THE IMPACT OF DEVELOPMENT ASSISTANCE

VOLUME II

COUNTRY STUDIES:

INDIA, KOREA, TURKEY, GHANA AND IVORY COAST

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November 15, 1982

(Draft)

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November 15, 1982

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Revised
November 15, 1982

CHAPTER

THE IMPACT OF DEVELOPMENT ASSISTANCE ON INDIA

Introduction and Overview

India became an independent nation in August 1947. Even before attaining independence, the Indian intellectual and political leadership had become convinced of the necessity for economic planning as a means for solving the major economic problems of the country. In 1950, the Government of India established a Planning Commission. The main objective of economic planning in India was to attain a rapid rate of growth of income in order to achieve social justice. The other objectives of planned economic development, stated in the First Plan document and reaffirmed subsequently and frequently, included national self-reliance, the reduction of inequalities in income and wealth, and the reduction of unemployment. India's First Five Year Plan began in 1951, and since then a series of plans have strongly influenced the overall pattern of growth in India.

At the time when India's First Plan began, the population of India was about 360 million. India's per capita income and literacy and education levels were among the lowest in the world. Its schools and educational facilities, roads and rail transport facilities, electric power and irrigation capacity, credit and finance institutions, and other elements of infrastructure were at a low level of development. Its total foodgrain production was estimated to be about 56 million tons, and crop yields in India were among the lowest levels observed in any country of the world. In 1951, India's consumption of chemical fertilizers

was about 70,000 tons, that is, less than 1 kilogram per hectare of gross sown area. The domestic production of fertilizers was about 18,000 tons, and the production of other modern agricultural inputs, especially pesticides and tractors, was nonexistent and indeed was not to begin for nearly another decade.

Over the past thirty years, much progress has been made toward solving some of India's critical economic problems. Between 1951 and 1977, the Indian economy recorded an average growth rate of 3.65 percent per year. During the first five years of planned growth, net national product at constant prices grew at 3.7 percent per year. This slowed to a rate of growth of 3.1 percent per year during the Second Plan period and slowed further to a rate of 2.5 percent per year during the period 1961 to 1966 (Chaudhuri, 1979: 52). It is important to note that the unprecedented droughts of 1965-1966 and 1966-1967 reduced the overall rate of growth of the economy. The excellent agricultural harvest of 1967-1968 spurred overall economic activity, and between 1967 and 1971 the economy grew at an average rate of over 4.5 percent per year. A fall in agricultural production in the early 1970s again slowed economic growth. But between 1974 and 1977, the economy again grew at a rate above the long-run rate of growth of 3.65 percent (Raj Krishna, 1980: 78).

The relatively low rate of long-run growth has meant a very slow increase in per capita income since population has continued to increase. Between 1951 and 1961, the population of India grew at nearly 2 percent per year, and this rate in fact accelerated to 2.25 percent per year between 1961 and 1971 (Bhagwati and Srinivasan, 1975: 7). While the Indian economy grew at more than twice the rate recorded in British

India between 1900 and Indian independence, the rate of growth since planning began has been not only less than the targeted growth rates but also lower than growth rates achieved in most other countries. As Raj Krishna has pointed out, "in as many as 90 nations out of 121 the rate of growth of the gross national product per capita exceeded that of India for the period 1960 through 1977" (Krishna, 1980: 78).

India remains today a desperately poor country. Krishna has characterized India as "a case of stunted, sub-optimal growth, burdened as it is with the world's largest single mass of poverty and unemployment" (Krishna, 1980: 78). While much of the resources and knowledge needed to eradicate poverty exist, the failure to increase overall industrial and economic growth is "man-made" and "managerial" (Krishna, 1980: 85).

This summary indictment of Indian economic performance does not ignore, or even minimize, the tremendous changes that have occurred in the Indian industrial economy and in the agricultural sector over the past few decades. A wide range of industrial capital goods is now produced in India. For example, it has been noted that between 1955 and 1978 Indian imports fell to a level of between 2 and 21 percent of total supply in 21 industrial sectors and exceeded 25 percent of the total supply in only 6 industrial sectors (Krishna, 1980: 78). This change in the industrial structure has been the outcome of basically import substituting, inward-oriented policies that India has pursued over the past. But it does not mean that the full implications of the import substituting policies were understood by the policy planners in India or, for that matter, by the aid givers abroad.

In the massive agricultural economy of India there have been phenomena changes. It is not often realized that foodgrain production in India has shown a sustained upward trend. Between the beginning of planning in India and 1977, foodgrain production doubled. The rate of growth of total foodgrain production achieved during that period was 2.8 percent per year, which ranks favorably with the growth rates achieved in the developed world (Sanderson and Roy, 1979: 2). However, since population also rose, the average yearly increase in per capita production was only 0.6 percent. The history of agricultural production in India seems to be characterized by certain periods of rapid growth and other periods of relative stagnation. Simultaneously, there have been periods of optimism and of despair at the foodgrains production performance and future prospects in India.

When India looks ahead on the basis of agricultural production trends from the recent past, the outlook for agriculture is promising. The amount of land that can be brought under irrigation in the next two decades can be increased to almost two-thirds of India's present cropped land surface. The yields that have been realized under various national demonstration programs are many times the actual average yields, especially for rice, corn, and millet. India has now a well-run agricultural research and extension system with a high-caliber staff. And, as Raj Krishna points out, "for India, the gloomy prediction of a growing gap between food demand and food supply, a prediction that some international agencies publicize regularly, seems in fact to have no basis" (Krishna, 1980: 83).

In this transformation of the Indian economy, foreign assistance has played an important role, but India itself provided the great bulk

of its own development requirements. Foreign aid to India was insignificant during the First Plan period:

> The 'era' of aid began with a distinct jump at the beginning of the Second Plan, grew rapidly to a peak at the end of the Third Plan, held that peak briefly with the drought-induced increase in food aid, and then declined rapidly. Thus, large-scale foreign aid as development assistance was concentrated largely within the ten years of the Second and Third Five Year Plans. (Mellor, 1976: 218)

After this somewhat lengthy introduction and overview of the Indian economic scene, the primary objective of this essay may be stated. The objective is to review the assessments that have been made of various aspects of the entire development aid activity in India. We will examine issues related to the magnitude of economic assistance to India; the terms and conditions of economic aid; the types of aid, that is, whether project aid or non-project aid or aid in the form of agricultural commodities; and the role that foreign assistance in general has played in the overall economic development policies of India. The history of aid to India will be examined. We will review the assessments of the impact of aid on rural development strategies that India has pursued, beginning with the Community Development program of the early 1950s and the Intensive Agriculture District Program of the 1960s. Food aid constituted a major part of the development assistance to India and the impact of such aid has been a much studied and controversial topic, and we will review those studies. The impact of development assistance on the growth and maturation of the Indian agricultural research establishment, now generally recognized as among the major national agricultural research systems in the world in terms of resources employed and level of scientific endeavor, will also be reviewed. The primary purpose of this exercise is to understand the nature of the aid program, pay close

attention to those facets of the aid program that have been characterized as successes, and draw some general conclusions.

For the most part, the works and references cited in this review are American or British or, at least, published outside India. The literature that has been surveyed was mainly restricted to articles published since 1970 and cited in the American Economic Association's Index of Economic Issues and the Journal of Economic Literature. Some well-known works published prior to 1970, notably the writings of I. M. D. Little (1965), Edward Mason (1964), Raymond Mikesell (1968), and P. T. Bauer (1961) were also surveyed. But no exhaustive search was made for articles on economic aid in the professional Indian literature published in India. It may, however, be noted that, not entirely unexpectedly, the most perceptive observers and commentators on the economics of aid have been several internationally-known Indian economists. The works by these Indian economists have been published outside India under the auspices of the Organisation for Economic Cooperation and Development (OECD) and the National Bureau of Economic Research (NBER), the latter under an AID financed project. It is also noteworthy that just as the U.S. aid program in India dropped off sharply in the late 1960s to early 1970s, the economic assessments of aid to India in the professional literature also dropped off after a certain time lag.

14.1 History of Aid to India

The U.S. government, under its Point Four program, provided its first technical assistance to India in 1950, even before formal economic planning began in India. In 1951, the U.S. provided an emergency wheat loan of about $190 million (repayable in dollars) to help alleviate food shortages caused by widespread crop failures in 1950. But the beginning of a broad-based program of U.S. economic and technical assistance to India can be dated to the Indo-U.S. Technical Co-operation Agreement of January 1952 (Hendrix and Giri, 1970: 142). Under this agreement and supplemental agreements extending to 1970, the U.S. provided economic and technical assistance to more than 150 projects in agriculture, industry, transportation, education, health, and other fields.

The early observers of aid and the early participants in the aid effort in India usually cited various reasons for aid to India. Among the was the sheer size of India, its great poverty and low levels of living of the vast majority of its population, its high mortality rates, and its low education levels. Through much of this literature there exists a recognition of the political aspects of the aid program in India. For example, Edward Mason, writing in 1964, says that " the principal purpose of foreign aid in my view is to promote the security of the United States and, insofar as our security is dependent on theirs, foreign aid is an essential part of a mutual security policy" (Mason, 1964:). Again, as recently as 1975, Valentine Belfiglio, in his survey of U.S. grants and credits to India, says the following: "American officials had looked in awe at the absorption of backward and undernourished China by communist forces in 1949. To strengthen and keep in power the friendly Indian

government, in 1951 the U.S. gave increased economic assistance to that impoverished nation. American aid was also given to obtain the goodwill of the Indian people and for humanitarian reasons." (Belfiglio, 1975: 418). These political overtones have also been noted by various other authors, including I. M. D. Little (1965), and, as we shall see momentarily, clouded the assessments of the 1966 devaluation of the Indian rupee.

From a relatively modest beginning at the start of India's First Plan, India received more aid from more countries than any other developing country. Foreign aid to India during her First Plan was small, small relative to absolute amounts of aid during subsequent plan periods, and small in terms of its contribution to gross investment in India relative to subsequent plans.

During the First Plan the amount of foreign aid from all donors utilized by India was Rs 1.94 billions, which was a little less than 6 percent of the total investment in India during that period (U.S. Embassy in India, n.d.: 19). However, from data provided by Mellor, who defines net foreign resource transfers to India as the excess of imports over exports, the arithmetic mean of net foreign resource transfers as a percentage of gross investment in India during the five years of the First Plan period was 9.98 percent, with the variables denominated in dollars (Mellor, 1976: 219).

The above paragraph illustrates one difficulty encountered in this survey of the role of foreign aid in Indian economic development. In studying the amount of aid authorized and/or utilized by India, various authors provide data on the magnitude of aid either in dollars or in rupees. Bhagwati and Desai (1970) and Bhagwati and Srinivasan (1975) provide data on foreign aid in rupees and cite as their source the

Government of India's Economic Survey publications. Streeten and Hill (1968) also provide data in rupees but they cite as their source the Indian central bank, the Reserve Bank of India. But they also provide some data in dollars citing the World Bank as the source of the data. Harberger (1970) provides data in dollars using AID publications. Narain and Rao (1963), in an often-cited study on foreign aid and India's economic development, prepared for UNESCO, provide data in rupees but do not cite any sources for their data. However, they are careful to point out that "it is difficult to give a completely unambiguous and meaningful total of aid that has been received from diverse sources and in diverse forms" (Narain and Rao, 1963: 1). The principal reason for this is that the use of official rates of exchange between the Indian rupee and the currencies of the various donor countries may be inappropriate.

In the First Plan aid authorizations were made by 7 countries and by the World Bank. The 7 countries were (in order of size of authorization) the U.S., U.S.S.R., Canada, Australia, New Zealand, Norway, and Britain. Insignificant amounts of U.S.S.R. and U.K. aid were utilized and the U.S. share in total aid utilized by India was nearly 70 percent. (U.S. Embassy in India, n.d.: 19). During the Second Plan period, aid authorizations were provided by 13 countries and this had increased to 19 countries during the Third Plan. With the increased number of countries contributing to India's economic development, the share of the U.S. in the total aid utilized by India fell to 54 percent during the Second Plan, but rose to nearly 60 percent during the Third Plan. The share of the Soviet Union, which was insignificant during the First Plan period, had increased to just over 5 percent in the Second Plan and to over 8 percent during the Third Plan.

At least one outcome of India's receiving aid from several countries was the adoption of a wide range of techniques and methods in various industrial sectors such as metals and machinery production. For example, in steel making, the U.K., West Germany, and the Soviet Union each financed steel plants in the public sector (Bhagwati and Desai, 1970: 210). Unlike the industrial sector, however, there was some specialization in aid to India for the development of the agricultural sector. While the U.S. and, to some extent, Canada, provided both technical assistance and loans and grants to specific programs in agriculture, as well as financing imports of fertilizers and foodgrains, development assistance from Australia, New Zealand, Denmark, Switzerland, the Netherlands, and Hungary was largely in the field of animal husbandry, including dairy development. Development assistance from the Scandinavian countries (Sweden, Norway, and Finland) was largely confined to the fishery and forestry sectors. West Germany made significant contributions to the area development program, Japan to the agricultural extension service, and the U.S.S.R. to a large mechanized farm and to the seed industry. India also received sizable assistance from non-official sources such as the Ford and Rockefeller Foundation. The bulk of Ford Foundation assistance went for the extension program of IADP, while the Rockefeller Foundation assistance was directed to the strengthening of agricultura research facilities in India (Govt. of India, National Commission on Agriculture, 1976: 667-68).

Table 14.1 from Mellor provides data on the magnitude of net foreign resource transfers to India from the first year of the First Plan to the early 1970s (Mellor, 1976: 219) and presents data on foreign resource transfers as a percentage of India's net national product, gross investment,

Table 14.1. The relative importance of foreign resource transfer, India, 1951-52 to 1973-74

Year	Net foreign resource transfer*		Net foreign resource transfer as percent of			
	Total (million U.S. $)	Per capita (U.S. $)	National income †	Gross investment	Central government expenditures	Imports
1951-52	335	0.92	1.6	16.1	23.7	18.2
1952-53	193	0.52	0.9	18.0	16.6	13.7
1953-54	87	0.23	0.4	5.6	5.8	7.2
1954-55	132	0.34	0.7	5.9	7.2	9.6
1955-56	123	0.32	0.6	4.3	6.0	9.0
1956-57	590	1.48	2.4	14.9	26.0	31.3
1957-58	841	2.08	3.5	23.8	27.2	38.7
1958-59	692	1.68	2.6	18.9	22.3	36.6
1959-60	675	1.59	2.5	18.1	18.0	33.4
1960-61	1,007	2.33	3.6	22.9	26.6	42.7
1961-62	903	2.04	3.1	20.5	21.1	39.4
1962-63	937	2.07	3.0	17.0	17.7	39.4
1963-64	903	1.96	2.5	13.9	13.5	35.1
1964-65	1,119	2.37	2.7	14.9	15.4	39.5
1965-66	1,267	2.63	2.9	14.7	15.4	42.8
1966-67	1,229	2.49	3.9	20.8	20.8	44.4
1967-68	1,079	2.14	2.9	16.5	18.0	40.3
1968-69	735	1.43	1.9	10.8	12.3	28.9
1969-70	225	0.43	0.5	3.1	3.4	10.7
1970-71	132	0.25	0.3	1.7	1.9	6.1
1971-72	325	0.59	0.7	n.a.	3.5	13.5
1972-73	- 120	-0.21	‡	‡	‡	‡
1973-74	534	0.92	0.9	n.a.	5.7	15.0

*Defined as imports less exports. †At factor cost. ‡No net foreign resource transfer.

Sources: Columns 1 and 6: 1951-52, 1955-56, and 1960-61 to 1973-74, Appendix, Tables 11 and 12; all other years based on import and export figures in Reserve Bank of India, Report on Currency and Finance, various issues. Column 2: Based on population figures published in Economic Survey (New Delhi: Government of India, Ministry of Finance), various issues. Column 3: Based on data in Estimates of National Product (Government of India, Central Statistical Organisation), various issues; and Reserve Bank of India, Bulletin, various issues. Column 4: Based on data in Reserve Bank of India, Bulletin, various issues. (Gross investment for 1951-52 to 1959-60 was estimated by assuming that the average ratio of net investment to gross investment was the same in that period as in 1960-61 to 1970-71. Column 5: Based on data in Economic Survey, various issues; and Report on Currency and Finance, various issues.

Source: John Mellor. (1976). The New Economics of Growth. Page 219. Cornell University Press, Ithaca, New York.

central government expenditures, and imports. The data show that foreign aid increased sharply at the beginning of the Second Plan in 1956-1957. Foreign aid as development assistance was most heavily concentrated in the ten years of the Second and Third Plans, that is between 1956-1957 and 1965-1966. The large foreign resource transfers in 1966-1967 to 1968-1969 were principally PL 480 grain shipments to India necessitated by the disastrous crop failures in India in 1965-1966 and 1966-1967.

Table 14.2 from Bhagwati and Srinivasan also provides detail on the utilization of external assistance by India as a percentage of national income. While these data are not comparable to those of Mellor, they nevertheless underline the "era" of aid as the Second and Third Plan periods, 1956-1957 to 1965-1966.

Much of the literature on economic assistance to India is marked by a concern for suitably deflated measures of aid, for example, aid per capita. Most academic commentators seem to agree that while India received substantial amounts of aid in aggregate terms, India was a "grossly under-aided country if one takes suitably deflated measures as aid per capita" (Bhagwati and Desai, 1970: 180). Several commentators have pointed out that on the basis of foreign assistance per capita India ranked virtually at the bottom of the list of aid recipients. In terms of aid relative to existing levels of national income per capita, India fared a little better compared to aid per capita. The reason for this is that India's per capita income ranks near the bottom of the world distribution of income. Comparing India with the other major country of the Asian sub-continent, it has been pointed out that aid received by India per head was much lower than that received by Pakistan in the early 1960s (Streeten and Hill, 1968: 332).

Table 14.2. Utilization of External Assistance by India, as Percentage of Net National Product at Factor Cost, 1951-52 to 1969-70

	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61
1. Loans	0.81	0.34	0.02	0.02	0.08	0.25	1.06	1.78	1.27	1.39
2. Grants	0.04	0.12	0.16	0.10	0.28	0.35	0.30	0.19	0.26	0.22
3. Assistance under P.L. 480/665, etc.	---	---	---	---	0.05	0.45	1.01	0.74	0.75	1.39
4. Total aid	0.86	0.47	0.19	0.11	0.40	1.05	2.37	2.71	2.28	3.01

	1961-62	1962-63	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
1. Loans	1.60	2.02	2.21	2.38	2.37	0.41	0.47	0.39	0.37
2. Grants	0.15	0.10	0.09	0.10	0.16	0.06	0.03	0.03	0.01
3. Assistance under P.L. 480/665, etc.	0.61	0.81	1.05	1.07	1.14	0.21	0.20	0.09	0.09
4. Total aid	2.37	2.93	3.35	3.55	3.67	0.69	0.71	0.52	0.48

Note: The 1960-61 to 1969-70 estimates are for the revised NNP series. The 1966-67 to 1969-70 aid estimates are at the post-devaluation exchange rate.

Source: Economic Survey, annual issues 1966-73, Government of India, Ministry of Finance, Department of Economic Affairs, New Delhi.

Source: J. Bhagwati and T. N. Srinivasan. (1975). Foreign Trade Regimes and Economic Development: India. Columbia University Press, New York. Page 11.

Whereas some authors used the figures on the low levels of aid per capita for India to argue that India should have gotten even more aid, other commentators have argued that the growth of aid to India during her first three five-year plans was exaggerated since data on gross inflow of aid concealed the reduction in the share of grants in the total aid flow as also the deterioration in the terms and other conditions of aid.

Implicit in the use of these "deflated" measures of aid is the view that if aid, suitably deflated, is low its economic impact would be expected to be low. Alone among contributors in this area, Harberger makes an explicit attempt in arguing that even if aid dollars were attributed "a rate of social yield more than twice that which is applied in the evaluation of our own federal programs and projects," the contribution of aid to the national income of the aid receiving countries would be expected to be relatively small (Harberger, 1970: 635). Harberger's main point is that the success of the U.S. aid program in Western Europe under the Marshall Plan could not be easily duplicated in the less developed countries because of the entirely different economic and other circumstances of the less developed countries.

14.1-1 U.S. and U.S.S.R. Aid to India

United States aid to India went to nearly all sectors of the Indian economy. This statement can only be appreciated by examining the following features of American aid to India. In what follows, a brief description of the sectors and projects aided is given and is intended to convey the magnitude of the contribution of American aid.

In the mid-1960s, about one-quarter of the nitrogen used by Indian farmers was imported with U.S. assistance. In the early 1960s, the U.S.

financed one of India's largest fertilizer plants, at Trombay, near Bombay. The U.S. aided some of India's largest irrigation projects, such as those at Hirakud (in Orissa state), Kosi (in Bihar state), Nagarjunasagar (in Andhra Pradesh state), and Chambal (in Madhya Pradesh state). Most of the assistance to these projects was in the form of heavy construction equipment, and a major part of the rupee expenditures for these projects was met by PL 480 loans and grants. In the area of power projects, India received more assistance from the U.S. than from any other country. These included some of India's largest thermal power units, including Bandel (in West Bengal state), Barauni and Chandrapura (in Bihar state), Satpura (in Madhya Pradesh state), and Talcher (in Orissa state).

In the field of transport, initially U.S. aid was in the form of steam, diesel, and electric locomotives and railway wagons and coaches. The U.S. also aided the diesel locomotive factory at Varanasi (in Uttar Pradesh state); diesel components were initially imported but are now being manufactured in India. The U.S. also provided some centralized traffic control equipment for the Indian railways. The U.S. aided improvements in India's national highway system, including bridges over two major rivers. In motor vehicle production, the U.S. provided aid to India's existing automobile and truck assembly plants for the import of vehicle components. In aviation, the U.S. provided funds to India's international airline for the purchase of airplanes, and provided improved navigational aids to facilitate faster and safer domestic flights. The U.S. also aided other industrial projects, including a coal mine ropeway, a rayon-tire cord factory, an aluminum plant, paper mills, and others.

Apart from commodity assistance and assistance for industrialization, the U.S. also provided considerable funds for nearly every area of education,

including a major contribution to the establishment of agricultural universities. The U.S. provided funds for the purchase of laboratory and scientific equipment for several engineering colleges. One of India's premier engineering schools, the Indian Institute of Technology at Kanpur (in Uttar Pradesh state) was solely assisted by the U.S. A consortium of several leading American universities (M.I.T., Cal Tech, Illinois Institute of Technology, Carnegie-Mellon, Michigan, and California) provided faculty for the Kanpur institute. The Teacher's College of Columbia University was involved in the establishment of the National Institute of Education in New Delhi. Under U.S. auspices, summer institutes were created under which each summer college and secondary school teachers of science and mathematics were exposed to new methods of science teaching. In the field of medical education, scientific and laboratory equipment was provided to the All India Institute of Medical Sciences, located in New Delhi, which is now India's leading research and teaching medical college. This involvement in many areas of Indian education did, as Bhagwati and Desai have noted, lead to charges by Indian radical thinkers that a politically sensitive area such as education was being penetrated by ideologically oriented foreign powers (Bhagwati and Desai, 1970: 209). They also noted that an attempt to start an Indo-U.S. Education Foundation in 1966 drew strong criticism from Indian intellectuals and the project was eventually abandoned.

The key message from a description of the U.S. aid effort in India in the preceding few paragraphs is that American aid was extensive and touched upon many different sectors of the growing Indian economy. Further, and perhaps more importantly, the bulk of U.S. aid went to the Indian

public sector. At least one commentator on this feature of American aid to the Indian public sector has noted that "such aid has increased the resources of the public sector relative to the private sector and has enabled the government to pursue policies which have tended to restrict the activities of private investment and have tended to discourage a larger inflow of foreign private capital" (Tansky, 1967: 113). The U.S. did, of course, provide loans to the Indian private sector under the provisions of the Cooley amendments to the use of PL 480 counterpart funds. Tansky, however, adds that because much of U.S. aid was for the development of infrastructure, the infrastructure development could create conditions conducive to private sector capital formation. It has also been noted that aid emphasis on infrastructure development, at least during the first three plan periods extending up to the mid-1960s, strengthened the public sector and increased its share of total productive capacity, but also strengthened the private sector (Narain and Rao, 1963: 67).

In contrast, Soviet aid went predominantly for projects in the heavy industrial sector, including steel, power, coal, petroleum, and pharmaceuticals. Soviet and Eastern-bloc aid had been negligible in the First Plan period, but grew rapidly in the Second and Third Plans. In the Third Plan, Soviet aid utilized by India was about 9 percent of the total aid utilized by India (U.S. Embassy in India, n.d.: 5-12).

Most of the Soviet-aided projects were in the public sector. These projects "are generally identifiable as Soviet projects and appeal to India's fervent aspirations for industrialization" (Tansky, 1967: 110). The only state-owned oil refineries in India in the mid-1960s were financed by the Soviet Union and Rumania. It is not entirely obvious that Soviet aid to India resulted in the expansion of the Indian public sector beyond what

domestic policy would anyway have wanted it to be (Bhagwati and Desai, 1970: 184-85). Nonetheless, it is noteworthy that sizable Soviet aid went "for such traditional preserves of private interests as petroleum and pharmaceuticals" (Tansky, 1967: 170).

Most of the Soviet credits extended to India required repayment over a 12-year period beginning one year after delivery of all (source-tied) machinery and equipment for any project. The rate of interest charged was 2.5 percent per year. In contrast, the rate of interest charged on U.S. AID loans between 1961 and 1966 was 0.75 to 1.0 percent per year for the first ten years and 2.5 percent thereafter. Table 14.3 presents estimates of the average maturities and interest rates for the major aid-giving countries for India's Third Plan (1961-1966). With the exception of IDA, U.S. aid carried the softest terms. However, Soviet loans carried repayments in kind which "definitely eased the burden of repayments insofar as such provisions have led to net additions to Indian exports" (Bhagwati and Desai, 1970: 184). But it is important to note in comparing aid from different countries, especially Soviet-bloc aid versus Western aid, that Soviet-bloc aid "made for greater manoeuvrability on the part of India by allowing for a competitive edge through offers of aid-finance and know-how for projects which the West could not, or would not, help to implement" (Bhagwati and Desai, 1970: 184).

Outside the Soviet bloc, since 1961, India has had her aid channeled through the Aid-India Consortium which comprises the aid donors to India, including the World Bank and IDA. The World Bank took on the role of a convening agent for the Consortium annual meetings to discuss aid requirements, but gradually took on the task of comprehensively evaluating India's economic performance.

Table 14.3. Average maturity and interest rates on fresh loans authorized during the third plan by major donors.

Donor	Grace period for repayment	Total maturity including grace period	Interest rate
	Number of yrs.	Number of yrs.	% per annum
1. United States	8.7	35.5	1.86
2. United Kingdom	6.9	25.0	4.43
3. West Germany	4.8	17.3	4.82
4. Japan	5.0	15.2	5.84
5. U.S.S.R.	1.0	12.0	2.50
6. I.B.R.D.	4.4	21.2	5.64
7. I.D.A.	10.0	50.0	0.75
Total: all countries/ institutions	5.8	25.8	3.20

Notes: 1. The estimates include credits meant for use in the Third Plan, though actual agreements were signed in the Second Plan period.

2. The averages have been compiled by weighing the loans by size. Source: J. N. Bhagwati and P. Desai. (1970) Planning for Industrialization: India. Oxford University Press for the Organisati for Economic Co-operation and Development. Page 184.

14.1-2 Aid Tying

In the entire foreign aid program in India (and probably elsewhere) there have been few other topics that have generated as much comment (indeed, recrimination) as the whole issue of tied aid, including project-tying, source-tying, and reverse-tying. Project aid is aid to cover part or all of the foreign exchange cost of an identifiable project. Non-project or general purpose aid refers to aid to finance purchases of spare parts and raw materials, and generally to support the balance of payments. Non-project aid may be tied to purchases from a specific country source.

Reverse-tying occurs when repayments of a loan from a specific source are made in the form of commodity exports to that country. Aid from multilateral agencies is free from source-tying due to the agencies' policies regarding global tendering.

It has been estimated that, excluding U.S. commodity assistance, about 66 percent of the total aid utilized by India during her Second Plan was source-tied and 34 percent was untied, and during the Third Plan about 83 percent of the total aid utilized was source-tied and 17 percent was untied (Bhagwati and Desai, 1970: 201).

The issue of aid-tying has generally been approached in terms of the costs of aid-tying to the recipient countries. Bhagwati and Desai note that the government of India did not make any careful estimates of the costs of aid-tying, but they cite evidence from other studies concluding that such costs were substantial (Bhagwati and Desai, 1970: 204). P. Chaudhuri cites a study by N. Chandra who found that "the costs of tied-aid for non-project uses is of the order of 19 percent, indicating that the actual amount of foreign resources transferred through such aid is about one-fifth less than its nominal amount" (Chaudhuri, 1979: 103). While these discussions on the costs of aid-tying are generally designed to demonstrate that the true extent of resource transfers from aid are considerably less than the nominal amounts of such aid transfers, the implications of aid-tying have been much less studied.

The most effective form of procurement tying occurs when aid is used to finance the import content of new projects. It is this aspect of tying that can lead to serious economic distortions in that the pattern of imports of aid recipients becomes heavily biased toward capital goods for new projects. This is apparently what happened in India: "India has in

the past suffered from excessive projectization, in that the aid given for capital goods for projects could have been more rapidly and beneficially spent on increasing imports of components, raw materials, spare parts, and minor capital goods not required for specific new projects" (Little and Clifford, 1965: 161-62).

Echoing the same theme, Mellor has argued that aid donors neglected agriculture because they preferred projects with a large foreign exchange component. There were many such projects in industry and infrastructure but few in agriculture. Because of "basic sympathy" with the Indians' own planned approach to industrialization, actions by aid donors on loans and grants tied to specific projects reinforced the growth strategy of India's development efforts (Mellor, 1976: 225). With hindsight, Mellor argued that the capital intensive growth strategy was bound to produce low rates of return on investment in the short run. The massive investments in the rural infrastructure of irrigation, power, and communications would not have yielded high returns until the complementary investments in education and research had been undertaken.

14.1-3 Aid Authorization and Aid Utilization

Several observers have noted the rather long lags between the authorization of aid and its utilization by India during the first one-and-one-half decades of Indian planning (Streeten and Hill, 1968: 331; Narain and Rao, 1963: 37; Bhagwati and Desai, 1970: 187-89). Bhagwati and Desai estimate that during the Third Plan period the rate of utilization of aid was in the range 26 to 53 percent. This lag has obvious implications for the efficiency of the aid program. The principal reason given for the slow utilization of aid was the fact that most of the aid was project-tied

and source-tied, and the much-vaunted administrative service in India was not adequately prepared for the task of detailed project preparation, programming, and scheduling. However, the trend, at least in the period 1961 through 1967, in the rate of utilization was upward and presumably is attributable to improvements in project planning and the realization that the slow utilization of aid has a social cost. Delays in utilization were also due to the shortages of complementary factors and inputs.

Little and Clifford point out that only in 1963-1964 India began to receive large amounts of non-project assistance. However, at the beginning of 1965-1966 India was suffering one of her worst balance of payments crises and there was, at the same time, considerable excess capacity in some industrial sectors due to lack of imported raw materials and complements. They draw the inference that aid and planning were still too much devoted to the creation of output capacity and not enough to promoting current output or to the rapid completion of the schemes already started. The end result of this was a low productivity of capital. They also argue that the central and state government administrative machinery was too overstrained to deal with the heavy burden of public control and ownership which was assumed by the government (Little and Clifford, 1965: 228-31).

In spite of all this, they still argue that India could (at least in the mid-1960s) have absorbed more aid by improved sectoral and project planning and by using more aid for imports of raw materials such as fertilizer. While arguing that insufficiency of general purpose aid means that the economy operates below capacity, they argue that insufficiency of aid resulted in more stringent import and investment controls. In other words, something of a vicious circle exists. Administrative controls imply a

reduced efficiency of the economy which implies that usage of aid is low. If general purpose aid were increased, some controls could be relaxed, especially on imports of current inputs, which would mean that more aid would be absorbed and output would grow.

14.2 Macroeconomic Perspective on Development Assistance to India

The early literature on the impact of foreign resource transfers from the developed industrialized countries to the developing countries of Asia, Africa, and South America assumed that each dollar of these transfers would add one dollar to the imports of the developing countries (Papanek, 1972). Since these additional imports would be capital good imports, the inflow of foreign resources would be expected to increase investment in the developing countries by the exact same amount. Further, since stable incremental capital output ratios were also assumed, the increased investment would be expected to yield a certain stream of income. This naive view of the process of economic growth, at least from the perspective of today, somewhat naturally led to rather optimistic and exaggerated expectations about the productivity of aid. The experiences of the Marshall Plan in Europe shortly after the end of World War II and the rapid economic growth that had been attained there tended to reinforce and sustain the expectations of the early aid proponents.

But over time as the economics profession began to better understand the nature of the economic development process, studies on the impact of aid on the developing countries also grew in sophistication. The role of education, social factors, the political framework, and traditional institutions was acknowledged and even included in some of these studies. But "assumptions about the contribution of foreign resources were not changed: they were exactly additive to domestic savings and to domestically financed imports" (Papanek, 1972: 934).

A "revisionist" phase apparently began in the early 1970s when some writers argued that foreign resources contributed little, if anything, to economic growth and domestic savings. Indeed, Griffin and Enos (1970)

went so far as to argue, on the basis of cross section evidence from Latin America, that over the period 1957 to 1964 the rate of growth of GNP was inversely related to the ratio of foreign aid to GNP. While many other writers did not go so far as that, many of them did reach a common view that foreign aid and other foreign inflows reduce domestic savings (Weiskopf 1972).

Weiskopf used a simple macroeconomic model of the legendary two-gap variety. Such a model was said to be necessary for an evaluation of the role of foreign capital because foreign capital contributes both to the potential availability of savings (easing the savings constraint on capital formation and growth) and to the potential availability of imports (easing the trade constraint). From a total sample of 44 countries. Weiskopf classifies them into those where there was a binding savings constraint or where there was a binding trade constraint or a "hybrid situation in which both the savings and trade constraints are active at the cost of excess production capacity" (Weiskopf, 1972: 30). For 17 countries that were identified to be savings constrained, Weiskopf estimated savings functions relating GDP, total exports, and net foreign capital inflow to aggregate saving.

One of the 17 countries for which results are reported is India. The results for India are:

$$S = -4968.0 + 0.191Y - 0.270F + 0.812E$$
$$(-15.12) \quad (60.91) \quad (-5.91) \quad (4.35)$$

Time period = 1950-1965; $R^2 = 0.999$; where S is aggregate savings, Y is GDP, F is net foreign capital inflow, and E is total exports (Weiskopf, p. 36) (t-ratios are in parentheses). The striking aspect of these results is the strong negative and significant coefficient for the foreign aid

variable. Indeed, for every single country of the 17 countries for which results are reported, the coefficient of the foreign aid variable is negative. With dummy variables to distinguish each of the countries, a pooled regression was also estimated. According to the pooled regression, "the impact of F on S is highly significant, and approximately 23 percent of net foreign capital inflow substitutes for domestic savings" (Weiskopf, 1972: 37).

Disputing the above findings, Papanek (1972) argued that much of the apparent association between savings and foreign capital inflows was in fact explainable in purely statistical terms, and certain exogenous factors (such as changes in the terms of trade, political upheavals weather variables, and even cultural and religious considerations) could lead to both a positive association between foreign resources and savings and growth as well as a negative association between these variables. Unlike Weiskopf's time-series approach, Papanek (1973) used a cross-section approach to study the impact of foreign resources on growth. Papanek also distinguishes between the various forms of foreign capital inflows and between primary exports and other exports.

Papanek examines a large number of developing countries in Asia, Africa, and Latin America and seeks to explain GDP growth rates in terms of explanatory variables such as domestic savings, and various forms of foreign resource inflows such as aid, foreign private investment, and "other" foreign inflows. Recognizing the limitations of such a cross-country approach, Papanek offers his findings as "suggestive." What the evidence presented suggests is that savings and foreign inflows "explain" about one-third of GDP growth in the entire sample. The coefficient for the aid

explanatory variable is found to be nearly twice that of the other independent variables. Some interesting regional differences in the estimated equations are also observed. For example, "savings and foreign inflows, and especially aid, have the most unequivocal impact on growth in Asia and the Mediterranean countries. . . . Coefficients are distinctly lower for the Americas and barely significant" (Papanek, 1973: 123). Papanek also attempts to estimate aggregate savings functions of the form relating aggregate savings to income per capita, population, foreign resource inflows, primary exports, and other exports. Here the coefficient for aid turns out to be negative and highly significant but Papanek argues that that might be more likely due to exogenous factors affecting both aid and savings rather than signifying a causal relationship between the two variables.

One other example of a cross-country approach in evaluating the impact of development assistance is the work by two leading "practitioners" of aid, Hollis Chenery and Nicholas Carter. They present "a summary evaluation of the interrelations between internal and external policies and the role of foreign assistance in the development experience" of a group of 37 developing countries (Chenery and Carter, 1973: 459). India is among the countries studied and while much detail on the Indian experience is lost in the aggregation of sample countries, the cross-country approach has provided much useful information about the developing countries.

Chenery and Carter base their evaluation on the projections of growth and aid made by Chenery and Strout (1966) for the period 1962-1970 for establishing aid requirements, and estimates of the actual values of the parameters in their model for 1960-1970. The Chenery - Strout projections were derived from a simplified two-gap model which exaggerates the likelihood

of disequilibrium between internal and external constraints to growth. Out of their total sample of 37 countries actual GDP growth in 25 countries between 1960 and 1970 was within ± 1.2 percentage points of the planned rate of growth in these countries. The authors attempt to indicate the relative importance of "internal" and "external" factors in the 5 countries that had rapid growth (Taiwan, Korea, Iran, Thailand, and Kenya) and in the 6 countries of retarded growth (India, Colombia, Ghana, Tunisia, Sri Lanka, and Chile). India's actual GDP growth for 1960-1970 was 3.5 percent per year, which was not only below the planned 1962-1970 growth rate of 5.3 percent per year but also below the actual achieved growth during 1957-1962 of 4.3 percent per year.

Chenery and Carter discover that successful development had led to increased supplies of external capital, usually on harder terms. But unsuccessful development usually led to a reduction in the aid supplied to those countries. They find that in the fast-growing countries there was substantial saving and investment even though marginal savings rates were not generally higher than predicted. But in countries of retarded growth, there was less of a shortfall in savings and investment rates than in growth of GNP.

The authors observe that Taiwan had a very large increase in both exports and savings, permitting both an acceleration of growth and a reduction in capital inflow. In Korea, the substantial inflow of foreign capital made possible a fuller mobilization of the economy's resources. In the cases of retarded growth, they conclude that internal factors provide the primary explanation of slow growth. For example, Tunisia is said to have misallocated a large share of investment to less immediately productive uses over much of the 1960s. Chile followed a policy of "excessive import

substitution" and the savings rate stayed low as a result of failure to control inflation. Sri Lanka and Ghana were judged to have inadequately adjusted to the slow growth of their major export products. In India and Colombia, the "reduction in external assistance played a major role in retarding growth" (Chenery and Carter, 1973: 464). The foreign trade bottleneck in India, as also in Colombia, was made worse by trade policies that discriminated against exports of manufactured goods.

The "shortfall" of aid to India in 1962-1970 was roughly $6 billion. Exports were roughly $0.5 billion short of the Chenery-Strout projections. Using simulation experiments on the Chenery-Strout model, the authors conclude that the addition of the lost exports would have added only 0.5 percent per year to the 3.5 percent per year actual growth achieved by India during the decade. But the projected amount of aid (that is, the makeup of the $6 billion shortfall) would, in their view, have raised the growth rate to 6.8 percent per year.

From these basically theoretical modeling exercises of the relations between development assistance and macroeconomic variables we now turn to examining the impact of development assistance on variables such as income and savings and investment rates in India.

The impact of development assistance depends on the share of foreign aid in the total investment in the receiving country, but quantifying the contribution of aid to the productive capacity of a country is a difficult task. Among other things, aid can be used to transfer capital or technical skills, but the productivity of these transfers cannot be treated analogously to the relatively simple, but still complex, question about the yield of capital. As Little and Clifford have argued, foreign aid may have the effect of bringing into use productive resources already existing in the receiving

country and hence might have a much greater effect than the yield of capital would suggest (Little and Clifford, 1965: 103). However, an overall assessment of the impact of aid must only be attempted in conjunction with an assessment of the economic policies of the receiving country.

India's attempt at formal planned development began in 1951. The First Plan was largely a collection of individual projects put together, as various authors have emphasized, around a Harrod-Domar growth model (Bhagwati and Srinivasan, 1975: 4). The thrust of the plan was to build infrastructure and the plan focused on fiscal policy to raise domestic savings to the levels required to match the projected investment that was considered necessary for the planned (that is, targeted) economic growth.

The Second Plan (1956 to 1961) was a continuation of the development effort begun in the First Plan but embodied a shift in priorities toward industrialization, especially heavy industry. The Second Plan was developed by Professor P. C. Mahalanobis of the Indian Statistical Institute on the basis of a structural model which saw the key source of growth the capital goods sector and the means of growth a large increase in investment, especially by the public sector. The Second Plan envisaged and accomplished a large increase in investment, especially in public sector heavy industrial projects. Very significant amounts of foreign aid flowed into India during the plan period to finance infrastructure development and the creation of basic industrial capacity. Despite this, the first two years of the Second Plan were also characterized by large scale deficit financing which, in the Indian context, is defined as the excess of government expenditures over receipts from taxes, borrowing within the country and abroad, and drawing down of official reserves, and so is creation of money. The

implications of this have, unfortunately, not received much attention in the Indian literature. However, it should be noted that, among others, P. T. Bauer, a vocal and sometimes strident critic of Indian planning and foreign aid, argued that the large scale deficit financing in the mid-1950s contributed to inflation and the foreign exchange crisis (Bauer, 1961: 33-38). The inflation was, of course, moderated by the large import surplus occasioned by foreign aid.

However, the important point to note about this era is that the Second Plan saw the beginning and subsequent strengthening of industrial licensing and controls over nearly all sectors of the Indian economy. The precarious foreign exchange position towards the middle of the Second Plan period led to strict licensing of imports of both capital goods and consumer goods. The exclusion of private enterprise from large areas of industrial activity (which was an outcome of government industrial policy) and effective exchange controls were principal deterrants to the inflow of private foreign capital. In the area of agriculture, the inter-state movement of foodgrains became subjected to restrictions and controls These administrative controls have undergone considerable refinements and adjustments, including periods of relative liberalization, but continue to pervade nearly all spheres of economic activity to this date. As Mellor has argued, the Second Plan "was, by its very nature, centralist since the emphasis on a few large-scale capital goods industries "lent itself to administration from a highly centralized bureaucracy" (Mellor, 1976: 4).

The Third Plan (1961 to 1966) reaffirmed the basic imbalanced approac to planned industrial development. But with the historic droughts of 1966 and 1967 and the resulting industrial recession, along with the decline

in foreign aid in the aftermath of the 1965 war with Pakistan, the planning process was in disarray for several years. This was evidenced by a hiatus in the five-year plans between 1966 and 1969 at which time a series of one-year annual plans was put as a makeshift strategy before the elements of a new strategy of growth were put together in the Fourth Plan (1969 to 1974) and subsequent plans.

14.2-1 Impact of Aid on Income, Savings, and Investment

Since the beginning of the First Plan the Indian economy has recorded an average growth rate of between 3.5 and 4 percent per year. While there have been year-to-year fluctuations in the rate of growth, the rate has not risen or fallen on any sustained basis. During the first five years of planned growth net national product at constant prices grew at 3.7 percent per year. This slowed to a rate of growth of 3.1 percent per year during the Second Plan period, and slowed further to a rate of 2.5 percent per year during the period 1961 to 1966 (Chaudhuri, 1979: 52). It is important to note that the unprecedented droughts of 1965-1966 and 1966-1967 reduced the overall rate of growth of the economy. The excellent agricultural harvest of 1967-1968 spurred overall economic activity and between 1967 and 1971 the economy grew at an average rate of over 4.5 percent per year. A fall in agricultural production in the early 1970s again slowed economic growth. But between 1974 and 1977 the economy again grew at a rate above the long-run rate of 3.65 percent per year (Raj Krishna, 1980: 78). In 1979-1980 a severe drought and external events such as the rise in petroleum prices led to a fall in national income, but since then the economy has again grown smartly.

The relatively low rate of long-run growth has meant a very slow increase in per capita income since population has continued to increase.

Between 1951 and 1961, the population of India grew at nearly 2 percent per year and this rate in fact accelerated to 2.25 percent between 1961 and 1971 (Bhagwati and Srinivasan, 1975: 7). Preliminary data from the 1981 Census indicate that between 1971 and 1981 the rate of growth of population was slightly above 2 percent per year.

Indian performance on savings and investment has been much better than on aggregate or per capita income growth. Gross domestic savings as a percentage of gross domestic product at market prices has shown a steady trend upward over the past 3 decades, rising from 13.7 percent in 1960-1961 to 16.8 percent in 1971-1971 to 22.2 percent in 1981-1981. As Raj Krishna has commented, "rates on this order (of saving) are typically achieved only by nations with a per capita income of $400 to $500 in 1964 U.S. prices" (Krishna, 1980: 82). An evaluation of the behavior of different categories of savings such as government savings, private household savings, and savings by the private corporate sector is not available. But whatever data are available suggest that the contribution of the public sector to domestic saving has not been noteworthy (Bhagwati and Srinivasan, 1975: 9; and Mellor, 1976: 142).

Like the savings rate, the rate of gross fixed capital formation as a percent of GDP has shown a rising trend over the past three decades of planned economic development. Gross fixed capital formation as a percentage of GDP was 14.4 percent in 1960-1961, 15.7 percent in 1970-1971, 17.9 percent in 1975-1976, and 18.8 percent in 1980-1981. Gross fixed capital formation by the public sector was 46.7 percent of the total in 1980-1981, but was only 23.0 percent of the total in 1950-1951. However, as Raj Krishna has pointed out, "the ratio of added investment to increases in output has risen steadily from 3.6 in the First Plan to 6.2 in the first three years

of the Fifth Plan" (Krishna, 1980: 82). Investment in the public sector has had a very low rate of return. Between 1970 and 1975, the private corporate sector had a profit rate of about 11 percent of net assets, but central government companies had a profit rate of only 4.4 percent and state-government companies had an even lower profit rate. One of the reasons why these rates of return on public sector investment have been low is that the prices for the products of these companies have been kept artificially low "as a matter of policy," but "the main reason for low rates of return on public investment seems to be inefficiency. Instead of generating large surpluses the public sector has become a drag on resources. People have to be taxed at higher rates year after year to finance the mounting losses and new public investment in public enterprises" (Krishna, 1980: 83).

Even though government tax revenue as a percent of GNP is high in India, the government has not apparently been able to mobilize sufficient resources to finance its investment, especially after foreign aid declined in the late 1960s. In 1969, all major commercial banks in India were nationalized. And now the financial system "is compelled by a set of laws and guidelines to lend a high proportion of its funds to the government" (Krishna, 1980: 82).

14.2-2 Development Assistance and the Foreign Trade Regime

The key reference in reviewing studies on the foreign trade regime is the study by Bhagwati and Srinivasan (1975), covering the period 1950-1970, which is a careful examination of India's foreign trade regime in its interaction with domestic policies. The authors analyze insightfully the import and export policies under the foreign trade regime that operated

in the period 1956-1966. They examine the interventions by the government in the foreign trade sector and the methods by which scarce foreign exchange was allocated in an effort to study the static efficiency effects of the foreign trade policies. They also study the growth effects of the foreign trade regime by examining the question whether the foreign trade regime had any impact on the savings effort. The overall conclusion reached is that the basic strategy of industrialization followed by India was detrimental to the growth of the economy "by adversely influencing export performance, by wasteful inter-industrial and inter-firm allocation of resources, by permitting and encouraging expansion of excess capacity and by blunting competition and hence the incentives for cost-consciousness and quality-improvement" (Bhagwati and Srinivasan, 1975: 245).

The ratio of exports to national income in India was low throughout the 1950s and 1960s and her share in total world trade fell during that period. Mellor attributes this relatively weak performance to "the choice of development strategy, the nature and conditions of foreign aid, and the initial composition of exports" (Mellor, 1976: 192). All through this period Indian exports remained heavily biased toward "traditional" items such as tea, jute manufactures, and cotton textiles. These commodities were believed to have poor growth prospects (the so-called export pessimism syndrome) which reinforced the government's import displacement policies in spite of the rising capital intensity of such efforts. According to Bhagwati and Srinivasan, relying on the earlier study by Bhagwati and Desai (1970), the stagnation of export earnings through the 1950s is "to be largely attributed to domestic policies which frequently led to falling shares in Indian traditional exports and an inadequate expansion of new exports (in the absence of any export promotion on that front)"

(Bhagwati and Srinivasan, pp. 54-55, parentheses in the original). The accompanying Table 14.4 on "traditional" and "non-traditional" exports provides data from 1951 to 1974.

The first severe foreign exchange crisis in India occurred soon after the Second Plan (1956-1961) began. While significant amounts of aid flowed into India, exports continued to stagnate, and the resulting foreign exchange crises led to the imposition of a quantitative-restrictions regime in India. The government made some tentative attempts at export promotion but nothing much was accomplished. The large inflows of aid constituted a painless substitute for foreign exchange earned via exports, and enabled India to maintain a high rate of investment, higher than what would have been possible if aid flows were smaller.

From the early 1960s the government began a policy of export subsudies and licensing preferences. As a result of these policies and due to the expansion of trade with the socialist countries, total export performance in the Third Plan was considerably better than in the Second Plan. However, while the export subsidies reduced the average degree of over-valuation of the Indian rupee, the subsidy policy was "selective, chaotic, and cost-unconscious." The incredible complexity of the export subsidy policies, involving exemptions and refunds from sales, customs, and excise taxes, direct tax concessions, and import entitlement schemes under which eligible exporters received import licenses carrying high import premia, has been carefully analyzed by Bhagwati and Srinivasan (especially pp. 59-75). The key characteristic of the whole policy milieu was intervention by the government in a selective manner with little economic rationale. The inefficient and indiscriminate export policy was accompanied by an equally indiscriminate import policy involving protection to domestic industries. The policy of export subsidies and increased use of import duties implied

Table 14.4. Indian Exports

Year	Total exports Million U.S. $ (current)	Traditional exports Million U.S. $ (current)	Nontraditional exports Million U.S. $ (current)
1951-52	1,503	1,332	172
1955-56	1,242	1,081	159
1960-61	1,349	1,120	232
1961-62	1,387	1,153	235
1962-63	1,440	1,221	217
1963-64	1,666	1,350	316
1964-65	1,715	1,446	269
1965-66	1,692	1,368	325
1966-67	1,542	1,217	322
1967-68	1,598	1,214	384
1968-69	1,810	1,242	569
1969-70	1,884	1,219	668
1970-71	2,047	1,330	716
1971-72	2,091	1,430	663
1972-73	2,431	1,466	971
1973-74	3,021	1,812	1,208
1974-75	4,174		
1975-76	4,672		
1976-77	5,753		
1977-78	6,315		
1978-79	6,978		
1979-80	7,997		
1980-81	8,503		

Definitions: Traditional exports: food, beverages and tobacco, crude materials, mineral fuels, animal and vegetable oils and fats, and cotton textures and jute manufactures. Nontraditional exports: chemicals, manufactured goods other than cotton textiles and jute manufactures, machinery and transport equipment, miscellaneous manufactured goods, and others.

Sources: 1. John Mellor. (1976). The New Economics of Growth. Page 194. Cornell University Press, Ithaca, New York. For data for 1951-52 to 1973-74. 2. Government of India. Monthly Statistics of Foreign Trade. Various issues for data after 1974-75.

The data from 1974-75 are not comparable to data prior to that year. Breakdown between traditional and nontraditional exports after 1973-74 are not available.

a gradual de facto devaluation, which culminated in the June 1966 devaluation of the Indian rupee.

The June 1966 devaluation marked the beginning of a new phase in which export subsidies were eliminated and import duties were reduced. The "gross" devaluation, that is, the pure parity change was 57.5 percent in the official rate on the dollar. Simultaneously with the parity change, the import entitlement method of export subsidy was eliminated along with some of the cash subsidies on selected engineering goods and the government tax credits. Countervailing export duties were imposed on "traditional" exports aimed at neutralizing the effect of devaluation on these exports but based on the assumption that India had monopoly power in trade in these products. And, when the countervailing export duties and removal of import entitlements, tax credits, and cash subsidies are all taken into account, the devaluation actually amounted to only 21.6 percent for exports. Similarly, the "net" devaluation for imports was 42.3 percent (Bhagwati and Srinivasan, 1975: 97).

The Aid India Consortium had virtually made a major devaluation a precondition for the resumption of aid, which had been temporarily suspended after the 1965 India-Pakistan war. The years 1965-1966 and 1966-1967 were years of very bad crop failures. Consumer prices rose sharply and there was an industrial recession. In the public mind the devaluation was due to the political pressures by the aid donors. Many observers also attributed the inflation of those years to the devaluation. Bhagwati and Srinivasan, however, argue that the inflation was mainly due to the severe crop failures of 1965-1966 and 1966-1967.

The devaluation of the India rupee could not have come at a worse time. The crop failures of 1965-1966 and 1966-1967 contributed to the

inflation following the devaluation and also to the industrial recession in India. Overall Indian exports remained stagnant for nearly one-and-one-half years after the devaluation. Bhagwati and Srinivasan argue, after a careful examination of the time lags involved and the entire policy changes that accompanied the devaluation, that even though some uneconomic exports did fall, non-traditional engineering and iron and steel exports increased after the devaluation. The crucial lesson that they draw from the entire episode is that the timing of devaluation and liberalization is of fundamental importance to its success and should come after a good harvest.

The political fallout from the devaluation was tremendous. It was seen as being imposed from outside, by the Aid India Consortium. It became a lively issue in partisan politics. It was seen as an attempt by aid donors to influence Indian policy. But because of extremely bad political timing (foreign pressure came at a time when the new government of Mrs. Gandhi was less than six months old and was not yet firmly established), the entire episode was seen as a disaster for the aid relationship between India and Western aid donors. Bhagwati and Srinivasan contrast this aid relationship with that which prevailed between India and the Soviet Union. The Soviet Union's method of evaluating its aid activity in India was restricted to evaluating its aid-financed projects and did not extend to evaluating the whole range of Indian econ nic policies. This "helped to avoid the kind of adverse reaction the Western donors provoked" during the devaluation-liberalization episode and indeed this episode even affected the responsiveness of Indian officials to the Smithsonian Agreement parity changes of 1971 (Bhagwati and Srinivasan, 1975: 153, 155, footnote 6).

The drop-off in foreign aid in the early 1970s and the commodity and oil price increases in the early 1970s made exporting "a question of national economic survival" (Dhar, 1978: 1034). Efforts at export promotion, begun again in 1974, did result in 10 percent increases in exports in 1975-1976 and again in 1976-1977. This rate of increase has been maintained since then. In 1980-1981, exports of Indian engineering products amounted to over $1 billion and had become the largest single export item accounting for over 13 percent of total exports. Raj Krishna has argued that this sharp export growth in the late 1970s was one measure of success of the import substitution policies that India followed because these policies "made many of the goods produced by India cheaper in the long run than their imported counterparts." As evidence, he cites Indian steel prices in December 1978 as being approximately one-half of European steel export prices, as a result of which prices of Indian engineering products were low relative to other countries (Krishna, 1980: 78).

Indian imports exhibited a growth and composition pattern determined by the development strategy that she pursued. Table 14-5 from Mellor (1976) provides details on imports. The data, of course, reflect the outcome of an explicit long term policy to establish an adequate indigenous capacity in the basic industrial sectors, particularly metals and machinery, heavy chemicals, and transport and communications equipment. Along with strict industrial licensing, import licensing operated in India. The foreign trade balance was consistently negative since external resources filled the gap between exports and imports.

The import substituting policies that India has pursued have led to a highly diversified industrial structure. A wide range of capital goods is now produced in India. For example, it has been noted that between 1955

Table 14.5. Indian Imports

Year	Total imports Million U.S. $ (current)	Traditional imports Million U.S. $ (current)	Nontraditional impo Million U.S. $ (current)
1951-52	1,838	1,526	312
1955-56	1,365	1,082	280
1960-61	2,356	1,976	382
1961-62	2,290	1,864	427
1952-53	2,377	1,956	423
1963-64	2,559	2,104	464
1964-65	2,834	2,445	390
1965-66	2,959	2,557	403
1966-67	2,771	2,403	368
1967-68	2,677	2,303	372
1968-69	2,545	2,118	427
1969-70	2,109	1,681	429
1970-71	2,179	1,732	445
1971-72	2,416	1,874	542
1972-73	2,311	1,779	532
1973-74	3,555	2,517	1,038
1974-75	5,666		
1975-76	6,084		
1976-77	5,676		
1977-78	7,031		
1978-79	8,270		
1979-80	11,171		
1980-81	15,838		

Definitions: Traditional imports: cereal and cereal preparations, raw cotton other than linters, chemicals, manufactured goods, machinery and transport equipment, miscellaneous manufactured goods, and residual imports. Nontraditional imports: food other than cereal and cereal preparations, beverages and tobacco, crude materials other than raw cotton, mineral fuels, lubricants, animal and vegetable oils and fats.

Sources: 1. John Mellor. (1976). The New Economics of Growth. Page 196. Cornell University Press, Ithaca, New York. For data for 1951-52 to 1973-74. 2. Government of India. Monthly Statistics of Foreign Trade. Various issues for data after 1974-75.

The data from 1974-75 are not comparable to data prior to that year. Breakdown between traditional and nontraditional exports after 1973-74 are not available.

and 1978 imports fell to a level of between 2 and 21 percent of total supply in 21 industrial sectors and exceeded 25 percent of the total supply in only 6 industrial sectors (Krishna, 1980: 78). This, however, does not mean that the full implications of the import substituting policies were understood by the policy planners in India or, for that matter, by the aid givers abroad. The government recognized, to some extent, that the development of the capital goods industries was not likely to provide substantial direct employment of labor. This was sought to be softened by the development of the cottage and small industries sector. That this policy has not been successful is implicit in the statement by Krishna that "the volume of unemployment (in India) keeps growing, contrary to (an important) objective of Indian policy" (Krishna, 1980: 81, parentheses added). That this policy was not likely to be successful had been noted many years ago by several critics of Indian planning, most notably by Milton Friedman. P. T. Bauer (1961) quotes an unpublished memorandum prepared by Friedman in 1955 for the International Cooperation Administration of the U.S. saying that Indian economic policy of large investment in heavy industry on the one hand and in cottage industry on the other "threatens an inefficient use of capital at the one extreme by combining it with too little labor, and an inefficient use of labor at the other extreme by combining it with too little capital" (Bauer, 1961: 59).

It should be noted that given the export pessimism of the planners in the early stages of planned economic growth in India, given the targeted rate of growth of output and the implied (by the capital output ratios) requirements of investment, the emphasis on import substituting industrialization was a logical corollary (Dhar, 1978: 1031). This objective of selective industrialization implied a tight regime of import restrictions.

However, the government relied less on import tariffs than on a direct allocative procedure. Such a procedure was complex and the economic consequences of the allocation methods included considerable administrative expense, delays, lack of coordination among different agencies doing the allocations, and automatic protection to domestic industries. Further, the strategy of import substitution involved implicit discrimination against exports. Indeed, it was an inward-looking strategy (Bhagwati and Srinivasan, esp. pp. 35-52). To be sure, there were periods of liberalization of the trade regime in India, but as various authors have noted, these lasted only for brief periods and were tentative at best. The import policy regime in India still relies heavily on quantitative restrictions.

14.3 AID and the Development of Financial Institutions

One other measure of the impact of foreign resource transfers from the industrialized world to the developing countries is in terms of the creation of viable financial institutions in the aid-receiving countries. Such institutions, often called development finance companies or development banks, are an essential step in creating conditions conducive to the growth of capital markets in the developing countries and serve in mobilizin capital for development purposes. International lending agencies have played an important role in the growth of such financial institutions. Unfortunately, however, this role has not received much attention in the literature. There are available only a few studies on this topic and none of these is specifically devoted to any one particular country.

The only study which specifically examines industrial finance companies in India is the 1964 report of the Columbia University School of Law on public international development financing in India. This report arose from a research project at Columbia University financed by the Ford Foundation. The director of the research project was Wolfgang Friedmann of Columbia University Law School, and the principal contributors to the project report included Dr. R. K. Hazari of Bombay University. The other studies that were received for this section included the one by Adler and Mikesell (1966) and by Kane (1975).

The Industrial Finance Corporation, set up in 1948, was the first of a number of institutions set up to provide long and medium-term finance to private industry in India. The other institutions which have since been established are the Industrial Credit and Investment Corporation of India, the National Industrial Development Corporation, the National Small Industries Corporation, the State Financial Corporation, and the State

Industrial Development Corporations. In 1964, the Industrial Finance Corporation was reorganized and named the Industrial Development Bank of India. It now amounts to a central bank for India's network of term finance institutions.

The Industrial Finance Corporation, now known as the Industrial Development Bank of India, is the oldest and largest long-term industrial financing institution in India. Under its charter it has financed public limited companies and cooperative societies registered in India. It provided loans for the purchase of new machinery, replacement of old machinery, construction of factory buildings, and the purchase of land for factory sites, but does not provide finance for purchase of raw materials or for working capital. Most of its loans have gone to sugar, paper, cotton textiles, chemicals, and metal products manufacturers. Adler and Mikesell (1966) have argued that the policies of the external agencies prohibiting the use of money by sub-borrowers for working capital has adversely affected the long-term growth of the development banks in the developing countries (Adler and Mikesell, 1966: 59).

Until 1955, when the Industrial Credit and Investment Corporation of India was set up, the Industrial Finance Corporation was the only institutional lender of long-term industrial finance. The IFC approached the World Bank for funds several times to enable it to make foreign currency loans but was rebuffed (Columbia University, 1964: 225). Adler and Mikesell point out that this was due to the doctrinaire approach of the World Bank group in providing financial and technical assistance to <u>private</u> development banks, and the Indian IFC was a public sector development bank. Unlike the World Bank group, the U.S. Development Loan Fund-Agency for International Development was much less doctrinaire with respect to its

policies and made dollar and local currency loans to private, public, and mixed ownership industrial development banks. The DLF made its first loan (of $10 million) to the Indian IFC in 1960. This loan was repayable in rupees. In the first fifteen years of its existence, the Industrial Finance Corporation disbursed Rs 878 millions and out of this amount only Rs 22 millions (or 2.5 percent) came from foreign sources (Columbia University, 1964: 224-25).

India's first private sector development bank, the ICICI, was set up in 1955. Its origin is traced to the "U.S. aid mission which wanted to place PL 480 counterpart funds with a private agency but could not make much progress with the scheme, perhaps due to the lukewarm attitude of the Government of India. The idea (for the private development bank) crystallized only when IBRD came into the picture" (Columbia University, 1964: 230). The objective of the ICICI was to assist industrial enterprises in the private sector in India and to foster the growth of a private capital market in the country. The ICICI provides financial assistance to private companies for the purchase of capital assets through the underwriting of securities issued by these companies, makes rupee loans, and makes foreign currency sub-loans out of World Bank and other foreign exchange credits for financing imports of capital equipment and technical services.

The work by Kane (1975) is an important contribution in assessing the overall effectiveness of development banking in the process of economic development. Kane studies 31 development banks all of which had received loans and/or equity capital from the World Bank group. These 31 banks include 12 in East and South East Africa, 8 in Africa, 2 in Latin America,

3 in the Middle East, and one in Europe. Kane's sample is a fairly diversified group with respect to the age of the banks, their size, and their ownership. Three of the banks are publicly owned, 15 are private, and 13 are of mixed public-private ownership. Among the 31 is the Industrial Credit and Investment Corporation of India.

Kane uses a demand-for-funds/supply-of-funds approach in evaluating the performance of development banks. From a particular development bank's point of view, the demand for funds is defined as the value of all projects submitted to the bank by private sector entrepreneurs per period of time which are evaluated by the bank as economically viable and loan-worthy and which the bank stands ready to finance, assuming it has the necessary funds. The supply of funds is said to consist of all funds which the development bank has available for lending, including funds in lines of credit extended to the banks, funds temporarily invested in short-term assets, and funds from current amortization payments.

Kane examines the demand for funds, defined above, and also the supply of funds in his sample of developing country development banks for the 1950s and 1960s. He concludes that the supply of funds was more than adequate, and effective demand for bank funds was the real limit on the level of lending by the sample development banks. In an earlier study, Adler and Mikesell had pointed out that the major limitation on the number and volume of sub-loans made to private enterprises in developing countries arose from the demand side rather than from the supply of loanable funds (Adler and Mikesell, 1966: 55).

In evaluating the role of development banks in the process of economic development, an understanding of the sources of capital supply to the banks is essential. A knowledge of where such capital originates and

what processes are necessary for replenishing capital is important in explaining the relative shortage or availability of funds. A relatively small percentage of development bank financial resources (only 17 percent) originates in the private domestic sector via debt and equity actually raised in the market, by far the major share of such resources is contributed by foreign lending agencies, 47 percent (Kane, 1975: 94-98). For India, Kane finds that the ICICI obtained only 15 percent of its resources from private domestic sources. The low share of private domestic sources in the supply of funds reflects low levels of income and hence of aggregate saving in the developing countries. However, available private domestic capital can often find more attractive alternative investment opportunities than investing in debt or equity instruments of the development banks.

The foreign funds which the development banks have obtained include lines of credit extended to the development banks for financing equipment imports from the capital exporting countries. Such lines of credit have been extended by the U.S. Exim Bank. Many of the development banks have received economic assistance funding through AID or its predecessor agencies including counterpart funds. For some countries, counterpart funds were particularly important, as in Turkey and in India.

The key element in assessing the role of development banks in promoting private enterprise and economic development is considering the emergence of capital markets in the developing countries. The long-run success of the development banks in becoming viable financial institutions is tied to the development of capital markets in developing countries. Development banks finance their customers through both debt and equity securities. When development banks underwrite the public issue of securities by private industrial concerns, they create activity in the capital market. However,

if the underwriter takes up a large fraction of any new security issue, that is a sign of weakness in the capital market. And, if the underwriter takes up a small fraction of a new security issue, that is a reflection of the fact that other investors and funds are available and these other investors have confidence in the issuing corporation.

For much of the 1950s and 1960s, the private capital market evolved very slowly in India. Kane points out that between 1957 and 1969 the total amount of capital raised in the Indian capital market grew at an average annual rate of 2.2 percent. This performance "raises questions about the ability of a capital market to develop adequately especially with respect to private investment in the context of a highly planned economy. . . . The All India Share Price Index declined from 1962 = 100 to 77.7 in 1967. Military conflict, economic recession, and excessive or misdirected planning legislation all had their effect on investor confidence in private industry" (Kane, 1974: 177).

Development banks have also used sales of securities from their own portfolios to stimulate development of capital markets. This, according to Kane, was particularly important in Turkey and also in India.

The key conclusion that may be drawn from the above review is that development banks are an important institutional innovation whose major objective is to foster growth of private capital markets and thereby mobilize private capital for economic development. Aid agencies have an important role to play in the development of these term finance institutions because funds from such agencies and from the public sector act as "seed money to mobilize private sector resources for industrial development" (Kane, 1974: 185).

Vasant Sukhatme
Draft
October 20, 1982

14.4 Agriculture and Rural Development

At the time of India's independence Indian agriculture was in a sorry state. Total foodgrain production had been stagnant, use of modern inputs was at a low level, rural life, including education and health in the rural areas, provided little reason for hope for the vast majority of the population. But in a relatively short period of 30 odd years a great deal has been accomplished. The agricultural economy in some regions of the country has been completely transformed. Agriculture continues to dominate the economic scene of the country accounting for over 40 percent of the gross domestic product in 1979/80. Within agriculture, crop production dominates and within crop foodgrains (cereals and pulses) account for 70 percent of total crop production. In 1979/80 foodgrains were planted on 77 percent of the gross cropped area and accounted for 79 percent of the irrigated area. Rice is India's major foodgrain, accounting (in 1980/81) for over 40 percent of the total foodgrains produced. The second most important grain is wheat which (in 1980/81) accounted for about 28 percent of total foodgrain production.

Between the beginning of planning in India and the late 1970's foodgrain production more than doubled. The rate of growth of total foodgrain production achieved between 1951 and 1977 was 2.8 percent per year, which ranks favorably with the growth rates achieved in the developed world (Sanderson and Roy, 1979: 2). But since population also rose the average

yearly increase in per capital grain production was only 0.6 percent. The history of agricultural production in India seems to be characterized by certain periods of rapid growth and other periods of relative stagnation. Similarly, there have been periods of optimism and of despair at the food-grain production performance and future prospects in India.

Agriculture in India is in the hands of the private sector in the sense that the day-to-day decisions by tens of millions of farm families directly impact agricultural production. The government has, of course, devoted substantial resources to agriculture as have international donor agencies. The ultimate impact of such resources has been to alter the institutional and technological environment, as well as the economic, within which Indian farmers operate. However, it needs to be emphasized that neither government of India nor aid givers' agricultural development strategy, at least in the early years of India's economic development, was characterized by a systematic, long term view of the necessary and sufficient conditions to effect agricultural modernization. This is partly attributable to the inadequate understanding, from the perspective of today, of the economic modernization process. Even so, U.S., other bilateral, and multilateral assistance to India's agriculture sector made fundamental contributions to the growth of that sector.

John Mellor has argued that aid donors to India (and, presumably, elsewhere in the developing world) neglected agriculture because they preferred projects with a large foreign exchange component. There were many such projects in industry and infrastructure but few in agriculture. Because of "basic sympathy" with the Indian's own planned approach to

industrialization, actions by aid donors on loans and grants tied to specific projects reinforced the growth strategy of India's development efforts (Mellor, 1976: 225). In hindsight, Mellor argues that the capital intensive growth strategy pursued by India was bound to produce low rates of return on investment in the short run. The massive investments in the rural infrastructure of irrigation, power, and communication would not, and indeed, could not, have yielded high returns until the complementary investments in education and research had been undertaken.

Among economic policy makers and also within the development economics profession the complementarity nature of physical inputs and human capital inputs with new inputs embodying new scientific discoveries had not been clearly and widely appreciated. There was a presumption that investments in physical infrastructure were not only necessary but sufficient to generate and sustain economic growth. In agriculture, the payoff to investments in water, roads, and other infrastructure, and even the payoff to farm decision makers of getting price signals "right" was bound to be low until farmers had access to new science-based seed varieties that could make the most effective use of the fertilizers and the water. The locational specificity of bio-chemical (and, also mechanical) technology in agriculture, determined principally by climate and enviornmental conditions, had not been understood by many economists and policy makers. The recognition of this locational specificity of technology implied that little success would be achieved in borrowing technology from abroad or even from other areas in a country lying in different geo-climatic zones.

These are important lessons to be drawn from the present survey of assessments of the impact of development assistance to India's agriculture.

Indian agriculture performance, policies, and prospects have been extensively and intensively studied by many scholars. For our purposes only a small sample of these studies have been reviewed. Indian agriculture is massive and complex and development assistance from a long list of donors has been large on an absolute basis.

Just as in the industrial sector, the agricultural sector in India received aid from a wide variety of sources. However, unlike industry, in agriculture there was greater specialization in the aid effort. While the U.S. and, to some extent, Canada provided assistance to a large number of agricultural programs and projects while also financing food and fertilizer imports, development assistance from other countries was concentrated in narrow areas within agriculture. Development assistance from Australia, New Zealand, Denmark, Switzerland, the Netherlands, and Hungary was largely in the field of animal husbandry, including dairy development and processing of animal products. Development assistance from Norway, Sweden, and Finland was largely confined to forestry and fisheries. West Germany made significant contribution to area development programs, Japan to agricultural extension, and the Soviet Union to mechanized farms. India also received sizeable assistance from non-official sources such as the Ford and Rockefeller Foundations (Government of Agriculture, National Commission on Agriculture, 1976: 666-67).

The government of India has, of course, devoted substantial resources to agriculture. In absolute terms, investment funds allocated to agriculture increased over fourteen-fold from the First to the Fifth Plan (Sanderson and Roy, 1979: 13). The allocation of government resources has fluctuated

between the various plan periods but the share allocated to agriculture and rural development never fell significantly below 25 percent. The accompanying table (Table 14.6) from Sanderson and Roy provides details on public sector expenditures on agriculture in India by five year plan periods. Several observers have noted that since the public sector outlays on agriculture as a percentage of total plan outlays fell to 23 percent in the Second Plan from 37 percent in the First Plan, this was one measure of the neglect of agriculture in the Second Plan relative to the First Plan. However, if it is borne in mind that some of the plan outlays on agriculture in the First Plan were for completion of irrigation projects begun even before the First Plan, then the 37 percent figure for the First Plan is an aberration and a correction for that aberration reveals that Second Plan outlays as a percent of total plan outlays were not much below that for the First Plan.

Table 14.7 summarizes the targets for agricultural production that were set for each of the plan periods and the achievements. During the 1950's foodgrain production grew largely as a result of increases in acreage, both in the total area under grains and the rate of double cropping. During the 1960's and 1970's the expansion in acreage was an insignificant source of increased output, the growth in output was achieved by yield increases. Since 1960 irrigated land has grown in relative and absolute importance. Between 1950 and 1975 the total net irrigated area increased by 65 percent, from 20.9 million hectares to 34.5 million hectares. Over two-fifths of that expansion is attributable to major public (canal) irrigation systems (Sanderson and Roy, 1979: 113). Also, fertilizer consumption has increased

Table 14.6. Public Sector Outlays on Agriculture (Billion rupees)

Type of Outlay	First Plan, 1950-51 to 1955-56		Second Plan, 1956-57 to 1960-61		Third Plan, 1961-62 to 1965-66		Fourth Plan, 1969-70 to 1973-74		Fifth Plan, 1974-75 to 1977-78[c]		Sixth Plan, 1978-79 to 1982-83	
	Amount	% of total	Amount	% of total	Amount	% of total	Amount	% of total	Amount	% of total	Amount	% of total
Agriculture[d]	2.17	10.8	2.76	6.0	7.25	8.4	19.66	12.4	45.91	11.7	97.00	14.0
Major irrigation[e]	4.32[f]	21.5	4.20	9.1	6.65	7.7	13.54	8.6	34.34	8.7	79.25	11.4
Fertilizer and pesticides	0.09	0.4	0.37	0.8	2.25	2.6	4.93	3.1	15.55	3.9	16.88	2.4
Rural electrification[g]	0.08	0.4	0.75	1.6	1.53	1.8	7.23	4.6	8.00[h]	2.0	14.50	2.1
Community development[i]	0.82	4.1	2.53	5.5	3.64	4.2	3.55	2.2	5.03	1.3	6.25	0.9
Total agricultural outlays	7.48	37.2	10.61	23.1	21.32	24.9	48.91	31.0	108.83	27.7	213.88	30.8
Total plan outlays	20.13	100.0	46.00	100.0	85.76	100.0	157.79	100.0	393.22	100.0	693.80	100.0

Sources: Government of India, Planning Commission, Selected Plan Statistics (New Delhi, 1959); GOI, Planning Commission, Review of the First Five Year Plan (Delhi: Manager of Publications, 1957); GOI, Planning Commission, Second Five Year Plan, 6 vols. (Delhi: Government of India Press, 1957); GOI, Planning Commission, Third Five Year Plan (Delhi: Manager of Publications, 1961); GOI, Planning Commission, The Fourth Plan: Mid-Term Appraisal (New Delhi, 1971); GOI, Ministry of Agriculture and Irrigation, Directorate of Economics and Statistics, Indian Agriculture in Brief, 13th ed. (Delhi: Controller of Publications, 1974), and 16th ed. (Delhi: Controller of Publications, 1978) [hereinafter, Indian Agriculture in Brief]: GOI, Planning Commission, Draft Five Year Plan, 1978-83 (Delhi: Controller of Publications, 1978).

a. First through Fifth Plans, expenditures; Sixth Plan, planned outlays.
b. See footnote 5 to this chapter.
c. The Fifth Plan was terminated one year early; figures are for four years.
d. Includes minor irrigation.
e. Includes flood control.
f. Includes power.
g. Excludes institutional finance.
h. Estimated.
i. Includes cooperation.

Source: Sanderson, Fred and Shyamal Roy. (1979). Food Trends and Prospects in India. The Brookings Institution, Washington, D.C. Page 14.

Table 14.7. Targets and Achievements of Agricultural Production, 1950 to 1982

Item	First Plan, 1950-51 to 1955-56	Second Plan, 1956-57 to 1960-61	Third Plan, 1961-62 to 1965-66	Fourth Plan, 1969-70 to 1973-74	Fifth Plan, 1974-75 to 1977-78[a]	Sixth Plan, 1978-79 to 1982-83
Food grain production (millions of metric tons)						
Base year (trend)[b]	57.2	65.6	75.1	96.1	107.1	119.5
Target	62.6	81.8	101.6	129.0	125.0	140.5-144.5
Achievement						
Actual	66.9	82.0	72.3	104.7	125.6	n.a.
Trend[b]	65.6	75.1	86.1	107.1	119.5	n.a.
Additional irrigation (millions of gross hectares)						
Total						
Target	6.85	8.54	9.66	11.97	10.80	17.00
Achievement	5.13	5.74	7.31	9.78	8.10	n.a.
Major and medium						
Target	3.50	4.90	4.50	4.77	5.80	8.00
Achievement	1.30	2.10	2.10	2.55	4.30	n.a.
Minor						
Target	3.35	3.64	5.16	7.20	5.00	9.00
Achievement	3.83	3.64	5.21	7.23	3.80	n.a.
Fertilizer Consumption (millions of metric tons of NPK)[c]						
Target	n.a.	0.66[d]	1.43[d]	5.50	4.80	7.85
Achievement	0.14	0.28[d]	0.71[d]	2.84	4.19	n.a.
Nitrogen consumption (millions of metric tons)						
Target	0.12	0.51	1.02	3.20	3.40	5.25
Achievement	0.11	0.21	0.58	1.83	2.89	n.a.

Sources: First through Fourth Plan figures and Fifth Plan targets, Indian Agriculture in Brief, pp. 204-05, 211-13; Fifth Plan achievements and Sixth Plan targets, Government of India, Planning Commission, Draft of Five Year Plan, 1978-73, pp. 25, 129-30, 135, 137.

n.a. Not available. a. Fifth Plan targets are for 1978-79; achievements for the four years (1974-75 to 1977-78) the Fifth Plan was in effect. b. Trend production substituted for actual foodgrain production to eliminate the effects of weather fluctuations and other temporary factors. Trends are exponential. c. NPK is total fertilizer consumption, by weight of principal nutrients (nitrogen, phosphorus, potassium). d. Does not include potassium.

Source: Sanderson, Fred and Shyamal Roy. (1979). Food Trends and Prospects in India. The Brookings Institution, Washington, D.C.

dramatically, especially since 1960. Between 1960 and 1975 fertilizer consumption, measured in terms of kilograms per hectare for all cereals, grew at an average annual rate of over 16 percent (Sanderson and Roy, 1979: 132).

The allocation of funds to agriculture has been determined by the agricultural and rural development strategy that India has pursued. During the First Plan and even before there was substantial investment in irrigation to increase the productive capacity of the land, but the principal emphasis was on altering people's motivations and attitudes towards change. The view implicitly guiding rural development policy was that the Indian farmer was a tradition-bound economically unresponsive individual who lacked the motivation and ability to efficiently utilize the resources at his disposal. The initial approach to community development was aimed at changing the attitudes of the rural people toward the use of production-increasing technology (Mellor, 1976: 26). The farmer was also seen as being exploited by landowners, money lenders, and traders, and this was sought to be eliminated by attempts at land reform, the creation of government-sponsored co-operative credit schemes, and the development of a co-operative marketing structure (Mellor, 1976: 30-8).

Of the efforts at agrarian reform, the abolition of the 'zamindari' system was the most successful (USAID/India, 1982: 4). The land reforms of the First Plan increased the proportion of land in owner-operated systems from 40 percent to 75 percent and lowered the proportion of land worked under "undesirable" forms of tenancy from 50 to 12 percent (USAID/India, 1982: 4). Further attempts at agrarian reform were only partially successful as were attempts to reduce exploitation of peasants by money lenders.

However, by the end of the First Plan there were 200,000 agricultural co-operatives, 80 percent of which were credit societies and total membership numbered 13 million (Mellor,1976: 34-5).

The first great and by far the most ambitious effort to tackle the tremendous task of raising the income, productivity and quality of life of the rural population was the Community Development Program. It was begun in October 1952. The program was a multi-purpose, broad front attack on every aspect of village life, including agriculture, physical infrastructure such as roads and wells, education, health, cottage industry, the co-operative movement, the role and status of women, the emancipation of the "untouchable" class, and land reform. The U.S. government and the Ford Foundation provided more than $100 million for the Community Development Program between 1951-52 and 1960-61 (Brown, 1971: 5).

In the Community Development Program the country was divided into "Development Blocks", each consisting of roughly 100 villages with a total population of around 100,000. Two new cadres of Community Development workers were created - the Block Development Officers and the Village Level Workers. Government capital was used to finance and train the new staff and also finance the provision of direct production inputs for agriculture, including seeds, pesticides, machinery, credit, and marketing and storage facilities. Foreign technicians were involved in the training of the new staff. In a relatively short period of time over 100 training centers for Village Level Workers were set up. However, in most cases these training centers were located some distance away from the existing agricultural colleges and research stations and only about 15 percent of the training time was devoted to technical agriculture (Brown, 1971: 5).

Several observers of the Community Development Program came to the conclusion fairly early on in the program that a rapid increase in agricultural production would not be achieved in a program that relied on the use of available agricultural technology. Dorris Brown cites a report by a U.S. agricultural technical study committee for the U.S. Technical Co-operation Mission in 1953 which questionned the effectiveness of then known yield-increasing technology and which felt that economic incentives (such as crop prices) were inadequate to motivate the average Indian farmer to produce more. The study committee recommended that the Indian government re-allocate some of the Community Development funds away from demonstration-based extension activity towards agricultural research to discover new agricultural technology.

The implications of the report were rejected by the Government of India and by other supporters of the Community Development Program who felt that adequate and effective agricultural technology was available but was not being used by farmers.[1/] In 1955, however, a Joint Indo-American Team on Agricultural Research and Education re-emphasized the need for improved agricultural education and research and proposed the establishment of agricultural universities in India similar to the U.S. federal-state land grant universities. This proposal was accepted by the government of India and initiated in five states in India during the Second Plan.

By the late 1950's, India's food situation was precarious and foodgrain imports were necessary to supplement domestic supplies. India's foreign exchange position was also weak and scarce foreign exchange was being allocated to industrial imports. The tight foodgrain situation coupled with some misgivings about the effectiveness of the Community Develop-

ment approach in raising food output led the government to appoint the Nalagarh Committee to study the situation. The Committee issued its report in October 1958. It reiterated the view that the agricultural research program was inadequate. At about the same time the government, through the Ford Foundation, invited an agricultural production team from the U.S. to work with Indian agricultural experts in developing a plan for agriculture. In 1959 the committee issued its well-known Report on India's Food Crisis and Steps to Meet It. This report was accepted by the government which then invited a second group of agricultural experts to suggest a specific "action program." The specific 10-point action program came to be known as the Intensive Agriculture District Program and was formally adopted by the government in 1960.

Before we turn to the IADP it is necessary to review some assessments of the Community Development program. It was a massive effort, but in terms of resources, outlays on the program were only about one-fifth of the outlays for major irrigation works. The Indian government's 1976 National Commission on Agriculture provides an assessment of the Community Development Program of the 1950's. It argues that towards the middle of the Second Plan there was a realization among the policy makers that the (scarce) resources committed to the program were "being spread too thinly over a wide area and no appreciable increases in production were being achieved," (Government of India, National Commission on Agriculture, 1976: 35). The National Commission goes on to add "under the Community Development Program there was considerable emphasis on demonstration as the key element in agricultural extension. This particular program has generally been described as a failure. The reasons usually cited for this include inadequate organization and the inability to adopt a package approach to crop production," (Government of India, National Commission on Agriculture, 1976: 45).

While the output and productivity gains coming out of the Community Development Program were small, the program did go a long way to improve and uplift the village environment. As Gary Hunter points out in his careful study of the administration of agricultural development in India, the Community Development Program established certain administrative structures which exist even today, and the program created an awareness among the rural population that the government, through the personage of the Village Level Worker, was a source of advice and assistance (Hunter, 1970: 26).

Another observer has pointed out that the program activities under Community Development were "useful in bringing about a greater cohesiveness in the village or community structure," but since scarce financial resources were used to deal with many aspects of village life, and only limited attention was given to the improvement of agricultural productivity, this short-sighted view tended to postpone the implementation of sound long-range policies devoted to developing sources of "dependable technological or substantive inputs" for agriculture (Moseman, 1971: 71).

In a 1970 review of U.S. agricultural assistance strategy in India, Schutjer has noted that while considerable technical assistance and equipment for the Community Development Program was provided by the U.S., the U.S. also directed considerable effort to increased and more effective use of fertilizers in India (Schutjer, 1970: 3-4). The U.S. also provided technical assistance for the establishment of soil testing laboratories, for conducting crop response trials, and for the establishment of the Fertilizer Association of India. Much of the effort on fertilizers was bound to be unsuccessful so long as new crop varieties more responsive to chemical inputs did not

exist. While that is evident today, it was not so in the early years of development assistance to India.

Difficulties on the foodgrain situation in the late 1950's led to greater attention to production performance and the IADP. Schutjer has noted that the "concepts underlying the IADP represent a composite of the views of Indian Government officials, AID personnel, and the members of the visiting (Ford Foundation) team," (p. 6, footnote 13, parentheses added).

The primary objectives of IADP were to demonstrate how rapid increases in production could be achieved in certain areas by intensive concentrated efforts in those areas. From over 300 of India's districts, 15 districts, one in each state, were selected for the experiment. The criteria for the selection of the districts were: assured rainfall and irrigation facilities; well organized and operating village institutions set in place by the earlier Community Development Program; least vulnerability to natural hazards; and a high potential for increasing food production in a relatively short period of time. The aim was to concentrate scarce resources (for example, fertilizers, pesticides, credit, technical, water, and farm management assistance, etc.) in the more responsive, more likely to succeed, districts. (The above and the next few paragraphs draws heavily on Dorris Brown.)

The IADP was assisted by the Ford Foundation, USAID, and the Japanese Government. The Government of India and the state governments provided more than $30 million for the first five years of the program (Brown 1971: 14). Evenson and Kislev, however, on the basis of state budget data conclude that until 1975 a total of about $100 million had been spent. They add "It (the program)

cost roughly one half as much as the research activities in India devoted to improved crop production for the entire country during the 1960's," (Evenson and Kislev, 1975: 106).

Several assessments of IADP have been made--by the Government of India, and by research workers in India, the U.S., and elsewhere. The assessments by the Government of India have mainly to do with physical and administrative targets reached such as number of cooperative societies formed, amount of credit disbursed, and quantity of fertilizer used. Most of the assessments by Indian research workers have tended to examine output and yield changes in IADP districts compared to other districts. For our purpose we will briefly examine assessments by Lipton (1968) and by Brown before turning to the one by Evenson and Kislev.

Michael Lipton's assessment of IADP is qualitative and somewhat polemical. It predates Dorris Brown and Evenson and Kislev, who don't refer to Lipton even though Lipton's contribution appeared in an important volume entitled The Crisis of Indian Planning. Lipton questions the rationale behind IADP, and asserts that the program is (was) in-egalitarian because it reduced risk only for farmers already enjoying assured water supply. He labels the selection of IADP areas as unsatisfactory because insufficient attention had been given to determine where the expected rate of return on the package of practices was the highest.

D. Brown's study covered the period of the first five years of IADP. In a preface to his study, S. R. Sen calls Brown's study an "independent evaluation of the IADP." Curiously, Sen adds that Brown was actively involved in the implementation of the program as a consultant for seven years. While

this close association with IADP may not have affected Brown's objectivity in evaluating the program, the methodology employed by Brown was subsequently adopted by many Indian research workers in the field. The Government of India in its own evaluation of IADP also used the same methodological approach.

Brown computed compound annual rates of growth of area, output, and yield of all crops for the ten year period 1956-57 to 1965-66 in each district in the country. Then, he divided the rates of growth in the districts during 1961-62 to 1965-66 by the growth rates achieved during the previous five years and termed those "indices of change." His methodological approach is stated as follows: "If IADP has had a major impact on foodgrain crop output and productivity, then the ten-year growth rates and indices of change calculated for IADP districts should be significantly higher than zero and significantly different and above the same items calculated for bordering districts and other districts in the same state," (Brown, 1971: 29).

This calculation showed that only 3 of the 15 IADP districts reported significantly higher rates of change of output and yield for foodgrains during the IADP years when compared with the previous five years. Only two IADP districts reported significantly higher changes in foodgrain output than did bordering areas. The farmers in IADP districts did somewhat better with increased output of cash crops. However, there was no significant difference between the IADP districts and other districts in the increased use of inputs. These results led Brown to conclude that "during the Third Plan, growth in output and yield per acre of foodgrain crops in IADP districts as a group was not significantly different from that in the previous five years in the same district," (Brown, 1971: 92).

Nevertheless, Brown attributed important conclusions to the IADP experiment. It helped demonstrate that most Indian farmers operate with economic rationality. The IADP experience guided the development of and the diffusion of the then-new "Green Revolution" technology. Data from IADP crop field tests and other special studies helped government policy makers evaluate alternative price policies and influenced policies regarding the efficient use of water in crop production and the development of irrigation resources.

The evaluation by Evenson and Kislev (1975) is by far the most analytical evaluation of IADP. They argue that the methodology employed by Brown was inappropriate and, using an altogether different procedure, conclude that "the program induced a very significant increase in the use of modern factors of production and hence of agricultural production," (Evenson and Kislev, 1975: 107).

Evenson and Kislev argue that the rate of measured total factor productivity growth is determined by the application by producers (that is, farmers) of new economically relevant technology and by the reduction in technical choice errors. The new technology can originate from three sources: (1) from agricultural research specifically directed to producing technology suited to the economic and environmental conditions in the district; (2) from agricultural research directed to producing technology suited to economic and environmental conditions different from those of the district, but superior to existing technology in that district; and (3) from discovery activity by farmers themselves when they modify and adapt new technology to farm-specific conditions. The improvements leading to reduction in economic and technical choice errors can arise from two sources: (1) farmers may utilize available resources in a more cost-minimizing manner, and (2) there may be improvements in factor supply efficiency, including supply of credit.

In their view the test of the contribution of the IADP program has to be made in terms of associating increased total factor productivity with IADP activities, holding constant the contribution of agricultural research and other technology discovery activity and environmental factors, and controlling for the initial level of economic slack. The evaluation by D. Brown and by the Government of India did not take into account the level of economic slack existing at the beginning of the program in 1961 in the IADP and non-IADP areas. The selection of the IADP districts in terms of the criteria of relatively well-endowed water resources and well-functioning village institutions probably implied that the selected districts had less economic slack than the other districts.

Evenson and Kislev set up an econometric estimating equation where the dependent variable is district total factor productivity. The explanatory variables include expenditures on agricultural research in the state in which the district is located; expenditures on agricultural research outside the state but within the same geo-climate region; the rate of change of total factor productivity in the district in the five years prior to IADP, which is used as a proxy measure for the level of economic slack existing at the start of the program. They also include an "interaction" term to take into account the fact that there frequently is technological borrowing both within and across different geo-climatic regions.

The econometric estimation is made with data for 140 districts for the period 1960-71, including 7 IADP districts. Qualitatively, the state and regional research variables were found to be significant contributors to the statistical explanation of both productivity change and foodgrain yields.

The IADP effect was picked up by the coefficient of the dummy variable for the IADP districts which had been introduced in the estimating equations, and was positive. Also, the coefficient of the pre-IADP productivity index was significantly negative which implied that the higher the early period productivity gains, the lower the economic slack at the beginning of the IADP program, and therefore, the lower the potential for total factor productivity gains in future periods. They also examine the interaction between the IADP dummy variable and the agricultural research variables, and conclude that the IADP program complemented the research inducements to increased yields, but substituted for research in terms of the contribution to total factor productivity.

In summary, Evenson and Kislev conclude that the IADP program induced significant increases in the use of modern inputs, especially fertilizer. But when these increased inputs are "netted out" in the total factor productivity computations, the contribution of the IADP program becomes modest. And, because districts with relatively low economic slack were chosen, there was a relatively small impact. The key element was that there was no new technology discovery under IADP although there was borrowing of technology across districts. In terms of economic payoff to IADP, Evenson and Kislev argue that "the IADP program probably had a payoff of approximatel the same order of magnitude as other development efforts, with the glaring exception of investment in research," (p. 119).

The crucial lesson that can be drawn from the IADP experience is that while the use of modern inputs (especially fertilizer) expanded, the payoff in terms of increased output was small. The reason for that was that since

no new biological sources of permanent income were being produced (the Indian agricultural research system was in its infancy), the marginal productivity of modern inputs was bound to be small. The increased use of fertilizer and other modern inputs was not to yield large increases in output until new seed varieties capable of more effectively utilizing new chemical nutrients became available. The new biological technology could not be brought in from abroad because of the location specificity of such technology. The ability to borrow such technology and effectively adapt it for use in India was constrained by a relatively undeveloped agricultural science capacity in India. Further, within a country also there are significant differences in soils, weather, and environmental conditions and these limit the possibilities for borrowing plant material across different geo-climate zones within a country.

Simultaneously with the IADP program to which AID, Ford Foundation, and other agencies made significant contributions, there was underway in India an important institution-building program which was to lay the foundation for a science-based agriculture in India. This institution building to serve agriculture received substantial assistance from the U.S. AID and from the Ford and Rockefeller Foundations. The physical facilities for agricultural research and the scientific capacity to produce a steady stream of scientific knowledge and methods applicable to Indian conditions are an important prerequisite for sustaining agriculture in India.

As John Mellor and others have pointed out, although India had a long history of agricultural research, there was little cooperation, coordination, or even sense of purpose within the agricultural research system.[2/] In a

"very striking effort spanning more than a decade," the Rockefeller Foundation, the Ford Foundation, the U.S. government, and other agencies provided scientists and technicians, financed the foreign training of Indian scientific personnel, and provided the basis for a growing and rigorous research establishment. Mellor characterizes the early American effort to introduce a system of agricultural universities patterned after American land grant universities as a "heavy-handed approach to technical aid" which, fortunately, succeeded only when it was properly adapted to Indian conditions by Indian administrators (Mellor, 1976: 225-29).

The Indian agricultural research system in its present organizational form is of recent vintage which only underscores its rapid progress. M. S. Randhawa, in his highly readable history of the Indian Council of Agricultural Research, published on the occasion of the fiftieth anniversary of the ICAR, notes and mentions individuals who played a key role in the effectiveness of aid assistance efforts in India (Randhawa, 1979). He singles out the contributions of Dr. Frank W. Parker ("a real friend of India with a passionate concern for its people and their agriculture"), who was the chief agricultural advisor in the U.S. Technical Co-operation Mission in India between 1953 and 1959, in influencing the Rockefeller Foundation's involvement in agricultural development schemes in India. Moseman (1971) also points out that Parker's work in India was instrumental in changing decisions on kinds and quantities of fertilizers needed in India and created a base for improving fertilizer resources in India (Moseman, 1971: 73).

In recent years most observers of the Indian agricultural research system characterize it as one of high caliber relative to that of most other

developing countries and even compared to that of some developed countries. For instance, Ruttan says that the system in India "is clearly one of the half-dozen most significant national agricultural research systems in the world in terms of resources employed and level of scientific activity," (Ruttan, 1982: 95). The Indian Council of Agricultural Research is the national apex agency which coordinates and guides agricultural research and education in the country. There are 32 central research institutes and 7 soil conservation research and training centers under its jurisdiction. There are now 21 agricultural universities, 73 agricultural colleges (including those at the agricultural university campuses) and 21 veterinary colleges. Six U.S. universities under USAID-financed contracts in the 1960's assisted in developing the teaching, research and extension programs in Indian agricultural universities. The first agricultural university started functioning in Uttar Pradesh state in 1960.

In a very general sense, scientific personnel and capital and current expenditures are the inputs which go into the agricultural research system. The output that comes out of this system is the new knowledge that is created. This new knowledge, whether it is embodied in new but conventionally defined production inputs or whether it serves to alter existing input combinations, must be treated as a production input which affects the productivity of agriculture. The new knowledge is an intangible and cannot be measured directly. While a proxy measure of the new knowledge has been used by many authors, the key point is that the new knowledge is capable of sustaining a higher rate of agricultural growth. Randhawa argues that the "outstanding achievement (of the agricultural research establishment) is attainment of self-sufficiency in food by the country," (Randhawa, 1979: iii; parenthesis

added). Most of the increase in the production of cereals has occurred after 1965 and is, of course, due principally to the introduction of the high-yielding varieties of wheat, rice, and maize and their adaption to local Indian environmental conditions. Indian agricultural scientists "were not the mere recipients of this (plant) material but they improved it significantly, (Randhawa, 1979: preface, vi).

The investments in agricultural research in India have yielded very high returns in terms of agricultural productivity. As Ruttan has shown above in Chapter 10, the results of a large number of studies of the contribution of agricultural research to productivity growth from both high and low income countries indicate high rates of return to investment in agricultural research. The studies on India also indicate high rates of return to investment in agricultural research (Evenson and Kislev, 1975; Evenson and Jha, 1974; Karam Singh, 1974; and Kahlon, et al, 1977). The results of these studies are cited in Chapter 10.

Evenson and Kislev, Randhawa, and others have also argued that one measure of the maturity of institutions to sustain agricultural development is the quality and quantity of the scientific output of the scientists in the research system. A proxy measure of scientific output is the number of books, monographs, and journal articles being produced by the scientists. Randhawa provides a list of all such publications since 1929. Until 1940 only 12 books or monographs had been published; between 1941 and 1950, 4 published; between 1951 and 1960, 38 publications; between 1961 and 1970, 76 publications; and between 1971 and 1978, 59 publications. Randhawa also points out that the publications program for journals has also expanded rapidly. The ICAR now publishes monthly well known journals such as the Indian Journal of

Agricultural Sciences, the Indian Journal of Animal Sciences, Indian Farming, Indian Horticulture, and a Hindi language magazine called Kheti. Evenson and Kislev show that between 1948 and 1968 the number of publications by research workers in India (some of whom may have been non-Indian) grew rapidly. There was a shift over time away from commercial crops such as sugarcane and cotton toward foodgrains.

The present position of agricultural research in India provides the foundation for a relatively promising outlook for Indian agriculture. Foreign assistance played a crucial role in the development of the research system which must be one of the greatest successes of aid effort by the U.S.

Food Aid Impact Studies

U.S. bilateral and multilateral aid to India for purposes of agricultural and industrial development was large in absolute amounts and largely uncontroversial. However, food aid to India was, to say the least, the subject of a great amount of inquiry and debate. U.S. aid to India in the form of agricultural commodities supplied under PL 480 constituted an important proportion of total bilateral and multilateral aid to India.

Except during 1951-52 India did not import any significant amounts of food during her First Plan period. Foodgrain prices were stable during that period. But from the beginning of the Second Plan (1956-57 to 1960-61) India's food imports began to increase. The lagging agricultural production and a growing foreign exchange crisis compelled the Government of India to enter into an agreement with the U.S. for the import of foodgrains. Since that first agreement several other agreements and supplementaries were signed between the two countries. The agricultural commodities that were shipped to India were wheat,

rice, maize, milo, cotton, dairy products, tobacco, and soybean oil. Wheat shipments dominated the program. Between the first Title I agreement in 1956 and 1978 a total of $4.6 billion worth of agricultural commodities were programmed for India (U.S. Embassy in India, 1979: 42-3).

The nature and magnitude of these shipments, especially in the mid-1960's, and their impact on the development of the agricultural sector, and on overall economic development of India has been the subject of numerous studies. The primary focus of studies on the impact of this aid has been on the disincentive effects of food aid: do increased imports of foodgrains result in a misdirection of investment by reducing the incentive to invest to raise domestic production. The other focus of these studies addresses the question: does control over the uses of local currency proceeds of PL 480 sales provide a means of influencing development policies of recipients by the U.S.?

As Isenman and Singer point out, in the discussion of the above issues the direct purposes of food aid have often been overlooked (Isenman and Singer, 1977: 206). Food aid provides food for the hungry, especially target groups like children. It provides financing for specific government development projects, both in the rural and other sectors. Food aid can be used to build up food stocks which can then be used to moderate price increases. Food aid can be used to permit recipient countries to expand employment as in "food-for-work" programs.

Empirical studies of the effects of PL 480 programs have been made for several countries, including individual country studies of India, Egypt, Colombia, and Turkey. For India the best known studies are those by Rath and Patwardhan (1967), a Ph.D. thesis by Seevers at Michigan State (1968), and a study by Srivastava, Heady, Rogers, and Mayer (1975). The last one above is the most

recent monograph-length study on "the effects of food aid programs on development, producer and consumer welfare, agricultural progress, and fiscal structure in recipient countries" with special reference to India. There have also been numerous journal articles dealing with the impact of PL 480 on India, the most recent of which is the one by Isenman and Singer (1977).

The first to express some concern about the possible negative effects of agricultural commodity aid on the recipient countries was T. W. Schultz (1960). Others disagreed with him by either denying that there was any production responsiveness to changes in price or that, even if there was such responsiveness, it would be small (Rogers, et al, 1972).

Mann (1967) developed an econometric model to measure the price and production effects of PL 480 imports on the Indian economy. His model consisted of a supply equation, a demand equation, an income-generation equation, a commercial import equation, a withdrawal-from-stocks equation, and a market clearing identity. He estimated that an increase in per capita imports of cereals under PL 480 of one pound resulted in a 0.54 percent drop in wholesale cereal prices in the same year and a decline in output in the second year of about 0.5 pounds of cereals per capita. Output tended to rise in later years so that the depressing impact on output was reduced to about 0.3 pounds per capita in the long run. Mann measured only the direct impact of PL 480 imports; the indirect impact via the effect of readily available food on planners' attitude to agriculture was not estimated.

Shortly after Mann's study, Streeten and Hill examined the PL 480 issue (1968). They did not attempt to estimate an econometric model but relied on a "commonsense" approach. They argued that the growing size of U.S. food shipments was entirely contrary to U.S. aid philosophy since it undermined Indian

self-reliance and "India's determination to tackle its agricultural problem seriously" (Streeten and Hill, 1968: 342). Though weather played a role in the weak performance of agriculture, at least in 1967 India had not hit upon a combination of policies to ensure a high and sustained rate of growth in agriculture. They also argue that during India's Third Plan funds arising from PL 480 aid financed over 10 percent of public developmental outlays. Since the Indian government was aware of the dangers in excessive deficit financing and high taxes, the government had an interest in large PL 480 grain imports and sales to raise funds to finance its plans (Streeten and Hill, 1968: 343).

On the question whether U.S. commodity aid may have had a direct impact on agricultural production via its effect on farmer incentives, Streeten and Hill argued that the evidence linking PL 480 imports and lower levels of cereal production is "strong but circumstantial." Writing in 1968, they came to the conclusion that sizeable food aid to India would continue, but that food aid should be used to stockpile cereals.

The second major econometric study of the impact of PL 480 on agricultural prices in India is the one by Srivastava, et al (1975). This study covered essentially the same ground as the Mann study referred to above and the study by Rogers, Srivastava, and Heady (1972). Srivastava, et al, built a multi-equation econometric model similar to that of Mann, except that they include an additional equation to separate cereal purchases on the open market from those in the government-run concessional market at subsidized prices. Their conclusions are stated as follows: "Each kilogram of PL 480 cereals is estimated to have depressed production of cereals by 0.027841 kg., so for each 450,480 metric tons of imports, production was depressed by 12,600 tons over a 14-year period, with the major impact coming as a result of the first and

second round of price changes. Comparing our estimates of multipliers with Mann's, the cumulative impact of distribution through a differentiated market is about one-tenth the impact with a non-differentiated market" (Srivastava, et al, 1975: 50). The policy implication of this is that the negative impact of PL 480 imports on domestic prices and supply can be significantly reduced if the commodities are distributed in the recipient economy in a way that creates new demand rather than substituting for existing demand. The government-run "fair price shops" provided for increased consumption amounting to 93 percent of the amount imported. Since imports were distributed through the government shops at prices lower than open market prices, Srivastava, et al, argues that consumer welfare was increased due to the increased consumption. Further, the distribution of PL 480 grain "has depressed domestic prices in the open market by only 0.02 percent" (Srivastava, et al, 1975: 51).

One further interesting finding of the authors may be noted because it is important to appreciate the inter-regional variability in the availability of food. Beginning in the late 1950's and continuing since then, the country was divided into food zones and movement of grain across zones was restricted. The idea behind this institutional arrangement was to enable the government to "procure" excess foodgrains from surplus zones and distribute them in the deficit zones through the fair price shops. But since government procurements fell far short of the distribution requirements, PL 480 cereals were used to change the distribution of cereals between the states. Srivastava, et al, finds that "the release of PL 480 food aid through the fair price shops has improved the interregional distribution of cereals in India" (Srivastava, et al, 1975: 54).

Isenman and Singer (1977) eschew an econometric model formulation in favor of a commonsense view on the impact of food aid. Between 1957 and 1971

large quantities of food aid (mainly in the form of wheat) were provided to India. Isenman and Singer find that in only 3 years of the food aid period, 1960/61 to 1962/63, did the relative price of food fall below that in the reference or benchmark years of 1955/56 to 1957/58. In analyzing the impact of these changes in prices on yields, they conclude "there is surprisingly little evidence of any systematic detrimental effect on yields" of the reduction in the relative price of foodgrains (Isenam and Singer, 1977: 234).

Quite apart from these impacts on prices and yields, food aid played an important role in providing resources to the government. Isenman and Singer argue that food aid provided resources equal to 10 percent or more of gross investment in the Indian economy in the first half of the 1960's. Earlier, Streeten and Hill had argued that "during the Third Plan funds arising from PL 480 aid financed over 10 percent of public developmental outlay. PL 480 aid accounted for 56 percent of the external assistance to public outlay. Because of the dangers of too much deficit financing and of the unpopularity of higher taxes, the Indian government has had an interest in making PL 480 imports and sales as large as possible to raise funds to finance its plans" (Streeten and Hill, 1968: 343).[3/] At a time when the government's investment effort was increasing rapidly and non-agricultural output was increasing, the availability of food aid was a restraining force on wage growth and offset the risk that the investment program would worsen the food situation in the inevitable years of low rainfall (Isenman and Singer, 1977: 235-36).

The gist of the above arguments is that the basic developmental strategy of the Indian government in the Second and Third Plans, with its emphasis on import-substituting industrialization, particularly heavy industry, was supported by the food aid which India received. Such food aid enabled the government

"to maintain large subsidized food distribution programs while, in the eyes of many analysts, not adequately addressing some basic questions of foodgrain production and distribution" (Isenam and Singer, 1977: 213). On the other hand, if food aid were not available, the basic developmental strategy of the government would likely not have changed.

Revised
November 15, 1982

CHAPTER 15

ASSISTANCE TO KOREA

Of the case studies undertaken in this survey, South Korea represents the most successful in terms of her overall development, and simultaneously illustrates the extreme difficulty involved in attempting (especially during the aid process itself) to assess the influence of aid donors on the macroeconomic policies of the aid recipient.

Because of the uniqueness of the Korean experience and the lessons that are involved for the assessment of aid generally, this case study focuses heavily on the aid experience during the years 1953 to 1965. These were the years during which aid was an extremely important factor in the South Korean economy and the years during which the South Korean economy was transformed from a dependent, relatively slowly-growing economy with numerous distortions into the most rapidly growing economy in the entire world. Section 15.1 provides a brief outline of the economy's structure and growth during the years under review, and also brings the reader quickly up to date as to later developments. Section 15.2 covers the aid relationship during that period, and the lessons that may be learned about the macroeconomic role of aid in the development process. Section 15.3 covers the relationship between trade and aid in the Korean economy during the years under review. Section 15.4, finally, covers assistance to agricultural and rural development.

15.1 Economic Growth in South Korea

Korea was a Japanese colony until 1945 when it was liberated by the Allied military forces. The upheaval associated with the end of colonial status was economically difficult. The rate of inflation prior to the Japanese withdrawal was in excess of 100 percent a month. Most businesses were Japanese-owned. Normal trading ties were disrupted. In the Korean case, these difficulties were reinforced by partition of the Korean peninsula. South Korea was the predominantly agricultural part of the country. It had relied heavily on the north for supplies of electric power and many manufactured goods.

Reconstruction efforts dominated the 1945-1950 period. These included a distribution of land which left a relatively egalitarian distribution within the rural sector. Major resources were devoted to developing the Korean educational system. During the Japanese period all education had been in the Japanese language. Few Koreans had been educated beyond high school level. These two reforms represented an important basis for later growth. The American military government and ECA were instrumental in accomplishing both the land and the educational reforms.

By 1948-49 the South Korean economy was beginning to revive, due in large part to the relatively sizable flows of aid under the military government (until 1948) and by the U.S. Economic Cooperation Administration (ECA) after the founding of the Korean Republic in 1948.

By 1949, there was a major debate within the American administration and Congress over the future of South Korea and of American assistance to that country. Although assistance was continued, it was at a substantially lower level than had been recommended by ECA. While the debate was still unresolved in the late spring of 1950, North Korean forces invaded South

Korea and the Korean war began. Under United Nations auspices, the United States and other military forces joined the South Koreans in fighting the orth Koreans. Although there was massive assistance to South Korea during he war years (until 1953), most of it was devoted to military equipment nd to supplies, including food, essential to the war effort.

At the end of the Korean War in August 1953, the Korean economy was ven more devastated than it had been in 1945. Most of the progress that ad been made between 1945 and 1950 had been undone. In addition, the nfrastructure of the economy--roads, ports, schools--had been severely amaged.

The Korean War also left some other legacies which proved damaging o the Korean economy in the following years. Among these were a high rate f inflation. Inflationary pressure was associated with both (a) the strains hat had been put upon domestically available goods when the demand for them welled under pressures of war and (b) the purchasing power of the foreign ilitary forces while supplies dwindled because of the war. Associated ith a high rate of inflation (which was in excess of 50 percent in 1953 o 1957) was an elaborate system of exchange control and multiple exchange ates.

During the Korean war, the American government had naturally wished o enable their forces serving in South Korea to buy goods and services ocally. To do so, it was necessary to purchase Korean currency from the orean government. Negotiations over the exchange rate at which these urchases would be made in the context of rapid inflation, combined with he Korean exchange control system which was necessarily partly undermined y the emergence of a black market, resulted very quickly in a multiple xchange rate system. By August 1953, nominal exchange rates varied from

18 won per dollar at the official rate (compared to an official rate of 38.7 won per dollar at the "U.S. greenback rate". Because the Korean government wanted to maximize the foreign exchange it would receive in return for local currency provided for American and other U.N. troops, it was naturally reluctant to devalue the currency. That reluctance, coupled with a high rate of inflation, led to a severely overvalued exchange rate, which in turn necessitated quantitative controls over most foreign exchange transactions.

The reconstruction period in South Korea after 1953 started with an extreme macroeconomic imbalance. The imbalance was partly offset during the 1950s by sizable inflows of American aid (see Section 15.2). Three structural features were particularly important for the dramatic difference in the Korean economy during the 1950s and the 1960s.

The Korean economy, like that of most developing countries, was predominantly agricultural in the 1950s. Mason, Kim, et al., estimate that 44 percent of GNP originated in agriculture in 1953-55, with only 13.6 percent in industry.[1/] Even for the 1960-62 period, agriculture accounted for 39.9 percent of GNP and industry (including construction and utilities) only 18.2 percent of GNP. Hence, while there was some change in the relative importance of primary and secondary industry, structural transformation was relatively slow during the 1950s.

Second, private consumption accounted for 80 percent of GNP in the 1953-55 period, while investment accounted for only 11.2 percent of GNP. The average domestic savings rate is estimated to have been only 2.9 percent of GNP. Foreign savings (primarily aid--see Section 15.2) accounted for 8.3 percent of GNP. This was almost three-quarters of investable resources. Indeed, in 1956, net domestic saving was negative (See Krueger (1979),

Table 52). Moreover, the situation was relatively unchanged by 1960: foreign saving accounted for 78 percent of total saving, and gross investment represented about 10 percent of GNP.

Thirdly, due to the importance of foreign aid as a source of investible resources, imports accounted for 10-12 percent of GNP throughout the 1950's, while exports represented between 1.8 and 3.5 percent of GNP, and their share was not growing.

This relatively stagnant structure and dependence on aid for financing imports was reflected in a variety of ways. First, despite the opportunities for rapid growth that a postwar reconstruction period always presents, Korean economic growth during the 1953-60 period was relatively slow (Table 15.1). Secondly, foreign exchange difficulties, which arose from the continued reluctance of the authorities to devalue the currency in the face of rapid inflation and the desire of the government to increase its aid receipts, led to the continuation of the complex system of multiple exchange rates and stringent import licensing. The inefficiencies associated with the foreign exchange shortage itself, the multiple exchange rate system, and the inevitable corruption that surrounded its administration were certainly responsible for the diversion of resources from the export sector and the consequent failure of resources from the export sector and the consequent failure of export earnings to grow significantly. In turn, the pull of resources into import-competing sectors resulting from the sizable margin of domestic over foreign prices was accompanied by pronounced inefficiencies. These phenomena were, of course, a large part of the explanation of the relatively slow growth referred to above and documented in Table 15.1.

Starting in the late 1950's, a series of policy reforms was undertaken. A first step was a general tightening of macroeconomic policies - monetary

Table 15.1. Annual Rates of Growth of Real GNP Components 1954 to 1960

	Primary	Industry	Services	Exports	GNP
1954	6.7	20.0	2.5	-36.0	5.5
1955	2.7	17.1	5.7	-27.9	5.4
1956	-5.8	13.3	4.0	42.1	0.4
1957	9.4	11.8	5.8	1.5	7.7
1958	6.1	8.1	3.5	-20.3	5.2
1959	- .9	11.3	7.5	11.3	3.9
1960	- .5	6.7	2.8	54.1	1.9

Source Mason, Kim, et al (1980), The Economic and Social Modernization of the Republic of Korea (Cambridge: Harvard University Press): Table 12.

and fiscal - in 1958 in response to a reduction in aid levels. This resulted in a pronounced slowdown in the rate of inflation - from an average rate of 36 percent for the 1953-57 period to 3.8 percent for the years 1958 to 1960 (Mason and Kim, 1980, Table 19).

The second step came after the revolution and the installation of a military government in May, 1960. There was a massive devaluation and a unification of the exchange rate system. The purchasing-power-parity effective exchange rate for Korean exports, which was 223.8 in 1955, rose to 319.6 in 1960. This represented a massive 42 percent increase in real receipts per dollar of commodities exported. And it probably represented a much greater increase per dollar of value added in export production. The exchange rate reform was accompanied by the installation of additional export incentives, including export subsidies, access to subsidized credit, and rights to import goods without payment of duty.

Despite the fact that the new government was not initially able to contain the rate of inflation, it maintained the export incentives through changes in the subsidy rates between formal devaluations. Throughout the 1960's and into the early 1970's, exporters could be assured that, regardless of the rate of domestic inflation, the real return on their exports would be protected.

The export drive which began in the 1960's was central to the entire set of policy reforms. After his election in 1960, President Park was almost single-mindedly committed to economic growth. The initial success of the export-oriented drive led him, and the entire government, to associate the achievements with the success of the export drive.

Before turning to measures of the degree of success, some other policy measures should be noted. In 1964, budgetary reforms were undertaken, which

substantially reduced the government's budget deficit. The deficit, which amounted to about 5.2 percent of GNP in 1962 was down to 0.6 percent of GNP by 1965. This, and the credit reforms discussed below, resulted in a markedly lower rate of inflation than had earlier been experienced. The average rate of price increase was around 10 percent annually in the late 1960's in contrast with a rate of about 20 percent in the 1960-64 period.[2/]

Combined with budgetary reform were interest rate reforms. Prior to 1964 interest rates charged on loans were subject to ceilings set by the government. Naturally, there was excess demand for credit at these subsidized interest rates (although there was also a very active curb market at much higher rates of interest), and the government was a key factor in influencing banks in their allocation of credit. The government's ability to steer credit had been an important instrument in encouraging exports.

Although conditions after 1964 cannot be described as being a fully free market, the rate of interest paid to domestic savers was increased substantially, and the lending rate of the banks rose markedly. This, combined with the substantial reduction in the rate of inflation, significantly raised the cost of credit to borrowers, and greatly reduced the subsidy element in loans from the banking system.[3/]

These, then, were the major reforms. In a survey such as this, it is necessary to pass over many more minor actions that were undertaken almost continuously which permitted the efficiency of the economy to grow rapidly. There was a liberalization of the import system. Customs and other procedures surrounding export and import regulations and entitlements were streamlined. The government itself was a major actor in the transformation as it sought to keep the capacity of ports, communications, and transport

equal to the rapid increase in volume. Perhaps most significantly, government activity in the economic sphere was almost single mindedly devoted to facilitating the export drive which was seen as the hallmark of Korea's dynamic economy.

Some indicators of the transformation are given in Table 15.2. As can be seen, the first few years of the export drive were only in hindsight "successful". Real GNP growth during the early 1960's was not significantly different than it had been in the late 1950's. The only real change that was apparent was in the rate of export growth. To be sure, the government was somewhat unlucky in the weather. Both 1960 and 1962 were poor crop years, which adversely affected the overall rate of economic growth. By 1964, however, success was beginning to be apparent. The only question in most observers' minds was how long such a rapid rate of economic growth could be sustained. It was sustained over a period of more than 15 years, resulting in a complete transformation of the structure and performance of the Korean economy.

From one of the poorest countries in the late 1950's, as measured by per capita income, Korea became one of the richest. The share of agriculture in GNP fell from 37 to 16 percent (despite the fact that agricultural output grew at the very satisfactory rate of 4.4 percent annually in the 1960's) over the 1960 to 1980 period. The share of industry rose from 20 to 41 percent (with that of manufacturing rising from 14 to 28 percent). Even more striking was that the ratio of gross domestic investment in GNP rose from 11 percent in 1960 to 31 percent in 1980, while exports rose from 3 to 37 percent of GNP.

Table 15.2. Indicators of Korean Growth During the 1960's (average annual rate of growth)

Year	Primary Sector	Industry	Services	Exports	GNP
1960	- 0.5	6.7	2.8	54.1	1.9
1961	11.8	4.6	1.1	22.7	4.8
1962	- 5.0	14.0	8.9	30.0	3.1
1963	7.9	11.4	7.4	53.9	8.8
1964	15.3	12.6	3.0	36.7	8.6
1965	- 1.6	20.4	9.9	47.0	6.1
1966	10.5	18.7	12.6	44.5	12.4
1967	- 4.4	21.4	13.8	32.7	7.8
1968	2.3	29.5	15.4	45.8	12.6
1969	12.0	25.5	14.6	36.9	15.0
1970	- 0.4	15.5	8.9	33.8	7.9

Source Mason, Kim, et al (1980), The Economic and Social Modernization of the Republic of Korea (Cambridge: Harvard University Press): Table 12.

By any standard the Korean story is one of success - to a degree that had previously been regarded as unattainable. Korea has few natural resources. Its economy was affected by the oil price increase and commodity price boom of 1973-4 to a greater extent than most other country. The government nonetheless managed to pass on the price increases, encourage domestic conservation, respond with new export activities (such as construction in the Middle East), and sustain the momentum of economic growth. The rate of growth of real GDP in South Korea is estimated to have been 8.6 percent in the 1960's and 9.5 percent in the 1970's. Although the economy is currently facing some severe difficulties (largely as a consequence of the failure to maintain the real exchange rate and the real interest rate during the late 1960's, combined with a premature decision to develop heavy industry), the lessons for aid originate in the remarkable change in Korean economic policies and economic performance between the 1950's and the 1960's, and the role played by U.S. aid in the process. That is the subject of Section 15.2.

15.2 The Role of Aid in Korean Economic Growth

Tables 15.2, 15.3, 15.4, and 15.5 provide an overview of the role played by foreign assistance and U.S. assistance in Korea.[4/] Foreign assistance was most important in the 1950's, and diminished in importance thereafter. During the 1950's assisted imports accounted for 69 percent of total imports, and about 77 percent of all savings (with foreign savings in total accounting for 88 percent of all savings). The period of Korean growth was one of a gradual reduction of the importance of aid (which made the returns from increasing domestic savings less than they would have otherwise been).

Once the Korean potential for rapid growth had been amply demonstrated, Korea was able to obtain foreign resources on the private international capital market, and thus to enhance her growth rate by foreign borrowing. Even in the 1965-74 period, foreign borrowing accounted for 42 percent of gross fixed capital formation, although capital formation as a percent of GNP had risen from 10.5 percent in the 1953-62 period to 22.7 percent of GNP over the 1965-74 period. Thus, once the transformation to rapid growth was well under way, South Korea could rely on the external capital market for additional resources so that profitable investment opportunities could be exploited beyond those financable with domestic savings.

There are two important questions on which the South Korean experience sheds some light. The first is whether, in the light of manifestly ill-advised domestic policies, foreign donors can contribute in any manner conducive to economic development. The second is the role of foreign donors in the dialogue. Since foreign donors cannot have a role unless they are in fact

Table 15.3. Ratios of Aid Imports and Net Foreign Saving to GNP, Total Imports, and Fixed Capital Formation.

	1953-62	*1963-64*	*1965-74*
Ratios to GNP of:			
Total imports	11.7	15.1	26.7
Fixed capital formation	10.5	12.7	22.7
Foreign savings	9.1	9.6	9.5
Aid imports	8.1	6.5	4.4
Ratios to Total Imports of:			
Foreign savings	78	64	36
Aid imports	69	41	17
Ratios to Fixed Capital Formation of:			
Foreign savings	88	75	42
Aid imports	77	51	20

Source: Derived from Tables 43 and 44.

Source: Mason, Kim, et al (1980), The Economic and Social Modernization of the Republic of Korea (Cambridge: Harvard University Press): 185.

Table 15.4 Aid-Financed Imports Relative to Total Imports ($ U.S. and % of total imports)

		Aid-Financed Imports							
		Total				U.S. Share			
		Grant[a]		Loan[c]		Grant[b]		Loan	
	Total Imports	Amt.	%	Amt.	%	Amt.	%	Amt.	%
1953	345	201	58			71	50		
1954	243	149	61			132	54		
1955	341	233	68			215	63		
1956	386	320	83			304	79		
1957	442	374	85			369	83		
1958	378	311	82			314	83		
1959	304	211	69			220	72		
1960	343	232	68			245	71		
1961	316	197	62			199	63		
1962	422	219	52			232	55		
1963	560	233	42			216	39		
1964	404	143	35	25	6	149	37	25	6
1965	463	136	29	2	0	131	28	2	0
1966	716	148	21	50	7	103	14	47	7
1967	996	152	15	80	8	97	10	38	4
1968	1,463	168	12	90	6	106	7	70	5
1969	1,824	155	9	169	9	107	6	71	4
1970	1,984	187	9	101	5	82	4	51	3
1971	2,394	126	5	193	8	51	2	34	1
1972	2,522	66	3	342	14	5	0	194	8
1973	4,240	23	1	224	5	2	0	123	3
1974	6,851	30	0	186	3	1	0	20	0
1975	7,274	37		348	5				

Source: Suk Tai Suh, *Import Substitution and Economic Development in Korea*, (Korea Development Institute, December 1975), pp. 221-222. U.S. grant aid is from BOK, *Economic Statistics Yearbook*.

Notes: [a]Total grant aid includes Japanese grant funds from 1965 on.
[b]U.S. grant aid includes technical assistance costs in addition to commodity imports.
[c]Loan aid includes loans from international organizations and public bilateral loans.

Source: Mason, Kim, et al (1980), The Economic and Social Modernization of the Republic of Korea (Cambridge: Harvard University Press): 206.

Table 15.5. Relationships of Foreign Savings, Foreign Aid, Imports, and Fixed Capital Formation to GNP.

	Percent of GNP				Percent of Fixed Capital Formation	
	Fixed Capital Formation	Imports	Foreign Saving[a]	Aid Imports[b]	Foreign Saving	Aid Imports
1953	7.2	9.7	7.7	5.7	107	79
1954	9.1	7.3	6.2	4.4	68	48
1955	10.1	9.8	8.2	6.7	82	66
1956	10.3	13.1	11.7	10.9	113	106
1957	10.6	12.0	10.5	10.2	99	96
1958	10.1	10.7	8.7	8.8	86	87
1959	10.9	10.1	7.5	7.0	69	64
1960	10.8	12.6	9.3	8.6	86	80
1961	11.6	14.8	9.5	9.0	82	78
1962	13.9	16.9	11.7	9.5	84	68
Average 1953-1962	10.5	11.7	9.1	8.1	88	77
1963	13.9	16.3	11.4	6.8	82	49
1964	11.6	13.8	7.8	6.2	67	53
1965	14.8	15.9	7.4	5.3	50	36
Average 1963-1965	13.4	15.3	8.9	6.1	66	46

Source: Mason, Kim, et al (1980), The Economic and Social Modernization of the Republic of Korea (Cambridge: Harvard University Press): 207.

contributing aid, the second question must be discussed first here.

For purposes of what can be learned about the ability of foreign donors to influence domestic policie in the aid process, the South Korean example is an extremely interesting one. During the 1950s, when the United States was a major donor of aid, there was a continuous dialogue between the American and the Korean authorities over appropriate levels of aid and the policy choices that the South Korean government was making. The American negotiators fully recognized, and repeatedly pointed out, the difficulties associated with the excess-demand, multiple-exchange rate, inner-oriented policies that the Korean Government was following. There is little doubt that, in certain respects, the negotiators won concessions from the Korean government (with respect, for example, to devaluing the won and making some efforts to raise tax revenue or lower expenditures).

However, the overall strategy of the Rhee government was to maximize he gap between domestic resources and expenditures that aid would fill Cole and Lyman, 1971). Because the United States was politically committed o the maintenance of the South Korean government, the bargaining power nherent in the American position was relatively weak.

Thus, an observer, as of 1958 or 1959, might have concluded with some ustification that American aid policies were erroneous because the Korean overnment was following inappropriate economic policies. This inter- retation seems to have some further support in that the policy reforms that ere undertaken in 1960 seem to have originated largely in a consensus among he Korean intelligentsia that changes were necessary if the country was to ave any reasonable future. But the discussion within Korea was certainly

furthered and to some extent stimulated by the fact that the United States had, as a policy decision, announced that aid levels could not be expected to increase and would, indeed, gradually decline. Given Korea's dependence on raw material imports, that prospect threw into sharp relief the proposition that only sustained growth of export earnings would permit rising levels of imports, which were obviously a necessary condition for further growth of the economy.

Nonetheless, those facts alone do not prove that the aid donors, and especially the United States, had no influence on the policy changes that permitted South Korea's success. Indeed, there are several considerations that point in the other direction. First and foremost, there is the undebatable conclusion that aid had, in the immediate recovery period (to 1956), been absolutely essential to the maintenance of the Korean economy. Given conditions in 1953, the South Korean economy could not, without assistance, have recovered sufficiently to undertake the necessary policy reforms - or, for that matter, to have achieved very much even if those reforms had been undertaken.

Secondly, there is a major important, but unanswerable, question as to the degree to which the American policy dialogue in the 1950s influenced the thinking of Korean policy makers. There is substantial evidence that economists at the American aid mission were involved in the discussions leading to the stabilization program of 1958-59 which, as seen above, was a predecessor of the major reforms of 1960-64. Moreover, U.S. assistance had financed the training in the United States of many Koreans in the United States. Their influence in the discussion is unknown.

Indeed, it is extremely difficult in any situation to document or measure the ways in which ideas are transmitted. It was certainly the case

that it was internal Korean political discussion in support of policy changes that was the immediate impulse for change. But it does not follow that earlier discussions had had no effect. The importance of the policy dialogue is further supported by the fact that in the early 1960's American economists associated with aid were intimately involved in later stages of the dialogue and policy reform. Certainly, the budget and credit reforms of 1964 were worked out with the collaboration of American economists financed by USAID (Mason, Kim, et al, (1980): 330). Later tariff liberalization was accompanied by the same sort of collaboration between Korean policy makers and consultants provided by USAID.

It thus seems impossible to reach a firm conclusion on the degree to which donor influence contributed to the policy reforms. It seems unarguable that there was some influence, and that forces favoring reforms were strengthened by U.S. aid. Whether the reforms would in any event have been undertaken in the absence of American pressures is more problematic. The safest conclusions are: (1) that American aid in the 1950's did not reduce the probability that policy reforms would be undertaken; (2) given the political interest of the United States in South Korea, it is remarkable that the American authorities took as strong a position as they did with regard to Korea's economic policies; (3) there was surely some donor influence on the intellectual atmosphere that prevailed when a political consensus was finally reached; (4) a contemporary observer could not, from the vantage point of 1958 or 1959, have perceived any influence of American aid on Korean policies; and (5) the fact that American aid officials already had experience in, and understood some aspects of, the Korean economy placed them in a uniquely

favorable position to assist in the continuation and furtherance of the policy reforms. While it would be purely speculative to attempt to analyze what might have been the fate of the reforms in the absence of significant external support, the donor presence was certainly a positive factor in influencing their success. Without prior experience in the Korean economy, it is doubtful whether that influence could have been as constructively employed.

Given, then, that there does appear to be a basis for believing that donor influence was of some significance in affecting the reforms when they were finally undertaken, there remains the question of the value of assistance during the 1950s. As already indicated, the period 1953-55 can surely be regarded as one during which assistance had a very high marginal product. It is almost unimaginable that political and economic stability could have been maintained in the absence of concessional assistance in those years when Korea was regarded as completely uncreditworthy in the private capital markets.

The real question, therefore, centers upon the product of aid during the 1956-60 period. Undoubtedly, some of it had a very low return. Aid financing of imports led to distortions of various kinds. However, there was considerable investment in infrastructure of various kinds (see Mason, Kim, et al (1980) for details and Section 15.4) which was undoubtedly of value in paving the way for the success of the export-oriented drive. This was certainly true of the educational reforms and assistance to education undertaken under U.S. auspices in the 1940's and 1950's. All

observers of Korea's phenomenal performance point to the availability of a literate labor force as having been an important prerequisite for the degree to which Korea could capitalize on the policy reforms. Likewise, in the early 1960s, the rate at which the Korean economy could grow was constrained by the availability of essential infrastructure - power, railroad and port capacity, and the like. While some of the infrastructural investments of the 1950s may initially have been less than optimally employed, the infrastructure certainly permitted a more rapid acceleration of growth than would otherwise have been possible in the early 1960's.

If there is a conclusion that might be drawn from this, it may be to suggest that infrastructural projects which enhance the potentially productive resources available to society are probably a wiser form of aid when governments are undertaking ill-advised economic policies than is program support. But even this conclusion must be qualified. The policy dialogue in Korea in the 1950's centered around the level of program lending to support the import program, and not around individual projects. Whether the same intangible influence on the climate of opinion could have been realized under project-only lending is certainly an open question. Possibly, in the absence of further evidence, the safest policy prescription for a donor confronted with a potential recipient whose domestic economic policies are suspect is to have a relatively higher proportion of project aid than for recipients whose domestic policies are deemed conducive to growth.

15.3 Trade and Aid in Korea

Korea's successful experience during the 1960's and 1970's is so intricately linked to the trade sector that much of the relationship between trade and aid has been discussed already. Certainly, the major factors retarding Korean growth in the 1950's were the excess demand associated with overall budgetary and monetary policy and the exchange control regime which provided the wrong signals for resource allocation within the domestic economy.

For the 1955-63 and the 1963-75 periods, the fraction of output growth attributable to export expansion, import substitution and domestic demand expansion has been calculated by Mason, Kim, et al (1980), Table 29). According to their estimates import substitution accounted for about 26 percent of manufacturing output expansion in the earlier period, and 7 percent in the later period. By contrast, export expansion accounted for about 9 percent of (slower) growth in the former period and 39 percent in the latter. These results are confirmed by every other indicator of Korea's economic performance: within tradables, and especially within the manufacturing sector, resources were allocated in radically different directions in the import-substitution years than they were under the export promotion strategy.

In the former period, foreign assistance really substituted for foreign exchange earnings - especially when it was in the form of program aid. As such, it could not contribute as significantly to development prospects as would have been the case had more appropriate policies been in place. In the latter period, foreign assistance (to an ever decreasing degree) and

subsequently foreign borrowing permitted the Koreans to take advantage of highly profitable projects sooner than would otherwise have been the case. While it therefore permitted a higher rate of investment than would otherwise have been possible, given the domestic savings rate, it did so in a highly productive manner.

Some of the Korean investments financed through aid in the 1950's - especially in the import substitution sectors such as cement - had very low rates of return. The lesson for aid that derives from this is that one cannot divorce sectoral assistance programs, even if they are administered under project lending, from overall macroeconomic policy considerations. As is discussed in Chapter 8 of Volume I of this survey, it is vitally important that the assessment of individual projects be undertaken only in the context of appropriate estimates of the international prices (as contrasted with the domestic prices) of outputs of various alternative projects.

15.4 Agriculture and Rural Development

During the period when Korea was a Japanese colony (1910 to 1945) Japan invested heavily in Korea in an attempt to create in Korea a source of food and manufactured goods for the Japanese homeland. The Japanese invested in irrigation, and in research to breed higher-yielding cold resistant rice varieties, and they also introduced chemical fertilizers (Steinberg, 1980: 14). They also developed an agricultural extension service that was viewed as part of the coercive administrative machinery by the Korean farmers. It was abolished at the end of World War II (Steinberg, 1980: 14). Rice production during the colonial period increased but per capita consumption of polished rice dropped from 111.5 kg to 80.2 kg (Steinberg, 1980: 14).

By the end of the Korean War in 1953, the Korean countryside had been ravaged, Japanese-built infrastructure was inoperable, and a heavy influx of refugees from the North had put enormous pressure on an already strained food situation. The division of Korea meant a loss for South Korea of heavy industry, major coal deposits, and almost all power capacity (Cole, Lyman, 1971: 18). Food prices increased by 100% and all industrial production was curtailed (Cole, Lyman, 1971: 18). In the Japanese scheme of development for Korea, the North was to have been Japan's source of manufactured goods and the South was to have been a source of food for the island. Although the Korean economy had become integral in the Japanese economy, they were not necessarily integrated within Korea. Thus, the division left South Korea with an agricultural system to rebuild and little industrial capacity (Cole, Lyman, 1971: 18).

The Rhee government which was in power from 1947 until 1960 sought to maximize aid and counseled ministries to understate Korean harvests (Cole, Lyman, 1971: 79). His objectives were to rebuild the infrastructure and industrial capacity which had been destroyed by the war, to maintain a strong military, and to improve private consumption levels within the limits of domestic production and available foreign assistance (Cole, Lyman, 1971: 164). The Rhee government's program for development favored the urban sector over the rural sector. Because of the large shipments of P.L. 480 grains, it was able to set prices often at below production costs without worrying about drops in the level of production.

President Park, the next major leader after Rhee, sought to neutralize relations with Japan in an effort to open up new non-U.S. sources of external financing (Cole, Lyman, 1971: 38). The Park government also adopted a more positive approach to agricultural development. Low interest agricultural credit was increased by 30 times over the pre-1961 average and the government offered to take over the high interest loans taken on by farmers in bad years to relieve them of excessive debt (Cole, Lyman, 1971: 39). By 1970-71 Korea had to pay for all P.L. 480 shipments in dollars, causing grain imports to become a drain on foreign exchange (Steinberg, 1980: 16). In the election of 1971, Park barely beat his opponent largely because his rural support had eroded. Thus, from the early 70's the agriculture sector in Korea was to get much more emphasis. Even after P.L. 480 terms for grain imports hardened, Korea continued to import grin. In FY 1972, P.L 480 grain loans to South Korea came to approximately $222 million (Wideman, 1974: 281-282). But, in 1972 there was a grain shortage in Korea. This bad harvest, compounded by sharply rising world grain prices, forced Korea

to pay more than $100 million more for grain than they had had to in the previous year (Wideman, 1974: 282). This was a drain on foreign exchange.

The New Community Movement (Sae-maul Undong - which hereafter will be denoted as NCM) was an attempt in the early 70's to improve the lot of the farmer after the 1971 election. Its purpose was to modernize and improve village life through self help and government grants and encouragement. Its beginning coincides with an excess of cement production in 1971 which led to the donation of 300 bags of cement to each village in the country for community projects. (Steinberg, 1980:17). Roads, bridges, and community meeting places were built. Rice straw thatch roofs were replaced with cement tiles and hedges around houses were replaced with cement walls (Park 1982: 40). Village roads were improved and conditions were generally upgraded. Moral suasion was used in villages to assure complete participation and villages were encouraged to compete with one another for approval. Along with the NCM, however, came a change in government pricing policy. Prior to the Park government's policy, grain prices were frequently below the costs of production (Steinberg, 1980:15). In the 60's until 1971, the purchase price of rice covered production costs with a small margin (Steinberg, 1980:16). By the end of the 1970's farmers had a government rice support price that was over two times the world market price (Steinberg, 1980:16).

Land Reform

South Korea has a land area of about 98,000 square kilometers and a population of over 38,000,000, making it one of the most densely populated countries in the world, (World Development Report, 1982: 111). The U.S. provided support for a major land reform in the 1940's and 1950's. The reform evolved in two stages. The first stage involved confiscating Japanese-held land and turning it over to Korean ownership. The second step involved

limiting holdings to approximately three hectares (Steinberg, 1980: 15). As a result of this program, the distribution of wealth is considered reasonably equitable. "On the average...an 80 percent or so decline in income of the top 4 percent was matched by a 20 to 30 percent increase in income of the bottom 80 percent who had been tenants or owner-tenants before 1948 if total farm output before and after the reform was about the same," (Ban, Moon, Perkins, 1980: 291). In 1945, 48.4% of the land in Korea was either totally or partially owned, versus 48.9% that was rented; in 1965, 93.0% of the land was either totally or partially owned versus 7% that was rented (Ban, Moon, Perkins, 1980: 286). Land reform was facilitated by the fact that there was a lack of class unity among the landlords. Some had conspired with the Japanese and consequently were in no position to oppose redistribution.

There is considerable debate over the short-term effects of land redistribution and reform but there seems to be a concensus that long-term effects have been positive. Perhaps the most positive effect has been in the political arena. Redistribution of land has been successful in diffusing what is often a major source of friction in rural areas - landlord/tenant tension. While there are some farmers who are better off than others and some who benefit more from government policies or improved techniques, rural income in Korea is distributed fairly equitably. Rural incomes are correlated with farm sizes but farm sizes have been maintained pretty much at a standard small size by law. There is the possibility in the future that this might change for demographic reasons. Young Koreans have been migrating to the cities, leaving the old men and women to run the farms. According to Steinberg, sale of land will probably become concentrated in the largest

farms and parts of it might be rented out (Steinberg, Morrow, Palmer, Dong-il, 1980: D-5).

Land Development

U.S. AID has played a part in land development in South Korea. In the early 60's the Korean government promoted a land development program which aimed at adding 15% more agricultural land to the country by reclamation of hillsides and tideland areas and by making irrigation and other improvements on existing farmlands (Cole and Lyman, 1971: 91).

> "The increasing demand for fruits and other crops at this time in addition to PL 480 support for the land reclamation program, provided strong incentive for accelerating the expansion of cultivated upland. From 1960 to 1968 the total cultivated land area increased at a compound rate of 1.68 percent per year. Since 1968 the area of both cultivated upland and paddy have been declining at rates of 0.98 percent and 0.37 percent per year from 1968 to 1973 respectively. This indicates that additional cultivated land brought about by reclamation was not enough to compensate for that converted for urban development, industrial sites and highway construction. (Ban, Moon, Perkins, 1980: 51-53) (See Table 28, Ban, Moon, Perkins, 1980: 81).

The land reclamation project was a labor intensive project, supported by over 100,000 metric tons of U.S. agricultural products per year. A food-for-work program, it employed hundreds of thousands of rural workers. The newly developed land was divided among those who had developed it or among those whose land holdings were below a certain level (Cole and Lyman, 1971: 91) P.L. 480 surplus food served as payment in kind to rural workers engaged in land reclamation and other agricultural projects. "Of 350,179 tons of wheat flour provided under PL 480-Title II in 1964 through 1966, for example, over 110,000 tons went for upland development and tideland reclamation." In addition to PL 480 support, local farmers were required to contribute labor and tool inputs equivalent to 30 to 60 percent of the total reclamation investment (Ban, Moon, Perkins, 1980: 80).

PL 480 assistance for new land development ended in 1967. AID was critical of the Korean government's failure to develop an adequate land use and development policy and recommended that future assistance be limited to advisory services (Ban, Moon, Perkins, 1980: 83). It is not entirely clear why this program lasted only about 5 years. There were problems with the program. It was difficult to decide who should get the improved land. It was unclear whether the food-for-work programs actually had any long-term benefits to the workers. They often provide short-term employment and food for the laborers but often the long-term benefits of improved roads, etc. accrue to others. There was also some indication that some of the improved land was not all that great in terms of productivity.

AID has also been involved in irrigation in Korea. Irrigation reduces the uncertainty of weather conditions and also is good for double-cropping. Many agencies, including the World Bank and AID, have been involved in irrigation in Korea. Table 15.6 below shows the expansion of irrigation in Korea over the years.

Table 15.6. The Expansion of Irrigation of Paddy Fields (1,000 hectares)

		Irrigated		*Non-Irrigated*	
	Total Paddy Acreage	*Benefited by Irrigation Association*	*Completely Irrigated Area*	*Partially Irrigated*	*Rain Field*
1952	1,226.3	183.7	351.3	278.8	412.6
1956	1,093.2	197.8	340.8	279.4	275.2
1960	1,202.9	236.4	392.7	285.5	288.3
1965	1,198.9	281.2	421.1	298.7	197.9
1970	1,183.5	304.1	543.7	223.2	112.6
1974	1,268.9	309.1	583.5	288.6	87.8
1975	1,276.6				

Sources: NACF, *Agricultural Yearbook 1961, 1968, 1975*; MAF, *Yearbook of Agriculture and Forestry Statistics 1952, 1961, 1976.*

Source: Ban, Moon, Perkins (1980), Rural Development (Cambridge, Harvard University Press): 95.

In the irrigation project which began in 1974 which AID provided financing for, project design and implementation were largely Korean (Steinberg, Morrow, Palmer, Dong-il, 1980: i-iii). In the "lessons learned" section of the Korean irrigation monograph, the main lesson seems to be that the project was successful because it was designed by Koreans to meet their specific needs (Steinberg, Morrow, Palmer, Dong-il, 1980: 12-14; Chapter 10).

RURAL INCOMES

Land reform after World War II by the U.S. leveled rural incomes in Korea and redistributed wealth in the rural sector. Korean land reform involved much more expropriation than compensation and when compensation was made to a landlord, it was often made in the form of bonds which were essentially worthless (Ban, Moon, Perkins, 1980:287). By 1957 an estimated 1.5 million farmers had acquired some 2.5 million acres of land on which they had formerly been tenants or farm workers - all but the largest and most agile landowners were pauperized (Aqua, 1974: 17). Most Korean farmers, other than former landlords, were better off in the 1950's than they were in the 1930's (Ban, Moon, Perkins, 1980: 301). Throughout the Rhee period, the government used grain price manipulation to provide cheap food for the cities (Table 15.7). PL 480 imports were large (Table 15.8). According to Steinberg, in no year did the government purchase price equal the cost of production and in six of the 13 years the purchase price was under 50% of the market price (Steinberg, Morrow, Palmer, Dong-il, 1980: F-2). After Park took over the government, grain procurement prices rose to at least cover production costs although they were still usually under the market price (Steinberg, Morrow, Palmer, Dong-il, 1980: F-2). See Table 15.7 for a comparison of purchase prices and market prices versus cost for the production of rice 1948-1975.

Table 15.7. Government Purchase Prices and Market Prices versus Cost of Production for Rice, 1948-1975
(wŏn per 80 kg)

Year	urchase Price (A)	Cost of roduction (B)	Market[a] Price (C)	A/B (%)	A/C (%)
1948	2.47	3.72	7.10	66.3	34.8
1949	2.67	6.71	13.21	39.9	20.2
1950	16.40	15.88	52.30	103.6	31.4
1951	65.37	n.a.	157.50	-	41.5
1952	200.62	329.09	447.50	61.0	44.8
1953	200.62	330.94	350.00	60.6	57.3
1954	308.33	330.94	581.00	93.2	53.1
1955	390.56	838.44	962.00	46.6	40.1
1956	1,059.00	1,134.00	1,591.00	93.4	66.6
1957	1,059.00	1,384.00	1,311.00	76.5	80.8
1958	1,059.00	1,297.00	1,157.00	81.6	91.5
1959	1,059.00	1,300.00	1,368.00	81.4	77.4
1960	1,059.00	1,313.00	1,687.00	80.7	62.8
1961	1,550.00	1,377.00	1,768.00	112.6	87.7
1962	1,650.00	1,422.00	2,801.00	116.3	58.9
1963	2,060.00	1,373.00	3,470.00	149.7	59.4
1964	2,967.00	1,936.00	3,324.00	153.3	89.3
1965	3,150.00	2,672.00	3,419.00	117.9	92.1
1966	3,306.00	2,495.00	3,750.00	132.5	88.2
1967	3,590.00	2,735.00	4,289.00	131.2	83.7
1968	4,200.00	3,403.00	5,140.00	123.4	81.7
1969	5,150.00	3,565.00	5,784.00	144.5	89.0
1970	7,000.00	4,642.00	7,153.00	150.8	97.9
1971	8,750.00	4,682.00	9,844.00	186.9	88.9
1972	9,888.00	6,115.00	9,728.00	161.7	101.6
1973	11,377.00	6,578.00	12,175.00	173.0	93.4
1974	15,760.00	7,959.00	17,821.00	198.0	88.4
1975	19,500.00				

Sources: MAF, *Grain Statistics Yearbook 1967-1975.*
MAF, *Cost of Production Survey, 1967-1975.*

Note: [a]November-January average prices.

Source: Ban, Moon, Perkins (1980), Rural Development (Cambridge: Harvard University Press): 240.

Table 15.8. The PL 480 Role in Agricultural Imports ($ U.S. millions)

Year	Total Grain Imports	Total PL 480 Aid	PL 480 Grain Imports	Total Cotton Imports	PL 480 Cotton Imports	Other PL 480 Imports
1955	6.4	-	-	20.1	-	-
1956	31.2	33.0	20.0	25.0	8.2	4.8
1957	84.3	45.5	33.0	26.9	1.8	10.7
1958	51.1	47.9	46.9	31.7	0.5	0.5
1959	17.5	11.4	4.3	30.8	7.0	0.1
1960	20.6	19.9	19.2	28.6	0.8	0
1961	n.a.	44.9	22.6	n.a.	21.5	0.8
1962	40.1	67.3	34.4	34.2	31.3	1.6
1963	107.2	96.8	62.6	38.2	31.8	2.5
1964	60.8	61.0	28.0	37.3	30.5	2.5
1965	54.4	59.5	29.7	40.8	29.7	0.1
1966	61.3	38.0	11.2	42.8	26.7	0
1967	76.6	44.4	7.9	49.3	34.0	2.4
1968	129.3	55.9	27.3	49.1	24.7	4.0
1969	250.3	74.8	31.6	52.0	39.0	4.2
1970	244.8	61.7	33.0	62.7	27.4	1.3
1971	304.0	33.7	18.0	84.2	15.7	0
1972	282.7	-	-	85.5	-	-
1973	444.1	-	-	112.4	-	-

Sources: BOK, *Economic Statistics Yearbooks*, and EPB, *Korea Statistical Yearbooks*.

Source: Ban, Moon and Perkins (1980), Rural Development (Cambridge: Harvard University Press): 30.

In the early 1970's the Korean government changed its pricing policy. It was no longer getting free P.L. 480 grain from the U.S. and grain imports became a potential drain on foreign exchange. The 1971 election demonstrated to Park that his rural constituency was eroding and something had to be done. In 1969, the Korean government instituted a two price rice and barley pricing system where they would pay relatively good prices to the farmers but would also subsidize urban grain prices. As farmers' incomes rose and the urban grain prices were kept down, the costs of these subsidies were carried as an overdraft on the central bank which increased the money supply and thus fueled inflation (Steinberg, Morrow, Palmer, Dong-il, 1980: F-3).

The change in grain price policy, along with general improvements in rural conditions and urban demand for food and rural labor, created favorable conditions for rural laborers in the 70's. According to the government in 1976, the annual income for the rural household surpassed that of the urban household (Kihl, 1979: 135). According to South Korea's Ministry of Agriculture and Forestry, farm income per household has grown 2.5 times between 1965 and 1971. Aqua, after adjusting for inflation, claims that in fact the real gain between 1960 and 1971 has been about 45.5% (Aqua, 1974: 28). In 1971 rural households were paying higher prices for food purchases (about 6% more) than urban households although they paid somewhat less for housing and clothin (Aqua, 1974: 28). Steinberg found in his project report on irrigation that all rural residents believed that their standard of living would be higher in the cities (Steinberg, Morrow, Palmer, Dong-il, 1980: D-4), and that few farmers would like to see their children become farmers (Steinberg, Morrow, Palmer, Dong-il, 1980: E-5).

"The booming prosperity and industrialization of the urban areas and the rapid growth of the Korean economy created unusually favorable conditions for the growth in both agriculture and fishing," (Brandt, Cheong, 1982:46). Farmers who live near cities and have access to improved transportation systems, can grow vegetables and fruits and market them in the cities which has apparently been profitable. Their land is also worth considerably more as a result of improved transportation and easy access to the city market. The demand for labor in the urban industrial areas due to the improved manufacturing sector has caused many to leave rural areas in search of better opportunities. Today there is an actual shortage of agricultural labor in South Korea (Brandt, Cheong, 1982:38-39). Increasingly, farming is done by women and older men (Wideman, 1974:286). Korea is increasingly being urbanized and the agriculture sector is declining significantly as a percent of national income and as an employment sector. According to the U.N., South Korea has exhibited one of the largest urban-rural growth differentials in terms of migration in the years between 1950 and 1970. In 1915, 3.1% of Koreans lived in urban areas of 20,000 or more. By 1940, 16.0% of Koreans lived in urban areas of 20,000 or more. In 1955, 24.5% lived in urban areas of 50,000 or more and by 1975 48.4% lived in urban areas of 50,000 or more (Kihl, 1979: 153).

Transportation

U.S. AID took an early interest in transportation in Korea. The major impetus for this interest was the Korean War in the early 1950's. Paved roads made moving troops and supplies much easier and proved much less wearing on machinery. Thus, good roads facilitated military actions in Korea. Another reason for this interest was to rebuild roads that were destroyed by the Korean War. During the period from 1954-63, the U.S. provided 18.9% of the funds invested in highway construction with the bulk of aid going to paving and a lesser share going to bridge building (Ban, Moon, Perkins, 1980:148). Cole and Lyman's estimates of aid to the transportation sector vary slightly (1958-1966 - 26.1% of aid went to transportation sector) but transportation is also the largest share of aid by any sector (Cole, Lyman, 1971:193).

Although major concern in the 50's for road building was either to facilitate military maneuvers or to rebuild that which was destroyed by war, in the 60's the major consideration became uniting the country for commercial reasons. In the beginning of the 60's, it was clear that the lack of adequate transportation facilities was the real bottleneck to growth (Hasan, 1976:31). The railway network has been modernized and expanded by the development of roads and coastal shipping has been even more rapid and led to a substantial redistribution of passenger and freight traffic away from the railroads (Hasan, 1976:31). In the early 60's there were 4,000 buses in the whole country, most of which were in the city of Seoul and a few other cities (Ban, Moon, Perkins, 1980:315). The development of the transportation sector reflects the early interest in urban areas at the expense of the rural areas.

The main impetus for transportation planning has been to link important cities within the country but it wasn't until 1969 that construction of expressways to link major cities began. By 1977, 44% of national inter-city roads were paved (Ban, Moon, Perkins, 1980:148). The interest in rural roads and non-linking roads didn't really begin until the 70's. In 1971 only 0.05% of all roads in Korea were paved and 33% of all villages did not even have access roads that could accommodate small trucks (Wideman, 1974:275).

The NCM, which was a Korean government initiative and had little to do with aid, was the main impetus for improving roads within and around villages in the early 1970's. Bad roads were seen as a critical restricting factor for introducing labor-saving machinery and equipment because power tillers with attached trailers were difficult to move on narrow village roads. Thus, farmers were unable to purchase labor-saving devices (Park, 1982:34, 39).

Road construction has been advantageous to Korean farmers for several reasons. In areas where transportation is good and access to the city is easy, the price of land has gone up considerably (Park, 1982:62). Also the growth of market crops in the late 60's is in large part due to highway construction (Ban, Moon, Perkins, 1980:154). The improvement of rural roads and their hook-up into the national "highway" system, enabled farmers to reach the markets easier. By producing crops like winter vegetables and fruits they were able to circumvent the government's control of grain prices and grow crops year round for the city markets.

Utilities

The Japanese in Korea had developed North Korea as the major manufacturing region while South Korea's role was food production. The division of Korea in 1953 meant a loss for South Korea of heavy industry, major coal deposits, and almost all developed power capacity (Cole, Lyman, 1971:18) Whatever power capacity South Korea had was probably heavily damaged by the war. Between 1958 and 1966, the "power" sector was the third largest category of AID grant project assistance, comprising 11.5% of the total amount given in grants to Korea (Cole, Lyman, 1971:193). Early impetus was to provide power for urban industrial areas and it wasn't until 1965 that a rural electrification program actually began (Ban, Moon, Perkins, 1980:144). The provinces with the largest urban areas had the earliest and highest rates of rural electrification. In 1964, 12% of rural households had electricity; in 1974 61% had electricity (Ban, Moon, Perkins, (1980: 145). The large use of electricity in rural areas rose from negligible levels in the late 1940's to 25.2 million kwh in 1962 to 56.6 million kwh in 1973 (Ban, Moon, Perkins, 1980:99).

Under the NCM, rural electrification was an objective. The goal of government policy was that by 1977, 90% of rural households would have access to electricity (Hasan, 1976:108). Part of the push for rural electrification programs comes from the hope of establishing small workshops in the countryside to provide profitable work for farmers in the slack season. These workshops would produce handicraft goods for export and by 1976, the government hoped to be earning $480 million in foreign exchange from these exports (Wideman, 1974:300). A major problem with this scheme is the cyclical demand for labor in rural areas and the shortage of labor in general.

Current Inputs

Throughout the 1950's and into the 1960's, U.S. assistance played a dominant role in imports of current inputs to farming such as pesticides, fertilizers, and new seed varieties.

These imports must be credited with providing much of the impetus for agricultural growth during this time. Pesticide and fertilizer use jumped substantially during these years. From 1953 to 1959, aid financed two-thirds of the nitrogen fertilizer used in Korea. An even greater proportion of the phosphorus and potassium inputs were provided through foreign assistance (Ban, Moon, Perkins, 1980: 104). While the average compounded rate of annual expansion from 1946 to 1973 was 0.53 percent for land, 0.34 percent for labor used, and 1.37 percent for fixed capital, the same measure for current inputs was 8.59 percent (Ban, Moon, Perkins, 1980: 53). "For the whole period 1945-1975, total input grew at an annual rate of 1.94 percent and total productivity at 1.44 percent. Therefore, according to this method of estimation, about 57 percent of total production growth is attributable to the increase of input and the remaining 42 percent to improvement in productivity," (Ban, Moon, Perkins, 1980: 57,60).

The critical growth in current input use can be directly linked to the foreign assistance to Korea. Through the end of the 1960's, Korea was the main recipient of U.S. fertilizer assistance. The contribution of U.S. shipments verses domestic production has already been noted in the previous discussion and in Table 5.9. During the 1970s as Korea established a domestic fertilizer industry, they received AID loans to help finance these projects. "The AID risk guarantee program also helped encourage private investment in fertilizer plants," (Libbin 1970: 20). Given the demands on foreign exchange, without the contributions of foreign assistance programs

the supply of fertilizer and other current inputs would have been a small fraction of the actual levels and the transition to self-sufficiency would have been much more difficult.

Nearly all of the fertilizer available came from imports. Without American aid fertilizer consumption would have been cut to a small fraction of the level of actual use during this period. In 1952, for example, aid financed imports of 98,100 metric tons of fertilizer while Korean foreign exchange financed only 33,200 metric tons. During 1953, the aid component was even more important. Aid-financed imports came to 111,000 of the 112,000 metric tons of fertilizer imported in that year (Ban, Moon, Perkins, 1980: 102-104).

The absence of such aid to agriculture would have greatly decreased production. Perkins estimates, "If the amount of nitrogen had been cut from 80 to 40 kilograms per hectare, for example, grain output may have fallen by well over half a million tons (10 percent or more of total grain output)," (Ban, Moon, Perkins 1980: 101).

The critical role played by current inputs to agriculture during this time is noted by Krueger who states, "Total agricultural output grew at an annual compound rate of 2.09 percent from 1945 to 1953, with an annual rate of increase of inputs of 1.50 percent. Input increases, therefore, accounted for about 72 percent of output increases," (Krueger 1979: 17). Apparently, the growth in fertilizer input, made possible through foreign assistance, can be credited for a major portion of the agricultural growth through 1953. The average annual support level for chemical fertilizers was $43.2 million for 1956 to 1960 (Krueger 1979: 112).

Chemical fertilizers remained the single largest category of non-project support during the 1960 to 1965 period. The annual support level for chemi-

cal fertilizers during this time averaged $33.6 million. But throughout the 1960's domestic fertilizer production increased so that by 1970 Korea achieved a self-supporting level of fertilizer production and actually became a net exporter as shown in Table 15.9. Assistance in this area was then no longer necessary.

Several problems with the distribution of these aid-financed fertilizer imports should be noted. First, the Korean government priced the fertilizer well below its theoretical market value. This made distribution through the free market impossible and the government resorted to a program of rationing. The government's distribution program was chaotic and often failed to deliver the fertilizer at the proper time or to the proper place. For this reason, farmers were often forced to resort to dealing in the black markets where prices reached levels of two to three times those of the government.

Second, farmers were frequently reluctant to use the available fertilizer resources of phosphorus and potash at any price. The positive relationship between the use of these nutrients and crop yields was not as immediately evident to the farmers as with the use of nitrogen. The reaction of the farmers points to the need to conduct appropriate extension programs in conjunction with an increase of foreign-funded agricultural inputs.

The introduction of new higher yielding strains of seeds for cereals and vegetables increased potential agricultural output substantially. The International Rice Research Institute transferred the "Tong-il" (IR-667) and "Yushin" rice seed varieties to Korea in the early 1970s. The first demonstration plots for the Tong-il seed were established during the 1970-71 rice crop year. The new rice varieties came into widespread use during the rest of the decade after it was shown that crop yields could be increased 30 to 40 percent using the improved seed.

Table 15.9. Imports and Exports of Chemical Fertilizer, 1951-1975.

	Imports (1,000 metric tons)						*Exports*
	AID Financed			*Korea Foreign Exchange*			*(1,000 metric tons*
	N	*P*	*K*	*N*	*P*	*K*	*of all nutrients)*
1951	43.9	19.3	0	5.4	0	0	0
1952	91.1	0	7.0	33.2	0.1	0	0
1953	89.9	13.6	2.7	0.6	0.4	0	0
1954	96.4	50.2	1.9	18.7	0	0	0
1955	127.7	28.2	8.8	18.7	0	0	0
1956	157.3	53.8	8.1	50.9	4.2	0.4	0
1957	143.9	68.5	6.5	36.6	11.6	0	0
1958	171.7	66.8	5.0	75.5	15.1	0.7	0
1959	102.4	55.5	6.0	76.5	11.6	2.0	0
1960	199.7	55.2	7.3	n.a.	n.a.	n.a.	0
1961	138.7	74.4	16.8	41.4	6.4	0	0
1962	1.5	15.8	0	11.4	24.1	0	0
1963	.4	113.0	29.1	161.3	5.1	0	0
1964	0.4	131.5	32.7	84.9	7.2	2.8	0
1965	27.7	161.8	82.1	145.8	3.9	3.7	0
1966	18.8	164.2	136.5	156.2	5.2	5.6	0
1967	5.6	179.1	110.9	127.2	6.1	6.4	9.2
1968	1.9	70.5	68.4	111.1	3.0	10.1	11.5
1969	0.8	46.5	21.6	35.1	2.2	58.1	45.7
1970	0	0	0	2.4	2.4	1.9	55.8
1971	0	0	0	16.2	12.2	63.2	82.4
1972	0	0	0	11.3	10.1	93.4	88.0
1973	0	0	0	9.8	13.2	106.3	27.2
1974	0	0	0	2.8	26.1	122.3	0
1975	0	0	0	9.9	35.0	196.0	0.5

Sources: MAF, *Yearbook of Agriculture and Forestry Statistics*, various years.
USOM/K, *Rural Development Program Evaluation Report, Korea, 1967*, p. 82.
Korean Traders Association, *Statistical Yearbook of Foreign Trade* (1969 through 1975 editions). All phosphate fertilizers imported were converted to nutrient (P) at a rate of 20%. Compound fertilizer, both exports and imports, was assumed to be 22-22-11.

Source: Ban, Sung Hwan, Pal Yong Moon, Dwight H. Perkins (1980), Rural Development, Studies in the Modernization of the Republic of Korea: 1945-1975 (Cambridge, Mass.: Harvard University Press).

Research and Extension

Korea has had a long history of agricultural research. Its earliest official demonstration station was established in 1906 and experimental improvements in rice were conducted throughout the Japanese colonial period, (Steinberg, Jackson, Kim, Hae-kyun, 1982: 4). After WWII until the 60's, the system was neglected partly because it was remembered by farmers as being a coercive vestage of colonial power. In 1962 the agricultural research system was reorganized and the Office of Rural Development (ORD) was established with the backing and financial support of AID. The Office of Rural Development is one of three main divisions of the Ministry of Agriculture and Fisheries. Its purpose is to do agricultural research, to provide training and extension to farmers (Steinberg, Jackson, Kim, Hae-kyun, 1982: G-2). AID was not responsible for setting up the organization of this research system since it had already been in effect. What AID provided was funding to expand and improve research facilities, to create a larger research network, and to provide increased training both to farmers and to extension workers.

Marketing and Credit

The National Agricultural Cooperative Federation (NACF) is another example of AID support to a government organization. The NACF is part of the Ministry of Agriculture and Fisheries whose responsibility is to provide agricultural credit, seeds, fertilizer, pesticides and herbicides, and agricultural machinery. It is also the government arm for the purchase of crops at standard, centrally set prices and quantities (Steinberg, Jackson, Kim, Hae-kyun, 1982: G-2). The main criticism of the NACF (besides the fact that it is called a cooperative and in fact functions more like an arm of the government) has been its inability to coordinate its efforts with the ORD (Ban, Moon, Perkins, 1980: 278-9). The organizations have very strong hierarchical components, are

competitive with one another, and are driven by a need for immediate results. The combination of these factors does not always lead to optimal conditions. On a non-governmental level, U.S. AID helped to reorganize and finance 18,000 cooperatives which are the main source of credit to the country's farmers (Libbin, 1970:20).

Health (sanitation, family planning, modern medicine, nutrition)

The Japanese had taken measures in Korea during the colonial period to improve public health to increase the productivity of the Korean labor force. Their measures included compulsory innoculation, enforcement of quarantines at major seaports and the establishment of public hospitals in each province and major urban areas (Repetto, Kwon, Kim, Kim, Sloboda, Donaldson, 1981:198). The colonial government also tried to improve health conditions by drilling community wells and developing running water systems (Repetto, Kwon, Kim, Kim, Sloboda, Donaldson, 1981:198).

Between 1958 and 1966, 10.5% of AID grant project assistance was spent on health and sanitation (Cole, Lyman, 1971:193). As with other problems, urban sanitation was top priority. According to Hasan, only 7% of all villages had a sanitary water supply system in 1972 (Hasan, 1976:163). The early 70's saw attempts being made to improve health by protecting well water from contamination (Ban, Moon, Perkins, 1980:314). NCM objective was that all villages would have a sanitary water supply by 1981 (Hasan, 1976:163).

Family planning and public health were in fact very minor programs in the Korean government's priorities - in fact Rhee, who was president until 1960, was opposed to family planning (Steinberg, 1980:32-33). In the late 1950's considerable support was being offered by members of the foreign community for family planning. This support was helpful because the Minister

of Health was forced to resign in the early 1960's because he supported family planning. U.S. AID supported a community development program which started in 1958 which encouraged field workers to discuss family planning with rural villagers with whom they worked (Repetto, Kwon, Kim, Kim, Sloboda, Donaldson, 1981:225-226). In September 1961, the government announced a family planning program (Repetto, Kwon, Kim, Kim, Sloboda, Donaldson, 1981: 202). The influence of AID, Planned Parenthood, Population Council and UN Fund for Population Activities (UNFPA) was important during the early stages of the national family planning policy formation because they were able to supply funding and technical expertise. Their influence is currently declining but they have remained the key providers of contraceptive supplies. They also still support research and advance training in population and family planning (Repetto, Kwon, Kim, Kim, Sloboda, Donaldson: 1981:257). Abortion was not legalized until 1973 but it was a common practice especially in the urban areas.

> "The development of a black market for abortion during the Korean War was important. Strong biases against abortion and illegitimate births prevailed in Korean society but the biases against illegitimacy were stronger. Thus, abortion became socially justified with the increasing incidence of illegitimate pregnancies during the war. Contact with the West through American troops intensified with the Korean War. These socio-political changes constitute the major forces that cleared the path for lower fertility," (Repetto, Kwon, Kim, Kim, Sloboda, Donaldson, 1981: 25).

Birth rates have, however, gone down naturally through perceived demographic needs. As farms in rural areas could not support larger families, birth rates seem to have dropped. There is also some evidence that women tended to be older at the age of marriage in 1970 than they were in 1955. Delayed marriage often results in fewer births per woman.

As is often the case, "modern" medicine has been mainly concentrated in the cities. In 1970, about half of Korea's townships were without a qualified doctor (Breidenstein, 1974:251). In 1967, of 8,000 registered doctors in Korea, less than 3,000 were working in rural areas (Breidenstein, 1974:267). In 1970 there were 12 doctors in Seoul for every 10,000 people versus 2-3 doctors in rural areas for the same number of people (Breidenstein, 1974:267). Of 5,400 hospitals and clinics, 2,500 were in Seoul in 1970 (Breidenstein, 1974:267). Although modern medicine has not made much progress in rural areas there were traditional health centers and herbal doctors which served rural needs (Ban, Moon, Perkins, 1980: 314). Rural health has improved somewhat over the years. TB and parasite diseases are still widespread in rural Korea (Ban, Moon, Perkins, 1980: 311) but by the 1970's infant death had fallen to less than half that of the late 1940's (Ban, Moon, Perkins, 1980: 312). The number of hospitalizations per 1,000 population in rural areas appears to have doubled between 1963 and 1974 although the rate is still below that of the urban areas (Ban, Moon, Perkins, 1980: 314). Eighty percent of doctors and 90% of nurses are still concentrated in urban areas (Wideman, 1974: 275). According to Wideman, many of the doctors and nurses have been sent abroad to earn foreign exchange (Wideman, 1974: 275).

Nutrition

Some specialists have commented critically on nutrition levels in rural, relative to urban dwellers!

> "The average daily caloric intake of city dwellers is 2,646, whereas the peasants average 2,511. While this does not indicate undernourishment for peasants, other studies show that protein content is much higher in urban than in rural diets," (Wideman, 1974: 276).

Wideman claims that this difference was the result of government policies which would have been impossible without U.S. AID and P.L. 480 shipments (Wideman, 1974: 281-283). Measurement of caloric intake is notoriously difficult in rural households. And Steinberg disagrees that nutrition is a very telling indicator of relative wealth in Korea. In a survey taken by Steinberg (Steinberg, Morrow, Palmer, Dong-il, 1980: 13, D-3, D-4) enhanced income has little impact on nutritional standards of members of the family and no positive impact on infant nutrition. Instead, rising incomes were universally regarded as a means of upward social and economic mobility directed to the cities through higher education for children. Thus, while Steinberg admits that P.L. 480 may have depressed incomes in rural areas nutritional standards are not a relevant measure of the P.L. 480 effect. "The impression was gained that television and electric fans were ranked higher than nutrition and consequently that the satisfaction of basic needs would be seen differently by villagers and development planners," (Steinberg, Morrow, Palmer, Dong-il, 1980: D-4).

Education

In the 1930's less than half of the rural population was literate in anything except the Korean alphabet (Ban, Moon, Perkins, 1980: 311). When the U.S. took over administration of Korea after World War II, it set about rebuilding and "democratizing" the educational system (Krueger, 1979: 22).

AID was very interested in education. Between 1952 and 1966, AID gave $100 million to build 23,000 classrooms (Steinberg, 1982:29). By the 1960's virtually all children in appropriate age groups were in primary schools and increasing numbers were going to middle school (Ban, Moon, Perkins, 1980:311). For most village children, there were grade schools within walking distance but sending a child to middle school, high school, or college required that the family be prepared to board the child in the town or city (Wideman, 1974:275). Through the 1960's this was very difficul because rural incomes were so poor. The big spurt in rural middle school education appears to have coincided with the rise in incomes in the 1970's (Ban, Moon, Perkins, 1980:311) because of the expense of sending a child to board at a school. According to Hasan, almost 90% of the farm population was literate in 1974. 75.8% of the rural population went to primary school, 21.8% went to middle school, and 6.5% went to high school or college.

Koreans traditionally place a high value on education and learning (Brandt, Cheong, 1982:52). Longer periods of schooling, more frequent consumption of meat, and the recent acquisition of radios, televisions, rice cookers, and electric fans were regarded as indicators of improved conditions of life in rural areas (Steinberg, Morrow, Palmer, Dong-il, 1980: 9). Farmers clearly felt that education was the key to success and made sacrifices to provide their children with the best educations they could afford.

Although AID was very interested in education, the non-Korean influence on education was very limited according to Steinberg (Steinberg, 1982:28). Many Koreans were sent overseas for advanced degrees or training. When Park became president, he rewarded young well trained men with key policy positions. Rhee had rewarded political supporters with policy appointments. Early planning was done mostly by foreigners but after that planning was done mainly by Koreans, a number of whom had completed training programs abroad, especially in the U.S. (Cole, Lyman, 1971:204). In all nearly 3,000 persons in education, the bureaucracy, and the business community were sent to the U.S. for training under the AID program following the Korean War (Cole, Lyman, 1971:279).

Women

Little information seems to exist on women in rural Korea. It seems likely that the role of women has changed in Korea in the last 30 years or so. After World War II, AID helped rebuild the educational system and "democratized" it by including women in the system and by making education universal (Krueger, 1979: 22). Women have had access to higher education in increasing numbers, possibly because it improves their prospects for marriage. Many young women migrate to the cities in search of a better life than they think they could have in the rural areas. "Some mothers maintained that they especially wanted their daughters to get out of agriculture because it was so hard and all young unmarried women interviewed by Steinberg were adamant that they did not want to marry a farmer," (Steinberg, Morrow, Palmer, Dong-il, 1980: D-5).

The industrialization policies of the Korean government have created a demand in cities for both young men and women. Perceived job availability in urban areas has led many able-bodied people to leave the farms. Increasingly farming is done by women and older men (Wideman, 1974: 286). Women farm workers increased from 37.3% of the total farm workers in 1963 to 43.1% in 1971 (Wideman, 1974: 287). The gender specificity of cultivation tasks has led to an absolute rise in demand for female labor, and, given the decline in male-typed tasks, a relative rise as well (Steinberg, Morrow, Palmer, Dong-il, 1980: 8). Women are still paid less than men are and are put out of work occasionally by the introduction of new techniques (Table 15.10).

Table 15.10. Rural-Urban Wage Differentials, Males and Females, 1959-1975

Year	Monthly Wage in Manufacturing		(3) Monthly Wage in Textile Manufacturing	(4) Adult Female Farm Wage Per Month (daily X 26)	(5 (1)/(2)	5) (3)/(4)
1959	2,350		1,930	1,562	0.96	1.24
1960	2,330		2,290	1,543	0.97	1.48
1961	2,610		2,470	1,677	0.98	1.47
1962	2,780		2,460	1,828	0.97	1.35
1963	3,180		2,830	2,366	0.89	1.20
1964	3,880		3,440	3,224	0.78	1.07
1965	4,600		4,060	3,666	0.83	1.11
1966	5,420		4,670	4,290	0.85	1.09
1967	6,640		6,050	5,382	0.87	1.12
1968	8,400		7,090	6,760	0.88	1.05
1969	11,590		9,110	8,216	1.00	1.11
1970	14,561		11,223	10,192	1.01	1.10
1971	17,349		13,124	12,272	1.00	1.07
1972	20,104		15,837	14,352	1.00	1.10
1973	22,330		18,322	16,120	1.01	1.14
1974	30,209		25,756	20,748	1.06	1.24
1975	38,220	36,675	31,255	27,144	1.04	1.15

Sources: (1) and (3) EPB, *Korea Statistical Yearbooks*, and BOK, *Economic Statistics Yearbooks.*
(2) and (4) NACF, *Agricultural Yearbooks* and MAF, *Yearbook of Agriculture and Forestry Statistics.* The average number of days worked per month in manufacturing was about 25, whereas in the textile industry it was about 26 days.

Source: Ban, Moon, Perkins (1970), Rural Development (Cambridge: Harvard University Press): 78.

Many reforms in developing countries adversely affect women without realizing it. Women's work in rural areas has increased over the years but much of it is unpaid. The growth of almost universal primary school education in rural areas has increased the amount of work that women do. More children go to school which causes their participation in household chores and farm jobs to decrease. Women often have to do the work formerly done by children. Labor camps of the NCM often required women to feed the workers which also increased their workload (Tinker, 1982:11).

Fertility control has clearly benefitted women. The better-off a farm family is, the fewer children the family tends to have. This has been largely because they see education as the key to success and it costs money to send children off for higher education. Thus, they perceive fewer educated children as being as useful as more uneducated children (Steinberg, Morrow, Palmer, Dong-il, 1980:D-3). The "fewer educated children" has been possible because of improved health standards.

15.5 Some Conclusions

When the U.S. accepted the surrender of Japan in 1945, South Korea became the responsibility of the U.S. It was therefore, the responsibility of the U.S. to help South Korea rebuild after 35 years as Japan's colony. With the departure of the Japanese, the U.S. was left with a considerable amount of unowned land and property to dispose of. Thus, the first thing the U.S. set out to do was to return Japanese-held land to Koreans and to bring about land reforms. The redistribution of land and the limit placed on the number of hectares owned has in fact made rural income levels much more equitable over the years.

A major goal of the U.S. in the early 50's was to maintain South Korea as a "democracy". War broke out between the two sections of Korea in 1950 which led to massive U.S. aid in the form of military hardware, salaries, food and U.S. troops (Ban, Moon, Perkins, 1980:22). The Korean military force increased to 700,000, was the fourth largest military, and was heavily supported by U.S. aid (Ban, Moon, Perkins, 1980:35). Between 1946 and 1975 the U.S. provided $13 billion in military and economic assistance to Korea, over half of which was military assistance (Steinberg, 1982:26).

U.S. military assistance from the U.S. has been very important to Korea. It has provided large sums of money directly to the government and has allowed the Korean government to divert money to other areas. The war in Vietnam was also very helpful to Korea, although one couldn't really classify the gains as aid. "From 1964 increasing U.S. involvement in Vietnam increasingly brought windfall profits to South Korea. American use of South Korean mercenary troops and construction workers, as well as the purchase of commodities for the war boosted Korean foreign exchange earnings remarkably beginning in 1965," (Wideman, 1974:273). The Vietnam War provided jobs

for Koreans and paid them in foreign exchange. The Korean army had rural roots since it was mainly conscript (Cole and Lyman, 1971:37). This use of rural labor took some of the pressure off land during the 1960's and possibly diffused what might have been a conflict with the government over its grain pricing policies.

In addition to military assistance, AID began to give large grants to South Korea to rebuild its infrastructure which had been heavily damaged during the war. AID also helped to develop previously undeveloped sectors like the power industries. The three major areas of U.S. support between 1958 and 1966 were transportation, manufacturing, and power and these three sectors made up over 50% of AID grant project given by sector. Through 1968, 75% of approved foreign investment projects were either manufacturing and mining, transportation or electricity projects (Cole and Lyman, 1971: 196). None of these areas involved purely rural problems but all of the above had very beneficial effects on the rural areas of the country in later years. The time of maximum aid (until 1965) was the time of least growth especially in the rural sector but this was the time when many improvements were made which ultimately benefitted rural areas.

Large amounts of P.L. 480 grain shipments were given to Korea as grants until the late 1960's. This was initially given to prevent starvation during and after the Korean War when agricultural production was interrupted. It was also, however, given to benefit U.S. farmers who had a large surplus of grain and needed to dispose of it. This grain was given as a grant until the late 1960's. The late 1960's marked the end of food grants to South Korea, but the Korean government continued to import grain using foreign exchange to pay for it. 1972 was a bad year in Korea for farmers. That coupled with bad harvests worldwide, the 1973 sale of wheat to Russia, and the increase in the price of energy and fertilizer made the cost of grain

imports to Korea higher than ever before (Wideman, 1974: 282). It was around that time that the Korean government realized that it would have to provide more support for the rural sector.

Free P.L. 480 grain allowed the Korean government to pursue a policy of urbanization without the uncertainty of bad harvests as a constraint. It also allowed the government free reign on grain price manipulation. It could pay farmers at below production cost prices and still have enough grain to feed its citizens. As the P.L. 480 program declined in importance Korean government anticipated that commercial grain imports would represent a serious foreign exchange drain. This led, under the Park government, to stronger programs of agricultural and rural development. The hardening of terms and decreased rural support in the 1971 election acted as spurs to the South Korean government to pay more attention to agricultural production and to improve levels of living in rural areas.

AID spent a good deal of its money on infrastructure in Korea. After a lag in the 60's, the benefits of this investment were seen by Korean farmers. The pull of cities and industry has made rural labor scarcer and thus more costly (Steinberg, 1982:18). In 1960, 28% of the total population lived in cities; in 1982, 55% lived in cities. Now there is an actual shortage of agricultural labor in South Korea (Brandt and Cheong, 1982: 38-39). Improved roads have allowed many farmers who live near cities to grow fruit and vegetables as cash crops which they market in the cities (Aqua, 1974:33). Industrialization has led to a demand for labor both male and female which has provided alternative occupations for people who otherwise would have been farmers. Development of electricity, which was assisted by AID, has led to improved lifestyles in rural areas as evidenced by the appearance of radios, T.V.'s, rice cookers, electric fans, and refrigerators.

One must keep in mind that the bulk of aid given to Korea was given when anti-Communist inspired military assistance was something that the American people could understand. Infrastructure made sense too because the Marshall Plan had successfully helped to rebuild Europe. Education was important because it taught democracy and in general it was felt an educated populace was better. Many classrooms were built by AID and many Koreans were brought to the U.S. for post-high school training. Korea pursued a development policy which in many ways fit early aid hopes. While it basically ignored human considerations like welfare and human rights, it built an internal structure which in the long run benefitted its citizens. When the "basic needs" element to aid became the mode, Korea was at a point in its development where it could afford to pay more attention to the "needs" of its citizens. In the rural areas, the NCM (New Community Movement) was the Korean counterpart to rural "basic needs" strategy. The central government in Seoul would decide what needed to be done and the villagers would do it. These projects included such things as building better village roads, communal meeting halls, tiling roofs which had been rice thatch, increased electric use in villages, modern houses, and improved health conditions - all the "basic needs". Thus, rural development in Korea has fit in nicely with the swings in U.S. foreign aid considerations.

Korea is considered one of the major success stories of the developing world. This success is partly a result of unique aspects. It is homogenous and it is a Sinitic society. China, Japan and Taiwan are also successes and are also Sinitic societies which leads one to think that perhaps there is something about the society itself which is important for success. Policy implementation is felt to be a key factor in Korea's success. According to Steinberg, its policy formulation was probably no better and no worse

than any other developing country's, but its ability to formulate a policy and have it followed was important (Steinberg, 1982: 43). Orders were given from the central office and they were carried out exactly as directed at the local level.

Korea's history is also somewhat unique. Land reform was carried out by U.S. military occupation after World War II with relative ease. When the Japanese surrendered to the U.S., 40% of Korea's land was Japanese-owned. This left a large amount of land unowned which had to be distributed. Landowners had often been co-opted by the Japanese and thus were in no position to resist the reforms. Land reform has been important to income distribution in Korea but it was carried out under unique circumstances. The Vietnam War was also a boon to Korea. It brought in foreign exchange through purchase of goods but it also employed Korean soldiers and workers at a time when a military force of 700,000 could have been a problem. The Korean War was heavily subsidized by the U.S. as was the rebuilding process afterwards. Finally until the 1970's, aid to Korea was mainly in the form of grants. This meant that the Korean government was virtually debt free in the beginning of the 1970's.

It has been difficult to separate the impact of AID programs in terms of rural and urban development. It has also been very difficult to figure out exactly what AID did in Korea on a project-by-project basis. General information is available. AID financed infrastructure early on. Specific details about various projects are much harder to find. Thus the lessons which seem to come from rural development in Korea are general ones which encompass the whole economy. They are as follows:

1. Early emphasis on urbanization and industrialization caused a demand for agricultural produce which in turn stimulated agriculture. More emphasis was placed on the urban sector and manufacturing. Agricultural laborers left the countryside to work in cities where incomes were higher. This led to a scarcity of labor which is partly responsible for improved rural incomes. Urban demand for food also stimulated agricultural production.

2. Free P.L. 480 grain shipments are not always detrimental in the long run. In the short run, most people agree that the free shipments of grain from the U.S. allowed the Korean government to pursue a policy which neglected agricultural production and rural welfare. If farmers came up short in a harvest, the Korean government knew it could get free grain from the U.S. In the late 1960's the terms of trade hardened and the Korean government realized that it would have to spend foreign exchange on grain if harvests were poor. From that time on, the Korean government pursued a policy which put emphasis on agriculture. Basically P.L. 480 shipments bought time during which the government was able to concentrate (successfully in Korea's case) on its urban export-oriented manufacturing sector. Terms of trade for grain acted as a catalist for either ignoring agriculture or aiding it.

3. "Basic needs" came as a result of successful economic policies. The Korean economy developed with little consideration for the basic needs of the people. Rural people's needs were largely ignored before the 1970's when the NCM (Saemaul Movement) began. Although education, medical facilities, housing, etc. were of more interest in the urban areas, these were not high priority any place. In rural areas, increased income has meant improved living conditions and the increased income is a result of improved employment opportunities.

4. Training abroad seems to have been important. According to Cole and Lyman, approximately 3,000 Koreans have been trained abroad, many in the U.S. (Cole, Lyman 1971: 279) We have not seen a systematic analysis of the impact of overseas training in Korea, but certainly Cole and Lyman and Steinberg feel this was one of the greater impacts that the U.S. has had in Korea. Early planning was done mostly by foreigners. By the second round of planning, however, trained Koreans were very involved. (Cole, Lyman 1971:204) In his project impact study of Korean irrigation, Steinberg concludes that the general success of the project is the result of policy formulation and implementation by Koreans themselves. (Steinberg, Morrow, Palmer, Dong-il 1980:i) In this project the U.S. mostly provided the funding. Training abroad gave Koreans the skills needed to make decisions and adapt policies for Korea. The Park government gave these foreign-trained people key policy positions in the government and expected them to encourage long-term development.

Footnotes

1/ All data cited in this and the subsequent two paragraphs are from Mason, Kim, et al, 1980, Chapter 4 except as otherwise noted. This chapter also draws heavily on Krueger (1979).

2/ It is perhaps noteworthy that, even during the very rapid growth years from 1960 to 1978, South Korea never achieved full control over domestic inflation. During most of that period, however, the rate of inflation was fairly stable, not accelerating, and significantly below the rates of earlier years. South Korea's inflation rate rose in the 1970's as did rates in the rest of the world. Overall, however, one would judge the South Korean inflation experience in the 1970's to be no worse than that of many other countries.

3/ Unfortunately, the nominal interest rate was not permitted to rise as much as the domestic inflation rate in the 1970's. By the late 1970's the negative real interest rate was once again an identifiable source of major distortion within the system.

4/ A thorough analysis of the role of aid in Korea's growth over the period 1945-75 was undertaken jointly by the Korean Development Institute and the Harvard Institute for International Development. For a detailed analysis of the role of aid in Korea's development, see Mason, Kim, et al, (1980).

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Revised
November 15, 1982

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CHAPTER 16

ASSISTANCE TO TURKEY*

This chapter was prepared by Anne O. Krueger and Vernon W. Ruttan with the assistance of Arnold Sheetz. It has benefitted from a critical review of an earlier draft by Charles K. Mann.

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Revised
November 15, 1982

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CHAPTER 16

ASSISTANCE TO TURKEY*

An examination of the history of aid to Turkey is instructive for a variety of reasons. Turkey has one of the longest histories as a U.S. aid recipient of any country in the world. As a member of NATO and immediately on the Russian border, there are important American strategic and political interests in the country, along with the strong interest in economic development concerns.

There is also an interesting contrast with Korea, another country whose history with foreign assistance is surveyed in this volume: from the perspective of the early 1960's, most observers would have concluded that assistance to Turkey had been highly successful (because of her relatively high rate of economic growth) whereas that to Korea had been somewhat less so. Viewed from the perspective of the 1980's, however, the Korean economy, despite its current problems, has had enormous success in achieving developmental targets and in eliminating any need for concessional finance. By contrast, Turkey continues to be an aid recipient, and her economic progress over the past two decades has been far less impressive than that of South Korea.

To understand some dimensions of the aid experience in Turkey, it is necessary first to provide a brief sketch of Turkish economic growth. That is done in Section 16.1. In section 16.2 a history of assistance, and its interaction with that growth, is provided. In Section 16.3, the trade-and-aid interrelationship is examined in somewhat more detail. Section 16.4 is devoted to a review of assistance to Turkey for agricultural and rural development. The conclusions that flow from our review of development assistance to Turkey are summarized in Section 16.5.

16. Turkish Growth Performance

There have been three strikingly similar cycles of growth in Turkey over the period 1950-1982 (Table 16.1).[1/] An understanding of those cycles is perhaps the simplest means of providing a sketch of Turkey's growth experience, and is simultaneously necessary for analyzing the aid experience.

It is simplest to start, therefore, by providing the "stylized facts" of the cycles, and only after that to consider the progress that was made during, and the special characteristics of, each cycle. Each cycle starts with a period during which growth is fairly rapid, generally as a consequence of some external stimulus. These covered the post-war reconstruction and the commodity price boom of the early 1950's; the advent of program aid in the early 1960's; and the large expansion in output following upon the success of the 1970 devaluation. Inflationary pressures arise, the exchange rate becomes increasingly unrealistic, the government responds with a variety of ad hoc measures to "patch up" the situation, and the economy becomes increasingly distorted. Meanwhile, little is done to curb the sources of inflationary pressure. The limited actions that are taken, such as imposing price controls on state economic enterprises and financing their deficits through central bank credits, have often actually intensified inflationary pressures

As distortions mount, either through a rising rate of inflation or through increasingly scarce foreign exchange, the rate of economic growth declines.

Table 16.1. Growth and Sectoral Composition of GNP in Turkey: 1950-1980
(TL million in 1968 prices)

	Agriculture	As % GNP	Industry	As % GNP	Services	As % GNP	Import Taxes
1950	15,867	41.2	5,054	13.1	15,761	40.9	1,915
1951	18,998	43.7	5,192	11.9	16,955	39.0	2,390
1952	20,856	42.9	5,763	11.8	18,844	38.7	3,275
1953	22,668	41.9	6,872	12.7	21,331	39.4	3,339
1954	19,607	37.5	7,514	14.3	22,427	42.7	3,106
1955	21,483	37.9	8,382	14.8	24,097	42.5	2,950
1956	22,553	38.6	9,192	15.7	24,619	42.1	2,399
1957	23,985	38.1	10,260	16.3	26,874	42.7	2,298
1958	26,182	39.8	10,858	16.5	27,190	41.3	2,078
1959	26,258	38.3	11,250	16.4	28,826	42.1	3,039
1960	26,836	37.9	11,254	15.9	30,276	42.7	3,025
1961	25,549	35.3	12,472	17.3	31,393	43.4	3,206
1962	26,740	34.8	13,017	17.0	33,312	43.4	3,961
1963	29,344	34.8	14,597	17.3	36,208	43.0	4,142
1964	29,224	33.3	16,225	18.5	38,231	43.6	4,102
1965	28,101	31.0	17,761	19.6	40,155	44.4	4,061
1966	31,128	30.8	20,469	20.2	44,389	43.9	4,643
1967	31,205	29.6	22,196	21.0	46,874	44.4	4,883
1968	31,699	28.2	24,677	21.9	50,862	45.2	4,952
1969	32,110	27.1	27,654	23.3	54,070	45.6	4,333
1970	32,870	26.2	28,032	22.3	58,692	46.8	4,355
1971	37,209	26.9	30,557	22.1	62,994	45.6	4,421
1972	37,072	25.0	33,661	22.7	68,365	46.0	4,965
1973	33,443	21.4	37,711	24.1	74,251	47.5	5,023
1974	36,887	21.9	40,628	24.2	80,499	47.9	5,223
1975	40,889	22.5	44,268	24.4	86,953	47.9	5,651
1976	44,025	22.5	48,387	24.7	94,582	48.3	6,213
1977	43,506	21.4	51,766	25.5	99,871	49.1	6,434
1978	44,745	21.4	53,546	25.6	103,659	49.6	5,364
1979	45,989	22.1	51,050	24.5	103,998	49.9	4,450
1980	46,766	22.7	49,549	24.0	103,968	50.5	3,613
Average Annual % Increase:							
1950-60	5.4		8.3		6.7		
1960-70	2.0		9.6		6.8		
1970-80	3.6		5.9		5.9		
1950-80	3.7		7.9		6.5		

Table 16.1 (continued)

	GDP (purchaser prices)	Net factor income fro abroad	GNP (purchasers prices)	Index (1950=100)	Populat (millio mid-ye	GNP per head (TL)
1950	38,598	-. 92	38,506	100	20.9	1,842
1951	43,536	- 89	43,446	112.8	21.3	2,040
1952	48,738	-117	48,621	126.3	21.9	2,220
1953	54,210	-120	54,090	140.4	22.6	2,393
1954	52,655	-174	52,480	136.3	23.2	2,262
1955	56,912	-270	56,642	147.1	23.9	2,369
1956	58,763	-335	58,428	151.7	24.4	2,394
1957	63,417	-422	62,995	163.6	25.3	2,490
1958	66,308	-463	65,844	171.0	26.0	2,532
1959	69,373	-852	68,521	177.9	26.7	2,566
1960	71,391	-522	70,869	184.0	27.5	2,577
1961	72,619	-334	72,286	187.7	28.2	2,563
1962	77,030	-276	76,754	199.3	28.9	2,656
1963	84,291	-103	84,188	218.6	29.7	2,835
1964	87,782	-163	87,619	227.6	30.4	2,882
1965	90,078	+290	90,368	234.7	31.2	2,896
1966	100,629	+576	101,204	262.8	31.9	3,172
1967	105,158	+302	105,460	273.9	32.7	3,225
1968	112,190	+303	112,493	292.1	33.6	3,348
1969	118,168	+426	118,594	308.0	34.4	3,447
1970	123,949	-1,477	125,425	325.7	35.3	3,553
1971	135,181	-3,004	138,185	358.4	36.2	3,817
1972	144,063	-4,414	148,476	385.6	37.1	4,002
1973	150,428	-6,029	156,458	406.3	38.1	4,106
1974	163,237	-4,776	168,013	436.3	39.0	4,308
1975	177,761	-3,623	181,383	471.1	40.1	4,526
1976	193,207	-2,544	195,751	508.4	40.9	4,784
1977	201,577	-1,781	203,358	528.1	41.8	4,869
1978	207,314	-1,869	209,183	543.2	42.6	4,906
1979	205,487	-2,857	208,343	541.1	43.5	4,786
1980	203,896	-2,165	206,061	535.1	44.4	4,637
Average Annual % Increase:						
1950-60	6.3		6.3		2.8	3.4
1960-70	5.7		5.9		2.5	3.3
1970-80	5.1		5.1		2.3	2.7
1950-80	5.7		5.8		2.5	3.1

Table 16.1 (continued)

Notes: [a] Includes construction, wholesale and retail trade transportation, storage, communications, banking, insurance, and related financial activities, business, social, personal, and governmental services, minus imputed bank service charges.

[b] Preliminary figures (SIS)

Sources: Turkish State Institute of Statistics (SIS), National Income and Expenditures of Turkey, 1948-1972 (Ankara, SIS, 1973), pp. 36-37, 143; SIS, Türkiye Mille Geliri, 1962-1977 (Ankara, SIS, n.d.), Table 5; SIS, Statistical Yearbook 1981 (Ankara, SIS, 1981), Tables 20, 398, pp. 29, 400.

And this in turn induces a new reform program. The period surrounding the reform program has typically been a period of slow growth. In the two earlier cycles, the reforms were successful in stabilizing the economy and reducing the degree of distortion. It is still too early to pass judgement on the success of the 1980-81 reforms.

With this overly-simplified pattern in mind, the economic history of each of the three subperiods can be briefly recounted. The first such period, which began during the worldwide boom of the early 1950's, ended with a devaluation-reform program in 1958. Turkey's economy had been dislocated during the Second World War. The post-war period was one of recovery spurred by relatively high commodity prices for Turkey's exports and by Point Four and Marshall Plan aid. The short-run expansion in real output was impressive, with rates of growth of real GNP estimated to have been almost 10 percent annually from 1950 to 1953. Turkey even became the world's largest exporter of wheat in the 1951-53 period (see Section 16.4 for an analysis of the role of aid in the expansion of grain production in the Anatolean plateau).

By 1953, however, difficulties were arising as the increase in resources permitted by high commodity prices, rising real volumes of exports, and foreign assistance, were not sustained. Inflationary pressures within the domestic economy mounted. Export earnings fell due to a worsening of the terms of trade, to a poor harvest, and to the decline in the real value of the Turkish Lira.

The Turkish government's response was to improve surcharges on imports, to require import licensing, and to permit resort to suppliers' credits and bilateral arrangements to finance needed imports. My 1958, however, the

situation was desperate. Additional credits became virtually unavailable as a result of many arrears in indebtedness. There was insufficient foreign exchange available to permit the petroleum imports needed to harvest the crops and transport them to port. A devaluation-stabilization program was finally entered into with the IMF and donor countries (see Section 16.2 for more details), and major domestic economic reforms were undertaken.

By 1960, the response to the reforms was being felt, and the ground was laid for the next cycle, which lasted over the decade of the 1960's. During the 1960's growth was rapid - averaging just under 7 percent annually in real terms. From the vantage point of the late 1960's Turks could justly point with pride to their cumulative growth rate since 1953 as being one of the highest in the world. The retardation of the late 1950's appeared to have been a temporary aberration.

The 1960's witnessed the start of major governmental investment programs and intervention in the economy in support of development objectives. In particular, major emphasis was placed upon the development of a "modern" industrial sector. Measures were taken to encourage the growth of domestic industry (see Section 16.3 below). This had several effects: (1) it placed heavy demands on imports for both investment goods and for intermediate goods to permit existing import substitution activities to continue producing; (2) it intensified inflationary pressures within the domestic economy; (3) it placed incentives on production of import substitutes at the expense of expansion of capacity to produce goods for export.

Unlike the 1950's cycle, the cumulative effects of these strains were most gradual in developing. The government acted to avoid the extreme dislocations of the 1950's. However, by the late 1960's delays in obtaining

foreign exchange and import licenses were again mounting. The black market exchange rate was again soaring well above the official rate and dislocation was emerging in many economic activities. While the rate of economic growth slowed down somewhat, action was taken before difficulties were severe. In August 1970 a devaluation-cum-stabilization program was again announced.

The response to that program was immediate and pronounced: partly because Turkish workers in Europe had been channeling their funds through informal channels (or holding their savings in deutschmarks or other hard currencies), and partly for other reasons, export earnings and other foreign exchange receipts rose sharply. Turkey's international reserves, which had stood at $-221 billion in 1969, rose to a peak of $484 billion in 1973. Meanwhile, imports had risen markedly from $948 billion in 1970 to $2086 billion in 1973. Again, the economy also responded markedly, as real GNP rose 10.2% in 1971, 7.4% in 1972, and 5.4% in 1973 (Table 16.2).

However, this third cycle, which culminated in the reform program begun in January 1980, also contained the seeds of its own self destruction. The initial contributing factor was the success of the devaluation-stabilization program itself. The sharp increase in workers' remittances and other foreign exchange could not be sufficiently contained by the Central Bank of Turkey. As a consequence, inflationary pressures were released within the economy. The rate of inflation, which had fallen to an average of less than 8 percent in the 1960's, rose to over 25 percent by 1973.

Although Turkey produces very little oil and was thus adversely affected by the oil price rise of 1973-74, the Government's initial response was to borrow from abroad and to run down foreign exchange reserves. This strategy was moderately successful in 1974 and 1975. Real GNP rose 7.4 percent in

Table 16.2. Trends in Trade, Development Assistance, and Balance of Payments in Turkey: 1950-1980

	CURRENT ACCOUNT					
	Visibles		Invisibles		NATO Infrastructure and offshore receipts	Balance
	Imports (CIF)	Exports (FOB)				
1950	286	263	-	- 27	-	- 50
1951	402	314	-	- 6	-	- 94
1952	556	363	-	- 5	-	- 198
1953	533	396	-	- 27	-	- 164
1954	478	335	-	- 34	-	- 177
1955	498	313	-	- 35	43	- 177
1956	407	305	-	- 40	67	- 75
1957	97	345	-	- 47	40	- 59
1958	315	247	-	- 48	52	- 64
1959	470	354	-	- 64	35	- 145
1960	468	321	-	- 44	52	- 139
1961	510	347	-	- 55	48	- 170
1962	622	381	-	- 41	40	- 242
1963	688	368	-	- 29	49	- 300
1964	537	411	9	- 51	59	- 109
1965	572	464	70	- 60	20	- 78
1966	718	490	115	- 70	19	- 164
1967	685	523	93	- 59	14	- 114
1968	764	496	107	- 80	10	- 231
1969	801	523	141	-106	8	- 221
1970	948	588	273	- 92	8	- 171
1971	1171	677	471	-105	6	- 122
1972	1563	885	740	-100	30	- 8
1973	2086	1317	183	70	-	484
1974	3777	1532	462	63	-	- 720
1975	4738	1401	312	146	-	-1879
1976	5129	1960	982	-114	-	-2301
1977	5797	1753	982	-364		-3426
1978	4599	2288	983	-191		-1511
1979	5069	2261	694	-589		-1703
1980	7909	2910	071	-733		-3661

Table 16.2 (continued)

	CAPITAL ACCOUNT					
	Direct Investment	Other Capital Movements[b]	Project and Programme Aid[c]	PLO 480 Imports	Amortisation of debt	Net Capital Inflow
1950	2		103		- 15	90
1951	7	21	113	-	- 18	123
1952	10	85	72	-	- 22	145
1953	8	105	62	-	- 20	155
1954	8	126	65	-	- 73	126
1955	3	127	81	-	-105	106
1956	2	143	103	14	- 89	173
1957	17	87	75	32	- 83	128
1958	13	45	105	42	- 69	136
1959	7	28	169	27	- 60	171
1960	24	30	118	22	- 65	129
1961	34	15	151	65	- 84	181
1962	36	26	163	71	- 97	199
1963	21	15	247	88	-101	270
1964	25	17	190	31	-114	149
1965	22	5	274	29	-170	160
1966	30	11	238	17	-124	172
1967	17	12	246	-	-106	169
1968	13	22	274	-	- 94	215
1969	24	20	279	41	-115	249
1970	58	34	337	83	-197	315
1971	45	27	343	55	-125	345
1972	43	39	304	16	-127	275
1973	79	50	381	-	- 77	433
1974	33	113	269	-	-156	259
1975	55	348	322	-	-147	578
1976	27	236	391	-	-119	535
1977	67	1162	503	-	-214	1518
1978	47	733	855	-	- 45	1184
1979	86	-246	1887	-	- 94	782
1980	36	37	3808	-	-155	2325

Table 16.2 (continued)

	OVERALL BALANCE				
	Net IMF Position and SDR's	Net Short-term Capital	Errors and Omissions	Change in Reserves - = Increase)	Balance
1950	-	2	12	30	40
1951	-	3	11	21	29
1952	5	11	62	99	53
1953	20	10	48	69	9
1954	6	57	66	66	51
1955	9	61	52	71	71
19 6	-	15	45	38	98
1957	7	11	58	7	69
1958	17	7	15	67	72
1959	3	10	44	31	26
1960	3	18	82	51	10
1961	10	39	97	79	11
1962	6	15	22	30	43
1963	4	-	22	48	30
1964	3	-	80	37	40
1965	15	-	67	-	82
1966	-	-	18	10	8
1967	7	7	81	12	55
1968	27	18	25	4	16
1969	11	29	76	122	28
1970	48	18	24	186	144
1971	2	61	60	346	223
1972	61	332	28	566	267
1973	-	224	35	728	917
1974	8	16	22	431	461
1975	301	558	25	417	1301
1976	149	1520	15	112	1766
1977	14	1554	220	560	1908
1978	75	844	536	148	335
1979	3	194	808	84	921
1980	502	126	288	-580	1336

Table 16.2 (continued)

Notes: [a] Includes tourism, interest payments, profits transfers and other invisible transactions: for 1973-80, includes NATO infrastructure and offshore receipts.

[b] Includes suppliers and commercial credits and direct imports with waivers.

[c] Includes debt relief.

[d] For 1967-77, mainly convertible lira accounts.

Sources: SPO, Yeni Strateji ve Kalkinma Plani, Ucuncu Bes Yil, 1973-1977 (Ankara, SPO, 1973), p. 52; SPO Dorduncu Bes Yillik Kalkinma Plani, 1979-1983 (Ankara, SPO, 1979), p. 71; OECD, OECD Economic Surveys, Turkey 1978 (Paris, OECD, 1978), p. 55; Turkiye is Bankasi, Economic Report 1978 (Ankara, Turkiye is Bankasi, 1978), p. 34; Briefing, 17 March 1980, p. 18; SIS, Statistical Yearbook, 1981 (Ankara, SIS, 1981).

OECD, OECD Economic Surveys, Turkey 1982 (Paris, OECD, 1982), pp. 23, 62.

Singer, Economic Advance, p. 392.

1974 and 8.0 percent in 1975. However, the rate of inflation rose further, accelerating from 14 percent in 1973 to 21 percent in 1975, 26 percent in 1977, and finally reaching 100 percent in 1980. By the end of the cycle in 1979 - and despite several "programs" that had been announced designed to rectify the situation - real GNP was declining. In 1980 real GNP stood only 5.3 percent above its 1976 level--an average rate of increase of less than 2 percent annually - less than the rate of growth of population over the same period.

As this brief description indicates, macroeconomic difficulties have plagued the Turkish economy throughout the period during which foreign assistance has been a factor in the economy. Although satisfactory economic growth rates were achieved for part of that period, those rates proved unsustainable because of macroeconomic difficulties. As will be seen in Section 16.2, much of aid policy toward Turkey, especially in the 1960's and the late 1970's, has been strongly conditioned by the presence of those difficulties.

16.2 Macroperspectives on Assistance

Turkey is one of the oldest recipients of aid and has, throughout most of the period, been a major recipient of American aid. Even during the Marshall Plan period, Turkey was a major recipient. There are few lessons from that period, however, for development assistance and this review therefore starts with the first of the three cycles.

Despite the similarities of the cycles in Turkish economic development, the role of foreign assistance has been somewhat different during each. During the 1950's, the United States was virtually the only donor country (until 1958). Most assistance was intended to be project assistance. It was directed primarily at infrastructure and agricultural development.

During the second cycle, American assistance efforts were generally shifted toward "program", rather than "project" support. In the case of Turkish program assistance was undertaken in conjunction with a consortium of donor agencies. In the third cycle, American assistance was greatly reduced in scope in the early 1970's in response, in part, to the apparent success of the 1970 devaluation. It was resumed again in response to the difficulties encountered by the Turkish economy in the late 1970's.

In the 1950's, assistance centered primarily upon infrastructure. Special emphasis was given to the construction of a road network deemed desirable for NATO-military purposes as well as for economic development. This nationwide network of paved roads has been of major significance for regional and agricultural development.[2/]

. Infrastructure investment and other development assistance activities were also undertaken in a number of other sectors.[3/]

For present purposes, however, focus must be on the interaction of American assistance with the Turkish macroeconomic difficulties of the late 1950's. American authorities were well aware of the problems inherent in Turkish macroeconomic policy. An American assistance-sponsored analysis of the Turkish macroeconomic problems was conducted by Chenery, Brandow and Cohn (1953). It is of interest that the Turkish reaction to the study was to refuse permission of the authors to enter the country. However, given the American political interests in Turkey, American policy was torn between a desire to provide political support to the Menderes government and the desire to have Turkish macroeconomic policies corrected.

The consequence was a difficult and tense period in Turkish-American relations. Starting in 1956, the Menderes government several times requested continuation of American project assistance and an American program loan to provide financing for imports.[4/]

The American authorities refused those requests based largely on their recognition that the Turkish government's policies were unsustainable. By the summer of 1958, the Menderes government was willing to accept the restrictions placed upon it under an IMF-led consortium that was clearly strongly influenced by the American position. Whether the change came about because of the increased difficulties experienced by the Turkish economy (there had even been a Turkish mission seeking Russian assistance prior to that time) or whether the American position softened somewhat (the Iraqi revolution took place two months prior to the stabilization plan) is an open

question. But the episode well illustrates the dilemma of assistance in the context of strong political interests in the recipient country.

The 1960's cycle represents yet another type of experience. By that time, the focus of American aid had shifted largely toward "program", rather than "project", assistance. Although Turkey received assistance from several donors the United States was by far the largest source of assistance in the early 1960's. But the United States' relative importance as a donor to Turkey declined sharply in later years as Turkish Associate Membership in the EC led to stronger economic ties with the European countries. The dilemma of U.S. program aid to Turkey centered upon how an individual donor could influence macroeconomic policy. The solution in the Turkish case was the formation of a "consortium", which met with Turkish planners and other officials to discuss budget plans and go over the "import requirements associated with it (White, 1967). This led to a focus on overall development efforts, and particularly on investment plans. The donor agencies were concerned with allocational issues including the distortions caused by the trade regime and the sectoral allocation of resources. Bargaining, however, tended to focus on the degree of emphasis and the rate of investment in import-substitution sectors rather than on the strategy itself. Perhaps this was because, in the context of the 1960's, the long-run consequences of such strategies were less well appreciated than they are today (see Chapter 13). It is also true, however, that a bargaining process itself implies some degree of "give and take" on both sides, which meant that the fundamental premises of Turkish planning could not be challenged.

Two other lessons from the experience of the 1960's may be mentioned. First, the "program" emphasis focussed on investment plans, foreign exchange

allocations, and, to a certain extent on the related macroeconomic issues. However, since the "foreign exchange shortage" associated with a given plan was what determined, at least in principle, the level of assistance to be extended by the Consortium donors there was some conflict on the part of the Turkish authorities as to the extent to which it was in their self-interest to minimize the gap. Secondly, the consortium model was in itself somewhat unwieldy. Multiple donors with different emphases among themselves probably limited the effectiveness that might otherwise have been achieved in influencing Turkish policy. There was also a problem with delays. The fact that Turkish plans first had to be formulated and then discussed with donors. The difficulty of reaching a consensus among all donors on assistance levels made the process a difficult one for donors and recipient alike.

Despite the above, which may be regarded as "lessons" learned from the 1960's cycle, it seems likely that the "program" approach to development assistance was probably a significant factor in limiting the distortions to which the Turkish economy was subject before remedial actions were taken. There was a continuing dialogue between A.I.D. and the Turkish government officials (in which Krueger was occasionally a sideline observer). There were attempts to persuade the Prime Minister and his cabinet that a change in macroeconomic policies, especially the exchange rate, was desirable long before the decision was taken. It is in principle unknowable whether the devaluation of 1970 would have been delayed even longer in the absence of donor pressure. What is clear, however, is that remedial action was taken in 1970 at a far earlier stage of the cycle than in either the 1950's or the 1970's.

The third cycle is in a way the most interesting. With the exception of the multilateral lending agencies, there was far less involvement of donors in the process than had been the case in the earlier cycles. American assistance resumed when severe balance of payments difficulties and other symptoms of extreme dislocation reemerged. Then, starting in 1978, there were repeated "programs" announced to stem the difficulties. An IMF stabilization program of 1978 of U.S. $450 million, combined with an OECD-consortium debt rescheduling provided about $1.2 billion over a two-year period in balance of payments support. There were, of course, conditions attached to the stabilization program and these were generally underachieved in 1978 and 1979. Despite changes in the exchange rate, the rate of inflation was sufficiently high that the real rate became increasingly overvalued and export earnings faltered.

From hindsight, there were two major mistakes in the 1970's. First, Turkish borrowing, primarily from commercial sources, in the mid-1970's postponed adjustment thereby making it more difficult when it did come. Second, when the imbalances were finally apparent in 1977, their severity was underestimated. The lending to Turkey in 1978 and 1979 did little to rectify the underlying difficulties, while simultaneously insuring that Turkey would have an even bigger debt-servicing burden when a genuine reform of economic policies was undertaken in January 1980.

It seems clear that a major lesson for development assistance is that, when the macroeconomic policy signals are massively out of line lending to support the country in question will only make the cost of adjustment even higher unless sufficient remedial actions are undertaken. There is, however, no widely accepted technique for estimating when the policy changes are

sufficient to remedy the underlying difficulties. At least until knowledge improves, advice on policy reform will continue to contain a large element of judgement.

16.3 Trade and Aid in Turkey

In any country which maintains a fixed exchange rate while experiencing a rate of inflation in excess of the rate in the rest of the world, the first symptom of real difficulty, other than the inflation itself, generally arises in its balance of payments and in mounting debt-service obligations. It is therefore inevitable that countries with expansionary policies and fixed exchange rates will seek support from donor countries and institutions. When the macroeconomic policies are appropriate, such support can be used in highly productive ways in support of economic development. When they are inappropriate, however, they can be largely dissipated in support of policies which must, at any event, be remedied if growth is to resume or continue.

The Turkish experience amply demonstrates this. While many of the individual projects financed by the United States and other donors have had a high rate of return, and more will have if present economic reforms succeed, the United States and other donors were three times caught in a weak bargaining position on economic reform by their political interest in Turkey at times when Turkish macroeconomic policy was unsustainable. In the 1960's, corrective measures were taken relatively early in the cycle. In the 1950's and 1970's, however, donors were induced to provide support (in 1956-58 and again in 1977-79) despite the fact that the underlying programs had not been sufficiently changed to offer promise of great macro-economic relief.

The fact that trade can substitute for aid means that the dangers of supporting inappropriate macroeconomic policies inherently affect the trade sector of the domestic economy. In the Turkish case the most vivid illustration of this lesson arises from the cycle of the 1960's. Even when broad macroeconomic policy was not highly out of line, the fact of an aid inflow helped to mask the underlying distortion in the trade regime, as between import-substitutes and exports. Krueger (1974) has estimated that while almost all exports were receiving only TL9 per U.S. dollar the implicit cost of many import-competing goods was TL20 or more per dollar.

This situation could not have persisted as long as it did had it not been for aid flows. Although aid officials correctly pointed to the distortions resulting from overvaluation they nonetheless persisted as a major stumbling block to expansion of export earnings. In Turkey's case, this difficulty was compounded by the fact that Turkish workers' remittances also provided a major source of foreign exchange. Nonetheless, a major lesson from the Turkish experience is that aid's effectiveness is greatly diminished unless it is administered in the context of a fairly realistic exchange rate and a liberal trade policy.

The relationship between trade policies and aid does not end at the macroeconomic level. It also affects the effectiveness of assistance at the individual project and sectoral level. Two episodes in Turkey will serve to illustrate the link. The first is the Eregli Steel works and the second is the experience of the Turkish Industrial Development Bank.

In the 1960's, when there was automatic protection to new industrial activities, the U.S. government decided to provide the major part of financing for the Eregli Steel Mill. This was a massive undertaking by Turkish standards of the early 1960's. For present purposes, the

important point is that the feasibility study the project used anticipated domestic price, rather than the international price, to evaluate the project prospects. In the event, the Eregli plant had numerous technical problems but, in addition, resulted in a substantial increase in the Turkish domestic price of steel. The price was so high that the tinplate cost of a liter can of processed tomatoes in Turkey exceeded the retail price of a comparable can in Germany. Thus, during the late 1960's, the development of any food canning activities for exports was unprofitable and hence not undertaken. An inappropriate set of trade policies induced an initially uneconomic steel mill, which in turn prevented the development of more economic food processing industries.

The Turkish Industrial Development Bank was founded in the early 1950's to lend money to private sector industrial activities. It received loans, primarily from the World Bank, which provided it with foreign exchange. Because foreign exchange was scarce its loans were eagerly sought by the Turkish business community.

The Bank has undoubtedly made major contributions to the economic and technical efficiency of Turkish industry through its technical assistance, project appraisal, and other activities. It adopted shadow pricing and cost benefit analysis early in its history (Chapter 6). However, in its first ten years of existence, its project appraisal was based on market prices. Many of the projects which it funded were very profitable at market prices, but uneconomic at international prices. When the Bank began using international prices in its project appraisal it was able to weed out loan applications from some high cost industries. But the policy did not induce loan applications from those activities (especially for export) that would have been profitable at a realistic exchange rate but were unprofitable at the actual exchange rate.

The benefits accruing from assistance to the Turkish Industrial Development Bank were less than they might have been, even when the Bank used appropriate appraisal criteria, had Turkish trade and exchange rate policies been more realistic.

.6.4 Assistance for Agricultural Development[5/]

There are several reasons why a review of U.S. assistance to agricultural development in Turkey is particularly relevant. One is that Turkey, along with Korea, was among the earliest recipients of U.S. agricultural development assistance. U.S. assistance for agricultural development in Turkey began during World War II and continued until 1976. A second reason is that in the process of acquiring experience in development assistance in Turkey the U.S. made almost all of the false starts and committed most of the development assistance errors that were possible. In spite of the false starts and errors there have been a number of success stories. U.S. development assistance has made an important contribution to expansion of the agricultural sector's productive capacity and to the economic well-being of rural areas in Turkey.

In this review we give special attention to four areas of development assistance: (a) agricultural inputs (tractors and fertilizer); (b) land and water development; (c) agricultural education, research and extension; and (d) wheat production campaigns. (Other rural development programs designed to improve the quality of life in rural areas are discussed in Section 16.5). We devote primary attention to the U.S. development assistance programs. Reference is made to the activities or other donors only as their programs interact with U.S. development assistance. The FAO has been active in support of development of the forestry sector, in the promo-

tion of fertilizer use, in supporting the development of animal health and production programs and in crop introduction and research. The World Bank has been active in soil and water conservation and irrigation development and in the development of the livestock industry.

Agricultural Inputs: Tractors and Fertilizer

After World War II use of tractors diffused rapidly in Turkey. Fertilizer use expanded steadily from very low levels in the early 1950's to the mid-1960's. The largest increases in fertilizer use came after the introduction of the new higher yielding fertilizer responsive varieties in the mid-1960's. U.S. assistance played a very important role in the rapid post-war introduction of tractors. It played a much smaller direct role in the growth of fertilizer use.

Tractors: During the Marshall Plan period (1948-52) and during the first several years under the Mutual Security Act, support for agricultural development represented a very large share of U.S. agricultural development assistance to Turkey (Wilson, 1971: 2, 3). And a major share of this assistance was in support of agricultural mechanization (Table 16.3). Nearly 40,000 tractors were imported with U.S. assistance during the Marshall Plan Period. After the mid-1950's assistance by the U.S. for mechanization declined but mechanization, as indicated by the growth in tractor numbers has continued (Table 16.3).

A major effect of the mechanization effort was to expand the land under cultivation. New land was opened up to cultivation. The replacement of draft animals by tractors released land previously used to produce animal feed for other purposes. Wheat production increased rapidly during the 1950's and into the early 1960's. Almost all of the increase in wheat production during this period was a result of expansion in the area cultivated rather than increase in yields.

Table 16.3. Mechanization in Agriculture

	1950	1955	1960	1965	1971	197[illegible]	1980
Tractors ('000)	17	40	42	55	16.1	241	394
Area cultivated with tractors (mn. ha.)	1.2	3.0	3.2	4.1	8.7		
Draught animals ('000 pairs)	2495	2564	2648	2674	2099		
Area cultivated with draught animals (mn. ha.)	13.3	18.0	20.1	19.5	15.8		
Total cultivated area (mn. ha.)	14.5	21.0	23.3	23.6	24.5	24.[illegible]	24.9

Sources

Turkish Government, State Institute of Statistics, Summary of Agricultural Statistics. Published annually.

OECD (1974), Agricultural Policy in Turkey.

IBRD/World Bank (February 18, 1982), Turkey Industrialization and Trade Strategy: Methodological and Statistical Annex Vol. 3.

In spite of the mechanization programs' initial impact on production, substantial questions were raised regarding its longer run viability. A 1951 mission from the World Bank criticized the number of tractors being imported. The mission estimated that the number of farms on which tractor cultivation was economically viable was only in the neighborhood of 10,000 (IBRD, 1951). It also seems apparent that land was converted to cotton and grain production that should have remained in pasture. In some areas the productive capacity of the new lands brought under cultivation deteriorated rapidly. There were also serious income distribution effects. Ownership of resources at the village level became more concentrated and large numbers of peasants were pushed into the migration stream (Ankara University Faculty of Political Science, 1953; Robinson, 1952 and 1958; Mann, 1980).

It is hard, in retrospect, to escape the conclusion that a slower pace of mechanization in Turkey would have been desirable. Both the negative effects of conversion of land use and the impacts of income distribution would have been mitigated if tractor cultivation had been introduced more slowly. And there seems little doubt that, in the absence of external assistance, the pace of mechanization would have proceeded more slowly. It also seems apparent that the excessive rate of mechanization and land conversion did not represent a failure of analysis. Our review suggests that very little analysis took place. It reflected instead an intuitive identification, on the part of U.S. assistance personnel and the Government of Turkey (GOT), of mechanization with the modernization of agriculture (Chenery, Brandow and Cohn, 1953; Aresvik, 1975: 76-81; Mann, 1980).

Fertilizer: Efforts to expand the use of fertilizer have represented a major focus of several U.S. assistance projects. The Mission's extensive involvement in fertilizer began with an AID-supported team of six fertilizer experts from the Tennessee Valley Authority. This team spent two months advising the State Planning Organization in the early part of 1966. Out of this association came a detailed fertilizer study, the conclusions of which were incorporated into the Second Five Year Development Plan. Since the completion of the report, the Turkish government worked extensively with AID in seeking to develop a suitable fertilizer project. In the end, however, the Turkish authorities did not seek AID financing for any fertilizer project although the Mission continued to work with the Turkish government on fertilizer-related questions.

An AID fertilizer advisor spent about four years (1967-1971) working with the State Planning Office, the Ministry of Agriculture, Donatim (the Agricultural Supply Organization), the Agricultural Bank, and Turkish industry trying to coordinate the development of a fertilizer industry. The fertilizer advisor wrote several reports, which were well received by the Turkish government, in which he made several recommendations about several possible areas of U.S. foreign assistance to Turkey, including the following: (1) technical assistance in helping Turkey develop a plan of reorganization and the establishment of policies for fertilizer marketing and distribution; (2) technical assistance in developing a sound economic marketing and promotional organization; (3) establishment of in-country training programs to help solve the Turkish fertilizer industry's problems. Even without U.S. assistance, the AID fertilier

advisor suggested that the Turkish government reorganize and consolidate all government fertilizer functions under one organization: production, credit, research, soil testing, marketing and fertilizer production (Hill, 1969).

One major change that took place in Turkish agriculture in the late 1960's as a result of the recommendations of the U.S. AID fertilizer advisor was the acceptance by the Government of the use of nitrogen fertilizer on wheat. The excellent results of phosphate with nitrogen on high yielding wheat varieties encouraged the Government to take a new look at the situation, and to recommend the use of nitrogen on wheat. This practice was begun with the introduction of Mexican wheat in the fall of 1967.

The results from following the U.S. AID fertilizer advisor's recommendations of applying nitrogen on high yielding winter wheat varieties on state farms convinced government research workers of the merit of using nitrogen fertilizers in addition to phosphates. The outcome of these experiences also resulted in the first nitrogen recommendations for winter wheats grown on the Anatolian Plateau in the spring of 1969. The amount of fertilizer used for wheat in Turkey increased dramatically after 1966 with the introduction of the high yielding winter and spring wheat varieties (Table 16.4).

The government has a virtual monopoly on the production, import, and sale of chemical fertilizers, except for raw materials which can be imported under license for domestic manufacture. The Agricultural Supplies Organization (TZDK) is the principal agency involved in the distribution of fertilizers to farmers. Successive governments have given priority to fertilizer imports in

Table 16.4. Consumption of Commercial Fertilizers in Turkey, 1950-72 (tons of nutrients)

Year	Nitrogen	Phosphorus	Potassium	Total
1950-54	5,722	4,708	3,158	13,567
1955-59	12,365	7,234	1,304	20,903
1964	51,000	42,400	4,320	98,320
1969	231,100	200,600	14,300	446,000
1972	354,353	245,999	27,173	627,525
1978	776,000	635,000	21,000	1,432,000

Note: The figures for the 1950-54 period and the 1955-59 period are averages.

Source: FAO (1950-72), Production Yearbook; Government of Turkey, State Institute of Statistics. Statistical Yearbook of Turkey 1973 for 1972 figures; IBRD/World Bank (February 18, 1982), Turkey Industrialization and Trade Strategy: Methodological and Statistical Annex, Vol. 2 for 1978 figures.

the allocation of foreign exchange and fertilizer is the second largest import after fuel. At the same time, fertilizers benefitted from generous government subsidies.

Fertilizer prices have been subsiddized in three ways. First, by distributing the commercial product at below cost directly to individual farmers and farmers' cooperatives; second, by providing credit at subsidized rates for the purchase of agricultural inputs including fertilizers; and third, by subsidizing domestic manufacturers. As a result, fertilizer prices were kept low and declining in real terms. For example, the official price of ammonium nitrate (26% N) was fixed from 1975 to 1979 at TL 1400 per ton, despite the fact that the currency was rapidly depreciating. By 1979 subsidies to fertilizers amounted to between 60% and 80% of product cost.

In 1980, retail prices of fertilizers were raised and subsidies to fertilizers were reduced to 20-45% of the product cost. Nevertheless, subsidies to fertilizer remain substantial, amounting to about TL 35 billion (U.S. $460 million) in 1980. The government indicated its intention to phase out the remaining subsidies on fertilizers over the next five years, concomitant with the introduction of cost reducing innovations in TZDK's fertilizer handling and distribution network.

Fertilizer consumption has increased very rapidly in part because farmers have purchased it much below cost. At this low price, excess demand conditions have prevailed, and therefore a non-price allocation mechanism has been used to distribute fertilizer to farmers and to specific crops. There has been an uneven distribution of available supplies. A World Bank simulation based on its agricultural sector model for Turkey indicated substantial malallocation of fertilizer use among crops and regions due to pricing policies (World Bank, 1982, Vol. 2, 252).

In retrospect it seems doubtful that subsidies were a necessary inducement to more intensive fertilizer use. Before the introduction of the new wheat varieties there was little economic return to higher levels of fertilizer use on most crops. When the new fertilizer responsive varieties were introduced, the economic incentive for fertilizer use was very large. The primary effect of fertilizer subsidies was to distort use patterns.

Land and Water Development

Both the U.S. AID (and its predecessor agencies) and the World Bank have provided substantial assistance for land and water development in Turkey The Seyhan Project - a large multi-purpose flood control and irrigation project was a major focus of assistance by both agencies for over 30 years.[6/] The project is of interest because it illustrates the difficult problems that both institutions have faced repeatedly in the development of large multi-purpose projects. Many of these problems have centered around the difficulties of articulating the irrigation phases of the project with the power and flood control phases.

In 1948 the Ministry of Public Works commissioned a design study for the Seyhan Project. In 1950 a request was made for a loan from the World Bank for the construction of the Seyhan Dam. An economic study was also commissioned to support the loan application. In spite of serious reservations by the bank's own survey mission the bank agreed to participate in the financing of the construction of the dam. The loan agreement was signed in 1952. The dam and hydroelectric plant were completed in the early 1960's.

In spite of the fact that the realization of all three objectives of the project was necessary for the project to be economically viable, it was not until 1958, after the dam was completed and the hydroelectric plant came on line, that a design study for the irrigation and drainage phase was commissioned. When the irrigation studies were completed in 1961 it was estimated that the cost of the irrigation phase of the project would cost several times as much as the cost of the hydroelectric and flood control phase - and it did not include the even larger cost of on-farm land and water development work that would have to be carried out in order to realize

the irrigation benefits. It was not until the early 1980's that a large portion of the irrigation system was completed. It seems apparent that during much of the period between 1950 and 1980 the project was more of a burden to the Turkish economy than a source of growth.

Based on its experience in the Stage I phase of the Seyhan Project, the Bank decided that special attention needed to be given to an intensive extension effort in order to ensure effective utilization of drainage and irrigation facilities once construction was completed. The extension services provided by existing government agencies were thought to be relatively ineffective. The new "training and visit" program, developed with the assistance of a specialist consultant, Mr. Daniel Benor, differed from the existing program in several respects: it offered more intensive assistance to farmers; activities of the different agencies were coordinated under a single program; it used village level "contact" workers, contact workers were trained at regular sessions and made scheduled visits to farmers; the contact workers were backed up by a hierarchy of specialists; its autonomy enabled it to concentrate on farm training rather than on data collection. The success of the training and visit (T & V) system in the Seyhan Project area led to its adoption in several other Bank assisted projects. It has also served as a model for Bank-sponsored extension programs in a number of other countries (Benor and Harrison, 1977: Chapter 10).

The initial response by the government of Turkey was less enthusiastic than that of the Bank. The T & V system was expensive for the government to operate and maintain. There was considerable animosity by the regular extension agency to special implementation units. Following completion of Bank assistance to the project the personnel connected with the T & V system

were reabsorbed into the regular extension service or left government service. The longer-run demonstration effect may, however, have been rather substantial. In 1981 the Ministry of Agriculture announced that the T & V system would be instituted nationwide over the next five years. This will require a doubling of extension personnel. Assistance agency advisors, including Bank personnel, have expressed concern as to whether such an intensive system will be cost-effective.

Substantial U.S. assistance was also directed toward strengthening the capacity of the Turkish government to ensure more effective utilization of its investment in land and water resource development. This involved the assistance in the establishment of a Department of Land and Water Resource Development (Devlel Su Isleri - DSI) in the Ministry of Public Works modeled on the U.S. Bureau of Reclamation. A second agency - TOPRAKSU - modeled on the U.S. Soil Conservation Service, was established in the Ministry of Agriculture in 1960 and later moved to the Ministry of Village Affairs in 1964. It was organized to assist farmers with problems of soil and water management. Aid funding was provided to train DSI and TOPRAKSU staff and to finance irrigation development and soil conservation investments by farmers.

Both the DSI and TOPRAKSU programs were designed to be national in scope. Major effort was placed on the training of personnel. An internal AID evaluation in the late 1960's indicated that DSI has become a highly professional and technologically proficient agency.

TOPRAKSU resources were, however, concentrated primarily in two major State Project Areas (Seyhan and Gediz). In these two areas a force account approach to land and water development - financed by the government and carried out by TOPRAKSU - was developed. This proved effective in bringing rapid on-farm development within the project areas but it did nothing for

the development of the more than a million hectares of irrigated land outside State Project areas. The force account approach (Seyhan strategy) was strongly supported by the World Bank and the European Investment Bank because it seemed to promise rapid realization of the irrigation potential in the State Project areas. It was criticized by the US/AID because it did nothing for the development of the more than a million hectares of irrigated land outside the State Project areas (US/AID, 1969; Mann, 1972).

Thus, by 1970 it was becoming increasingly clear that after two decades of very substantial investment in facilities and institution building, Turkey still had not developed the capacity to effectively deliver irrigation water to farmers and to assist them in making effective use of the water except in a few state managed projects. There was a major imbalance in DSI and TOPRAKSU capacity. The capacity of DSI for the design and construction of irrigation facilities exceeded the capacity of TOPRAKSU to manage the delivery of water and provide technical assistance for development and use of water at the farm level.[7/]

In 1969 U.S. AID assisted in the development of a new "On-Farm Water Development Project" designed to (a) increase TOPRAKSU's capacity to carry out on-farm water development and (b) support the development of private sector capacity to carry out on-farm development outside of the state-run water project areas.[8/] An initial pilot demonstration of this new approach, carried out in the Izmir region, was regarded as highly successful (Mann, 1972; OECD, 1974: 26). The diffusion of the new "Izmir model" was, however, slowed by (a) shortage of credit to farmers, contractors and equipment suppliers and (b) the limited engineering and agronomic capacity of TOPRAKSU.

The initial, although partial success of the new project has provided Turkey with two models - the Seyhan "intensive" model and the more "extensive"

Izmir model - of water resource development. The following comparisons have been made of the two models (Mann, 1972):

(1) The older Seyhan model resulted in rapid and intensive development in some state managed project areas but its impact was more constrained by budget limitations. Since the Izmir model draws much more heavily on private than public resources, budget limitations are a less serious constraint. There has been delinking of the pace of irrigation development from the size of the TOPRAKSU budget.

(2) Returns to public investment are higher under the Izmir model since most of the costs of land development are borne privately. The cost to the government is only for the technical assistance.

(3) The Izmir model is more labor intensive. Greater use was made of local resources. It provides more employment and greater opportunity for the development of local private sector entrepreneurship.

(4) The Izmir strategy has had more favorable distributional effects. There was a tendency in the Seyhan Project for large farmers to receive a relatively large share of the land development subsidies and technical assistance. In the Izmir approach public resources were spread more broadly.

In view of the frequent discrepancy between initial project projections and longer-term project accomplishments it is probably premature to accept all of the claims regarding the superiority of the Izmir model.[9/] What can be said is that Turkey has accomplished, over a period of 30 years, the institutionalization of substantial capacity to develop, implement, and manage land and water resource development activities. There is also at least a presumption that the availability of two competing models, each with somewhat differed strengths and weaknesses, may become an important factor leading to better bureaucratic performance. Finally, it does appear

that Turkey has, during the last decade, begun to realize some of the returns from its major investments in both the large multi-purpose water resource development projects and its smaller investments in land and water development outside of the major project areas.

Agricultural Education, Research and Extension

A third major area of assistance by the U.S. AID agencies was to strengthen Turkish capacity in agricultural education, extension and research. It was clear, in the early 1950's, that Turkish agricultural education, extension and research institutions were exceptionally weak. Turkey did not establish a Ministry of Agriculture until 1931. An extension service was not established until 1943. Agricultural research was highly fragmented and the research system was typically staffed by technicians rather than scientists.

Extension: Assessments by U.S. technical assistance missions in the early 1950's suggested an opportunity for substantial short-run gains in agricultural production by strengthening agricultural extension. Initial efforts to strengthen agricultural extension focused on the training and technical assistance to strengthen extension capacity at the field level (Horton, 1964). Later efforts were focused on extension planning and administration.

By the mid-1960's, however, it seemed clear that the extension development effort had been much less successful than anticipated. Much of the frustration and lack of accomplishment has been attributed to the inability to resolve the differing conceptions of the role of extension held by the Turkish bureaucracy and the U.S. advisors. In the Turkish view agricultural extension agents were regarded as part of the staff of the country administrator (the Kaymakan) and responsible primarily for regulatory and administrative functions. The objective of U.S. technical assistance was to reform the system to make it primarily responsible for carrying out the educational and technology transfer function of the Ministry of Agriculture. By the mid-1960's

these issues remained unresolved and U.S. assistance effort was redirected toward the strengthening of agricultural services and the direct support of agricultural production.

One response to the limited success achieved in the program to strengthen agricultural extension was the search for a new approach to providing services to farmers. In 1966 the U.S. AID and the GOT initiated an Integrated Agricultural Services Project on a pilot basis in Denizli Province in southwestern Turkey (Wilson, 1971). The objectives of the project were (a) to move agricultural planning to the provincial and county levels and (b) to achieve inter-agency coordination for agricultural development activities at the local level. Three major activities were initiated under the pilot project: (a) the development of a coordinated support system that would integrate the supplies and services necessary to increase agricultural production; (b) to make available increased supplies of fertilizer and credit, better seed and breeding stock, and improve land and water management; (c) local testing and evaluation of new technology. Although many of the individual sub-projects were effective in increasing production, the project was not able to establish the coordination among agencies necessary for an integrated approach to agricultural development. In June 1970 AID terminated support for the Integrated Agricultural Services Project and initiated a new project to deal with the problems that resulted in the limited success of the Denizli Project - lack of policy and planning coordination at the national level.

There are some indications that in the early 1980's, the government of Turkey was beginning to face up to the problem of the

ineffectiveness of its agricultural extension system - weaknesses that had long concerned both the World Bank and the U.S. aid agency. A decision has apparently been made to institute the training and visit (T & V) system, first developed during Phase II of the Seyhan Project as the pattern for all extension work.

Agricultural research: During the 1950's and 1960's the U.S. assistance program was much less actively involved in strengthening the Turkish agricultural research system than in strengthening the Turkish extension service. Research, like extension, tended to be fragmented among the several departments and agencies with agricultural program activities. Although the ineffectiveness of agricultural research was recognized by both the GOT and U.S. AID, the first development assistance project in support of research was not implemented until 1963 (U.S. AID, 1965). This initial project had as its objective the provision of technical assistance for the reorganization of the Turkish agricultural research system. It was complemented by a second project designed to strengthen agricultural planning and economic research (U.S. AID, 1968). Neither project was able to overcome the obstacles of the fragmented approach that continues to characterize Turkish agricultural programs.

A somewhat more successful effort in support of agricultural extension and research was the establishment, with U.S. AID support, of Ataturk University in eastern Turkey. Beginning in 1955 the U.S. AID provided support, through a contract with the University of Nebraska. The University

included an extension training institute and an agricultural experiment station. By the early 1970's the new university appeared to be effectively institutionalized (Wilson, 1971).

Wheat Production Campaigns

In the late 1960's and early 1970's AID shifted its development assistance support away from generalized institution building to direct support for agricultural production. During this period support for agricultural training, research and extension continued. But the support was directed toward the achievement of much more specific production objectives than the programs of the 1950's and 1960's. This shift in emphasis was associated with the demonstration of the dramatic yield increases that were potentially feasible from the introduction and/or development of new high yielding wheat varieties.[10/]

The potential of the new wheat varieties was first demonstrated in Turkey in 1965. The U.S. AID imported seed from two varieties developed in Mexico - Sonora 64, and Lema Rojo. When planted by a farmer near Adana on Turkey's Mediterranean coast, yields in the 4.0 tons per hectare range - roughly double the yields of the best local wheats - were obtained. On the bases of somewhat broader experience in 1966 the Turkish Ministry of Agriculture decided to undertake larger scale dissemination of the new wheat varieties in the 1966/67 season. Economic and technical assistance from U.S. AID was obtained (a) to import 22,000 tons of Mexican seed to be planted in the Mediterranean, Aegean and Marmara regions and (b) to conduct an educational program to acquaint farmers with the production practices needed to obtain high yields from the new seeds. The production campaign

involved higher rates of fertilizer application, better seedbed preparation, and more effective weed control.

The economic results of the Mexican varieties were highly favorable. A study by the Agricultural Planning and Economic Research Department of the Turkish Ministry of Agriculture, showed that net income from land and management per hectare increased in the first year (1967-68) about 150 percent with the introduction of the new technology (see Table 16.5). The Mexican wheat import program probably had one of the most favorable cost-benefit ratios of any U.S. AID program to Turkey (Arsvik: 164).

There were also many indirect benefits from the program. A number of agencies (Agricultural Bank, Government Supply Agency, Soils Products Office, State Farms, and others) learned that by coordinating their efforts in support of the wheat production campaign, they could each demonstrate program success. There were major improvements in the technical capacity and morale in the Turkish Extension Service itself. The staff became more cooperative and willing to change their techniques and procedures and to revamp their education approach. The fact that they had something of value to demonstrate to farmers induced greater interest in field demonstrations.

By the early 1970's what was missing in Turkey for wider success with the Mexican wheats was locally developed replacement varieties that had high yielding potential and adequate disease resistance. As a result, the production potential of the Mexican wheat varieties reached a maximum and then stagnated. A cooperative research program with CIMMYT and the Rockefeller project was working on the development of such "replacement varieties", but better varieties did not become available until 1975-76 (CIMMYT Spring 1976). Nonetheless, the planting of Mexican varieties on 600,000 hectares

Table 16.5. Income and Cost Comparisons of Mexican Wheat and a Native Variety Grown in Denizli Province of Turkey, 1967-68

	Mexican Wheat	Native Wheat
Number of farms	55	44
Hectares per farm	3.2	2.5
Costs per hectare (dollars)		
Family labor	3.54	2.60
Hired labor	7.56	5.27
Seed	18.33	16.90
Water[a]	3.62	0.87
Fertilizer	37.58	12.56
Power and implements	46.79	32.71
Interest (7.0 percent)	8.22	4.96
Total[b]	125.64	75.87
Production and income		
Grain (kilograms)	3,643	1,572
Price per kilogram (in 10 kurus)	8.88	9.89
Total value (dollars)	323.44	155.43
Net income (dollars)[c]	197.80	79.56

[a]Most of the producers did not use irrigation for wheat.

[b]Not including land rental.

[c]From land and management.

Note: Data for Mexican wheat are simple averages for three varieties: Super-X, Lerma Rojo 64, and Penjamo 62. The native variety (073-44) is one of the better native varieties for this area. Dollar values are converted from Turkish lira at nine TL per dollar.

Source: Oddvar Aresvik (1975), The Agricultural Development of Turkey (New York: Praeger): 167.

of land annually during the early and mid-1970's help raise average wheat yields in Turkey from 1 ton to 1.8 tons per hectare between 1966 and 1979.

The widespread adoption of the Mexican wheats in coastal Turkey underscored how rapidly farmers would respond to profitable new ideas. However, while the coastal regions had benefitted from the Mexican wheats, the Anatolian Plateau, with three quarters of Turkey's wheat land, was unaffected because it requires cold-tolerant winter wheats. The introduction in Turkey of the Turkish Government-Rockefeller Foundation-AID-sponsored program for developing high-yielding winter wheat varieties, which has been referred to as the "High-Yielding Winter Wheat Project," coincided with the program for the introduction of Mexican spring-type varieties. However, the winter wheat program was much more modest and was developed more gradually (Johnson, 1971).

In 1970 a program was initiated by the Turkish Ministry of Agriculture, with support from AID, to increase winter wheat yields in selected provinces of the Anatolian Plateau and Thrace. Most wheat scientists believe that the factor which most seriously limits wheat production in the dry areas of Turkey is the management of the soil during the fallow period and the subsequent management of the wheat crop. This was recognized at an early stage, since the traditional summer fallow tillage method produces relatively low unit yields and sharp variations in annual production. By 1974, the Turkish and Rockefeller Foundation scientists of the Wheat Project were able to recommend a set of practices that they felt confident would give farmers yields of at least 2,000 kg per hectare in all years except those of unusually low rainfall.[11/] The extension service put out 10-hectare demonstrations of the recommendations in 10 locations in Ankara Province in 1974/75. These trials yielded 2,530 kg per hectare while adjacent

farmers' fields averaged 1,810 kg per hectare. The demonstrations were expanded to five provinces in 1975/76 and seven more provinces were added in 1976/77.

Charles Mann, a Rockefeller Foundation economist assigned to the wheat project, found that all demonstrator farmers (those who used the recommended set of practices) "realized substantially higher returns than did farmers whose fields served as controls (Mann, 1976: 15). The recommended practice cost only 25 percent more than usual farmer's practices, but output increased so much that the ratio of increased benefits to increased costs averaged over 5 to 1. Mann tentatively concluded that the impressive yield increases appear to be due not to large amounts of costly physical inputs but rather to modest amounts of additional inputs combined with better management.

The success of the wheat programs could not have occurred without a major commitment by the GOT. When the Project was begun, several dozen government wheat scientists were promptly transferred to it. The Government provided offices and experimental land at the Ankara Agricultural Research Institute. The Government also established regulations that permitted foreign scientist trainees to enter and leave Turkey easily. It maintained a favorable price ratio between wheat and agricultural inputs that created incentives for farmers to find ways to expand their wheat production.

The Government of Turkey-Rockefeller Foundation Wheat Project resulted in a major reorganization of wheat research in Turkey. One improvement was the Project's gathering of scientists with different specialties into a multidisciplinary staff. Plant pathologists worked closely with the breeders to select resistant strains. Another change was the creation of a truly national wheat improvement program. The Project provides for 11 research

stations in the major wheat-growing areas of Turkey. There are three principal breeding stations--two in Ankara and Eskisehir for winter wheat and one in Izmir for spring wheat. The eight remaining stations are largely selecting and testing sites. In addition, off-station tests are performed on farmers' fields and off-season breeding nurseries are operated for spring wheat. Basic to the integration of wheat research is an annual meeting at Ankara during which wheat scientists from all of the experimental stations review the year's results and plan the next year's work.

Shortly after the Project was established in 1970, it sent half of the nation's wheat scientists abroad to study. For example, six scientists went to the U.S. to study for advanced degrees and three were enrolled in CIMMYT's nine-month in-service training course in Mexico. Since then, most scientists have been sent to the CIMMYT training program first. At CIMMYT the scientist works in the field alongside its staff members, gaining first-hand experience in one of the world's largest crop improvement programs. After returning to Turkey and working for a time, some are sent abroad again for graduate studies.

By 1976, 22 Turkish nationals from the Wheat Project had completed Master's degrees, mostly at Oregon State University. Twenty-eight Turks had completed the CIMMYT wheat training program. The Project envisions the implementation of its training program in three steps. First, the Project trains and national- and provincial-level wheat specialists. These specialists will then train county extension agents and village technicians for local work; the local agents will in turn carry on the farmer training program. This "filtering down" process of education has only worked slowly.

Plant breeders in the Wheat Project make over 5,000 crosses each year and test the crosses by passing them through several generations of selection

at different stations around the country. The tests in diverse ecological zones provide data on disease resistance and overall adaptability of the line that would take years to equal if testing were restricted to the station at which the original selection was made. In addition, the nationwide testing gives scientists at one station access to the best line from elsewhere.

In February 1982, the Turkish Ministry of Agriculture, with the assistance of the Rockefeller Foundation and CIMMYT, completed a comprehensive review of the 12-year old cereals project and made plans for the future direction of the Project under solely Turkish auspices (Mann and Wright, 1982). The Project was unanimously judged to be highly successful. It represents the first important demonstration of the Green Revolution in rainfed agriculture. Turkish wheat production moved from approximately 10 million tons per year at the start of the Project in 1970, to five consecutive years of over 16 million tons. About 50 percent of Turkey's present wheat area, both irrigated and rainfed, is planted with high-yielding varieties, and Turkey again became a wheat exporter in the mid-1970's (World Bank, February 1982: 244-293; Nyrop (ed.), 1980: 154). In addition to the success on the production side, the project has also provided a model for research organization and management that has now been extended to all of Turkey's agricultural research.

The projects success does not mean that there are not continuing problems that need to be resolved. The project review noted some:

(1) There is an inadequate pipeline of well-trained young scientists. This has been exacerbated by a drop in overseas training opportunities under the AID "new directions" guidelines. The Turkish Government will need to fund more of its own scientific training.

(2) The Project has not developed effective research teams in several important areas: (a) the high potential Cukurova (southwest); the southeast (a huge area which has experienced very little yield change in the past 25 years); and (c) eastern Turkey, which has also been relatively unaffected by the improved technology.

(3) Effective working relationships had been attained at the height of the Project between the extension service and the wheat research group. There had been a team of subject matter specialists who had been assisted by the extension service to work with the research group. They functioned quite effectively in organizing farmer demonstrations and training the extension service. Several years ago a number were either hired away by World Bank Projects or relocated within the extension service. This resulted in a substantial breakdown in communication between research and extension.

(4) The Project has been unable to hold economists in the research team. The Project's recent agronomic experiments have not been analyzed from an economic point of view. On the positive side, there is wide recognition of the need for an economics dimension. Economists could be transferred to the Project from other Government agencies, but hitherto the bureaucratic obstacle of such a move has not been surmounted.

(5) Turkey progressed from a wheat importer to an exporter of substantial quantities of wheat with very little structured planning of national policies to address the problems and opportunities created by becoming a surplus producer. Wheat production in excess of domestic

needs presents several policy options. These include: export bread wheat and flour; export durum wheat, semolina, and pasta; shift some wheat area to other crops (such as forage on the plateau); or decrease the area of wheat production in the coastal zones thus freeing areas for alternative crops. There still is not a close relationship between the research group and the macro-policymakers. One problem, for example, is that the cereal quality price differentials established by the Cereals Purchasing Office were inadequate to encourage production of export quality grain.

16.5 Assistance to Improve the Quality of Life in Rural Turkey

U.S. assistance for rural development has been directed primarily to programs designed to provide direct input for agricultural production, (machinery, fertilizer, water) and to strengthen the institutions whose purpose was to provide direct support for agricultural production (agricultural research and extension). To the extent that these programs have resulted in improvements in rural incomes they have also resulted in the improvement in the quality of life in rural areas. U.S. assistance has also been directed toward improvements in rural education, rural health, family planning and nutrition. The resources directed to these activities have been smaller than for support of agricultural production and less attention has been given to impact evaluation.

Rural education: During the late 1950's and 1960's U.S. assistance has been provided for educational planning, for school design and construction, and for mass literacy programs. During the late 1960's attention shifted more heavily toward the support of technical education and the modernization of university level education.

It was clear in the early 1950's that the low level of rural literacy represented a major obstacle to improvements both in the efficiency of agricultural production and to improvements in the quality of rural life. Two literacy projects - the Literacy Training in the Armed Forces Project (1959-62) and the Adult Education Resources Development Project (1960-65) - were

regarded as reasonably successful. But rural education and literacy projects were apparently not as effective in capturing the interest or support of the Turkish educational bureaucracy as the later programs to reform and develop higher education (Price, July 1970).

Rural health and family planning: Several U.S. AID sponsored studies, beginning with a survey by the Population Council in 1963, indicated that a high percentage of the population, in both urban and rural areas and in all economic classes had favorable attitudes toward family planning methods but lacked appropriate information and technology.

Since the mid-1960's U.S. AID has made several loans to support integrated family planning and rural health programs. Much of this support was directed to the more disadvantaged areas of eastern Turkey. One of the more interesting results of these programs was the demonstration of reinforcement resulting from integrating the health and family planning education with literacy improvement programs (U.S. AID, 1974).

Nutrition: Early efforts toward nutrition improvement focused on home economics, education and extension. Between the mid-1950's and the early 1970's support for food imports was provided through the PL 480 program. School feeding programs were also developed with PL 480 support. There has not, however, been any strong integrated approach to nutrition planning or nutrition programs on the part of either the U.S. AID or the GOT.

16.6 Some Conclusions

During much of its history, American economic assistance to Turkey has been confronted with difficult trade-offs between economic and political objectives. At several critical periods political concerns clearly limited the ability of the assistance program to pursue accurately diagnosed economic reforms. In retrospect the failure to carry out needed monetary, fiscal and trade reforms, particularly in the late 1950's, and the late 1970's, seriously weakened the Turkish economy. As a result the Turkish government is now in a weaker position to pursue either economic or political objectives than if the reforms, that eventually became necessary, could have been carried out in a more appropriate and timely manner.

There is a general presumption, based on the Turkish experience, that a substantial "program" component in the development assistance package can represent a useful instrument for inducing effective dialogue about development policy between donors and recipients. The policy dialogue between donors and the Government of Turkey during the mid and late 1960's was an important factor in assuring that the reforms undertaken toward the end of the 1960's growth cycle were both earlier and more effective than the more belated reactions to the cycles of the 1950's and 1970's.

A closely related lesson is that when macroeconomic policy is resulting in severe economic distortions lending to support the country in question is both costly and unproductive unless effective remedial actions are taken

simultaneously. When macroeconomic policies are inappropriate, assistance resources will be largely dissipated until the remedial policies are accepted and implemented. This conclusion must be tempered by a recognition that there are no widely accepted techniques for determining whether particular policy changes will be adequate. Until knowledge improves, advice on policy reforms will continue to be weighted heavily by judgement.

There are also some rather strong conclusions that have emerged from our review of assistance to agricultural development in Turkey. One is that allocation of development assistance funds for the purchase of material inputs such as tractors and fertilizer rarely amounts to a highly productive use of the resources available for development assistance. At best, such material transfers are an indirect method of overcoming foreign exchange limitations. When appropriate, the economic incentives exist for the use of such inputs they will be rapidly adopted by farmers even in the absence of subsidies.

A second lesson that both the U.S. AID and the World Bank should have learned in Turkey is that building the physical infrastructure for irrigation development is much simpler than building the institutional infrastructure. In retrospect both the World Bank's commitment to physical infrastructure development and the USAID commitment to institutional infrastructure development in support of land and water development appear highly successful. But the economic returns to both efforts would have been greater if attention had been given earlier to the institutional innovations needed to realize the production potential opened up by the physical infrastructure development.

A third lesson is that institution building proceeds most effectively where such efforts are motivated by an opportunity for high economic returns. This is the lesson of the wheat programs. Generalized efforts to reform and develop effective agricultural extension and agricultural research programs were largely ineffective until the new high yielding wheat varieties offered the possibility of very large gains from institutional innovation.

We have also been impressed that the impact of development assistance efforts has often appeared much more impressive a decade or more after completion than in the development completion reports. A major contribution of all development effort is the building of human capital through learning by doing. Many of the younger professionals who have participated in policy development and in project planning and management became, later in their careers, the architects of the reforms that are leading to more effective macroeconomic and sector development policies and to more effective program design and management.

Footnotes

1/ For a fuller account of the economic history of Turkey in the years since the Second World War, see Hale (1981), Hershlag (1968), and Krueger (1974).

2/ There is some reason to believe that the Turkish construction activities now going on in the Middle East may owe their origins to U.S.-supported construction activities of the earlier years. While such a conjecture cannot be documented, it can plausibly be argued that the experience gained in those endeavors was invaluable for the development of Turkish enterpreneurs.

3/ See section 17.4 for an analysis of assistance to the agricultural sector. In the early 1950's, a parallel emphasis to that on roads was for agricultural mechanization. It should be noted that there have been many worthwhile projects in individual sectors which are not covered here. For example, American assistance to the educational sector of the Turkish economy has had a large number of intangible payoffs, but evaluation of those payoffs is outside the scope of this survey. See Sheetz (1982) for a survey of the literature on some of those aspects.

4/ American aid did not cease. Project aid continued but the American government simply refused an additional program loan. From 1948 to 1958, United States economic aid to Turkey totalled $764.6 million dollars, of which $172 million was PL 480 commodity aid (Burke, 1977).

5/ This section draws on a much more complete set of notes and bibliographical references prepared for this project by Sheetz (1982). It has also benefitted from the very complete bibliography by Gorun and Somel (1979).

6/ The review of the development of the Seyhan Project presented in this section is based largely on IBRD (1951), US/AID (1969), and Wilson (1970).

7/ This imbalance has become almost a classic syndrome in large scale irrigation development. It has been much easier to develop the engineering capacity for the design and construction of irrigation systems than to develop the institutional infrastructure needed to effectively deliver and use the water and to maintain the system. See Chapter 10.

8/ During the 1970's the US/AID has given increased attention to on-farm water development and use in a number of countries (Easter, 1982).

9/ The US/AID provided support for the "On-Farm Water Development Project" only from 1969-1975. There was a decline in support by the Turkish government in the late 1970's. This trend has been reversed in the 1980's (World Bank, 1981: 291-293), Vol. 2.

10/ The opportunity to realize the potential gains from yield increases led to a similar refocusing of research and extension efforts in a number of countries (see Wortman and Cummings, 1978: 186-226).

11/ A general outline of the recommendations of the Wheat Project for the Anatolian plateau included the following:

(1) special tillage practices during the fallow season;
(2) planting seed of a high yielding variety treated for disease and insect control;
(3) early planting with a deep furrow drill where there is moist soil for seed germination;
(4) adequate fertilization with nitrogen and phosphorus;
(5) early herbicide application in the spring.

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Revised
November 15, 1982

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CHAPTER 17

ASSISTANCE TO GHANA AND IVORY COAST*

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Revised
November 15, 1982

CHAPTER 17

ASSISTANCE TO GHANA AND IVORY COAST

The experience of Ghana and the Ivory Coast with respect to the impact of development assistance could hardly be more varied. At independence in 1957, Ghana had a well established export sector, including cocoa, timber, and minerals, which permitted the accumulation of substantial foreign exchange reserves. Its physical infrastructure and educational establishment were reasonably well developed and its per capita income was the highest in black Africa. Two and one half decades later, the Ghanaian economy was in ruins, with cocoa exports cut in half, a black market exchange rate fifteen times the official rate, an extensive and complex system of trade and exchange controls, and real per capita income substantially below the level 25 years earlier. Foreign aid by this time was almost totally ineffective in stimulating development because of the absence of an appropriate policy environment.

The Ivory Coast, on the other hand, began its history as an independent nation in 1960 far behind Ghana in roads, schools, agricultural production, per capita income, and practically every other indicator of development. By the early 1980s, however, the Ivory Coast had one of the best rural infrastructures in Africa, had made substantial progress in educating and improving the health of its population, had a relatively well developed and diversified agricultural sector, and had experienced

an annual average growth of real per capita income over the period of close to 3 percent. Concessional foreign aid, which was fairly important in the early years after independence, had become much less so by the 1980s as the Ivory Coast was able to finance more of its development out of its own resources and by borrowing from abroad on commercial terms.

The difference between the experiences of these two neighboring countries is the subject of this paper. A major thesis is that the effectiveness of foreign aid has been conditioned in each instance by the economic policy environment in which the aid has been administered. This policy environment has been the result of many factors. Initially it was strongly influenced by the opposing directions taken by the two leaders, Kwame Nkrumah and Felix Houpouet-Boigny. Whereas Ghana chose the path of socialism and state control, the Ivory Coast saw the role of the state more as one of influencing the private sector, and taking the investment lead only where necessary. A second factor affecting economic policy has been the political turmoil that has characterized Ghana in comparison with a relatively high degree of political stability in the Ivory Coast. Finally, there has been an important difference in the degree of openness of the two countries to foreign trade, investment, and financial flows.

A second major theme is that under the right circumstances foreign aid can be very effective in promoting and enhancing the impact of policy reform. This is especially true if given in the form of program assistance in support of broad sectoral or macroeconomic policy changes, but project aid can also be useful in helping to identify issues and in developing the mutual trust and confidence necessary for major reforms. The contrasting experiences of Ghana and the Ivory Coast in this respect are remarkable.

The next section of this paper discusses foreign assistance to Ghana and the Ivory Coast within the historical context of development in these

two countries. This is followed by a macroeconomic assessment of foreign aid and its contribution to growth through the transfer of resources available for increasing investment and improving the balance of payments. The role of foreign aid in facilitating the transfer of specific technical-organizational packages in the form of particular projects is then examined, with special emphasis on agriculture and rural development. Following this, there is an analysis of the economic policy environment in each country and of how foreign aid has been used to help improve that environment. A final section summarizes the principal conclusions of the analysis.

17.1 Aid in a Historical Context

Foreign aid in Ghana and the Ivory Coast must be seen within the historical context of development in these two countries. Much of this development in Ghana occurred during the colonial period, though not all of it was due to the initiatives of the colonial government.[1/] The rapid expansion of cocoa farming prior to World War I, for example, occurred spontaneously without substantial government intervention (Hill 1963). Furthermore, investment was financed largely out of local resources since it was a basic policy of the British government that colonies should be financially self-sufficient. Nevertheless, there was major investment in infrastructure and an important beginning in the provision of education and health services, paid for largely out of export earnings from cocoa. With the depression and decline in world cocoa prices during the 1930s, however, most of this investment came to a halt.

Development in the Ivory Coast during this period was much less important than in Ghana. Cocoa was a realtively minor crop at this time and coffee, which contributed most to exports after World War I, was largely in the hands of European planters many of whom did not survive the depression. Like the British, France also contributed little to its colonial empire during this period. Since Ivory Coast exports were not nearly as well developed as those of Ghana, few resources were available for investment in infrastructure and human services.

The Post-World War II Colonial Period

World War II marked an important turning point for the Ivory Coast. France at last abandoned its policy of financial self-sufficiency in its colonies and created in 1946 an overseas development fund, the Fonds d'Investissement pour le Développement Economique et Social (FIDES). From

1946 to 1959, this fund provided close to 70 billion CFA francs in grants. Of this, about 9 percent went directly into agriculture, 29 percent was for bridges and roads, and 37 percent was used for construction of the port at Abidjan. The FIDES was succeeded in 1959 by the Fonds d'Aide et de Coopération (FAC). FIDES and FAC grants were managed by the Caisse Centrale de Coopération Economique (CCCE), which also provided loans and advances as well as sometimes taking an equity position for its own account. These public capital flows totaled almost 40 billion CFA francs by the end of 1958 (Ivory Coast 1960: 238-40).

This aid was instrumental in improving infrastructure in the Ivory Coast. Of greatest importance was the opening of the Vridi Canal and the construction of a protected, deep water port at Abidjan. Some progress was also made in road construction. By the end of 1958, there were over 10,000 km of all-weather roads, compared with less than 4,000 km in 1947. Only 600 km of these were paved, however, and many villages were not served by feeder roads of any kind (Ivory Coast 1960: 118). Educational and health facilities and personnel, especially of local origin, were also very meager. On the other hand, agricultural research had been undertaken in the Ivory Coast for many years by a number of French research institutes.

Ghana also benefitted from foreign assistance resulting from the Colonial Development and Welfare Act that was passed during the interwar period. Ghana's first Ten-Year Development Plan, published in 1946, called for the expenditure of about one million pounds, one third of which was to be financed through Colonial Development and Welfare grants, another third from the London capital market, and the last third out of domestic surpluses. These were booming years for cocoa, however, and the accumulation of reserves soon led to a series of plan reformulations to increase the

level of investment. Despite this, the government at the time of independence in 1957 held about £ 250 million in foreign exchange reserves (Hymer 1971: 166, 67). Foreign aid at this time thus offered relatively little in comparison with Ghana's own resources. This windfall for the colonial and post-independence governments was possible because of the decision not to transfer the profits from high cocoa prices back to the farmer. Instead, the Cocoa Marketing Board accumulated these as sterling balances held abroad.

Overall, the level of development in Ghana at the end of the colonial period was considerably higher than in the Ivory Coast. At the time of independence, per capita GDP at market prices was $181 in Ghana compared with $157 in the Ivory Coast at official rates of exchange. Ghana, with only three-quarters of the land area of the Ivory Coast, had three times the length of roads, of which nearly 4,000 km were paved. The primary school enrollment ratio in 1960 was 59 percent in Ghana compared with 46 percent in the Ivory Coast (World Bank 1976).

From Independence to 1966

This was a critical period for both Ghana and the Ivory Coast. During these years, the leaders of each country created the particular ideological and policy framework in which development was to take place. Strategies were formulated and the first steps towards implementation were undertaken. These proved so economically disastrous in Ghana that Nkrumah was deposed in 1966, leaving a legacy of debt and distortions from which the country has yet to recover. In the Ivory Coast, on the other hand, 1966 marked the turning point from a period of strong, concentrated economic management to one in which decision-making became much more diffused and decentralized in keeping with the growing complexity of the economy.

Ghana under Nkrumah embarked on a radical structural transformation of the economy, giving priority to import-substituting industrialization and capital-intensive, state-managed agricultural development. There was heavy emphasis on socialist ideology, decreased external dependence, Ghanaianization of the economy, and the public sector as the leader in promoting development. The Ivory Coast, in contrast, concentrated more on small-farm agriculture and exports, created an atmosphere conducive to private foreign investment in industry, and maintained close links to France, the European Economic Community, and neighboring francophone countries. The state was active in influencing and promoting development, but as a partner with rather than a replacement for the private sector (Berg 1971).

From 1960 to 1964, Ghana received $68 million in net foreign aid from OECD countries and multilateral institutions, of which $18.53 million was in the form of grants, primarily from the United States and the United Kingdom. Official bilateral loans, mostly from the same sources, amounted to $29.82 million and loan repayments equaled $1.38 million. Multilateral borrowing totaled $25.6 million, primarily from the World Bank, and repayments amounted to $4.74 million (OECD 1966).

The Ivory Coast received $70.16 million in grants during the same period, of which $34.34 million were from France and the rest from the European Development Fund. Official bilateral loans during this period equaled $82.26 million, two-thirds of which were from France. Total official capital flows during the first five years of independence thus totaled $152.42. (France 1976: 139). This was over twice the amount received by Ghana from these sources.

These aid flows, however, are only partial. In Ghana's case, they do not include the numerous bilateral arrangements made with eastern bloc

countries, some of which contained concessional elements. Nor do they include direct French budget subsidies for agricultural research, mineral exploration, and technical assistance. If all of these were included, the figure for the total foreign aid received by the Ivory Coast from 1960 to 1964 would be considerably greater.

The contribution of this aid was heavily influenced by the course of development in each of the countries. Gross domestic product in the Ivory Coast, for example, increased in real terms at an annual rate of about six to seven percent; in Ghana it increased at only two to three percent. Low rates of inflation and balance of payments surpluses in the Ivory Coast contrasted with rapid price increases and mounting deficits in Ghana.

With exports stagnant, imports rising, and foreign exchange reserves falling, the government of Ghana resorted to short term suppliers' credits and to deficit financing, borrowing heavily from the banking system and social security fund. At the beginning of 1966, consumer prices in Ghana were 75 percent higher than in 1960 and imported goods were in very short supply due to import quotas and exchange controls. As a result, industrial and other enterprises, which were heavily dependent on imports of capital equipment and intermediate goods, were forced to operate substantially below capacity because of their inability to acquire these inputs (Berg 1971: 188). In addition, large sums had been allocated to prestige products with very low rates of return.

Most significant for the future, Ghana by 1966 had acquired an enormous medium- and long-term external debt of about $500 million, wheras its foreign exchange reserves had fallen from $481 million in 1957 to $50 million at the time Nkrumah's government fell. About 80 percent of this debt consisted of costly suppliers' credits. Debt service obligations rose to 20 percent of exports in 1965 and were estimated at 25 percent in the

following year. In addition, the system of import quotas and exchange controls, introduced to try to reduce imports in the face of an overvalued exchange rate, was a bureaucratic nightmare and gave rise to severe distortions in domestic prices.

The development strategy of the Ivory Coast was conceived during the first six years after independence. A key man in this process was Raphael Saller, an Antillean with considerable experience in Africa, who served as the first Minister of Finance, Economic Affairs, and Planning. This was an extremely powerful position and enabled Saller to put his "pragmatic, modern, liberal and disciplined" stamp on the economy with the full approval of the President (Woronoff 1972: 201). The incentive code to encourage private foreign investment, which had been adopted in 1959, was revised in 1962. It provided tax holidays, guaranteed the transfer of capital, and provided for repatriation of profits. Foreign trade and domestic marketing were left in private hands, and government investments in industry generally involved minority participation. Public enterprises were created primarily for infrastructure development, to expand housing and the provision of utilities, and to introduce new crops such as rubber and oil palm into agriculture (Woronoff 1972: 204).

It was perhaps in the area of economic planning that the Ivory Coast was most innovative as an African nation. A series of Commissions de Développement, composed of public and private representatives were created to determine production targets, desireable reforms, and the general orientation of their respective sectors. On the basis of this information, a Comité Interministériel du Développement examined the broad economic situation and established the general framework for development and the overall rate of growth. Frequent contacts between government and the private sector were also maintained through the Conseil Economique et Social and the

Chambers of Commerce, Industry, and Agriculture. Using these guidelines, technical elaboration of the Plan was carried out by the vast Ministry of Finance, Economic Affairs, and Planning, with heavy input from French technical assistants. The plan was then incorporated into annual development budgets detailing how money and manpower would be used in a given year, As part of the planning process, numerous studies were carried out, which provided a solid foundation for the planning process. The government was therefore well placed to direct the country's development efforts (Woronoff 1972: 206-8).

In 1966, the economic super-ministry was divided into separate Ministries for Finance and Economic Affairs and for Planning. Substantial power was retained by Plan, however, since it continued to have primary responsibility for managing the special development budget (Budget Spécial d'Investissement et d'Equipement, or BSIE), funded by earmarked receipts from taxes, duties, loans, and surpluses from the state's operating budget. The priorities laid down by Saller were retained, but there began to be a decentralization of authority that has continued until today.

From 1967 to the Present

By the time the Nkrumah government was replaced and economic decision-making in the Ivory Coast became more decentralized, the basic pattern of economic development in these two countries was pretty much established. These first years of independence thus proved to be critical for a much longer period of time.

Ghana

Ghana since the Nkrumah era has been characterized by succeeding phases of devaluation, import liberalization, austerity, inflation, and political turmoil. The real value of exports (in 1968 prices) fell from 398 million cedis in 1966 to 154 million cedis in 1977. From 1970 to 1977,

this value declined at an annual rate of 10.6 percent. Cocoa and its products comprised 71 percent of the value of those exports from 1974 to 1978, and cocoa production decreased from 538,000 metric tons in 1965 to 265,000 tons in 1979, primarily as a result of a 50 percent decline in the real value of the producer price after 1963.

The NLC government devalued the cedi by 30 percent in 1967 and rescheduled the country's short-term debt. An austerity program and a brief increase in cocoa prices in 1967/68 permitted a liberalization of the exchange control system. Imports rose, but were not taxed adequately, and investment programs designed during the period of high cocoa prices were continued after prices declined, putting pressure on demand. The system collapsed and Busia's civilian government elected in 1969 moved towards a massive devaluation of 80 percent in late 1971. Before the devaluation could have effect, the government was replaced by a military coup of the National Redemption Council (NRC). The NRC proceeded to revalue the cedi so that the final devaluation was only 40 percent. Debts were unilaterally rescheduled, and some short-term debts, purportedly incurred under irregular circumstances, were repudiated (Leith 1974: 5-8). This prompted the donors to begin negotiations on an overall settlement. This was not reached, however, until 1974.

The NRC managed during its early years to curb demand for imports through strict, less corrupt licensing. Imports remained inflexible, however, due to arbitrary licensing procedures. Inflation accelerated and the cedi became increasingly overvalued. It was devalued again in 1978 from 1.15¢/$ to 2.75¢/$ but continued to depreciate on the black market until by mid-1982 the rate was about 35¢/$. By this time, the government's budget was almost totally out of control, with the deficit being financed by borrowing from the central bank, lending to an annualized increase in the money supply of

261 percent and triple digit inflation. In December 1981, the civilian government installed by Jerry Rawlings after his ousting of the NRC in 1979 was once again replaced by the military (Economist Intelligence Unit 1982(1). 10-12).

The major form of foreign assistance that Ghana received following the Nkrumah period was debt relief. A series of early bilateral agreements culminated, in March 1974, in a multilateral arrangement calling for repayment of the debt, after a 10 year grace period, in 36 equal installments, with an interest rate of 2.5 percent. The grant element of this repayment scheme was estimated at the time at $178 million, or 61 percent of the present value of the debt relief. In fact, rising world inflation considerably increased the relative importance of the grant element.

Gross official disbursements to Ghana averaged about $48 million a year during 1967-69, but few new loan commitments were made until 1974 because of the outstanding debt dispute. Public transfers received by Ghana at that time in the form of grants and technical assistance equalled about $30 million a year (Appendix Table A-1). By the end of the 1970s, Ghana was again receiving a substantial amount of foreign assistance, as shown in Table 17.1. Approximately 60 percent of this was bilateral in nature, mostly from West Germany, the United Kingdom, and the United States. Of the $581 million in investment grants and loans received during 1977-80, 18 percent was in the form of grants and 62 percent in the form of development loans with a grant element of at least 25 percent. As a result of debt rescheduling, the debt service averaged only about 3 to 4 percent of the total value of exports.

Table 17.1. Official Foreign Capital Flows for Ghana, 1977-80

($ million)

	1977	1978	1979	1980
Grants				
Investment	23.7	29.4	31.7	20.0
Technical Assistance	29.2	37.5	35.4	44.9
Total	52.9	66.9	67.1	64.9
Loans				
Concessional	47.3	55.7	114.6	140.9
Other	19.0	34.1	34.9	30.5
Total	66.3	89.8	149.5	171.4
Debt Service	13.1	15.4	20.6	22.9
Net Official Flows	106.1	141.3	196.0	213.4

Source: Appendix Table A-1.

Ivory Coast

The Ivory Coast economy after 1966 became increasingly diversified. The share of primary production in total GDP continued to decline during this period from 34 percent in 1966 to 24 percent in 1977. Even within agriculture there was a marked increase in the production and export of a range of crops in addition to coffee and cocoa. These included palm oil and kernels, coprah, rubber, bananas, pineapples, and cotton. Real annual growth of GDP remained high, but declined from 7.3 percent in 1965-70 to 4.9 percent in 1975-78. Prices also accelerated from 4.2 percent per annum in 1965-70 to 17.7 percent in 1975-78, though this may be attributed more to worldwide inflation than to growth in the domestic money supply. Gross Domestic Investment continued to increase at a rapid rate, rising from 20 percent of GDP in 1966 to 29 percent in 1978.

Nevertheless, there were some disturbing trends. The balance of trade, which had been in surplus in every year prior to 1971, moved into deficit during the 1970s. There was also evidence that the Ivory Coast was running out of its most profitable investments in agriculture and import-substituting industry and was having to accept lower rates of return. Greater decentralization in decision-making was creating problems of coordination and government control of foreign borrowing by parastatal enterprises. At about the same time, the government undertook some very costly investments in the southwest region of the country, in the Kossou dam and its area of resettlement, and in some large sugar complexes in the north. This necessitated substantial additional foreign borrowing, much of it at relatively high commercial interest rates. As a result, the disbursed outstanding external debt of the Ivory Coast rose from $256 million in 1970 to $2,667 million in 1978. Preliminary estimates put it at $4,062 million in 1980. The debt service ratio rose from 6.7 percent in 1970

to 14 percent in 1978, with preliminary estimates for 1980 at 23 percent. The capacity of the Ivory Coast to continue borrowing from abroad had reached its limits.

This is especially important because foreign assistance was increasingly in the form of relatively hard loans rather than concessionary grants. During 1960-66, grants comprised 49 percent of project-related official capital flows, and loans had a large concessionary element. From 1967 to 1973, however, grants amounted to only 11 percent of these flows (Appendix Table A-3). In 1977-80, as shown in Table 17.2, out of $907 million in official flows related to investment, only 9 percent was in the form of grants and 31 percent in the form of development loans with a grant element in excess of 25 percent. The increasingly hard terms applied to these flows was a sign of the creditworthiness of the Ivory Coast, as well as of the perception among international donors and lenders of its lack of need for concessionary aid. One result was that the Ivory Coast paid out $131 million in debt service payments during this period, reducing net capital inflows to $776 million. Technical assistance, however, was valued at $304 million, giving an overall net official flow for the four years of $1,080 million.

Table 17.2. Official Foreign Capital Flows for the Ivory Coast, 1977-80
($ million)

	1977	1978	1979	1980
Grants				
Investment	17.4	11.8	24.1	25.1
Technical Assistance	57.3	61.6	83.7	101.4
Total	74.7	73.4	107.8	126.5
Loans				
Concessional	42.4	73.3	67.8	100.0
Other	136.2	117.8	102.3	188.4
Total	178.6	191.1	170.1	288.4
Debt Service	22.2	29.7	34.5	44.8
Net Official Flows	231.1	234.8	243.4	370.1

Source: Appendix Table A-2.

17.2 A Macroeconomic Assessment

Theoretical Perspective

From the macroeconomic point of view, foreign aid is seen as filling a resource gap that permits a country to attain higher levels of investment or to import more goods required for development. A rigorous formulation of this view is the "two-gap model" of the demand for foreign aid (Chenery and Strout 1966). In this formulation, the ability of a country to use foreign aid is determined by the following parameters: the capacity to absorb investment, the target rate of growth, the ratio of savings to income, the capital-output ratio, the marginal propensity to import, and the rate of growth of exports. The model assumes that these parameters are fairly constant over extended periods of time and that during any particular period there will be an ex ante gap both between investment and savings and between imports and exports. The role of foreign aid is to fill the larger of these two gaps, permitting the country to grow as rapidly as it can absorb investment funds, or when that is no longer an important constraint, to grow at its desired target rate.

The two-gap model has been critized on many grounds (Fei and Ranis 1968; Burton 1969). There is the question, for example, of what happens to the smaller gap when the larger has been filled since ex post the two must be equal. This does not pose any fundamental problem since, should the

larger gap be filled, the smaller gap can always be made larger by increasing consumption, using capital less efficiently, importing more consumer goods, or decreasing the growth rate of exports (Chenery 1969).

Much more serious is the issue of how the ex ante gaps can be measured when only the ex post gap is actually observed. Since foreign aid is always limited, it is highly unlikely that it will be sufficient in any particular instance to fill the larger ex ante gap. This means that accommodation will have to be made by lowering the target growth rate, increasing the rate of domestic savings, making more efficient use of capital, decreasing the marginal propensity to import, or increasing exports. What we view in the data, therefore, is not so much the demand for foreign aid as it is the result of compromise because the supply of aid is inadequate to satisfy ex ante demand.

A third criticism of the two-gap model is that it ignores the fact that the parameters of the model are variables amenable to policy change. The target rate of growth, for example, is obviously a policy variable. The savings rate and capital-output ratio can be altered by tax and interest rate policy and by encouraging the establishment of financial intermediaries. The marginal propensity to import and the export growth rate are both influenced by trade and exchange rate policies. Foreign aid could be used, therefore, to avoid difficult policy choices such as devaluation. The counter-argument, of course, is that policy change is economically and politically very difficult in any case and that foreign aid, if appropriately employed, can reduce those difficulties and make policy change feasible. Program aid, for example, may be highly useful in moderating the adverse short-run impact of devaluation (Krueger 1978). This question will be discussed later in the section on aid's relation to policy change.

Statistical Analysis

A statistical analysis was conducted to test the stability of the principal parameters of the two-gap model in Ghana and the Ivory Coast using data from the national accounts for 1960 through 1977 (World Bank 1976: 104, 105, 132, 133; World Bank 1980: 86, 87, 112, 113). Estimates were made of the marginal propensity to save, the marginal propensity to import, the growth rate of exports, and the incremental capital-output ratio using the following equations:

$$S/P = a + b\ Y/P \qquad \ldots.(1)$$

$$M/P = c + d\ Y/P \qquad \ldots.(2)$$

$$\lg (X/P) = \lg A + e\ T \qquad \ldots.(3)$$

$$(Y/P)_t - (Y/P)_{t-1} = f + g\ (L_t - L_{t-1}) - h\ (I/P)_{t-1} \qquad \ldots.(4)$$

where S is gross national savings (excluding net current transfers)

P is the GDP deflator

Y is gross domestic product at market prices

M is import of goods and nonfactor services

X is exports of goods and nonfactor services

T is time (year)

I is the gross domestic investment [2/]

L is the agricultural labor force

t is the year to which the relevant values of the variables refer. Where t does not appear, all variables in the equation refer to the same year.

b is the marginal propensity to save

d is the marginal propensity to import

e is the growth rate of exports

h is the marginal change in the incremental capital-output ratio holding labor constant.

The results of these regressions are given in Table 17.3.

The major econometric problem posed by the regression results is positive serial correlation in several instances, shown by relatively low values of the Dubin-Watson statistic. This implies that some of the estimates are biased, given the small sample of observations. The bias is not particularly disturbing, however, because the conclusions drawn from the analysis are very rough and therefore insensitive to large errors in the estimates.

Most important among these conclusions is the high degree of responsiveness of savings and imports to changes in income in the Ivory Coast compared with Ghana. This is shown by the large and statistically highly significant slope coefficients for equations (1) and (2) in the Ivory Coast compared with the same coefficients for Ghana. The Ghanaian savings coefficient is not significantly different from zero and the imports coefficient is negative, reflecting the major influence of trade restrictions and exchange controls. There was, in fact, a steady reduction of the ratio of imports to income from .35 in 1960 to .08 in 1977.

The growth rate of exports for Ghana, shown in equation (3), is also negative, though not significantly so. For the Ivory Coast, this growth rate is positive and fairly high, but its standard error is also quite large and there is very high positive serial correlation, shown by the low value of the Dubin-Watson statistic. The regression results are thus quite difficult to interpret given the limited number of years for which data are available. This should not obscure the fact, however, that the real value of exports for the Ivory Coast practically

Table 17.3. Regression Results for Key Macroeconomic Parameters

Equation	Constant[a]	Slope Coefficients[a]		R^{2}[b]	DW[c]
Ghana					
(1)	0.814	0.057		-0.006	1.578
	(1.289)	(0.060)			
(2)	8.501	-0.185		0.112	1.046
	(2.242)	(0.104)			
(3)	1.397	-0.016		-0.035	1.734
	(0.270)	(0.025)			
(4)	1.150	0.011	-0.452	0.947	1.125
	(0.972)	(.001)	(0.309)		
Ivory Coast					
(1)	-0.130	0.190		0.753	1.890
	(0.107)	(0.026)			
(2)	-0.387	0.460		0.975	0.945
	(0.074)	(0.018)			
(3)	0.256	0.051		-0.006	0.128
	(0.121)	(0.054)			
(4)	0.118	(0.001)	(0.043)	0.850	2.427
	(0.101)	(0.000)	(0.115)		

Notes:

[a] Figures in parentheses are standard errors of the coefficients.

[b] Coefficient of determination adjusted for the number of degrees of freedom.

[c] Dubin-Watson statistic.

tripled from 1960 to 1977, generating increasing amounts of foreign exchange with which to finance the rapidly rising level of imports.

With labor held constant, the influence of investment on changes in output, shown by the second slope coefficient in equation (4), appears to have been negative in Ghana. In the Ivory Coast, the results suggest no statistically significant relation. The reasons for this are unclear. They may have to do with the particular lag structure used in the equations, or there may be other statistical anomalies.

In any event, some insight into the relationship between income and investment in Ghana may be gained by looking at Table 17.4, which shows average annual rates of growth of the real value of output and investment over each of the past three decades. During this period, the growth rate of output steadily declined but remained positive. The growth of investment, on the other hand, was quite rapid during the 1950s but became increasingly negative after independence. By the 1970s, gross investment averaged only 8.9 percent of GDP, and net investment may even have been negative. Certainly this was true in the cocoa industry, where replanting had ceased and trees were rapidly going out of production because of their advanced age. The decline in investment was associated more with restrictions on imports of capital goods and replacement parts than with the relatively modest drop in domestic savings that occurred. The binding constraint on development in Ghana from a macroeconomic point of view, then, was foreign exchange rather than resources for investment. This was clearly related to stagnation in the export sector. It was also due to the failure of foreign aid and capital inflows to fill the ex ante foreign exchange gap, which was undoubtedly much larger than the ex post excess of domestic investment over domestic savings.

Table 17.4. Average Annual Growth Rates of Gross Domestic Product and Gross Domestic Investment for Ghana in Constant 1968 Prices (%)

	1950-60	1960-70	1970-77
GDP	4.1	2.1	0.4
GDI	8.9	-3.2	-8.6

Source: World Bank 1980: 86.

The reasons for this difference between the ex ante and ex post foreign exchange gaps were multiple. They had, first of all, to do with the basic constraints that existed on the total amount of foreign aid made available by donors and how that aid was parceled among countries. Second, Ghana's debt problem greatly complicated its access to loans, whether commercial or concessionary. Only after its debt was rescheduled in 1974, was it possible for Ghana once again to have access to the international capital market and to concessionary financing on a large scale. Finally, there remained the critical question for donors as to whether or not foreign aid in Ghana would contribute to filling the gap in such a way that this would lead to increased investment and economic growth.

The situation in the Ivory Coast was, of course, quite different. The real value of exports grew at an average annual rate during the 1960s of 5.5 percent, and this increased to 5.8 percent from 1970 to 1977. The real value of imports grew even more rapidly, at 6.8 and 11.0 percent per annum during each of these respective periods, because of official borrowing and private capital inflows. As a result, the real value of domestic investment increased at 12.7 percent per year during the 1960s and 12.1 percent annually from 1970 to 1977 (World Bank 1980: 113).

This favorable picture, however, may be changing. A sophisticated two-gap macroeconomic model has been estimated for the Ivory Coast by the World Bank (den Tuinder 1978: 160-86). The conclusions resulting from the use of this model to analyze the effects of the 1976-80 plan over the 1980s suggest that despite its past success, the Ivory Coast is now having to invest in projects that yield a lower rate of return. Furthermore, without substantial policy changes, the Ivorian economy is unlikely to be able to generate sufficient domestic resources to finance the investment required by its growth targets. Since tax revenues in relation to income are already high in comparison with other countries, additional

savings will, unlike the past, have to be generated by the private sector. In addition, recent increases in foreign borrowing cannot be sustained because of rising debt service payments and their potential for lowering the Ivory Coast's credit ratings abroad.

The major implications of this simulation exercise are: (1) that the Ivory Coast has in the past been constrained more by domestic savings than by exports; (2) that it has been highly successful, however, in generating a large amount of savings in the public sector and in mobilizing additional resources from abroad; but (3) that this strategy already is becoming more difficult and will continue to do so in the future. If plan targets are to be achieved, therefore, either additional foreign aid will have to be forthcoming or the parameters of the model will have to change.

PROJECT AID: AGRICULTURE AND RURAL DEVELOPMENT

Most foreign assistance is offered in the form of specific projects embodying technical-organizational packages in the design of which donors usually play a very significant role. With this form of aid, the resource transfer may be of less importance than the package itself, though the host government's acceptance of the project is generally conditional upon the donor furnishing the bulk of the financing. In effect, the donor buys the right to influence how its resources are to be used to promote development. The effectiveness of this form of aid is thus measured by the degree to which project objectives are attained.

This section examines the effectiveness of project aid in promoting agricultural and rural development in Ghana and the Ivory Coast. It begins with a historical overview, followed by a description of foreign assistance programs and projects in the rural sector of the two countries. A discussion of the constraints on project design and implementation then precedes the concluding section, which assesses the usefulness of project assistance in an unfavorable policy environment.

17.3 The History of Rural Development

Ghana

Cocoa, the mainstay of the Ghanaian economy,was introduced in the latter part of the 19th century. With scant assistance from the colonial administration, cocoa grew to become the principal export, with 270,000 mt being shipped abroad in 1935 (Gordon 1974: 71). In 1947, the Ghana Cocoa Marketing Board (CMB) was established to stabilize farmer incomes and real prices through the operation of a buffer stock and by shielding domestic prices from those on the world market. This yielded substantial public savings since on average one-half of export receipts were withheld as taxes or CMB surpluses, permitting the accumulation of large sterling reserves. World prices were sufficiently high, however, so that strong incentives could also be offered to farmers, with the result that production averaged 320,000 mt from 1954/55 to 1964/65, an increase of 40 percent over the previous decade. World prices continued to fluctuate, however, and, as seen in Table 17.5, Ghana's export earnings varied as well. Until the mid-1960s, though, shortfalls were compensated by drawing on the country's large reserves.

Starting with the seven year plan in 1961, the Nkrumah regime emphasized rapid, state-led industrialization. The government had little confidence in private, small-scale agriculture and felt that agricultural productivity and output could only be increased through large collective, motorized farms. By 1966, there were 135 state farms and about 35 Workers' Brigades employing a total of 21,000 salaried workers. The results of these projects were disappointing. The program cost $21 million in capital expenditures, imported farm equipment, and current operating expenses, while output was valued at only $4 million (Woronoff 1972: 186-187).

Table 17.5. World Prices, Production, Exports, and Export Receipts of Cocoa

	World Prices[a] ($/000'mt)	Production (000 mt)	Exports (000 mt)	Export Receipts (million $)
1950-54	3185	230.1	225.5	719.2
1955-59	2643	254.3	233.3	616.6
1960-64	1722	449.7	410.1	708.7
1965-69	2091	389.8	375.8	785.8
1970-74	2398	403.6	380.7[b]	912.9[b]
1975-77	3751	360.0	339.6[b]	1273.8[b]

Source: Commodity Trade 1980: 36.

Notes: [a] In 1979 constant prices, Spot New York.

[b] Estimate.

There were no government programs to assist the small farmer. Indeed, government policy penalized smallholder agriculture. Activities of the extension service, which were crucial to the cocoa subsector, were suspended in 1962 for about 5 years (McMurtry 1974: 219). In addition, marketing services were further centralized. The CMB purchasing monopoly was extended to other crops and private licensed buying agents (LBA) were replaced by the United Ghana Farmers Council (UGFC), which reduced the marketing system's flexibility and increased its costs.

The government's ambitious development and industrialization plan coincided with a slump in world cocoa prices in the early 1960s. To maintain its export revenue needed for growing import requirements, Ghana cut the cocoa producer price. By 1965/66, the nominal farmgate price of cocoa was only one-half of the 1951/52 price (Bateman 1974: 318-319). In real terms, the decline was even more severe as inflation accelerated from about 2 percent in 1960-63 to over 20 percent in 1965 (Leith 1974: 93). Output, however, continued to rise until the 1964/65 bumper harvest of 549,000 mt, in response to plantings in the 1950s. No additional plantings occurred thereafter and plantations were allowed to deteriorate. By the time the National Liberation Council replaced the Nkrumah regime in 1966, cocoa exports had declined and food production had dropped drastically.

Administrations after 1966 sought to redress the distortions accumulated over the early years of independence. All governments espoused the objective of self-sufficiency in food and industrial crops and the rehabilitation of the cocoa subsector. Increasing funds were allocated to the agricultural sector. The agricultural extension service was reestablished in 1967/68. Operation Feed Yourself (OFY), launched in

1972, sought to raise food production. Because of distrust of the innovative capacity of the small farmers and the overvalued cedi, which made imported inputs artificially cheap, OFY stressed motorized, large-scale production techniques. Motor services (land clearing, plowing, and combine harvesting) were heavily subsidized for these farms, as were intermediate inputs such as seeds, fertilizers, and insecticides. Overall, about 100,000 ha were put under mechanized cultivation, but yields remained low and economic costs very high (Winch 1976).

In the meantime, there was an acute scarcity of agricultural inputs for the small farmer. Furthermore, import restrictions on consumer goods resulted in few of these reaching the countryside, and those that did were very expensive. Cocoa farmers, already suffering from low producer prices, began to shift toward foodcrop production and to neglect their plantations. The age of cocoa trees rose, but little replanting occurred. Production declined by about 3 percent per annum from 1965/66 to 1972/73, and fell further by about 5 percent per annum to 230,000 mt in 1981/82 -- the lowest since the late 1950s.[3/] Ghana, which held the largest share of the world cocoa market in 1963/64 through 1972/73 at 30 percent, dropped in the late 1970s to third place behind the Ivory Coast and Brazil.

Ivory Coast

The development of export oriented agriculture in the Ivory Coast dates back to the early colonial period at the turn of the century. Rubber, palm products, and timber, the first export crops, were later replaced in importance by cocoa and coffee during the interwar period.

In 1940, the Ivory Coast exported about 45,000 mt of cocoa and 15,000 mt of coffee (Hermann 1981: 77). A decade later, local coffee trees were severely attacked by tracheomycosis, and were replaced by robusta varieties imported from the Belgian Congo. Timber exploitation expanded after World War II, and at the time of independence in 1960, coffee, cocoa, and timber had become the mainstay of the Ivorian economy, accounting for 85 percent of the country's export earnings.

Three policies were the key to the success of agriculture in the Ivory Coast. The first was the decision to build transport infrastructure opening up zones of unexploited potential at lowered transport costs. Equally important was the establishment of crop specific agricultural research institutes for the development, testing, multiplication, and dissemination of adapted varieties and technologies. Finally, coffee and cocoa production was supported through the operations of stabilization funds established in 1956.

The Ivorian government after independence continued the colonial strategy of export orientation and development base on agriculture. In addition, however, the government sought to broaden exports by diversifying away from coffee, cocoa, and timber into other export crops such as palm products, pineapples, and cotton. Research remained in the domain of sectoral agricultural research institutions. Extension of the new technologies, however, was delegated to autonomous regional authorities, (e.g., Autorité de la Vallée du Bandama, Autorité pour l'Amenagement de la Région du Sud-Ouest) or to crop specific development agencies (Sociétés de Développement, or SODE).

An ambitious oil palm program, aided by the World Bank, was begun in 1962 and sought to develop 63,000 ha of plantations by

1970.[4/] As shown in Table 17.6, output grew from 290,000 mt in 1961-63 to 707,000 mt in 1971-74. The growth of output of pineapples during the 1960-74 period was about 24 percent per annum,[5/] and cotton production in the drier areas to the north increased by 21 percent per year.

The traditional export products -- coffee, cocoa, and timber -- expanded at a slower rate. By 1970, the exploitation of timber resources was progressing more rapidly than regeneration, and reserves were being depleted. To sustain the levels of timber output, the government embarked upon an investment program in the San Pedro area to open up the hitherto unexploited tracts of the southwest. Coffee production continued to expand, but at only 3 percent per annum, reaching 258,000 mt in 1971-74. Production of cocoa grew more rapidly, aided by a large replanting and rehabilitation program.

Urbanization accelerated after independence, and national food requirements tripled in ten years. Even though food production increased more rapidly than population growth, urbanization and rising incomes placed large and increasing demands on food productivity. Food imports, perceived as threatening the positive trade balance, became a major concern for government. Rice production was promoted to substitute against imports and to generate additional income in the north. The first major investments were for mill and irrigation construction. Fertilizer, seed, and extension services complemented the program.

The 1973 drought and the commodity price boom of 1973-74 led to a major reassessment of Ivorian objectives. Concern over growing and increasingly expensive food imports, especially rice, and over fluctuating export earnings resulted in greater importance being attached to the reduction and eventual elimination of food imports as a central national

Table 17.6. Production of Key Agricultural Products in the Ivory Coast (1960-1974)

Product	1960-63	1971-74	% Incre
Palm Clusters (mt)	290,188	705,737	10
Pineapples (mt)	23,142	192,790	24
Timber (000 m^3)	3,470	4,669	4
Coffee (mt)	184,477	258,409[a]	3
Cocoa (mt)	91,965	199,829	8
Cotton (mt)	8,094[b]	55,933[b]	21

Source: La Cote d'Ivoire En Chiffres, Edition 1976-77.

Notes: [a] 1972-75

[b] 1959/60-1962/63 to 1971/72-1973/74

objective. As rice imports rose to over 100,000 mt per year in the early 1970s and world prices quadrupled, the Ivorian government accelerated its investment in swamp and irrigated paddy production. As an added incentive to producers and to aid farmers in the north, prices were increased sharply. In 1975-76, with new investments, higher producer prices, and demand dampened by a consumer price hike, the Ivory Coast became self-sufficient. The subsidies on locally produced rice, inputs, infrastructure, and services were a great fiscal burden, however, and the rice development agency, which began amassing large debts, was eventually disbanded in 1977.

Questionable investments were also made in sugar production, which received the largest chunk of public investment funds between 1971 and 1980 -- 21 percent of the total (Hermann 1981: 121). Production targets of 135-150,000 mt by 1980 were established despite anticipated high costs in relation to world market prices.

Foreign Assistance in the Rural Sector

In the 1960s, foreign assistance stressed capital development projects such as irrigation, roads, ports, and power facilities. World Bank lending to the agricultural sector consisted mainly of irrigation projects. Bank policy shifted in the early 1970s, however, towards maintaining the momentum of the green revolution to feed the developing countries and to increase the incomes of the poor (World Bank, Agricultural Sector 1972: McNamara 1973). Bilateral donors followed a similar transition. Whereas AID had been concerned in the 1960s primarily with infrastructural aid and balance of payments assistance, the "New Directions" mandate of 1973, and the subsequent "Basic Needs" philosophy shifted United States' aid to the "poorest of the poor" and to small-scale projects with better distributional effects. The history of foreign assistance to Ghana and the Ivory Coast followed this worldwide direction.

Ghana

Through 1966, most foreign assistance in Ghana was allocated to capital development projects and to assisting Nkrumah's industrialization policy. The World Bank had no projects in the rural sector, while AID, the largest donor, funded an agricultural extension and production project. The objective of AID strategy was to assist Ghanaian production programs through price supports, subsidized input deliveries, and credit programs. Technical assistance and management training were important components of this strategy.

The first World Bank Cocoa Project to Ghana was initiated in 1970. This called for 20,000 ha of cocoa to be rehabilitated and 15,000 ha of new trees planted over a five year period. Asked by the government to assist in revitalizing the extension service, AID revamped the Agricultural Extension and Production Project to emphasize extension and input delivery aspects. Further resources were directed to health and population projects. Significant amounts of PL 480 and about $30 million in program assistance were also made available.

The unilateral repudiation of part of Ghana's foreign debt by the NRC in 1972 resulted in a sharp drop in foreign assistance to Ghana. With the exception of few bilateral donors (e.g., Canada), disbursement against existing projects continued but no additional projects were designed. From 1972 to 1974, donors awaited major macroeconomic policy reforms before continuing their assistance programs. AID, no longer the largest donor, relied on World Bank leadership and minimized its involvement in policy questions (AID 1975, Vol. I: 34). The World Bank funded a Sugar Rehabilitation Project and designed a Rice Development Project in the north

that was never funded. AID sought to influence policy indirectly through training of management. After 1972, the Economic Development Management Project and various other training projects gained importance in USAID's portfolio (AID 1975, Vol. I: 24).

When Ghana's external debt was successfully rescheduled in 1974, and long term stabilization seemed a likely prospect, project assistance increased significantly. Agricultural and integrated rural development projects predominated. Four World Bank Projects totalling $51 million (Cocoa II, Oil Palm, Livestock Development, and Upper Region Integrated Rural Development) were approved. US objectives, in line with the Congressional mandate, sought to ensure that "the poor majority have more adequate incomes and greater access to health care services of sufficient quality" (AID 1975, Vol. I: 21-22). The basic approach of better delivery of inputs and services, stronger planning and management, and development of local institutions focused on a specific region was maintained for all three sectors of AID involvement -- agriculture, health, and family planning. The large Managed Inputs and Delivery of Agricultural Services (MIDAS) Project illustrates this comprehensive approach. The project was comprised of imports and distribution of fertilizers, seed multiplication and distribution, extension services, rural credit, management training, studies of the marketing structure, and a number of other components.

By 1977, economic mismanagement in Ghana had resulted in triple-digit inflation, a severely overvalued cedi, and cumbersome import licensing procedures. Macroeconomic distortions created an undesirable incentive structure favoring corruption, smuggling, and arbitrage. The environment being no longer conducive to development, donor assistance

programs began to be scaled down. As existing projects come to completion even today, both multilateral and bilateral donors are reducing their assistance programs to Ghana.

Ivory Coast

Until 1967, the Ivory Coast relied heavily on bilateral, especially French, foreign assistance. Of an estimated total of about $260 million between 1960 and 1967, France contributed about $135 million in funds, personnel, and commodities, compared to $33 million from the US and $93 million from all multilateral donors (France 1976: 189: Appendix Table A-5).

Donors' programs supported the government's policy of rapid, export-oriented growth. In the early 1960's, infrastructural projects, training, studies, resource surveys, and research projects were important. France, for instance, financed one-half of the agricultural research agencies, to which it also furnished substantial technical personnel. In addition, a series of regional socioeconomic studies and resource surveys were also funded. Top-level technical and managerial personnel were sent from France to assist the Ivorian government in its program of rapid economic growth. The presence of top-level administrators and technicians, and the large financial support lent by France, undoubtedly accorded France an important influence on policy decisions and aided in the establishment of a stable and conservative economic environment.

By 1968, the Ivory Coast had built up an impressive infrastructure of ports, roads, and power networks. The government's emphasis on agriculture as the principal source of growth was lent support by increasing project aid. Donors' assisted the expansion of traditional export crops, as well as the diversification program that sought to widen the country's foreign exchange base.

Project identification was facilitated by extensive studies and surveys which analyzed the country's comparative advantage. Agricultural project financing increased rapidly from the mid-1960s. The World Bank group funded the first of over 15 agricultural projects in 1969. During 1968-81, of the $710 million in aid extended by the World Bank, one-quarter was for the agricultural sector. This included cocoa, rubber, oil palm, coconut, and cotton production projects. In the mid-1970s, the Bank's program towards integrated rural development projects (North-eastern Savannah Project, Center West Project, etc.).

American assistance in the post-1967 period declined to $23.3 million in AID projects and other economic assistance, and $7 in PL 480 assistance from 1968 to 1981. This is not surprising since, with sound international creditworthiness and a per capita GNP of $1200 in 1980, the Ivory Coast no longer met the congressional mandate conditions. On the other hand, the EX-IM Bank extended $255 million in various loans during the 1968-81 period.

Project aid proceeded satisfactorily until the late 1970s when the Ivorian government attached increasing importance to regional development and to foodcrop production, thus moving away from traditional, comparative advantage sectors into those with lower rates of return. The decreasing return on investment coincided with the oil crisis, and was soon followed by a drop in coffee and cocoa prices. The Ivorian public investment program for 1978 was planned during the 1976/77 coffee and cocoa boom. Over $2 billion was allocated, 40 percent from external sources. Available funds were used for some bad investments (the sugar complexes, rice production), to meet rising public recurrent expenditures, and for projects with long gestation periods (education and

health). The Ivory Coast's debt service had risen to 25 percent by 1980, and the need for structural readjustment was recognized.

Constraints on Project Design and Implementation

Ghana

Two broad types of projects have been financed in Ghana's rural sector. Directly productive investments include various cocoa, oil palm, rice, and livestock projects. At the other extreme are projects with an indirect impact on production, such as those involving health, education, and training. Integrated rural development projects, like the World Bank's Upper Region Project and USAID's Managed Inputs and Delivery of Agricultural Services (MIDAS) Project, have sought to incorporate elements from both ends of the spectrum.

Few, if any, projects in the rural sector have succeeded in attaining their targets in Ghana. This is particularly true of the directly productive projects. The World Bank's Eastern Region Cocoa Project, for example, set as its goal the replanting of 15,000 ha and the rehabilitation of an additional 20,000 ha. By the end of 1973/74, one year before foreign financing ended, only one half of the acreage had been planted, while only 29 percent of the target 20,000 ha had been rehabilitated.

Similar problems faced the MIDAS project, USAID's major integrated rural development project in Ghana. Whereas the project's stated goal was to increase agricultural production on small holdings through better input distribution, a 1979 mid-project evaluation stated that "the project failed to deliver agricultural inputs such as fertilizer, seeds, credit, and technical services to small farmers" (Hess and Biney 1979).

A common constraint to design and implementation of all Ghanaian projects has been the lack of a clear overall rural development plan to guide donor participation (AID 1973: 1). In addition, rapid staff turnovers of upper and middle level Ghanaian management have hindered constructive dialogue. These problems have been further compounded by the rapid rate of inflation and the overvaluation of the cedi. In 1977, inflation reached 60 percent, and thereafter exceeded 100 percent each year (AID 1981: 8). In the face of a constant official rate of exchange, this led to an increasingly overvalued currency. Imported inputs and tradable outputs were underpriced in relation to local currency expenditures and the opportunity cost of labor. Furthermore, local operating expenses of projects and donor missions, when converted to dollars at official exchange rates, became prohibitively expensive.[6/] The World Bank Oil Palm Project, for example, was appraised at $22.5 million in 1975 but cost $53.3 million in 1982 due to inflation. Price distortions encouraged people to take advantage of differentials in order to supplement their meager incomes. Managerial inefficiency and corruption became entrenched. Donors complained frequently that projects could not "keep good people" (North 1982).

A number of specific problems also constrained the successful implementation of projects in Ghana. The government's cocoa price policy, for example, inadequately reflected production costs. In 1975, the

producer price was the equivalent of 0.59 N¢/kg, whereas the breakeven price was estimated at about 0.73 to 0.88 N¢/kg. At those prices farmers were unwilling to maintain and, at times, to harvest their farms. They of course did little replanting. Shortages of consumer goods and farm inputs also reduced farmers' real purchasing power. Not surprisingly, even though cocoa was very profitable at economic prices (Stryker 1975: 21), farmers switched to privately more profitable foodcrops. The average age of trees in the meantime increased so that,by 1978, 85 percent of the cocoa trees were estimated to be 16 years or older.

To arrest the rapid decline in cocoa production, the Limann government tripled the producer price to 12 N¢/kg in 1981 (Economist Intelligence Unit 1982 (1): 10). Even at 12 N¢/kg, however, -- which traded at 35 N¢/$ on the black market -- the Ghanaian cocoa producer received less than half the price to Ivorian producers when comparison is made at the black market exchange rate of 35 N¢/$. As a result, about 50-60,000 mt of Ghanaian cocoa are currently being smuggled annually to the Ivory Coast and Togo.

Pricing and availability of primary factors of production has also biased the types of techniques employed. Ghanaian exchange rate policy has favored capital intensive, mechanized production techniques. Due to the overvalued cedi, imported equipment appears less expensive than locally procurred labor services. This bias is compounded by the government's decision to apply no duty on mechanized equipment imports. Mechanized services are also strongly subsidized by the government, with subsidies ranging from 70 to 90 percent of costs. Yet studies have shown that whereas capital-intensive techniques are financially attractive, they are economically least profitable (Winch 1976: 92).

The Ghanaian government has also heavily subsidized other agricultural inputs. The subsidy on fertilizer was 77 percent in 1974 and 56 percent in 1981, while the subsidy in 1975 on sprayers and insecticides was 80 and 90 percent respectively. At these subsidized prices, however, insufficient inputs could be supplied. In 1972, only 8,000 of the required 11,000 mt of fertilizer were delivered (Gilbert 1972: 7). Imports of insecticides and sprayers also declined. Insecticide supplies averaged 205,450 gallons in 1957-64, but only 137,900 gallons in 1964-74. Between 1970 and 1975, sufficient insecticides were made available to spray only 15,000 hectares, or about 9 percent of the total land area each year. The World Bank Cocoa Project "had very few cutlasses which it could supply" and a "limited quantity of gammalin 20" to spray farms. Pruners and sprayers were "on order" (Christian 1974: 11).

Projects also suffered from inadequate local support services. Ghanaian seed multiplication farms had a total annual production capacity of 1.65 million cocoa pods in 1976, enough to replant 20,000 ha per year, or less than 1 percent of the cocoa area. Even the declining demand for seedlings could not be met. The Eastern Cocoa Project requested 250,000 pods in 1972/73 but received only 150,000,enough for 5,400 of the planned 8,000 acres (Christian 1974: 11-12).

In Ghana, it has not been the price of the input that has limited consumption but the "lack of an effective system of ... importation and distribution" (Gilbert 1972: 8). The foreign exchange constraint has limited the quantity of inputs imported. Agricultural inputs have not received priority in foreign exchange allocation. When funds have been allocated, the licensing procedure has been cumbersome, susceptible to corruption, and subject to long delays. Due to the lack of fuel and spare parts, transport of

inputs upcountry to the project areas has been delayed. Relative scarcity induced by the subsidized prices has necessitated elaborate controls to ensure input use by the target groups. But since sprayers in 1975 cost 30 N¢ in Ghana, and comparable sprayers cost the equivalent of 700 N¢ in the Ivory Coast, smuggling of project inputs has been prevalent. Credit, too, has been subsidized. In AID's MIDAS Project, rural credit has been made available at 8-12 percent. But inflation since 1977 has exceeded 100 percent, so the real rate of interest has been strongly negative. Whether the credit has been used for its intended productive ends under such circumstances is doubtful.

Finally, institutional weaknesses have hindered project success. Various government agencies involved in agriculture have been overstaffed, poorly trained and motivated, and underequipped. Recurrent administrative expenditures have been high. The CMB with a staff of about 50,000 had in 1982 an estimated 4,000 N¢ in administrative expenditures per ton of cocoa (Economic Intelligence Unit 1982(2): 16).

In the face of these difficulties, it has been extremely difficult to design and implement projects successfully. Infrastructure projects have become enormously expensive as local costs have mounted with the increasingly overvalued exchange rate. AID has concentrated instead, in recent years, on training projects designed to improve the human resource base upon which future development will depend. But it is estimated that as much as half of the participants subsequently emigrate from Ghana in search of more remunerative employment elsewhere. Furthermore, training and education projects have difficulty in meeting recurrent expenditures. In Ghana AID has covered about 90 percent of the operating costs of training projects.

Ivory Coast

The economic performance of the Ivory Coast, which is heavily reliant on its rural sector, has been one of the few successes of independent sub-saharan Africa. Not surprisingly, most rural development projects have attained their objectives. Most commercial crops grown in the forest zone, for example, attained or exceeded their production targets in the 1971-75 Plan. Large investments in ill-planned projects financed chiefly by external borrowing, however, later led to structural imbalances in the Ivorian economy.

The factors that resulted in the structural difficulties of the economy also acted as constraints on the design and implementation of externally financed projects. One constraint stands out in particular In its desire to develop the relatively poor northern savannah region, the Ivory Coast moved away from its traditional comparative advantage in high rainfall crops produced in the south. Large amounts of resources were transferred north through production projects that were hastily selected and poorly prepared. Not only was there a shift towards the north, but there was an inappropriate selection of crops and techniques.

The Ivorian government planned, through the construction of twelve irrigated sugar complexes, to produce 600,000 mt of sugar. Of the public investment planned for 1976-80, 35 to 40 percent was to be allocated to sugar production. Since Ivorian demand was estimated at 100,000 mt, one-half million tons of sugar would have had to be exported. As the world sugar price declined, the number of sugar complexes was decreased to six, with 470,000 mt of sugar output. Capital costs were very high, and overruns not only resulted in partial completion of projects but they also severely affected project profitability (den Tuinder 1978: 35).

As designed, the complexes were capital intensive, used sophisticated technology, and would have few linkages with the rest of the Ivorian economy. Total production costs were estimated at $.23/lb, while 1980-85 world prices were projected at $.10/lb. It was unclear where the surplus of sugar could be exported and how the difference between the world price and domestic cost of production would be financed.

Cotton, which seems to be a reasonably profitable crop for the north, at first failed to reach its overoptimistic production targets. The cotton program has, however, successfully employed animal traction technology in an integrated regional development setting. Under the guidance of CIDT, the development agency for the north, cotton and foodcrop production has been expanding steadily.

The objectives of the rice program was to gain food self-sufficiency, to transfer income to the north, and to diversify production. Both price and investment policy were heavily employed. About 21 billion CFAF, or 6-15 percent of total public investment for the 1976-80 plan, were allocated to developing the rice sub-sector. Whereas the program achieved success -- producing large quantities of rice, the costs were very high. Rice projects generally involved costly irrigated and mechanized schemes with a high share of imported inputs (Humphreys 1981: 102). To be privately profitable, these required protection against lower cost imports. As discussed earlier, this was accomplished primarily by raising the producer price and incurring public marketing losses. This was not only financially, but also economically, unprofitable since the rice program was an inefficient means of saving foreign exchange (Humphreys 1981). Unsound projects could not be sustained over the longer run through public subsidies, and the system collapsed.

The second major constraint on projects has been the absorptive capacity of the Ivory Coast. Successful planning, design, and implementation of projects requires flexible and skilled administration. As the Ivorian economy has grown in complexity, centralized state-operated or supported programs have become more difficult to manage. A governmental reorganization occured in the 1970s to allow for greater decentralization of decision making and to render ministries more responsive and effective in implementing policy, but skilled Ivorian managers, though growing in number, are still in short supply.

Donors were faced with similar constraints in realizing the objectives of their programs. As project selection became less obvious and as the Ivorian government's objectives grew in complexity, the importance of planning became evident. Without effective planning of sectoral and intra-sectoral resource allocation, bad investment choices, as in the case of the sugar complexes, diverted scarce human and financial resources into inefficient activities.

Similarly, price policy has led to important misallocations of resources, reducing the effectiveness of foreign assistance. The large rice program of the 1970s absorbed labor, land, foreign and domestic capital, and managerial skills from other, more profitable uses. As another example, coffee and cocoa prices are currently both maintained at 250 CFAF/kg, even though coffee is more costly to produce and its price has recently been higher on world markets.

Finally, public enterprises have played a crucial role in the success of project design and implementation. The Ivory Coast has used these enterprises in relatively high risk agricultural programs and to further its efforts to promote Ivorianization. But over time, the public enterprises have became overstaffed and bureaucratic. At the same time,

many public enterprises have lacked the flexibility and autonomy to increase their operating efficiency. Thus donors desiring to participate in those sectors where these public development agencies are involved have been increasingly confronted with high administrative costs and inefficiency.

Foreign Assistance as an Unfavorable Policy Environment

As the previous discussion suggests, the impact foreign assistance is likely to have depends critically on the economic policy environment of the recipient country. Foreign assistance to the rural sector of a severely distorted economy, as in Ghana, is generally ineffective as a means of achieving either donor or host country goals. In many instances, it is simply a resource transfer to the government and to that segment of the Ghanaian population benefitting from the officially sanctioned economy.

This tends to encourage the design of projects that are impervious to the distortions and inefficiencies introduced by government policy. Local expenditures are minimized since they are much more expensive at the overvalued exchange rate than purchases in foreign currency. These enclaves, such as the Volta River aluminum project, replace projects with greater linkages to the local economy and beneficial distributive effects.

At the other extreme are the integrated development projects designed with the view that a single component is more likely to fail than a comprehensive package that maintains a critical momentum. Despite its size, however, the MIDAS project could not overcome the constraints facing isolated projects with more limited objectives. Administrative and managerial capacity proved insufficient to coordinate elements

of the project. The import licensing mechanism -- even though the project was exonerated -- delayed imports of goods and inputs. Lack of transport equipment slowed shipments upcountry. Costs rose at an annual rate of over 100 percent due to inflation.

Infrastructure projects, such as the construction or rebuilding of roads, have the advantage that their success does not depend on government incentives to producers. In many instances, they can benefit the market economy outside the public sector. But they suffer from the same problems as other projects with respect to implementation, and they are particularly susceptible to cost overruns to the extent they require large expenditures in local currency.

Probably most successful have been the human resource projects (health, training, and education), which are only indirectly productive. The objective of these projects has been to reach the people directly, rather than passing through the government. While delays, cost overruns, and partial competitions have been encountered, these projects are regarded as a relative success in Ghana by AID. Nevertheless, cost recovery is low, and as many as one-half of the successful trainees are believed to have left Ghana to work in neighboring countries. One can only hope that these people will someday return when conditions in Ghana improve.

It may be argued that ultimately foreign assistance should develop people and not governments, and thus human resource projects with long gestation periods and few direct quantifiable financial benefits are justified in cases like Ghana. The beneficiary of human resource projects will be able to earn higher income, and may, if he has migrated, even remit some funds to his family in Ghana. The difficulty, however, is that without quantifiable benefits there is no benchmark for evaluating the desireability of these projects.

17.4 The Economic Policy Environment and Foreign Aid

The analyses thus far has shown a remarkable difference in the experience since independence of the two neighboring countries, Ghana and the Ivory Coast. Ghana, despite a substantial inflow of foreign aid, has seen a steady deterioration in nearly all its macroeconomic indicators such as GDP per capita, real investment, imports, inflation, and the black market rate of exchange. The critical constraint on its development seems to have been a severe shortage of foreign exchange. The Ivory Coast, on the other hand, has experienced high rates of growth of investment, domestic savings, exports, capital inflows, and per capita income. Inflation has been relatively low and linked primarily to that of the rest of the world because of the country's openness. The CFA franc has been strong with little or no overvaluation, and, until recently at least, the country has increasingly been able to borrow on the international capital market, replacing concessionary aid.

At the project level, Ghana has experienced any number of problems. The choice of promoting mechanized farms during and after the Nkrumah period proved disastrous. Low producer prices, especially for cocoa, have discouraged farmers and reduced their incentives to participate in projects. Efforts to establish public agencies for the collection and distribution of food have been costly and have interfered with the development of private marketing. Input subsidies, including the influence of the overvalued cedi, have created financial problems for public distribution agencies, encouraged smuggling of inputs to neighboring countries, discouraged private distribution of inputs, and benefitted disproportionately those with sufficient influence to gain access to scarce supplies. Inflation and the increasingly overvalued exchange rate

have raised the cost of project expendistures in local currency to prohibitive levels. While projects in the Ivory Coast have also had problems, these have been relatively isolated, at least until recently, and have at no time taken on the proportions of those in Ghana.

A major thesis of this paper is that the varied experiences of Ghana and the Ivory Coast with respect to their ability to mobilize and make effective use of foreign aid are to be explained primarily by the differences in their economic policy environments. These differences have not been isolated and particular but rather have been systemic and general. This section describes those environments and how they have influenced the effectiveness of foreign assistance. Thereafter, the historic role of foreign aid in improving the economic policy environment in each of the two countries is examined.

The Economic Policy Environment and Its Impact on the Effectiveness of Foreign Aid

The economic policy environment is the set of laws, decrees, regulations, and other legal or administrative devices that establish the economic framework in which producers, traders, and consumers, whether public or private, operate. This framework consists of tax rates, subsidies, investment regulations, import quotas, exchange controls, regulated prices, and a host of other "policy constraints". All of these alter the profitability or desireability, from a private point of view, of economic activities.

Of major importance, in this respect, are the economic policies a country establishes that govern its economic relations with the rest of the world. These influence domestic prices relative to those on world markets, create differences between private market and official exchange rates, determine the availability of imported goods and services, affect

flows of labor and capital across international frontiers, and act in numerous other ways to relate one country's economy to those of the rest of the world.

Ghana

Ghana's economic policy environment has been characterized above all by shortages of foreign exchange and a system of import and exchange controls, which as a result of mounting inflation has led to an increasingly overvalued currency despite several devaluations and attempts at liberalization.[7/] One result has been artificially low official prices for agricultural products, especially export crops such as cocoa. In addition, the government has been heavily dependent on cocoa exports as a source of tax revenue, further depressing the official price to producers.

Equally important has been the effect of import and exchange controls on the prices and availability of consumer goods purchased by farmers in rural years. The supply of these goods has been severely restricted, with priority being given instead to imports of capital and intermediate goods and to basic foodstuffs consumed in the cities. As a result, there has been a severe shortage of consumer goods in the countryside and those that have been available have been sold at very high prices. The farmer, therefore, has suffered in two ways: the prices received for his export crops have been low, and the prices paid for consumer goods, when available, have been high.

Since the late 1960s, however, the Ghanaian government has tried to offset this disincentive by offering subsidies on credit and on agricultural inputs, such as seeds, fertilizers, insecticides, and machinery services. These subsidies have been facilitated by the over-valued exchange rate at which the external prices of imported inputs are converted to domestic currency. Nevertheless, the subsidies have beer a financial burden on public supplying agencies and to some extent have encouraged inappropriate techniques and crops in which Ghana does not have a comparative advantage. In addition, the subsidies have strongly discouraged the distribution of agricultural inputs by private traders. Furthermore, severe shortages of the inputs, resulting from import restrictions and management problems, have biased their distribution towards larger, more prosperous farmers and have created uncertainty as to their availability.

Projects have succeeded only where these have been established in such a way as to be insulated from these problems. The Volta River project for example, was set up essentially as an enclave, importing capital and intermediate goods directly from abroad and bypassing the government's system of procurement. On the other hand, even when projects in the agricultural sector have been able to procure inputs without difficulty, these have had to be sold at subsidized prices that were substantially below prices on the private market or in neighboring countries. Diversion of the inputs from the project area and smuggling outside of Ghana have thus been strongly encouraged, enriching those able to gain access to to the inputs.

At the same time that export crops has been discouraged, the Ghanaian government has tried to promote the production of food and other import substitution crops. A key mechanism for accomplishing this has been its import policy. For imported rice, for example, tariffs and the margin of the Ghana National Trading Corporation equalled 66 percent of the c.i.f. value of imports in 1972. Distribution of this rice throug established wholesale and retail traders was ostensibly made at officiall regulated prices, but restrictions on imports and lack of enforcement of official prices resulted in large quantities of rice being sold at higher prices. The free market price of rice in Accra in 1972, in fact, was 2.3 times the c.i.f. price. Obviously, incentives for domestic farmers to produce rice were strong as long as that rice could be marketed by private traders.

The government, however, was more concerned about supplying urban areas with food at low prices. For this purpose, the Food Marketing Corporation was created under Nkrumah. This was later merged with the Task Force Distribution Unit to create in 1971 the Food Distribution Corporation. In 1975, this state agency took over the Marketing Division of the Grains Development Board. In addition, the Rice Mills Unit, which had been part of the Grains Development Board, was made an autonomous body under the Ministry of Agriculture.

Ostensibly these agencies have been responsible for implementing guaranteed minimum prices designed to cover production costs, especially for rice and maize. In fact, they have been obliged to sell at maximum prices that are insufficient to cover their operating costs in order to keep retail prices to consumers at low levels. As a result, they have incurred heavy financial losses. In most years, market prices

have been higher than the minimum prices offered by these agencies so that buying has been difficult. Even when the minimum price has been above the market price, buying operations have been limited because of lack of funds and storage space. Thus the influence of the state trading agencies on domestic marketing of food has had little importance at best and at worst has been detrimental since large producers and Agricultural Development Bank borrowers have at times been required to sell to these agencies at the official minimum price.

At the same time that government policy in Ghana has discouraged the production of export crops, it has offered positive incentives, in general, to industry. Import quotas and high tariffs, for example, have protected industrial firms from import competition. Non-traditional exports have enjoyed bonuses on their export earnings. In addition, the Capital Investments Board has provided tax holidays and exemptions from duties and other taxes on inputs. These benefits have been of limited value to foreign equity-holders, however, because remittances of profits and dividends have been blocked by exchange controls.

A useful way of comparing the incentives offered in different agricultural and industrial activities is to examine the effective rate of protection (ERP) in each. This measures the incentives applicable to both outputs and inputs and thus indicates the extent to which policy permits actual value added to diverge from its level in the absence of protection. The results are shown in Table 17.7 for 1972, a year in which the overvaluation of the cedi was not very great following its devaluation in late 1971, but the values of the ERP are essentially as expected. That of cocoa, Ghana's major export crops, is negative, showing the system's bias against this sector. The ERPs for maize, rice, and cotton are

Table 17.7. Effective Rates of Protection (ERP) for Selected Agricultural and Industrial Activities in Ghana 1972

Activity	ERP
Cocoa	-0.5
Maize	0.7
Rice	0.7
Cotton	1.8
Processed Food	1.4
Textiles and Clothing	15.5
Footwear	1.1
Wood and Wood Products	2.9
Fiber and Paper Products	1.3
Chemicals	0.7
Nonmetallic Mineral Products	-2.4
Basic Metal Products	0.6
Fabricated Metal Products, Machinery & Equipment	7.4

Source: Scott R. Pearson, Gerald C. Nelson, and J. Dirck Stryker, "Incentives and Comparative Advantage in Ghanaian Industry and Agriculture," August 1979, pp. 38-40 and calculations of the author.

positive at fairly modest levels. This primarily reflects the effect of restrictions on agricultural imports, leading to inflated prices on the private market. Effective protection of industry is in general much greater, partly because there is less political resistence to restrictions on imports of manufactured goods compared with foodstuffs. The ERP for nonmetallic mineral products is negative, not because protection is negative, as is true of cocoa, but because it is so strongly positive that resources are misallocated to such an extent that value added measured in world prices is negative. 8/

Although comprehensive data are not available, it is clear that the policy distortions shown in Table 17.7 have become accentuated since 1972. The producer price for cocoa divided by the national consumer price index, for example, decreased by 37 percent from 1972 to 1979. In rural areas, consumer goods prices rose even faster, and in many instances the goods were not available at any price. As a result of inflation the cedi depreciated rapidly on the black market, making agricultural input subsidies for the favored few who could obtain them even greater. In addition, the requirement on the part of the donors to convert foreign exchange to cedis at the official rate of exchange implied that the cost of local purchases rose enormously, making most projects prohibitively expensive. At the same time, restrictions on food and other imports raised their domestic prices on the free market, further biasing the structure of incentives against the export sector. By the beginning of the 1980s, the result was a highly distorted economy in which the incentives for black market dealing, smuggling, and corruption were so great that almost any project channeled through the public sector was unlikely to succeed.

Ivory Coast

In contrast to Ghana, the Ivory Coast's economic policy environment has been one in which these kinds of distortions have been minimal. First, the CFA franc has been rigidly linked with the French franc and has remained a convertible currency without exchange controls on current account. Second, the use of quantitative import restrictions has been minimal, implying that the relation between domestic and world prices of tradeable goods has been determined primarily by tariffs and, for agricultural products, by the operations of the Caisse de Stabilisation et de Soutien des Prix des Produits Agricoles (CSSPPA), charged with stabilizing produce prices of the major cash crops, and the Caisse de Perequation, responsible for stabilizing the prices of rice and some other basic foodstuffs (den Tuinder 1978: 42). Third, the bias towards industry has been less than in Ghana. Coffee and cocoa have been taxed, but the priority given by the government to agricultural development has kept it from squeezing that sector too hard. Fourth, import tariffs have, in general, been moderate, though effective rates of protection have been higher because of low duties on intermediate inputs and because of benefits from the Ivory Coast's investment code. Finally, though input subsidies have hardly been absent from Ivorian agricultural policy, they have been much less pronounced than in Ghana.

The lesser degree of distortions in the Ivory Coast economy compared to that of Ghana can be seen by looking at effective rates of protection (ERP) in Table 17.8. Although cash crops in the Ivory Coast have been taxed and food grains protected, these distortions have been less severe than in Ghana. Furthermore, industry in the Ivory Coast has received substantially less protection than in Ghana. The net impact of these distortions was such as to cause the exchange rate to be overvalued by an estimated 15 percent in 1972.

Table 17.8. Effective Rates of Protection (ERP) for Selected Agricultural and Industrial Activities in the Ivory Coast, 1972

Activity	ERP	Activity	ERP
Coffee	-0.4	Edible Oils, Soap	1.5
Cocoa	-0.4	Milk Products	0.0
Palm Products	-0.1	Tobacco	0.2
Copra	-0.1	Textiles and Clothing	1.5
Pineapples	-0.3	Footwear	1.8
Bananas	-0.3	Lubricants	1.2
Cotton	-0.4	Chemical Products	0.8
Rice	0.3	Rubber Products	0.0
Maize	0.4	Cement	0.0
Grain Milling	2.7	Transport Equipment	0.2
Processed Foods	0.1	Metal Transformation, Machinery	0.8
Beverages	-0.4	Paper Products	0.2

Source: J. Dirck Stryker, Garry Pursell, and Terry Munson, "Incitations et Coûts Réels en Côte d'Ivoire," May 23, 1975, Table A, and J. Dirck Stryker "Western Africa Regional Project: Ivory Coast -- Economic Incentives and Costs in Agriculture (Chapter II)," April 14, 1977, Tables 5 and 7.

Nevertheless, particular policy distortions have existed from time to time that have had an adverse impact on the effectiveness of foreign aid. One of the most notable of these, discussed earlier, was the sharp increase in 1974 of the official price offered to rice producers. This diverted large quantities of paddy from on-farm consumption and the private market to publically operated mills that were required to sell to wholesalers at a price which did not cover their costs. The result was overflowing public storage facilities and financial disaster for the public agency concerned. A rice production and milling project that was being considered for financing at the time by the World Bank was abandoned as a result of this untenable situation.

More generally, there was during the last half of the 1970s a sharp decline in the productivity of public investment resulting from a series of high cost projects. Those involving the sugar complexes in the north were discussed above in the section on Agriculture and Rural Development. In addition, there were several very costly higher education projects and some excessive investment in highways. Much of this program was financed by foreign borrowing on fairly hard terms. As a result, debt service obligations rose sharply just as coffee and cocoa earnings were declining, threatening the country's pace of development. With growing fiscal problems, too, essential services such as those in agricultural extension were also threatened. There was, therefore, a strong need for structural readjustment and for better planning and preparation of investment projects.

The Role of Foreign Aid in Policy Reform

The role that foreign aid can play in promoting and enhancing the impact of policy reform has become increasingly recognized.[9/] To some

extent this can be accomplished at the project level, but more often it requires structural adjustments that are at least sectoral, if not macroeconomic, in nature. The history of foreign aid in Ghana and the Ivory Coast offers some illuminating examples.

Policy Reform and Project Aid

Aid donors generally establish with host governments certain understandings and preconditions considered as necessary for the success of a particular project. These may involve institutional changes, better accounting practices, reduced input subsidies, higher producer prices, and any number of other reforms. Frequently, compliance with these conditions has an influence not only on the project concerned but also on other projects in the same sector. This, plus political factors, may make agreement difficult and require extended discussions over a relatively long period of time, during which mutual confidence needs to be established.

As an example, the World Bank and the government of the Ivory Coast continued to discuss the issue of the producer price for rice for several years after the original project was first rejected. The government agreed in principle that a new policy was needed in order to eliminate the producer subsidies but argued that this would have to come about through inflation since a reduction in the producer price was politically impracticable. The Bank financed further studies but would not go ahead with a production project as long as its implementation was thought to worsen, rather than to improve, the problem in the rice sub-sector. The Bank's continuing involvement was nonetheless thought to be useful if it could help improve policies and institutions or identify projects that would meet the needs of the sub-sector. A dialogue was thus maintained, though it became

increasingly apparent that the agricultural policy problems were not limited simply to rice but extended across the entire sector. The rice issue was, therefore, finally dealt with as part of the overall approach to policy reform discussed below.

In Ghana, the Managed Input Delivery and Agricultural Services (MIDAS) project, financed by AID, also offers some useful lessons. At the time the project was prepared, in 1973/74, agricultural inputs and services were being supplied to farmers by the Ministry of Agriculture, with credit being handled primarily by the Agricultural Development Bank. These inputs and services were offered either for free or at highly subsidized prices but were generally in very short supply because of foreign exchange shortages and because the Ministry's capacity to manage an input distribution system was very limited. The MIDAS project was designed to overcome these constraints by financing the foreign exchange costs of the project and by establishing autonomous agencies to handle distribution. Another major goal was to reduce or eliminate input subsidies.

Success with the MIDAS project has been highly uneven. The Ghana Fertilizer Company was established to import, blend, bag, and distribute fertilizers, but complications developed, partly because of deep vested interests, and the Ministry continued to supply fertilizers at subsidized prices, primarily to larger farmers with influence. On the other hand, the Ghana Seed Company was successfully established and the seed subsidy was eliminated. The project was reduced in scope, however, from the national level to a single region. This has subsequently reduced the impact it might have on national policy.

These are but two examples, but they suggest some important lessons. First, changes in economic policy are often very difficult because of vested interests and political pressures. The leverage offered by donor financing of projects is seldom great enough to overcome these obstacles. Second, policy changes do not come quickly and often involve a long period of dialogue and building of mutual trust. This is difficult or impossible if there are frequent changes in personnel by the host government or lack of a long-term commitment on the part of donors. Finally, economic policy issues often extend beyond the domaine of a particular project, requiring a sectoral or macroeconomic perspective on foreign aid.

A Comprehensive Approach to Policy Reform

The experience of both Ghana and the Ivory Coast suggests the importance of taking a comprehensive approach to policy reform and designing foreign aid programs that can reinforce this approach.

Ghana

At the end of the Nkrumah period in 1966, Ghana was in serious macroeconomic difficulties with mounting inflation, growing budget deficits, a deteriorating balance of payments, and rising debt service obligations. With assistance from the IMF, a stabilization program was undertaken by the National Liberation Council (NLC) government, which used external aid and short-term debt relief to maintain Ghana's capacity to import at the same time that aggregate demand was reduced through credit constraints and a tight budget. Although the exchange rate was devalued in 1967 from 0.714 to 1.02 cedis per dollar, relatively little attention was otherwise paid to removing the distortions resulting from overvaluation of the exchange rate, import and exchange controls,

the tariff structure, the credit system, and the government's monopoly on the distribution of agricultural inputs (Gilbert 1976: 290-94). By 1969, when the Busia government took over from the NLC, the economy was more stable and functioned more smoothly than three years earlier, but inflation had eroded the effects of devaluation, and the long term prospects for Ghana's economy were little improved. In retrospect, it appears that the stabilization program of the post-Nkrumah era was too short-term in nature, partly because economists at that time were not fully aware of the serious effects that distortions such as existed in Ghana could have on the allocation of resources and long-term development. In addition, the political situation probably would not have permitted more fundamental reforms without substantially more program aid to soften the blow to Ghana's urban population. Yet donors were unwilling to commit that level of aid and the administrative machinery in Ghana was hard pressed to utilize the new aid that was made available without a significant liberalization of procurement-tying provisions. Untied drawings on the IMF were extensively made but were inadequate by themselves. World Bank loans were also available, but only for projects, requiring a slow process of project identification and preparation. Finally, the contribution of debt rescheduling was limited because this was predominantly the responsibility of government export and investment credit guarantee agencies in the donor countries, which were unsympathetic to broader foreign policy and development concerns (Gilbert 1976: 333-37).

By late 1971, however, this situation had changed very substantially. The Ghanaian government and the Consultative Group of donors, under the chairmanship of the IMF and the World Bank, had decided to shift away

from the IMF-led stabilization program of 1966-69 and to combine broad-based economic reform and liberalization of the economy with large-scale balance of payments support and a generous rescheduling of the medium-term debt. The total package of external assistance required for committment in 1972 was estimated at $150 million. The US contributi was envisioned as $30 million in program loans, with direct US involvement in policy questions being minimized by the establishment of the World Bank as the principal external economic policy advisory agent (Agency for International Development: 1975, Vol. 1, 34-35).

The cedi was devalued in late 1971, but the rest of the reform program was cut short with the military coup in January 1972. The National Redemption Council, which came to power at that time, partially reversed the devaluation, repudiated much of the debt, imposed restrictior on private foreign investors, provided large subsidies for "essential" commodities, and otherwise undermined the structure of reform. Donors and creditors held up on their assistance plans awaiting resolution of the debt issue. Under the threat of complete repudiation, negotiations were entered into. They lasted two years during which foreign aid continued at only minimal levels.

There was another opportunity to deal comprehensively with the issue of policy reform in Ghana following the settlement of the debt situation in 1974. The donors appeared to be ready to commit over $100 million, and professional members of the World Bank staff were assisting Ghanaian economic policy and planning ministries. On the other hand, after the experience of the early 1970s, the government was more interested in concrete projects than in macroeconomic policy issues. Furthermore, the interests of the donors were shifting away from program loans towards

projects that were particularly likely to aid the poor, especially in rural areas. These types of projects took an especially long time to prepare in relation to the quantities of resources being transferred. Finally, there was a serious lack of coordination among donors, who frequently competed for projects rather than worried about structural reform. The opportunity for policy reform was thus missed, and the economic situation in Ghana continued to deteriorate.

Another stabilization program was attempted in September 1978 with a 58 percent devaluation, an austerity budget, and a stand-by agreement with the IMF, but this program was abandoned following the coup d'etat of June 1979. By this time, the correlation between devaluations and coups d'etat was deeply embedded in Ghanaian minds, and attempts at austerity measures alone proved useless in the face of massive price distortions (Morrison and Wolgin 1980).

Ivory Coast

The use of foreign aid to support policy reform in the Ivory Coast was in startling contrast to the experience in Ghana. The World Bank began project lending in the late 1960s, and by 1981 had made 41 loans and credits, mostly in agriculture and complementary infrastructure. Although the economic policy environment in the Ivory Coast was far superior to that in Ghana, a number of problems, discussed earlier, were beginning to appear by the mid-1970s. Many of these were identified in the Bank's 1977 basic economic report and in its reviews of external borrowing and investment policies and programs between 1978 and 1980. The government responded well to the Bank's advice during this period, reducing the size of the public investment program and the external borrowing to finance it. In addition, the government began to seek the

Bank's advice in devising a longer-term approach to the restructuring of the economy and the institutional framework to manage the process. This was a national consequence of the years of dialogue that had taken place at the project level over various aspects of economic policy.

The result was a World Bank Structural Adjustment Loan (SAL) which responded to the government's programs for wide-scale reform, including improved economic management of agriculture and industry, as well as a revised role for public enterprises. This loan of $150 million complemented an IMF Extended Fund Facility (EFF) program and paved the way for further lending by private banks and bilateral donor agencies to cover the expected external payments gap over a period of several years. Prior to approval of the loan, the Ivorian government undertook a number of specific policy reforms, including eliminating cash subsidies on cocoa and lowering the producer price of rice. Under the terms of its EFF agreement, the government also agreed to limit its borrowings of less than 12 years maturity. Further reforms included increasing budgetary discipline, centralizing public finances, strengthening the Ministry of Agriculture's capacity for sectoral planning and for project preparation and implementation, reforming the public enterprise sector, and improving the industrial incentives system.

17.5 Some Conclusions

The major conclusion of this comparative analysis of the impact of development assistance in Ghana and the Ivory Coast is that foreign aid is unlikely to be effective in achieving either donor or host country goals in the absence of an economic policy environment that is reasonably conducive to long term development. This is true regardless of whether aid is seen as a transfer of resources or as a means of implementing project packages involving a combination of capital, technology and managerial knowhow. When the policy environment is severely distorted, as it has been in Ghana on several occasions, it is difficult to find any type of foreign assistance that can be successfully implemented, except possibly for some training and investment in human capital that may prove valuable sometime in the future.

The donors cannot be absolved of responsibility simply because the existing policy envornment is inappropriate, however, since foreign aid can play an effective role in altering that environment. There were several occasions over the past two decades when that might have been the case in Ghana, but each time the opportunity was lost. At first, there was excessive focus on short-term stabilization through control of demand without enough attention to eliminating the fundamental distortions that were restricting supply. Later, after the debt settlement, donors concentrated on designing projects to aid the poor, oblivious to the fact that the poor could never benefit if the entire economy was running downhill. Throughout Ghana's history since independence, there have been deep misunderstandings on both sides.

Even in the Ivory Coast, where both project and program aid were highly effective during the 1960s and early 1970s, project aid was first

seen as the means to improve the policy environment threatening to retard growth in the latter half of the 1970s. Soon it became apparent, however, that the problems were sectoral or macroeconomic in nature and that it was inappropriate to deal with them at the project level -- even though experience with projects had helped to identify these problems and to build the mutual trust and confidence to overcome them. Ultimately, it was medium-term program assistance from both the IMF and the World Bank that was found to be most useful in undertaking the structural reforms necessary to promote development over the longer term.

Footnotes

1/ Stephen H. Hymer has argued that the colonial government's investments and policies in Ghana were largely unproductive and may even have retarded growth of the economy (Hymer, 1971: 129).

2/ The incremental capital-output ratio (ICOR) would more appropriately be estimated using investment net of depreciation. Unfortunately, data on depreciation are unavailable so that gross investment is used instead. This should result in a downward bias in the estimated coefficient of I or an upward bias in the estimated ICOR.

3/ Production is in fact higher than 230,000 mt since it is estimated that 40-50,000 mt are smuggled to Togo and the Ivory Coast each year (Economist Intelligence Unit, 1982: 12).

4/ By the late 1960's, oil palm was the Ivory Coast's major investment project taking 45 percent of all public agricultural investment. Rice investments during the same period (1967-70) comprised 17 percent, while cocoa, a traditional export received only 8 percent of total investment.

5/ From only 23,000 mt in 1960-63, pineapple production grew to 193,000 mt in 1971-74. One-third of the output was exported as fresh fruit, mainly to France, and the rest, or about 150,000 mt, was processed at three local plants for exports as canned product.

6/ Per diem in Ghana ranged in the fall of 1982 from $130 when local staff housing was provided up to $283 with hotel accommodations, compared to $88 in Abidjan, Ivory Coast (Standardized Regulations, Section 925, October 1982: 3-4).

7/ Part of this section is drawn from Pearson, Nelson, and Stryker (1979) which summarizes the literature available on the Ghanaian incentive system at the time of the mid-1970's and analyzes a substantial body of new data.

8/ The effective rate of protection can be written as:

$$\frac{\text{Value Added in Domestic Prices}}{\text{Value Added in World Prices}} -$$

If value added in world prices is negative but value added in domestic prices is positive, the ERP is less than minus one.

9/ The World Bank, Accelerated Development in Sub-Saharan Africa: An Agenda for Action, Washington, 1981: 121-33.

APPENDIX TABLE A-1

OFFICIAL FOREIGN CAPITAL FLOWS FOR GHANA (1971-1980)
($ million)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
GRANTS										
Investment	8.4	5.7	4.6	10.0	5.9	18.0	23.7	29.5	31.7	20.0
Technical assistance	15.9	14.9	17.6	19.7	25.9	27.4	29.2	37.4	35.4	44.9
Total	24.3	20.6	22.2	29.7	31.8	45.4	52.9	66.9	67.1	64.9
LOANS										
Concession	38.1	43.3	24.1	13.8	102.0	29.1	47.3	55.7	114.6	140.9
Other[a]	na	na	na	na	na	na	19.0	34.1	34.9	30.5
Total	38.1	43.3	24.1	13.8	102.0	29.1	66.3	89.8	149.5	171.4
Gross Official Flow	62.2	63.9	46.3	43.6	133.6	74.5	119.1	156.7	216.6	236.3
Debt Service	5.3	5.4	5.3	7.1	7.9	10.5	13.1	15.4	20.6	22.9
Net Official Flows	56.9	58.5	41.0	36.5	125.7	64.0	106.0	141.3	196.0	213.4

Source: OECD 1978: 80-81 and OECD 1981: 82-83

Note: [a] Other official flows are not reported for 1971-1976.

APPENDIX TABLE A-2

OFFICIAL FOREIGN CAPITAL FLOWS FOR THE IVORY COAST (1971-1980)
($ million)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
GRANTS										
Investment	10.0	34.5	13.6	25.2	16.8	15.6	17.4	11.8	24.1	25.1
Technical Assistance	23.8	26.8	35.7	39.4	55.2	54.2	57.3	61.6	83.7	101.4
Total	33.8	61.3	49.3	64.6	72.0	69.8	74.7	73.4	107.8	126.5
LOANS										
Concessional	23.2	15.5	23.0	20.9	41.6	49.7	42.4	73.3	67.8	100.0
Other[a]	na	na	na	na	na	na	136.2	117.8	102.3	188.4
Total	23.2	15.5	23.0	20.9	41.6	49.7	178.6	191.1	170.1	288.4
Gross Official Flows	57.1	76.9	72.4	85.5	113.6	119.4	253.3	264.4	277.9	414.9
Debt Service	6.0	28.6	9.0	9.5	13.0	11.2	22.2	29.7	34.5	44.8
Net Official Flows	51.1	48.3	63.4	76.0	100.6	108.2	231.1	234.8	243.4	370.1

Source: OECD 1978: 110,111 and OECD 1981: 108, 109.

Note: [a] The period 1971-76 does not report other official flows

APPENDIX TABLE A-3

TOTAL AID RECEIVED BY THE IVORY COAST (1960-1973)
(million CFAF)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973
GRANTS	3000	5165	3216	3594	2354	10584	2006	680	976	1044	2393	970	5045	2840
% of Total	51	56	57	34	37	62	49	15	3	13	12	5	19	8
LOANS	2891	4089	2391	6932	4016	6352	2101	3750	34640	7196	17435	18257	21425	31646
% of Total	49	44	43	66	63	38	51	85	97	87	88	95	81	92
TOTAL	5891	9254	5607	10526	6370	16936	4107	4430	35616	8240	19828	19227	26470	34486
% from France	65	48	73	44	49	35	83	57	26	15	27	26	19	15
Total in $[a] (million)	26.3	40.4	24.4	45.5	27.2	71.2	16.9	18.0	146.5	31.5	65.2	59.4	82.9	103.4

FOREIGN TECHNICAL ASSISTANCE PERSONNEL IN THE IVORY COAST (1960-1972)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972
TOTAL NUMBER OF PERSONNEL	1300	1215	1355	1432	1484	1692	1772	1936	2373	2577	2849	2966	3614
% from France	96.9	95.5	95.2	95.0	95.0	94.0	89.1	88.5	88.5	87.3	86.9	86.3	85.1

Source: The Republic of France, Ministry of Cooperation, Côte d'Ivoire; Données Statistiques sur les Activités Economiques, Culturelles, et Sociales, Paris, Janvier 1976 (p. 139).

Note: [a] 1967-69 = 100, constant dollars

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APPENDIX TABLE A-4

US OVERSEAS LOANS AND GRANTS AND ASSISTANCE FROM INTERNATIONAL ORGANIZATIONS TO GHANA (1958-1981)

OBLIGATIONS AND LOAN AUTHORIZATIONS IN $ MILLION (current)

	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	(1958-[illegible] Total
USAID[a]	0.2	1.0	0.8	21.4	63.9	1.6	0.5	1.0	1.5	23.9	19.3	4.5	17.7	18.6	2.6	22.0	2.6	2.5	11.9	7.5	6.9	7.6	10.0	5.0	$254.90
FOOD FOR FREEDOM[b]	—	0.7	0.1	1.0	0.7	0.6	2.0	0.8	7.0	8.6	14.2	19.1	12.1	1.7	16.7	0.9	2.1	2.8	3.9	8.7	3.0	14.6	15.7	19.0	$150.00
OTHER ECONOMIC AID	—	—	—	—	0.5	0.7	0.8	0.9	0.7	1.2	1.1	1.1	1.4	1.8	1.8	1.5	1.3	1.8	1.6	2.4	2.3	2.0	1.8	1.8	$ 28.5
TOTAL	0.2	1.7	0.9	22.4	65.1	2.9	3.3	2.7	9.2	33.7	34.6	24.7	31.2	22.1	15.1	24.4	6.0	7.1	17.4	18.6	12.2	24.2	27.5	25.8	$433.40
OF WHICH LOANS	—	—	—	—	65.0	—	—	—	0.2	1.5	2.8	5.2	—	—	—	0.6	—	11.[illegible]	—	27.6	—	—	—	—	$114.8[illegible]
INTERNATIONAL DONORS	0.2	0.6	0.3	1.1	48.4	3.7	1.9	3.7	2.7	3.3	12.7	7.8	15.5	9.7	1.0	17.7	20.5	61.2	79.9	71.9	2.8	21.1	74.7	31.3	$493.70
WORLD BANK GROUP	—	—	—	—	47.0	—	—	—	—	—	10.0	6.0	14.6	7.1	—	15.6	13.0	49.[illegible]	76.5	57.0	—	19.0	54.5	29.0	$398.30

Source: U.S. Department of State, AID, U.S. Overseas Loans and Grants (Green Books), Washington, D.C., various.

Notes: [a] USAID and its predecessor agencies

[b] Later Food for Peace (PL 480)

[c] Includes some OPIC direct loans.

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APPENDIX TABLE A-

US OVERSEAS LOANS AND GRANTS AND ASSISTANCE FROM INTERNATIONAL ORGANIZATIONS TO THE IVORY COAST (1961-1981).

OBLIGATIONS AND LOAN AUTHORIZATIONS IN $ MILLION (current)

	1961	1962	1963	1964	1565	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	(1961-81) Total
USAID[a]	2.1	2.1	2.0	6.0	-0.1	0.3	0.8	0.2	0.1	—	—	—	—	—	—	—	0.1	0.1	0.1	--	—	$13.8
FOOD FOR FREEDOM[b]	—	—	—	2.1	4.0	1.8	—	—	2.1	—	1.3	—	1.0	0.7	1.2	0.5	0.1	0.2	0.1	--	—	$15.1
OTHER ECONOMIC AID	—	0.4	0.6	1.0	0.6	0.6	0.6	0.7	0.7	0.7	0.8	0.8	0.9	1.2	1.4	1.3	1.5	1.3	1.4	1.5	1.3	$19.3
TOTAL	2.1	2.5	2.6	9.1	4.5	2.7	1.4	0.9	2.9	0.7	2.1	0.8	1.9	1.9	2.6	1.8	1.7	1.6	1.6	1.5	1.3	$48.2
LOANS	—	—	4.6	--	--	3.0	0.2	31.5	5.1	16.1	—	20.8	2.0	32.3	5.1	2.5	6.7	—	37.4	--	95.3	$262.60
INTERNATIONAL DONORS	14.8	6.8	8.0	3.0	38.5	8.4	13.0	10.1	31.3	27.7	35.0	35.8	32.2	64.8	45.7	13.4	89.2	107.5	60.8	87.9	161.8	$895.70
WORLD BANK GROUP	—	—	—	—	0.2	—	—	5.8	17.1	18.5	27.9	17.5	7.5	33.4	79.5	7.1	90.9	82.2	59.1	65.8	151.0	$657.50

Source: U.S. Department of State, AID, U.S. Overseas Loans and Grants (Green Books): Washington, D.C., various

Notes: [a] USAID and its predecessor agencies

[b] Later Food for Peace (PL 480)

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