5	27.9	44.7	-16.8	38.9	56.0	-17.1
Cheese and Curds	62.9	50.9	12.0	93.9	64.5	29.4	108.2	68.1	40.1
Eggs	139.8	11.2	128.6	185.8	16.0	169.8	74.8	27.2	47.6
Meat -- All Kinds	245.5	37.7	207.8	352.3	91.8	260.5	673.0	88.0	585.0
Livestock for Food	322.0	-----	322.0	286.8	29.2	257.6	362.1	-----	362.1

Source: USDA Trade Tabulations, Unpublished.

jected seem likely to change this picture. If the EEC meets its grain deficits by increased acreage, it will place a downward pressure on cow numbers due to forage limitations or farmers will have to change to higher rates of grain feeding. The first will increase the beef deficit and the latter increase the total demand for feed grains.

#### Supply-Demand Balances and Trade Patterns

The supply-demand balances presented above do not provide an accurate estimate of trade patterns or possibilities. Most EEC countries simultaneously import and export wheat and some dairy and poultry products (Table 48). In recent years the EEC has become a net exporter of wheat, and France has been the major source of these exports. This may continue, especially with the EEC commitment to participate in the concessional food grain sales to underdeveloped countries under the International Grain Agreement.

It appears that the EEC will continue to require imports of hard wheats for mixing purposes of about 1 million tons per year. For all practical purposes the EEC is already more than self-sufficient in soft wheat, so future imports of these varieties are unlikely barring unusual crop years.

In 1963-65 the EEC was net importer of about 8.5 million tons of feed grains and a net exporter of about 1 million tons of wheat for a total net import of grain of about 7.5 million tons. This is roughly equivalent to the 7.1 million ton deficit estimated for 1964.

The imports of feed grains in 1970 and 1975 depend largely upon the disposition of the surplus soft wheat by the EEC. Assuming an import of 1 million tons of hard wheat for mixing purposes in 1970 and 1975, the EEC will have a surplus of food grains of about 13 million tons in 1970 and of 15 million tons in 1975. The bulk of this surplus will be in France in both years, since the surplus in other countries is small and likely to be fed on farms where it is produced.

If the world demand for food grains and/or concessional programs is large enough to absorb most of the French wheat surplus outside the EEC, then EEC imports of feed grains might soar as high as 15-17 million tons with all of the countries except France becoming major importers. More likely, however, is the prospect that some of the French wheat will be exported and some diverted to feed use, especially in mixed pork and poultry feeds. The quantities that will be involved in each of these uses is impossible to project, inasmuch as they will depend upon a host of political and economic factors both within and outside the EEC.

In summary, the prospects for third-country exports of poultry, dairy, pork and soft wheat to the EEC in the years ahead look dim. Those sales now being made are likely to be lost, and moreover, the EEC is likely to become a significant competitor in the world market for food grains and manufactured

dairy products. On the other hand, the prospects for third-country exports of feed grains and beef to the EEC look bright. It is unlikely that the EEC can meet the rising demands of its population for beef and veal without rising imports of both meat and feed grains. This appears to be the case even if most of the surplus food grains are diverted to feed use, a prospect that is not unlikely barring a sudden surge in the world food grain market.

## Chapter 6

### Policy Issues in the EEC

Agricultural policy in the EEC, while framed within a broad set of objectives, has thus far concentrated on achieving a common market organization. This has been done through the elimination of internal trade barriers and the establishment of common agricultural policy. Import protection is, for the most part, based on variable import levies; and exports, where necessary are assisted through a variable export subsidy. Both the levy and the subsidy are designed to "overcome" the difference between EEC price levels and world market prices. Since price is the principal policy instrument used by the EEC, the effects and pressures generated by EEC policy will depend on how price as a causative variable interacts with other variables that influence production (technology and farm structure) and consumption (population and income) to alleviate or aggravate problems in the market for farm products.

#### Internal Implications

The interrelationships between production and consumption and price varies considerably among commodities. One of the more difficult problems of policy adjustment in the EEC is that related to beef, veal and milk. Beef and veal are substitutes both in production and consumption while beef-veal and milk are joint products in production and unrelated in consumption. In 1964 the EEC had an overall deficit in beef and veal and an apparent substantial surplus of dairy products. Two kinds of shifts by farmers can influence the amount of meat and milk that is marketed. First, if beef prices increase in relation to veal, this could encourage keeping of more calves for beef and increased slaughter weights for both. Second, if milk prices are high relative to veal, increased amounts of milk may be marketed and less fed on farms.

The objectives of increasing beef production and reducing milk through this kind of adjustment at the farm level could be encouraged through price by raising beef prices relative to veal and milk prices. Yet, because of the need to equalize pre-existing national prices, this has not been consistently achieved. In Germany, support levels are such that beef prices rise substantially relative to milk, but only moderately relative to veal prices during the period 1964-70. In all other countries, on the other hand, support levels for milk increase relative to those for beef. The support level for beef will increase relative to veal in Netherlands, Belgium, and France, but will decline relative to veal in Italy. Because of differences in regional supply and demand, price shifts that actually occur, of course, may be greater than that which is indicated by EEC support levels. Also, because beef is in

short supply and demand increases rapidly with improved incomes, market prices may be well above support levels for the EEC as a whole.

In addition to encouraging a shift from sale of veal to beef in the short run, price adjustment could have a longer term effect through encouraging an expansion in herd size. But, as long as beef-milk production is a joint enterprise, milk surpluses will be further increased as a result. Many small farmers that traditionally have produced milk and veal are not equipped to keep animals through maturity for meat production. Forage capacity and farm produced feed are fully utilized for dairy herds and hogs, and the facilities and organization including capital and managerial knowhow for feedlot production of beef simply do not exist. While some expansion of beef production without expansion of milk output could occur based on specialized beef herds in the central mountains of France combined with surplus feedgrains from the Paris Basin, there is little indication that this will occur in any significant amount.

As indicated in the preceding chapter, the projections developed in this study indicate that an increasing shortage of beef and an increasing surplus of milk will develop through 1975. The solution to this problem through price adjustment with existing farm organization is not apparent. Adequate supplies of beef can be obtained only through substantial imports of calves for feeding or through meat imports. Milk prices probably can be maintained only through substantial support purchases along with exports through commercial sales or food aid. If, on the other hand, the United Kingdom and Ireland become members of the EEC, an improvement in the internal market balance would occur. The United Kingdom would absorb some of the expected surplus of dairy products, and Ireland could provide an additional source of calves for beef production.

In the case of pork, poultry meat and eggs a different kind of effect will arise from the common policy and the initial impact of price equalization among countries. The policy mechanism differs in that little or no support buying is currently provided. Within the protection of external levies, prices will fluctuate in accordance with internal supply and demand balances. Price equalization among countries will be brought about through competitive interaction among producers. We project a supply-demand situation of approximate self-sufficiency in the EEC for these products. We also expect that future prices will be near cost levels for efficient producers. The largest price declines will occur in countries with previous highest prices particularly Germany for eggs and poultry and France for pork.

Pork, poultry and egg production will likely continue to expand in the face of declining prices. Our estimates indicate, however, that consumption will also expand with declining prices to the extent that market equilibrium will essentially be achieved if direct interference through support purchases

is avoided. Market interference to maintain prices could bring about increased production and at the same time curtail growth in consumption. Larger more efficient hog producers and the large integrated poultry meat and egg producers, both of which are accustomed to production centered on purchased feed, would be price responsive and expand output. In addition, in the case of hogs, this would provide an income effect on many small farms that produce a few hogs along with dairy or other products. Because of the large number of producers throughout the EEC who produce one or more hogs, political pressures for support buying are great. But if implemented, this would almost certainly be followed by surpluses and would create problems of disposal and financing.

EEC policy in the case of grain will serve largely to support a pre-existing tendency toward change in the composition of feed grain output. A continued expansion of barley production relative to oats and mixed grains will occur. Wheat prices will decline somewhat relative to barley prices in all countries. Wheat price will be supported only slightly above barley; hence, some shift from wheat to barley probably will occur. This change is not liable to be great, however, and our projections indicate a continued increase in wheat production over and above human consumption needs and an increasing problem of surplus disposal. Disposal could be achieved either through subsidizing export or denaturing for feed use.

Price policy could probably effect this balance by changing feed-grain prices relative to wheat. From the viewpoint of livestock product prices and consumption levels, it would be important whether this kind of adjustment was brought about through lowering wheat prices or raising barley prices.

The mix of livestock and grain prices will not cause an expansion in total grain output through a major shift in land use patterns. Forage acreage will be fully utilized to support existing levels or modestly increasing livestock numbers. Beef and milk support prices are increased relative to other livestock and to grain. With current production practices (especially since little grain fattening of cattle is done) this price change would tend to prevent a major shift of land from forage to grain.

In the overall, our assessment is that the production shifts brought about by implementing the Common Agricultural Policy will be limited to a minor effect in maintaining herd numbers through relatively higher beef and milk prices and to encouraging the pre-existing shift in composition of grain output. The most important effect of price changes will be those related to consumption. Growth in beef consumption will undoubtedly be retarded by higher prices, while consumption of pork, poultry, and eggs will be encouraged through lower prices.

Our projections suggest that the overall rate of output of grain and livestock products by countries and for the EEC in total will be as shown in



Table 49. These rates of growth in output, while rapid, are not excessive in terms of recent experience and the technical possibilities that still exist in the agriculture of EEC member countries.

Table 49. Projected Growth in Output of Grain and Livestock Products in the EEC 1964-1975.				
Country	Value of 1964 Production at 1970 Prices (1000 U.A.)	Value of Projected 1975 Production at 1970 Prices (1000 U.A.)	Index of Output in 1975 (1964=100)	Compound Annual Growth Rate
Germany	5,013,345	6,750,543	134.7	2.7
Netherlands	1,323,720	1,783,267	134.7	2.7
Belgium-Luxembourg	917,264	1,080,296	117.7	1.5
France	5,616,496	7,620,034	135.7	2.8
Italy	2,793,834	3,419,556	122.4	1.8
Total EEC	15,664,659	20,653,696	131.8	2.6

Movement to a common EEC agricultural policy will broaden the market for farm products and allow a wider scope for competition among agricultural areas of the EEC, but it will not solve the major underlying problems of EEC agriculture. While the common policy will allow "free" movement of farm products among EEC countries, the products which are and will be in surplus in France -- soft wheat and dairy products -- are in ample supply in all of the other countries. The major deficit areas -- Germany and Italy -- will not have significant deficits of the products that the surplus producers will have for sale. Thus, all EEC countries except France will be deficit in beef and feed grains but France will have very little surplus of these products at the price relationships we have anticipated. France appears likely to have a surplus of soft wheat and dairy products, but the other EEC countries offer little promise as markets for these products.

As now constituted, price is the primary policy tool with which the EEC can attempt to guide or control either the mix or level of farm output. Given the organization of EEC farms, this is likely to prove a weak and ineffective policy tool. It appears that a change in relative prices could change the mix of grains produced, but in the case of milk and beef, it is hard to see how price policy can significantly alter the combination of output. A major reduction in farm prices would be needed to control or even appreciably reduce total farm output in the face of technological and structural change.

Internal trade patterns of the EEC are unlikely to change markedly or rapidly for either grains or red meats. Imports from third countries of these two items are likely to continue to rise. EEC consumers thus will be paying both major import levies and export subsidies at the same time on different products.

A major effect that EEC policies as now agreed upon will have, is to shift the burden of financing the export subsidies or other costs for the surplus production away from the nation producing them. The principal deficit areas -- Germany and Italy -- will finance the disposal of French surpluses, even though in some respects they have agricultural income problems far greater than in France.

Those who believe that a move to a Common Agricultural Policy is likely to solve, or even appreciably alleviate, the low-income problem in EEC agriculture are likely to be disappointed. First, the most prosperous farms are found in northern France and the low countries. These are the countries where the greatest increases in farm incomes will occur under the new policies. This is especially true for the Paris Basin area where the large farms will benefit from both higher prices and the removal of the quantum tax. The lowest income farms in Germany, Italy and western France will benefit least from the new price policy. Thus, the policies as now formulated will, if anything, increase the income disparities within EEC agriculture; and, moreover, the countries with the lowest-income farms will pay the largest share of the costs of the policy.

It should be noted that no price policy will solve the income problem of most of these low-income farms. Only structural improvement can solve the problem and it will require a continued reduction in farm numbers, which is a long and difficult process. In this sense the EEC policy is not unlike that of the United States; it gives great emphasis to income transfers from non-farm to farm people, but the money that is transferred goes predominantly to those who are best off in agriculture, not to the poor.

Also, as in the United States, the shift to a new price policy may affect land prices, increasing the value of the best land in France and the low countries and decreasing the agricultural value of land in Germany and Italy.

It is difficult to assess what impact the new policies will have on the role of technical and structural changes. These countries all have had individual agricultural price policies for many years, with stable or rising prices for a decade or more. Thus, there is no reason to assume that there will be a great new boost to change, except insofar as national funds previously used for market support are diverted to structural programs. On the other hand, there is no reason that the new policies will inhibit further change. Farm price changes as such are unlikely to greatly influence out-movement of excess agricultural population and in that way aid in restructuring agriculture. Changes in out-movement are more dependent upon adequate nonfarm employment opportunities than upon conditions in agriculture.

The greatest structural change that may occur is in the marketing of farm products. The Dutch and, to a lesser extent, the Germans have a market-

ing system for farm products which is more efficient than in other EEC countries. It seems likely that these more efficient marketing systems will put a great pressure upon the other systems. If competition is really allowed in the marketing sector, it will benefit both farmers and consumers. On the other hand, there may be rising political pressure to reduce the competition and avoid the change.

Whether they like it or not the EEC officials are likely to find that their price policies have not and cannot isolate them from world markets in farm products. The prospects of both export surpluses and continuing imports make this true. Thus, the major problem they seem likely to face is the prospect of rising costs of agricultural programs and imports without any appreciable feeling of satisfaction from farmers, especially low-income farmers. This problem, of course, is common to all agricultural policies.

#### Implications to Third Countries

The Kennedy Round of Trade Negotiations have been completed without third countries receiving any appreciable concessions on agriculture from the EEC. This is not surprising, at least not in the situation as presently constituted.

Third countries have objected to both the EEC's internal farm price level and to their use of the variable levy based largely on the assumption that a substantial supply response would occur. Our investigation suggests that this assumption is fallacious. Future output in the EEC will be influenced largely by improvements in technology and farm organization, but very little by reaction to EEC prices.

The variable levy, of course, protects internal producers; and, in the case of some like poultry and eggs with modern production methods, it is a very great advantage. Realistically, however, we could have expected to lose those markets, in any case, because they are high capital, low land using industries and easily adaptable to European conditions.

Looking ahead it makes sense for the grain exporting countries to encourage the expansion of cattle production in the EEC, and the participation of the EEC in concessional sales of dairy products to underdeveloped countries. Many of these countries need animal protein and milk can be produced in the EEC at lower cost than in North America because of lower labor cost. Moreover, an expansion of cow numbers will increase the feed grain imports of the EEC while helping them to meet their beef consumption needs.

To the extent that the EEC contributes wheat to the feeding of underdeveloped nations, that wheat will not be available for feed use. There is probably about a ton for ton substitution here so that feed grain exporters have an interest in encouraging EEC participation in foreign assistance programs.

If the United Kingdom and certain other European countries are admitted to the EEC, this may have a far greater impact on third countries than has the development of the EEC policy to date. The possibilities of import substitution appear quite high, with EEC farmers gaining markets at the expense of third countries. In this event, third countries would clearly need a firm policy position.

Thus far our (U.S.) response to the formulation of EEC agricultural policies seems to have been more reaction than reason. We often have assumed facts about their agriculture that appear unfounded, and we sometimes have given the impression that the EEC should participate in the solution of our farm problems through expanded import purchases. We are not the only country with farm problems, and indeed, we can be grateful we have our problems and not those of the EEC policy makers.



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APPENDIX

## Appendix A

Table A-1. Estimates of Farmers Share of Consumers Expenditure for Cereal and Livestock Products						
Product	U.S.*	Belgium-Lux.	France	Germany	Italy	Netherlands
Cereals	20%	22.5	22.5	25	20	25
All Meat	48%	48	48	53	--	--
Beef	54%	54	54	59	52	59
Poultry	50%	50	50	55	48	55
Pork	46%	44	44	49	42	49
Eggs	55%	55	55	60	50	60
All Dairy Prod.	44%	40	40	48	40	48
Fluid Milk	45%	45	45	50	41	50
Butter	71%	67	67	71	67	71
Cheese	47%	44	44	47	44	47
*Source: USDA Marketing and Transportation Situation.						

Table A-2. Estimates of Price and Cross Elasticity Relationships Implied in Price-Consumption Adjustments

	Beef & Veal	Poultry	Pork	Eggs
Belgium-Luxembourg/France				
Total Meat				
Beef & Veal	- .70	.10	.10	
Poultry	.20	-1.01	.20	
Pork	.10	.10	-.30	
Eggs				-.20
Germany/Netherlands				
Total Meat				
Beef & Veal	.10	.20		
Poultry	-1.00	.30		
Pork	.05	-.27		
Eggs				-.30
Italy				
Total Meat				
Beef & Veal	-1.20	.05	.05	
Poultry	.30	-1.00	.10	
Pork	.10	.15	-.90	
Eggs				-.40



