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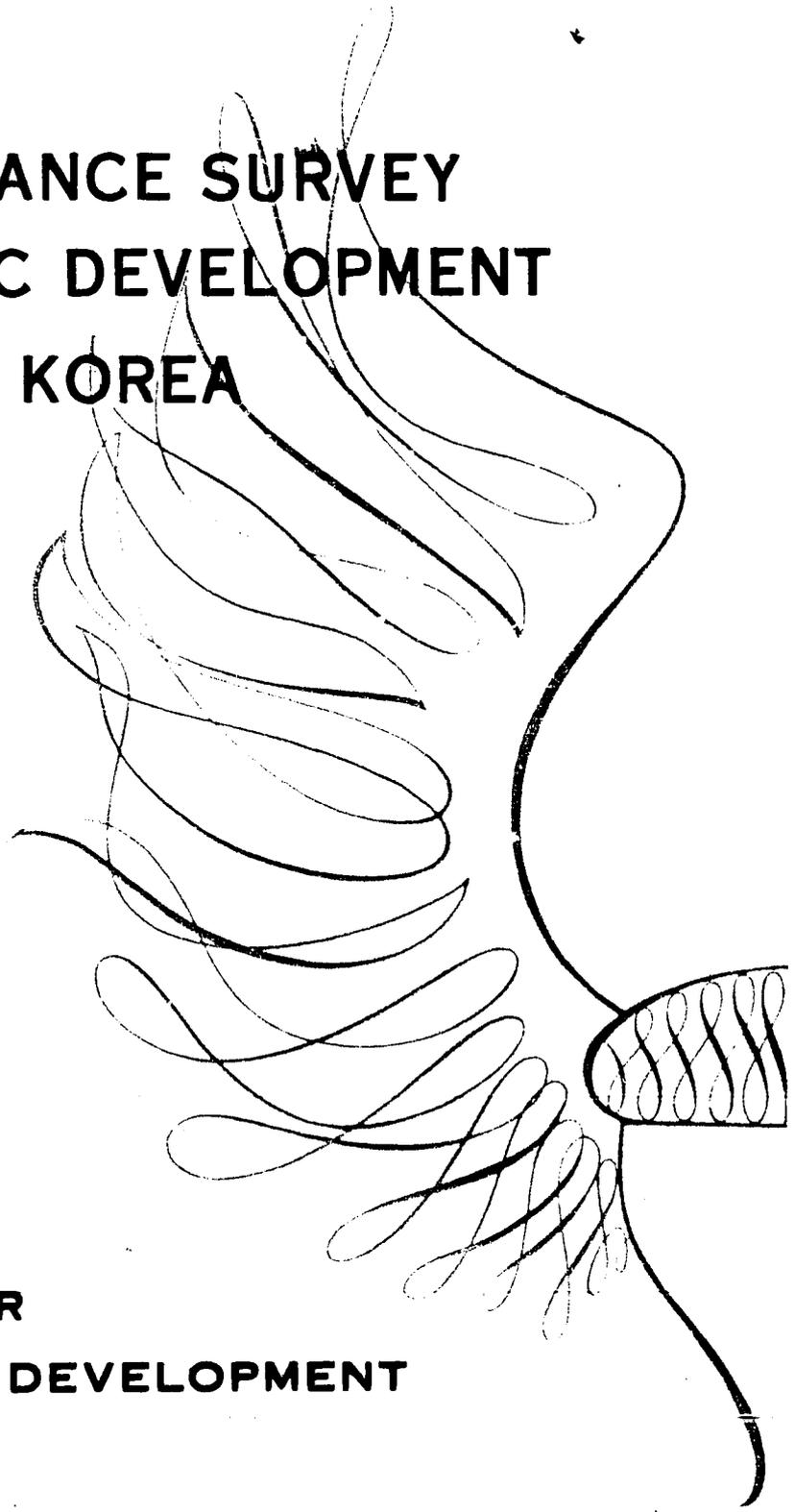
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RECONNAISSANCE SURVEY OF ECONOMIC DEVELOPMENT PLANNING IN KOREA

A.I.D.
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Room 1656 NS

report to

**THE AGENCY FOR
INTERNATIONAL DEVELOPMENT**



A R T H U R D. L I T T L E, I N C.

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REPORT OF AN ARTHUR D. LITTLE
RECONNAISSANCE SURVEY
OF
ECONOMIC DEVELOPMENT PLANNING
IN KOREA

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May 1962

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Arthur D. Little, Inc.



TABLE OF CONTENTS

	<u>Page</u>
List of Tables	v
I. SUMMARY	1
A. PURPOSE AND SCOPE	1
B. CONCLUSIONS	1
C. GENERAL RECOMMENDATIONS	2
II. BACKGROUND OF ECONOMIC DEVELOPMENT PLANNING IN KOREA	3
A. THREE-YEAR PLAN	3
B. THE DRAFT FIVE-YEAR PLAN, MAY 1961	6
C. BACKGROUND OF THE FIRST FIVE-YEAR PLAN, JANUARY 1962	10
III. KOREA'S FIVE-YEAR DEVELOPMENT PLAN	13
A. KOREA'S APPROACH TO DEVELOPMENT PLANNING	14
B. SIZE AND CHARACTERISTICS OF THE PLAN	17
C. RESOURCES AND THEIR USES	31
D. FINANCING THE PLAN	37
E. SECTOR PROGRAMS	50
F. IMPLEMENTING POLICIES AND PROCEDURES	69
IV. EVALUATION OF THE FIVE-YEAR PLAN AND ITS METHOD OF PREPARATION	73
A. PRINCIPAL ELEMENTS IN THE PLANNING PROCESS	74
B. EXAMPLES OF FAULTY PROJECT PLANNING IN THE FIVE-YEAR PLAN	86
C. KOREAN STATISTICS	92

TABLE OF CONTENTS (Continued)

	<u>Page</u>
V. ORGANIZATION AND ADMINISTRATION OF ECONOMIC PLANNING IN KOREA	99
A. ROLE OF ECONOMIC PLANNING IN ECONOMICALLY DEVELOPING COUNTRIES	99
B. ECONOMIC PLANNING PROCEDURES AND METHODS IN KOREA	102
C. PROPOSED REORGANIZATION OF ECONOMIC PLANNING IN KOREA	105
D. PROPOSED ECONOMIC PLANNING ADVISORY GROUP	113

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
II-1	May 1961 Five-Year Plan	8
III-1	Planned Development Expenditures: 1962-66 by Type of Ownership	21
III-2	Planned Development Expenditures: 1962-66 by Source of Funds	22
III-3	Estimated Gross Investment, 1960-66	23
III-4	Population, Employment and Living Standards	24
III-5	Major Physical Targets, 1962-66	26
III-6	Total Investment Program, 1962-66	28
III-7	Planned Changes in the Structure and Growth of the Korean Economy, 1962-1966	30
III-8	Estimated Resources and Planned Uses, 1962-66	33
III-9	Sources of Available Resources	34
III-10	Planned Use of Available Resources	34
III-11	Estimate of Gross Capital Formation and Domestic Savings, 1960-66	35
III-12	Foreign Assistance Requirements and Sources, 1962-66	36
III-13	Distribution of the National Income	38
III-14	Estimated Sources and Uses of Funds for Development, 1962-1966	39
III-15	Estimated Current Government Revenues and Expendi- tures, 1962-1966	40

LIST OF TABLES (Continued)

<u>Table No.</u>		<u>Page</u>
III-16	Financing the Public Sector, 1962-66	41
III-17	Financing the Private Sector, 1962-66	42
III-18	Proposed Investment in the Private Sector, 1962-66	43
III-19	Estimated Gross National Product, 1960, 1962 and 1966	45
III-20	Estimated Exports and Imports of Merchandise, 1960, 1962 and 1966	46
III-21	Estimated Invisible Trade, 1960, 1962 and 1966	47
III-22	Estimated Balance of Payments	48
III-23	Proposed Financing of Planned Imports	49
III-24	Proposed Investment in Agriculture, Forestry and Fisheries, 1962-66	52
III-25	Proposed Investment in Mining	54
III-26	Estimated Demand and Production of Industrial Products	56
III-27	Proposed Fixed Investment in Principal Manufacturing Industries	57
III-28	Investment Schedule-Electric Power	62
III-29	Electric Power Development Program	63
III-30	Transportation Development Program, 1962-1966	64
III-31	Communications Program	66
III-32	Planned Investment in Communications, 1962-1966	66
III-33	Planned Investment in Selected Public Services, 1962-1966	68

I. SUMMARY

A. PURPOSE AND SCOPE

This report of the Arthur D. Little, Inc. Korean reconnaissance survey, made between December 6, 1961 and March 5, 1962, (a) reviews and analyzes past and present efforts toward economic development planning and administration in Korea, (b) reviews the need for and feasibility of providing technical assistance in economic development planning and implementation, and (c) lays out a development planning technical assistance project.

B. CONCLUSIONS

Past efforts at economic planning in Korea (including the recent preparation of the first five-year plan) have been marked by inadequate preparation, the absence of a comprehensive development policy, and inadequate organization and administration, in both the training and competence of personnel and in the junior status of the planning personnel vis-à-vis other government officials with whom they have been called upon to work.

The various documents to which the term "economic plan" has been attached have, in the past, been little more than lists of projects uncritically accepted by the economic planners from the various ministries. The present five-year plan, however, differs somewhat from previous plans in that it is cast in an aggregate framework. Nevertheless, it remains essentially a list of projects (for the most part already included in previous plans), since projections of gross national product (GNP), investment and consumption are derived from a growth rate decreed by the Supreme Council and a similar fiat that consumption must be permitted to increase only within very narrow limits in the next five years. To achieve the necessary arithmetical balance, it has been assumed that private investment will fill the investment gap that remains after the projects submitted by the ministries have been added up. Unfortunately, the Government of Korea has not yet defined a clear development strategy that will enable it, in a purposeful fashion, to establish and apply investment priority criteria or to influence the nation's economic and financial policies. A particularly important defect in Korea's planning efforts has been the absence of clearly defined policies or procedures for implementation of the plan.

Despite the serious basic defects in the first five-year plan, we believe that its preparation and promulgation may prove to be important milestones in Korea's economic and social development. For the first time, a set

of goals and targets has been put before the Korean people by a government determined to strengthen the country's economy and provide higher living standards. This honesty and determination of purpose greatly outweighs the technical deficiencies of the first five-year plan.

C. GENERAL RECOMMENDATIONS

The principal recommendations of this report are that the Government of Korea should:

1. Strengthen its economic planning mechanism at an early date, and
2. Secure the services of an Economic Planning Advisory Group to work within the Economic Planning Board.

II. BACKGROUND OF ECONOMIC DEVELOPMENT PLANNING IN KOREA

Economic planning by the Government of Korea is of recent origin. Apart from a lengthy schedule of investment projects developed in 1952-53, and a number of short and long-term sector programs proposed by individual ministries, the first organized attempt at country-wide development planning in Korea was initiated in the Spring of 1958¹. Since then, economic planning has been carried on more or less continuously. Three separate, although necessarily related, plans have been developed--a three-year plan and two five-year plans. However, only the recently completed five-year plan has been adopted officially.

A. THREE-YEAR PLAN

During the latter part of 1957, the Korean government decided that its objectives would be better served by longer range economic development programming rather than the annual sector or project approach employed until that time. Accordingly, on March 13, 1958, an Economic Development Council was established in the Ministry of Reconstruction. The Minister of Reconstruction was named chairman, and an acting chairman was designated executive director. The Council was organized into a secretariat and six operating divisions:

Coordination
Agriculture, Forestry and Fishery
Mining and Industry
Public Utilities and Enterprises
Commerce and Trade
Public Finance and Banking
Water Resources

1. During 1953, Robert R. Nathan Associates, as consultants to the United Nations Korean Reconstruction Agency, prepared a fairly comprehensive five-year plan for Korea. However, this plan was largely the work of the consultants and, in any event, was not adopted by the Korean Government or UNKRA. The broad outline of this plan is contained in an unpublished report to UNKRA titled "Preliminary Report on Economic Reconstruction of Korea, 15 December 1952." The final report, "An Economic Program for Korean Reconstruction," was released by the United Nations in June 1954.

The professional staff of the Council originally numbered 17, including seven councilors as chiefs of the operating divisions. The staff had increased to about 50 professionals by 1960. For the most part, the Council was staffed by relatively young economists and statisticians. An advisory group of about 30 prominent persons from universities, business and government was appointed to assist the Council. In September 1959, ICA provided the Council with a five-man technical advisory group from the University of Oregon.

In Broad terms, the Council was expected to develop a long-term economic development plan for Korea, prepare detailed government investment programs for the annual budget, and conduct supporting economic research.

Shortly after the Council was formed in March 1958, work began on the first three-year program of what was expected to be a seven-year economic development plan. The first draft of the three-year program was completed in January 1959, and a final draft was submitted to the Cabinet in April 1959.

The details of this plan are not important for present purposes.¹ In general, the plan estimated that the gross national product could be increased by 22.6% over 1958, at an average annual rate of 5.2% during the plan period, 1960-62. To accomplish this, the plan visualized an increase of more than 60% in gross capital formation, largely in the private sector, very little increase in per capita consumption, and a net decrease in government consumption expenditures.

The basic objectives of the plan were not clearly stated. However, it may be inferred that a major objective was to start the Korean economy on the way toward decreasing dependence upon external assistance. Thus, the plan estimated that exports, chiefly agricultural products, fish and metals, would amount to \$63.6 million in 1962, an increase of 270% over 1958. Foreign aid and Development Loan Fund (DLF) loans were expected to decrease from \$350 million in 1958 to \$280 million in 1962. Substantial increases in tax revenues and private savings were visualized. To stimulate savings, the plan recommended that total tax collections, as a percentage of GNP, be decreased and that taxes be levied on consumption expenditures.

1. The full text of the three-year plan was not translated into English. A short summary of objectives and the principal aggregate values was prepared in English by EDC in January 1960.

In the mining and industrial sectors, the plan emphasized increased output of coal, iron ore, fertilizer and cement. Considerable new investment in transportation was also planned. Surprisingly, very little increase in electric power production was scheduled, although power was then clearly a major obstacle to industrial production and expansion.

The underlying economic development theory or strategy of the three-year plan was the achievement of "balanced growth." In fact, this concept was taken so seriously that great care was exercised to maintain the base-year relationships of production, consumption, savings and investments, as well as several of the leading industrial sectors.

The planning process and the analytical techniques used to prepare the three-year plan were quite inadequate for the task. For example:

1. The aggregate estimates of production, consumption and investment were completed by determining the total annual increase in GNP required to achieve an annual growth of 5.2%, applying to this increase a capital output ratio of 3.3, and estimating total consumption as the difference between total annual output and investment.

2. The annual output for most of the individual sectors during the plan period was derived mainly by extrapolating past rates of growth. This technique, as an expression of the "balanced growth" concept, must inevitably result in a plan which would largely preserve the existing business and industrial structure and relationships.

3. The division of estimated new investment between the government and private business was made by accepting virtually all of the projects proposed by the several ministries and treating the balance of the investment in each sector as a residual to be accounted for by private business.

4. The plan provided virtually no criteria by which the relative importance, or investment priority, of sector programs or projects could be judged. The plan was therefore essentially a collection of unevaluated projects.

5. The Economic Development Council was not staffed to make technical evaluations and its administrative status was far too low for the staff to insist that such evaluation be made by the ministries.

No official action on the three-year plan was taken for many months after its completion and submission to the Cabinet in April 1959. At that time, the government was preoccupied with preparations for the 1960 elections and the problem of dealing with the growing undercurrent of opposition. As 1959 ended, serious planning activity in the Economic Development Council virtually ceased.

Most of the staff were political appointees who turned their attention to political matters. Many of the more able staff members secured positions in other governmental agencies or private business.

When the elections returned the Liberal Party to power, (April 15, 1960), the Cabinet approved the three-year plan. Four days later, the Seoul students staged their march on the Capital, the government fell, and little more was heard of the three-year plan.

B. THE DRAFT FIVE-YEAR PLAN, MAY 1961

During the five and one-half-month period of interim government, the principal administrative problems were the preservation and operation of the governmental machinery and the maintenance of law and order. The politics of the coming election were the main concern of Korean public officials and, as might be expected, serious economic planning received little top-level attention. Nevertheless, several economists in the Economic Planning Council, who did not agree that "balanced growth" was an appropriate concept for planning Korea's development, began work on a new five-year plan based on the "leading sector" and "take-off" theories of economic development. This effort was sporadic but did result in preparation of an aggregative-plan framework, including allocation of the total estimated investment among the major economic sectors.

The Liberal Government had placed substantial emphasis upon planning and the new administration continued this policy. The Ministry of Reconstruction was renamed the Ministry for Economic Development, and the Vice Minister of the new agency was appointed Chairman of the Economic Development Council, which was enlarged and restaffed.

In December 1960, the Prime Minister requested preparation of a five-year development plan; the Economic Development Council was subsequently ordered to complete the plan by early May 1961. The Council's senior staff members urged that the planning period be extended to at least one year and that a well-qualified staff be organized under a politically responsible director. These recommendations were not accepted, however, and the task of preparing a five-year plan began in late January; it was completed May 10, 1961.

The planners rejected the philosophy and strategy of the three-year plan, including the concept of balanced growth. Instead, the plan proposed a five-year period of austere consumption and a savings program designed to provide domestic capital for substantial investment in a few basic industrial sectors, particularly power, coal, cement, oil refining and steel. The plan also aimed at increased agricultural output and considerably higher export earnings.

This unbalanced, leading-sector approach visualized Korea's economic development as a process of industrialization extending through several five-year periods. The first five-year program was expected to provide a base for the subsequent growth of secondary and consumer goods industries and the service sectors. Thus, the stated purpose of the plan was to create an industrial foundation for eventual achievement of sustained balanced growth and economic self-sufficiency.

The three-year plan had emphasized increased employment as its principal objective, with labor the key productive factor. The draft five-year plan, however, was developed around a capital-oriented model using the familiar Harrod-Domar equation. An over-all income target was estimated from examination of past aggregative trends, particularly population growth. A capital-output ratio was then applied to the income target to estimate total investment which, in turn, was allocated to industrial sectors; priority was given to the industries previously identified as bottle-necks to long-term economic growth and these industries were selected for special emphasis. Lists of specific projects were then supplied by the economic ministries, and residual estimated investment was allocated to private business and industry.

Compared to the three-year program, the five-year plan assigned a much larger direct investment role to the Korean government. This was due partly to the emphasis placed on industrial sectors monopolized or dominated by the government, and partly to the belief that strong government participation and guidance would be required to meet the proposed development goals.

The plan called for a total increase of about 47% in the gross national product from the base year, 1960, to the target year, 1966, at an average annual rate of 5.6%. The five-year program period extended from 1962 to 1966, during which the average annual growth rate was estimated at 6.1%. Total capital formation was estimated to increase from about 13% of GNP in the base year to 19.3% in the target year. Private consumption was expected to increase by about 33%, but the plan allowed for almost no increase in per capita consumption. The plan assumed no increase in the price level during the program period, continued Korean and United States support of the ROK armed forces, availability of U. S. grants and loans at a somewhat higher level than formerly, and increased availability of loans and private investment funds from countries other than the United States. The essential framework of the plan is shown in Table II-1.

The plan acknowledged that most of the implementing programs, policies and procedures remained to be developed. Thus, the plan pointed out the need for improving the governmental structure and public administration, for developing monetary and fiscal policies and programs for the development of agriculture and private industry, and for improving managerial and technical

TABLE II-1

MAY 1961 FIVE-YEAR PLAN

	<u>Base Year</u> <u>1960</u>	<u>Target</u> <u>Year</u> <u>1966</u>	<u>Percent</u> <u>Increase</u>
Population (MM)	24.3	29.5	21.6
Annual increase (percent)	2.9	2.7	--
Labor force (MM)	7.6	10.5	36.8
<u>Gross National Product¹</u>	<u>1,164.8</u>	<u>1,709.7</u>	<u>46.8</u>
Agriculture, forestry and fisheries	448.4	587.2	30.9
Mining	17.1	50.3	194.0
Manufacturing	161.5	286.4	177.0
Construction	55.2	119.8	177.0
Electric power	8.0	22.1	176.3
Transportation and communications	38.3	77.5	102.0
Defense and public administration	52.0	63.2	21.6
Housing	70.8	92.9	31.2
Services and other	313.5	392.0	25.0
<u>Planned Output--Leading Sectors</u>			
Electric power (M/kwh)	1,686	5,090	201.9
Coal (M tons)	4,156	11,500	178.0
Cement (M tons)	363	1,650	350.0
Fertilizer (M tons)	--	255	--
Oil refining (M gal)	--	252,000	--
Rayon (M lb)	--	7,920	--
Steel ingots (metric tons)	38,170	270,000	607.0
Rice (M suk)	16,602	21,846	31.6
Freight movements (MM ton/km)	3,527	6,842	94.0

TABLE II-1 (Continued)

	<u>Base Year</u> 1960	<u>Target</u> Year 1966	<u>Percent</u> <u>Increase</u>
<u>Aggregate Expenditures</u> ²			
Consumption	1,078.9	1,431.1	32.6
Investment	169.7	293.6	22.5
Private	111.8	185.8	66.2
Government	57.9	107.8	86.2
Change in inventories	-21.7	35.7	--
Balance of payments deficit	<u>-62.1</u>	<u>-50.7</u>	<u>-18.4</u>
 Total	 1,164.8	 1,709.7	 46.8
 <u>Foreign Exchange Receipts (\$ MM)</u>			
Exports of merchandise	19.7	75.7	284.3
Invisible trade ³	85.9	133.8	55.8
Grants and Loans ⁴	<u>243.9</u>	<u>278.7</u>	<u>14.0</u>
 Total	 <u>349.5</u>	 <u>488.2</u>	 <u>39.0</u>
 Balance of Payments (\$ MM)	 <u><u>-227.4</u></u>	 <u><u>-204.4</u></u>	 <u><u>-10.1</u></u>

1. GNP estimates in billions of Hwan at 1955 constant prices.

2. Billions of hwan at 1955 constant prices.

3. Chiefly sales to UN forces.

4. Primarily from the United States.

skill in government and private enterprises. Reference was also made to the need for detailed plans for the National Construction Service, attracting foreign capital, revising Korea's education system, and reorganizing the development planning mechanism. That plan, however, did not indicate either the nature of these essential elements of development programming or how or by whom they were to be accomplished. For this reason, the draft plan, at best, was mainly a framework of assumed or derived statistical values. It served an important purpose, however, in that it provided the development philosophy, the planning method and much of the sector detail for the present five-year plan. The analysis of this latest plan (presented in the following section) may be considered to also apply essentially to the draft May 1961 plan.

C. BACKGROUND OF THE FIRST FIVE-YEAR PLAN, JANUARY 1962

Following the change of government in May 1961, the Supreme Council for National Reconstruction was formed. The Supreme Council immediately assumed full responsibility for all legislative, administrative and judicial functions, and proceeded to administer the country through a group of committees and offices which, for administrative functions, correspond essentially to the ministerial structure of the civilian government.

An early decision of the Council was to make the economic and social development of Korea the central purpose and objective of national policy and to this end to place principal reliance upon economic development planning. It was therefore decided to organize the economic planning function within the Supreme Council under the jurisdiction of a sub-committee of the Finance and Economy Committee. Accordingly, a group of four economists, three from the Economic Development Council and one from the Finance Ministry, was assigned to the sub-committee to review the draft plan and the over-all planning situation and to prepare a new five-year plan for official consideration. As work proceeded, the matter of the organizational placement of the planning function was again raised. The principal question was whether the detail of the planning process and the day-to-day relationships with the ministries was appropriate to the policy and decision-making role of the Supreme Council. The issue was resolved by placing the planning functions in the administrative branch of government. Accordingly, the Economic Development Council was reorganized to form the present Economic Planning Board. The Board is headed by a minister having the status (but not the title) of Deputy Prime Minister. In addition to development planning, the Board has responsibility for the national budget, attraction of foreign investments, statistics, coordination of foreign aid, the National Reconstruction Service and the Office of (government) Procurement.

The Economic Planning Board was established early in July 1961. In the meantime, the economic planning staff in the Supreme Council had proceeded

to develop the framework of a revised five-year plan. This framework included the broad strategy and objectives, an average annual growth rate, aggregate country-wide values for production, consumption, savings, investment and balance of payments, and investment and output estimates for the principal individual sectors. The plan framework was turned over to the Economic Planning Board late in July, with orders to complete the plan within two months and to do so without modification of the target growth rate or the values assigned to the elements of the equation by which this rate was translated into the required aggregate investment.

The Planning Board began its assignment immediately and, by working virtually around the clock, completed a draft of a five-year plan by late September 1961. On September 29, the plan was submitted for review to an Economic Advisory Council, a large group of university professors and government officials concerned with economic affairs. The Council was given very little time to examine the plan prior to the initial meeting and it is understood that very little constructive criticism was received. The Council approved the plan on October 14, 1961. During the following week the Economic Planning Board increased the proposed investment in electric power at the request of the Prime Minister.

On October 20, 1961, the plan was submitted to the Cabinet. Several differences of opinion developed between the economic ministries and the Economic Planning Board. They were resolved in a series of conferences called by the Planning Board from October 20 to November 7, 1961.

On November 8, 1961, the plan was submitted to the Supreme Council where it was reviewed in some detail during the balance of November and throughout most of December. Some changes were made in the project detail of the plan and the scheduling of projects. However, in terms of its major dimensions, the plan was approved by the Supreme Council essentially as drafted by the Economic Planning Board. On January 11, 1962, a summary of the plan was released to the press.¹ The Korean newspapers have since devoted a great deal of space to the plan and its implementation in news stories, editorials and special analyses. By and large, the press reaction has been favorable, although some newspapers have suggested that the plan may be beyond Korea's resource capabilities; concern has also been expressed about the heavy emphasis upon primary industry, as compared to agriculture, and the failure of the plan to provide for any increase in per capita consumption.

1. "Summary of the First Five-Year Economic Plan," Government of Korea, January 11, 1962.

The Korean business community, although critical of some of the details, also appears to support the purposes and objectives of the first five-year plan.

During the Fall and early winter months of 1961, when the final version of the five-year plan was being developed, the Korean government was also preparing its 1962 budget. The budget was completed and approved during the final week of December 1961. Although only a general outline of the budget has been translated into English, it is our view that it supports and is generally consistent with the targets of the first year of the five-year plan. In this connection, it should be noted that the principal governmental agencies for capital investment in Korea are the government corporate enterprises whose fiscal affairs are managed outside of the general budget. Also, in the Korean budget, process funds are not actually made available until voted under a separate appropriating enactment.

III. KOREA'S FIVE YEAR DEVELOPMENT PLAN

Although Korea's present five-year plan is essentially a revised version of an earlier plan, it nevertheless represents a great deal of intensive effort by the Economic Planning Board and a great many persons in other parts of the central government.

It was hastily prepared and contains a minimum of textual material. Consequently, information about certain elements, notably those relating to objectives, strategy, methods, technique and priorities, has been obtained through interviews with planning officials, the economic ministers, bureau and section heads and officials of public enterprises and banking institutions. To some extent, it has been necessary to arrive at conclusions regarding certain aspects of the plan through inferences drawn from the sector and project detail.

For the most part, the following outline of the plan follows the definitions and classifications used by the Korean planning officials. A more meaningful view of the proposed development program could be gained by reorganizing and reclassifying certain of the data and by preparing several additional tables. However, this has not been possible, in part because very little of the underlying data has been translated into English, and in part because even minor reclassification of the present investment schedules would involve a large number of additional changes throughout the entire plan.

The following definitions and classifications are particularly important and should be kept in mind in reviewing Korea's plan:

1. In dividing investment and output between the public and private sector, public enterprises such as electric power and coal are classified as private activities although they are under public control. Ordinarily, programs for public enterprises are planned in detail as part of the government's investment responsibilities or, as in Pakistan's Second Five-Year Plan, classified separately as semi-public enterprises. The procedure followed by Korea overstates, by some 20%, the total investment allocated to the private sector.

2. The Korean plan classifies the total development outlay into three major industrial sectors--primary, secondary and tertiary. The primary industries are agriculture, forestry and fisheries; secondary industries include mining, steel, fertilizer, ore refining, machinery, general manufacturing and construction; and the tertiary sector consists of electric power, transportation, communications, education, health and other public services. It is understood that this breakdown was dictated by the shortage of planning officials and the lack of experience and skills of those available. It is based on a system of classification developed by Colin Clark in his book The Conditions of Economic Progress.

3. It seems that the Korean planners have not made a clear distinction between capital expenditures and outlays for certain current expenditures such as repairs and maintenance. This is not an easy distinction to make; nevertheless, it is important because capitalization of necessary recurring expenditures tends to conceal such expenditures and overstate their income producing effect.

A. KOREA'S APPROACH TO DEVELOPMENT PLANNING

1. Objectives and Strategy

The plan document identifies Korea's development objectives as follows:

"The basic objectives of the Plan are to rectify and avoid existing and potential social and economic vicious circles, and to provide a ground for the erection of a self-sustaining economy."¹

This, of course, is an extremely general statement and it is therefore necessary to examine the conceptual framework or strategy of the plan and the pattern of resource allocation it proposes in order to judge the underlying purposes and objectives. Following this approach, Korea's plan may be characterized as follows:

a. The plan is viewed as the first of a series of five-year plans for Korea's long-range development. This development is visualized primarily as a process of industrialization by which Korea is expected to pass through successive growth "stages" toward eventual sustained economic advancement and self-sufficiency.

b. The principal objective of the present plan is to carry the Korean economy through the first five-year "stage" of industrialization by establishing a base of primary industries, particularly electric power, steel, coal, cement

1. "First Five-Year Economic Plan, 1962-66," Economic Planning Board, Republic of Korea, 1962, p. 4.

and chemicals, and increased agricultural output to the point where Korea will be self-sufficient in food. The plan places over-riding emphasis on electric power in the belief that electric power is not only essential to industrialization but is also a reliable indicator of industrial growth.¹ Thus, with ample electric power and transportation facilities and with other basic industries in place, Korea is expected to be in a position to accelerate development in the secondary and final goods sectors during the succeeding five-year periods.

c. It is hoped that the plan will serve to cut the "vicious circle of poverty" by placing major emphasis upon those "leading sectors" that have been identified as the principal bottlenecks to Korea's industrial advance. A very rapid increase in the growth of the economy is postulated, but with relatively little increase in the output of consumer goods and per capita consumption. The plan calls for austere living and maximum savings and investment in order to strengthen the Korean economy.

d. Within this primary objective of developing basic and heavy industry additional plan objectives may be identified as follows:

1. Substantial expansion of employment opportunities.
2. Increased earnings for farm households and reduction of other inequalities in income and wealth.
3. Maintenance of Korea's armed forces at the present level.
4. Improvement in the balance of payments.

e. The plan states that the development program will be carried out under an economic system characterized as "guided capitalism." Private enterprise is to be preserved and encouraged. However, the program emphasizes "public sectors which are under government control while anticipating 'spill-over effects' upon the private sectors, and the voluntary, induced development of the latter guided by the government as necessary."²

1. See Yo Chan Song, "Five-Year Plan and Economic Development," Korean Affairs, February/March 1962, p. 7.

2. "First Five-Year Economic Plan," p. 4.

2. Assumptions

The plan is based upon a number of explicit and implicit assumptions, of which the more important are as follows:

a. Details of the plan are expressed in terms of estimated 1961 prices. It is thus assumed that the general price level will not change during the plan period. This assumption does not, of course, exclude the possibility of changes in relative prices.

b. The forecasts of agricultural outputs assume average weather conditions for all crops.

c. It has been unilaterally assumed that the sizeable amounts of foreign aid, loans and foreign investment required under the plan will be available both in total and in the amounts allocated to the individual projects.

d. The annual growth of population during the plan period has been estimated at 2.88%. It is assumed that this rate will decline to 2.74% by the end of the target year, in response to population control measures.

e. The projected labor force and employment estimates assume that "the sum of the rates of increase in employment and productivity determines the rate of economic growth."

f. The plan assumes that the ways and means of mobilizing the required capital and skilled manpower and of effecting essential social and institutional changes can be effectively developed during the plan period.

g. It is assumed that the present exchange rate of 1300 Hwan to the U. S. dollar will not change during the plan period and that the 1961 price relationships provide a reasonably accurate measure of the development value of available resources.

3. Planning Methods and Techniques

Korea's five-year plan is not informative regarding the planning procedures employed. Given the extremely short planning period and the lack of data, it is to be expected that the planners were forced to rely heavily upon assumptions, simple models and other short-cut devices.

In general, the plan was developed in three stages. In the first stage, a plan framework was prepared by the Advisory Committee of the Finance and Economy Committee of the Supreme Council. This framework was then turned

over to the Planning Bureau of the Economic Planning Board for development of sector and project details. The final stage consisted of a series of reviews and final adoption by the Supreme Council. The principal steps and techniques used in this procedure may be outlined broadly as follows:

a. Development of the Plan Framework

1. An average annual growth rate of 7.1% for the period 1962 to 1966 was adopted as a feasible over-all growth target. The incremental aspects of economic growth were recognized by estimating that the growth rate would increase from 5.7% in the first year to 8.3% in the target year. These rates were established from an examination of past rates of growth and the underlying aggregate values and the assumption that elimination of corruption would produce a sizeable increase in the availability of foreign capital.

2. The annual increases in the gross national product required to meet these rates were then computed. The base year used was 1960, largely because data was not available for 1961. In the plan, 1961 is designated as a "blank" year with an estimated growth rate of -0.1%.¹

3. The total and annual investment required to achieve the over-all rate of growth was calculated by applying a single capital-output ratio to the estimated increases in the GNP. Domestic savings were computed as residual values after allowing for government consumption and a slight increase in per capita consumption, taking into account the projected increase in population. Capital imports were then assumed to be the amounts required to close the gap between total domestic savings and total investment.

4. The estimated annual amounts of investment were next allocated to the primary, secondary and tertiary areas by applying separate capital-output ratios to each area. In this procedure, consideration was given to the leading sectors selected for special emphasis, as well as to the objectives of gaining self-sufficiency in food, reducing unemployment and increasing exports.

5. The annual investment allocated to each of the three areas was then allocated to the major industry classifications by plan years on the basis

1. In late February, the Bank of Korea estimated that the GNP increased by 2.8% during 1961, due primarily to bumper agricultural production.

of the estimated value added. Value added for each industry was computed from a table of coefficients compiled from the Bank of Korea's GNP tabulations for past years.

b. Planning Sector Programs and Projects

1. The plan framework was turned over to the newly organized Economic Planning Board (EPB) for development of sector and project detail. The Planning Bureau of the EPB subsequently requested the ministries to supply this detail for public programs and projects (including the public enterprises), showing estimated costs, outputs, foreign exchange and local currency requirements, loans and subsidies, and construction and operating periods. Most of the larger projects had been prepared previously for the draft five-year plan and much of the detail was taken from that plan.

2. The Planning Bureau assembled the program and project proposals of the ministries into planning schedules organized by the major sectors designated in the plan framework.

3. The investment and other values thus accounted for by public investment were then totaled for each sector and the difference between these totals and the amounts of investment allocated to the sectors in the plan framework were allocated to private business and industry.

4. A few projects were proposed by the ministries for private development and these were included in the plan. The remainder of the estimated private investment was shown as a residual.

c. Review and Adjustment

The remainder of the planning procedure consisted of a series of adjustments by the Planning Bureau to bring the plan into arithmetic balance within the aggregate values established in the plan framework. As described previously, the plan was then reviewed by an advisory group, the Cabinet and the Supreme Council. After a few minor modifications, the plan was officially adopted.

B. SIZE AND CHARACTERISTICS OF THE PLAN

1. Size

Total development expenditures (gross investment) in Korea's five-year plan are estimated at Hw 3,214.5 billion (\$2,473 million). Of this amount, Hw 1,786.2 billion is planned for the public sector and Hw 1,428.38 billion for the private sector.¹ The Korean government thus expects to undertake approximately 56% of the total planned investment, while depending upon private industry and public enterprises to invest the remaining 44%. However, in terms of the source of funds, about 60% of the total development outlay is expected to be provided by the government, with the remainder being provided by private industry and the public enterprises from their own sources.

Very rapid increase in development expenditures is projected over the plan period in both the public and private sectors. To meet the planned investment goal, it is estimated that investment in the target year (1966) must increase by 137% over the base year (1960). The total program is expected to produce an increase of about 40% in the gross national product, with investment rising from about 12% of GNP in the base year to 22% in the target year. These estimates assume that the GNP will increase at an average annual compound rate of 7.1%. The total planned development expenditures by major sectors are shown in Tables III-1 and III-2.

The size of a development program may also be judged from the standpoint of the rate of development expressed in terms of the annual outlays required to meet the over-all investment targets. The annual amounts of investment scheduled for Korea's development program are shown in Table III-3. It may be noted that local currency requirements increase much more rapidly than the foreign currency estimates and that the rate of increase is considerably greater in the last three years of the plan period.

2. Population, Employment and Living Standards

An important objective of Korea's long-range development policy is to make better use of the country's human resources by decreasing unemployment,

1. Total private investment includes the planned investment by public enterprises, notable in electric power and coal.

increasing the productivity of rural labor, providing job opportunities for rural labor through industrialization, and by using tax, credit and other public measures to reduce income inequalities.

According to the 1960 census, Korea's population totaled about 24.7 million and the average annual rate of increase since 1955 has been estimated at 2.88%. The plan assumes that, by controlling the number of births, the population growth rate will begin to decline in the second year of the plan and will fall to 2.74% in the target year. The population of Korea is therefore estimated to increase by 18.2% over the plan period to a total of 29.2 million.

It is also estimated that the population of working age (14-60) will increase at about the same rate as total population. However, it is estimated that if the national product increases from Hw 2,322 to Hw 3,269 (40%) as planned, about two million additional jobs will be created. It is estimated that unemployment will decline from about 2.5 million (24%) in 1960 to about 1.7 million (14%) in 1966.

Employment in all major sectors is expected to increase at a rate considerably higher than the growth of the labor force. At the same time, however, the structure of employment is expected to change, with the percentages of employment in agriculture, transportation and other services declining, and employment in manufacturing and construction increasing by about 70% to 10.7% of the total.

Over the plan period, the Korean people will be asked to live in an austere fashion in order to channel most of the expected increase in national income into investment in basic industries. The plan calls for an increase of about 40% in the gross national product and an increase of 150% in gross domestic savings. Per capita GNP is estimated to increase by about 20% from Hw 94,000 (\$72) to Hw 112,000 (\$86). Per capita consumption, however, has been estimated at Hw 76,700 (\$58) in 1960 and is not expected to rise to more than Hw 81,300 (\$64) by 1966. This amounts to a total increase of about 7%, or an average of roughly 1% per year. This increase is, of course, predicated upon a decline in the population growth rate. Thus, if the planned targets are realized, the principal income benefits to individuals will come from improved employment opportunities rather than higher per capita income.

A summary of the population, employment and private consumption aspects of Korea's five-year plan is shown in Table III-4.

TABLE III-1

PLANNED DEVELOPMENT EXPENDITURES: 1962-66
BY TYPE OF OWNERSHIP
 (billions of Hwan)

<u>Sector</u>	<u>Type of Ownership</u>				<u>Total</u>	
	<u>Public</u>		<u>Private</u>		<u>Amount</u>	<u>Percent</u>
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>		
Agriculture and forestry	145.7	29.5	349.0	70.5	494.7	15.3
Fisheries	-----	-----	59.7	100.0	59.7	1.5
Mining and quarrying	8.3	4.6	173.4	95.4	181.7	5.7
Manufacturing	307.6	34.7	586.8	65.3	894.4	27.9
Construction	5.9	36.6	10.2	63.4	16.1	0.5
Electric power	132.8	35.3	243.9	64.7	376.7	11.9
Transportation and storage	210.0	53.2	184.7	46.8	394.7	12.2
Communications	108.2	100.0	-----	-----	108.2	3.4
Ownership of dwellings	13.3	3.3	385.0	96.7	398.3	12.3
Other services	<u>185.9</u>	<u>64.1</u>	<u>104.1</u>	<u>35.9</u>	<u>290.0</u>	<u>9.1</u>
Total	1,117.7	34.8	2,096.8	65.2	3,214.5	100.0

TABLE III-2

PLANNED DEVELOPMENT EXPENDITURES: 1962-66
BY SOURCE OF FUNDS
 (billions of Hwan)

<u>Sector</u>	<u>Source of Funds</u>				<u>Total</u>
	<u>Public</u>		<u>Private</u>		
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	
Agriculture and forestry	383.5	77.5	111.2	22.5	494.7
Fisheries	25.9	43.4	33.8	56.6	59.7
Mining and quarrying	42.3	23.4	139.4	76.6	181.7
Manufacturing	503.8	56.3	390.6	43.7	894.4
Construction	5.9	36.6	10.2	63.4	16.1
Electric power	229.8	61.0	146.9	39.0	376.7
Transportation and storage	228.0	57.8	166.7	42.2	394.7
Communications	108.2	100.0	-----	-----	108.2
Ownership of dwellings	67.4	16.9	330.9	83.1	398.3
Other services	<u>191.4</u>	<u>66.0</u>	<u>98.6</u>	<u>34.0</u>	<u>290.0</u>
Total	1,786.2	55.6	1,428.3	44.4	3,214.5

TABLE III-3

ESTIMATED GROSS INVESTMENT; 1960-66

<u>Year</u>	<u>Foreign Currency</u> (millions of dollars)		<u>Local Currency</u> (billions of Hwan)		<u>Total</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
1960 (base year)	99	---	214.9	--	313.9	--
1962	121.4	24.6	371.7	75.4	493.1	15.3
1963	208.3	34.7	391.5	65.3	599.8	18.6
1964	223.2	33.0	450.5	67.0	673.7	20.9
1965	156.9	23.0	547.4	77.0	704.3	21.8
1966	<u>178.9</u>	<u>25.1</u>	<u>564.7</u>	<u>74.9</u>	<u>743.9</u>	<u>23.1</u>
Total: 1962-66	888.5	27.8	2,326.0	72.2	3,214.5	100.0

TABLE III-4

POPULATION, EMPLOYMENT AND LIVING STANDARDS

	<u>Base Year</u> 1960		<u>Target Year</u> 1966		<u>Plan Period</u> 1962-66	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent Change</u>
<u>Population (MM)</u>						
Persons	24.7		29.2		3.78	18.2
Growth rate (%)	(2.88)				(2.74)	
Rural	14.3	58.1	15.7	53.9	1.4	5.6
Urban	10.4	41.9	13.5	46.1	3.1	31.0
<u>Labor Force (MM)</u>						
<u>Population age</u>						
14-60	13.9	56.2	16.4	56.1	2.5	17.9
Not in labor force	3.5	14.1	4.5	15.4	1.3	16.7
Labor force	10.4	42.1	11.9	40.7	1.2	14.2
<u>Employment</u>						
Employed persons	7.9	----	10.2	----	2.0	28.3
Unemployment	2.5	----	1.7	----	-0.8	-49
Unemployment rate	(24.2)	----	(14.2)	----	----	-33
<u>Structure of Employment</u>						
Agriculture, forestry and fisheries	5.3	67.3	6.5	64.6		23.1
Manufacturing and construction	.5	6.3	1.0	10.7	.5	100
Power, transportation and other services	2.0	26.4	2.5	24.7	.5	25
<u>Living Standards</u>						
<u>Gross national product (billions of Hwan)</u>						
	2,322.7	----	3,269.1	----	1,146.4	40.8
<u>Private consumption (billions of Hwan)</u>						
	1,995.1	----	2,369.2	----	1,374.1	18.8
<u>Per capita GNP</u>						
Hwan	94,100	----	112,000	----	17,900	19.6
Dollars	\$72.00	----	\$86.00	----	\$14.00	14.6
<u>Per capita consumption</u>						
Hwan	76,000	----	81,000	----	5,000	7
Dollars	\$58.00	----	\$64.00	----	\$6.00	7

3. Major Physical Targets

In accordance with the general strategy of seeking to prepare the Korean economy for later industrialization, the first five-year plan emphasizes the development of power and coal, transportation facilities, primary industries such as cement, fertilizer, steel and oil refining, and increased agricultural output. Apart from the proposed increase in domestic food production (which would largely replace imports) and housing, the plan provides for very little increase in consumer goods. Average living standards are thus expected to remain at about the present level (\$70-\$90 per year) in the interest of building an industrial base. The development programs for rice, silk, iron ore, cement, graphite, tungsten, kaolin, and fish include substantial production for export. The more important physical targets are shown in Table III-5.

4. The Investment Program

Of the total planned investment of Hw 3,214.5 billion, approximately 40% has been allocated to power, transportation, communications and housing; 34% to mining and manufacturing and 17% to agriculture, forestry and fisheries. This distribution reflects the priorities of the plan and the heavy stress on basic industries and services.

Electric power, with priority in the plan, accounts for about 12% of total gross investment. However, coal, transportation, cement and iron and steel are closely interrelated with the construction and operation of electric power facilities. These industries, plus power, account for about 30% of total planned investment. The distribution of investment among the various sectors is shown in Table III-6.

5. Public and Private Investment

As might be expected, Korea's development planning has been conditioned strongly by the events and circumstances since the Korean War. These matters are well known and need not be repeated. However, it should be noted that the respective development roles assumed by the government and assigned to the private sector reflect quite clearly a rather basic belief that, at least for the initial five-year period, Korea's development will require major government participation and firm government control of the economy.

In the past, private business has greatly preferred short-term speculative investments, such as real estate and commodities, to long-term investment in manufacturing enterprises. This has been due in part to inflation, political instability and marked corruption in both the private and public sectors.

TABLE III-5

MAJOR PHYSICAL TARGETS, 1962-66

	<u>Unit</u>	<u>Base Year 1960</u>	<u>Target Year 1966</u>	<u>Percent Increase</u>
<u>Agriculture Products</u>				
Rice	M metric tons	2,311.6	2,980.7	29.0
Barley	" " "	326.9	377.5	15.5
Cotton	" " "	19.2	50.4	162.5
Silk Cocoon	" " "	4.6	14.6	218.1
Fish	" " "	241.7	421.0	74.2
Pigs	M head	1,397.0	2,802.0	100.6
<u>Minerals</u>				
Coal	M metric tons	5,350	11,740	119.4
Iron Ore	" " "	392	600	53.1
Lime Stone	" " "	591	2,000	238.3
Graphite	" " "	92	142	53.3
Kaolin	" " "	51	72	40.5
Tungsten	short tons	5,000	8,000	70.2
Gold	kilograms	2,000	5,000	144.3
<u>Electric Power</u>				
Hydro	megawatts	143	305	113.3
Thermal	"	223	743	233.2
Total	"	366	1,048	186.3

TABLE III-5 (Continued)

	<u>Unit</u>	<u>Base Year 1960</u>	<u>Target Year 1966</u>	<u>Percent Increase</u>
<u>Industrial Products</u>				
Cement	M metric tons	430.0	1,370.0	218.6
Pig Iron	" " "	13.9	43.2	210.0
Steel Ingots	" " "	50.1	90.0	80.0
Pulp	" " "	31.1	35.0	166.3
Caustic Soda	" " "	.3	10.2	-----
Fertilizer	" " "	-----	134.6	-----
Soda Ash	" " "	-----	39.6	-----
P.V.C.	" " "	-----	1.8	-----
Acetic Acid	" " "	-----	.8	-----
Formalin	" " "	-----	4.2	-----
Methanol	" " "	-----	1.1	-----
<u>Transportation</u>				
Commodities	MM ton-km	3,710	6,881	85.5
Passengers	MM pass-km	8,006	11,517	43.9
<u>Communications</u>				
Telephone	M lines	107.9	315.7	193
Telegraph	Circuits	520	1,370	164
Post Offices	Each	690	1,587	130
<u>Housing</u>	M dwellings	3,346	3,908	16.8

TABLE III-6

TOTAL INVESTMENT PROGRAM, 1962-66
(billions of Hwan)

<u>Sector or Industry</u>	<u>Gross Investment</u>		<u>Percent</u>
	<u>Sector</u>	<u>Industry</u>	
<u>Agriculture, Forestry and Fisheries</u>	554.4		17.2
<u>Mining</u>	181.7		5.6
Coal		130.7	
Iron Ore		13.5	
Tungsten		10.2	
Other		<u>27.3</u>	
<u>Manufacturing</u>	894.4		27.8
Transportation equipment		131.5	
Fertilizer		128.9	
Food and Fiber		81.2	
Iron and Steel		73.8	
Cement		43.9	
Petroleum		42.7	
Other		<u>392.4</u>	
<u>Electric Power</u>	376.7		11.7
<u>Construction</u>	16.1		.5
<u>Transportation</u>	394.7		12.3
<u>Communications</u>	108.2		3.3
<u>Housing</u>	398.3		12.3
<u>Other Services</u>	290.0		9.3
Education		133.1	
Public health and welfare		11.5	
City water and drainage		31.8	
Other		<u>113.6</u>	
<u>Total Investment</u>	<u>3,214.5</u>		<u>100</u>

A substantial number of private businessmen have been fined and/or jailed for what is termed "illicit fortune accumulation," and others have been denied access to foreign exchange, credit or subsidies. There is thus some doubt as to whether the private sector will be able or willing to marshal the capital and undertake the level of investment indicated in the plan.

The "guided capitalism" stipulated in the plan may be interpreted to mean that the government will directly or indirectly attempt to create conditions that will induce the private sector to invest. Should this fail, however, the government stands ready to fill the investment gap by means of public investment. Responsible government officials have stated that the present development effort may well be Korea's last chance. Therefore, they indicate full determination to meet the planned targets.

The plan appears to substantially overstate the amount of investment allocated to the private sector. Furthermore, it is clear that most of the high-priority programs and projects will be undertaken either by the government directly or will be influenced by the government in a major way through the control of credit, foreign exchange, etc.

For example, although 100% of the planned investment in coal, 64.7% of investment in electric power and 46.8% of investment in transportation are assigned to the private sector, these programs are, in fact, the responsibility of public enterprises or other agencies of the Korean government. Also, the petroleum and iron and steel plants are planned for public investment, and about 65% of the proposed investment in fertilizer and 85% of the outlays for machinery production are in the public sector. Finally, the government expects to provide about 75% of the investment funds for agriculture, forestry and fisheries.

6. Structural Changes

The plan envisages major modifications in the structure of the economy by the end of the five-year period. The agricultural share of the gross national product is expected to decline from 36% in 1960 to 34.8% in 1966. The mining and manufacturing sector, on the other hand, is expected to increase from about 18% to 36% of GNP. The relative contribution of electric power, transportation and other services is projected to decrease from about 46% to 39%.

The plan places major emphasis upon the growth of mining and manufacturing (secondary industry). These sectors, together, are expected to show an increase of about 100% in total output. The planned growth rates of the agricultural, forestry and fishing sections (primary industry) and power, transport and other services (tertiary industry) are about 32% and 24%, respectively.

To achieve the projected growth of manufacturing, substantial expansion of output from existing facilities is visualized. In addition, the plan calls for the establishment of about 17 industries which were not in existence or operation in the base year (1960). These include petroleum refining, fertilizer, nylon yarn, motor vehicle assembly and diesel engine manufacture.

The aggregate planned change in the structure of Korea's economy and the expected growth of the major sectors is shown in Table III-7.

TABLE III-7

PLANNED CHANGES IN THE STRUCTURE AND GROWTH
OF THE KOREAN ECONOMY, 1962-1966
(percent)

<u>Sector</u>	<u>Share of GNP</u>			<u>Rate of Growth</u>			<u>Plan Period</u>
	<u>Base Year 1960</u>	<u>First Year 1962</u>	<u>Target Year 1966</u>	<u>Base Year 1960</u>	<u>First Year 1962</u>	<u>Target Year 1966</u>	
Agriculture, Forestry and Fisheries	36.0	37.1	34.8	0.9	5.3	6.2	31.6
Mining and Manufacturing	18.2	19.4	26.1	4.3	11.1	17.3	99.3
Power, Transport and Other Services	<u>45.8</u>	<u>43.5</u>	<u>39.1</u>	<u>2.9</u>	<u>3.8</u>	<u>4.8</u>	<u>24.4</u>
Total	100.0	100.0	100.0	2.4	-0.1	5.7	8.3

C. RESOURCES AND THEIR USES

1. Sources and Allocations

Korea's five-year development plan proposes total gross investment expenditures of Hw 3,214.5 billion (\$2,473 million). Underlying this estimate and its financing are estimates of the resources available to the Korean economy during the plan period and the proposed pattern of resource uses. These are outlined in Table III-8. The gross national product is estimated to increase by about 40% over the five-year period, and the increase in total investment required to meet this target has been estimated to be about 50%. This may be compared with an estimated increase of 20% in investment during the period 1955-1959.

Although total consumption is forecast to increase by about 18%, the percentage of total resources used for this purpose is expected to decline from about 88% in the base year to 78% in the target year. Under this assumption, the share of total resources available for investment is estimated to increase from 11.7% in the base year to 22% in the target year.

During the early years of the plan, it is hoped that foreign aid and loans will remain at a high level, amounting to an estimated 13.5% of total resources in the first year. Thereafter, it is thought that these sources of external financing will decline to about 9% of total resources. The approximate sources and planned uses of total resources in percentage terms are shown in Tables III-9 and III-10.

2. Gross Capital Formation

The total planned investment of Hw 3,214.5 billion is a gross amount and includes an allowance of Hw 366.4 billion for increases in inventories. The total net fixed capital investment is therefore estimated at Hw 2,848.1 billion.

Gross investment in 1960 was estimated to be about 13.5% of the gross national product. During the first year of the plan, gross investment is expected to increase to 20.1% of GNP and to rise to 24% of GNP during the third plan year. The projected rate for the target year is 22.7%. These estimates postulate a very rapid and immediate increase in gross domestic investment and the channeling of an exceptionally high percentage of GNP into capital formation.

In this connection, it should be noted again that in Korean development planning, the magnitude of gross capital formation is essentially a statistical function of the independently selected average annual growth rate of 7.1%. The estimates of gross capital formation over the plan periods are outlined in Table III-11.

3. Gross Domestic Savings

It is estimated that in 1961 gross domestic savings amounted to about 2.6% of the gross national product and provided about 17% of gross capital formation. Over the plan period it is envisaged that the average rate of savings will be on the order of 9.5% of GNP. To meet this goal it is estimated that the rate will have to rise to 10.3% in the third year of the plan and reach a peak rate of about 13% in the target year. If gross savings of this order are realized and the estimated inflow of foreign resources is forthcoming, domestic savings will finance about 57% of gross capital formation in the target year, or about 42% of total gross capital formation during the five-year plan period. These relationships are shown in Table III-11.

4. Foreign Assistance

To meet the investment, production and consumption goals of the plan, it is estimated that Hw 1,847.7 billion (\$1,421.2 million) of foreign assistance will be required over the plan period. Of this amount, about Hw 595 billion (\$457.6 million) is required to meet the foreign exchange element of the plan and Hw 1,252.7 billion (\$963.6 million) to support the balance of payments. Of the total non-plan support, about Hw 889.7 billion is required for defense support.

These estimates are expressed in terms of requirements which it is hoped will be supported by foreign governments, particularly the United States. The plan assumes that over the plan period, U. S. aid will shift from grants to DLF loans, and that P. L. 480 assistance will continue, but at a declining rate. The plan also assumes that sizable loans will be forthcoming from friendly countries other than the United States, that a small amount of foreign private capital will be invested, and that Korea's own foreign exchange earnings will more than double. The assumed contribution of foreign assistance to total available resources over the plan period is outlined in Table III-12.

TABLE III-8

ESTIMATED RESOURCES AND PLANNED USES, 1962-66¹
(billions of Hwan)

	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>	<u>1966</u>	<u>Total Plan Period</u>	<u>Percent Change 1962-1966</u>
<u>RESOURCES</u>							
Gross National Product	2,452.7	2,609.7	2,800.0	3,018.6	3,269.1	14,150.3	40.7
Additional foreign resources							
Net borrowing and Hwan liabilities	86.0	120.1	120.0	90.5	95.0	511.6	--
Aid, loans and foreign investment	<u>316.7</u>	<u>289.5</u>	<u>265.1</u>	<u>251.5</u>	<u>225.6</u>	<u>1,348.4</u>	<u>-45.2</u>
Total Resources	2,855.4	3,019.3	3,185.1	3,360.6	3,589.7	16,010.3	25.7
<u>USES</u>							
Consumption	2,362.3	2,419.5	2,511.4	2,656.3	2,846.1	12,795.6	20.5
Public	465.8	467.6	472.4	478.3	488.5	2,372.6	4.9
Private	1,896.5	1,951.9	2,039.0	2,178.0	2,357.6	10,423.0	24.3
Investment	493.1	599.8	673.7	704.3	743.6	3,214.5	50.8
Public	152.1	227.1	257.1	232.4	249.1	1,117.8	63.8
Private	<u>341.0</u>	<u>372.7</u>	<u>416.6</u>	<u>271.9</u>	<u>494.5</u>	<u>2,096.7</u>	<u>45.0</u>
Total Uses	2,855.4	3,019.3	3,185.1	3,360.6	3,589.7	16,010.3	25.7

1. This table understates total resources by 15.7 billion Hwan due to a late change in the estimated requirement for additional foreign resources (total deficit on current account).

TABLE III-9

SOURCES OF AVAILABLE RESOURCES
(percent)

	<u>Base Year</u> <u>1960</u>	<u>First Year</u> <u>1961</u>	<u>Target Year</u> <u>1966</u>
Gross national product	86.5	86.5	91.0
Foreign borrowing	0.1	2.0	2.8
Foreign aid and loans	13.4	11.5	6.2

TABLE III-10

PLANNED USE OF AVAILABLE RESOURCES
(percent)

	<u>Base Year</u> <u>1960</u>	<u>First Year</u> <u>1961</u>	<u>Target Year</u> <u>1966</u>
Consumption	88.3	83.6	78.0
Private	74.4	69.0	65.9
Government	13.9	14.6	12.1
Investment	11.7	16.4	22.0
Private	7.9	11.6	14.2
Government	<u>3.8</u>	<u>4.8</u>	<u>7.8</u>
Total	100.0	100.0	100.0

TABLE III-11

ESTIMATE OF GROSS CAPITAL FORMATION AND DOMESTIC SAVINGS, 1960-66
(billions of Hwan)

Year	Gross National Product	Gross Capital Formation			Total Gross Investment as a Percent of GNP	Gross Domestic Savings		
		Public	Private	Total		Total	Percent of GNP	Percent of Gross Capital Formation
1960	2,322.7	103.0	210.9	313.9	13.5	135.3	5.8	43.1
1961	2,320.4	134.4	159.0	341.0	14.6	59.3	2.6	17.4
1962	2,452.7	152.1	341.0	493.1	20.1	90.2	3.7	18.3
1963	2,609.7	227.1	372.7	599.8	22.9	190.1	7.2	31.7
1964	2,800.0	257.1	416.6	673.7	24.0	289.0	10.3	42.9
1965	3,018.6	232.4	471.9	704.3	23.3	359.2	11.9	51.0
1966	3,269.1	249.1	494.1	743.6	22.7	423.1	12.9	56.9
Plan Period 1962-66								
Total	14,150.3	1,117.7	2,066.3	3,214.5	22.7	1,351.6	9.5	42.0
Annual Average	2,830.0	223.5	419.3	642.8	----	270.3	---	----

1. Calculated from percentages given in "Summary of the First Five-Year Economic Plan, 1962-1966." Republic of Korea, 1962, p. 34.

TABLE III-12

FOREIGN ASSISTANCE REQUIREMENTS AND SOURCES, 1962-66

	<u>Dollars</u> <u>(millions)</u>	<u>Hwan</u> <u>(billions)</u>
<u>Requirements</u>		
Support Assistance	684.4	889.7
Plan Support	457.6	594.9
Other	<u>279.2</u>	<u>363.1</u>
Total	1,421.2	1,847.7
<u>Sources</u>		
Defense Support (U.S.)	684.4	889.7
Foreign Loans, Including DLF	426.0	553.8
P.L. 480	233.0	303.0
Foreign Private Investment	62.5	81.3
AID Grants	8.9	11.6
Other	<u>6.4</u>	<u>8.3</u>
Total	1,421.2	1,847.7

5. Distribution of the National Income

The estimates of aggregate resources and their use are reflected in the growth and changing structure of Korea's national income. Table III-13 shows the expected increase of national income and the pattern of income distribution over the plan period. Data on national income by industrial origin is not available.

The share of income in the form of employee compensation is assumed to remain fairly constant, but the total is expected to increase by about 29%, due largely to the increased rate of employment envisaged in the plan.

Corporate savings and direct taxes on corporations are assumed to increase by 259% and 169% respectively, indicating general expectations regarding the level of corporate operations and profits, and increased incorporation of business enterprises. The government's share of national income from property and enterprises is expected to increase considerably, by about 208%.

D. FINANCING THE PLAN

Korea's development planning to date provides only a general or overall indication as to how the plan may be financed. Specific financial plans for the government, the public enterprises and the private sector are to be developed later. Of the total planned investment outlay of Hw 3,214.5 billion, it is expected that about 72% will be financed in local currencies and the balance in foreign exchange. Domestic savings, both public and private, account for about 42.5% of total gross investment and it is hoped that the remaining 57.5% will be available from foreign aid, loans and private investment.

It is estimated that 33% of the required foreign exchange will be available from Korean foreign exchange earnings and that 57% will be supplied in the form of grant aid, loans and private foreign investments. The estimated sources and uses of development funds are shown in Table III-14.

1. Financing the Public Sector

The plan indicates that the Korean government is expected to mobilize Hw 1,786.4 billion, or 55.6% of total investment, over the plan period. Of this amount, Hw 1,117.7 billion is required to finance public development investment and Hw 668.7 is needed for transfer to public enterprises, particularly coal and electric power, and to the private sector in the form of capital transfer and loans.

TABLE III-13

DISTRIBUTION OF THE NATIONAL INCOME
(billions of Hwan)

	<u>Base Year 1960¹</u>		<u>First Year 1962</u>		<u>Target Year 1966</u>		<u>Percent Increase (Decrease)</u>
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	
Compensation of Employees	688.5	38.5	892.2	42.3	1,061.6	39.0	29.9
Income from Unincorporated Enterprises and Property	1,068.5	59.8	1,124.9	53.4	1,480.0	54.4	25.3
Corporate Savings	24.5	1.4	48.0	2.3	98.0	3.6	259.0
Direct Taxes on Corporations	9.2	0.5	12.0	0.6	24.5	0.9	169.2
Government Income from Property and Enterprises	16.5	0.9	45.1	2.1	77.0	2.8	208.0
Less:							
Interest on Public Debt	5.5	-0.3	6.7	-0.3	13.5	-0.5	104.5
Interest on Consumer Debt	13.5	-0.8	7.8	-0.4	7.3	-0.3	(31.1)
NATIONAL INCOME	1,788.2	100.0	2,044.7	100.0	2,720.3	99.9	33.2

1. At 1960 prices.

TABLE III-14

ESTIMATED SOURCES AND USES OF FUNDS
FOR DEVELOPMENT, 1962-1966
(billions of Hwan)

<u>Sources</u>	<u>Amount</u>	<u>Uses</u>	<u>Amount</u>
Domestic savings	1,336.8	Public sector	1,117.7
Foreign aid, loans and investment	<u>1,847.7</u>	Private sector	<u>2,096.8</u>
Total	3,214.5		3,214.5

Over the plan period, it is estimated that the total current general expenditures of the Korean government (including national defense) will absorb virtually all of current revenues. Therefore, the government expects to rely on foreign aid and loans to raise the required development capital. Estimated current expenditures, revenues and surplus on current account are shown in Table III-15. The proposed sources and uses of development funds in the public sector are shown in Table III-16.

2. Financing the Private Sector

The plan estimates that total private investment during the five-year period will amount to Hw 2,096.8 billion requiring Hw 1,581.4 billion in local currencies and Hw 396.4 billion (\$304.2 million) in foreign exchange. The proposed sources of finance for the private sector are shown in Table III-17 and the proposed uses by major sectors are shown in Table III-18.

Personal savings are expected to provide nearly 50% of total private investment and about 60% of the local currency required by the private sector during the plan period. In the past, personal savings have been very small. The plan implicitly assumes extensive reorganization and expansion of the banking system, monetization of a much larger part of the economy, particularly in rural areas, and substantially greater utilization of banking institutions by the general public.

TABLE III-15

ESTIMATED CURRENT GOVERNMENT REVENUES
AND EXPENDITURES, 1962-1966

	<u>Hwan (billions)</u>	<u>Percent</u>
<u>Current Revenues</u>		
Indirect taxes	1,631.2	61.5
Direct taxes	486.6	18.3
Income from property and enterprises	304.1	11.5
Transfers from the private sector	<u>231.2</u>	<u>8.7</u>
TOTAL	2,653.1	100.0
<u>Current Expenditures</u>		
Consumption	2,372.6	90.7
Transfers to local governments and households	146.1	5.6
Other	<u>96.6</u>	<u>3.7</u>
TOTAL	2,615.3	100.0
<u>Surplus on Current Account</u>	37.8	--

TABLE III-16

FINANCING THE PUBLIC SECTOR, 1962-66

	<u>Hwan</u> <u>(billions)</u>	<u>Percent</u>
<u>Proposed Sources</u>		
Net foreign aid	1, 220.5	68.3
Net foreign loans	230.5	12.9
Domestic borrowing	73.2	4.1
Surplus from current revenue	37.8	2.1
Other income	<u>224.4</u>	<u>12.6</u>
TOTAL	1, 786.4	100.0
<u>Proposed Uses</u>		
Transfers and loans to the private sector	668.7	37.4
Public development program	<u>1, 117.7</u>	<u>62.6</u>
TOTAL	1, 786.4	100.0

TABLE III-17

FINANCING THE PRIVATE SECTOR, 1962-66

	<u>Hwan (billions)</u>	<u>Percent</u>
Personal savings	960.9	45.8
Government transfers and loans	668.7	31.9
Foreign sources	396.7	18.9
Net loans	187.5	8.9
Net aid	127.9	6.1
Private investment	81.3	3.9
Corporate savings	356.0	17.0
Korean foreign exchange holdings and Hwan credits	<u>12.1</u>	<u>0.6</u>
TOTAL	2,394.4	114.2
Less: Transfers to the Government	<u>(297.6)</u>	<u>(14.2)</u>
TOTAL	2,096.8	100.0

TABLE III-18

PROPOSED INVESTMENT IN THE PRIVATE SECTOR, 1962-66

<u>Sector</u>	<u>Total</u>	<u>Currency</u>	
	<u>Hwan</u> <u>(billions)</u>	<u>Hwan</u> <u>(billions)</u>	<u>Dollars</u> <u>(millions)</u>
<u>Agriculture, Forestry and Fisheries</u>	408.7	389.2	15.1
Farm land improvement	76.3		
Limestone	71.0		
Raw silk	33.1		
Farm machinery and tools	71.1		
Fisheries	59.7		
Other	97.5		
<u>Mining and Manufacturing</u>	770.4	469.0	231.9
Coal	130.7		
Iron ore	13.5		
Tungsten	10.2		
Other mining	20.6		
Cement	43.7		
Chemicals	75.6		
Machinery	88.5		
Other manufacturing	325.3		
Small and medium industries	14.5		
Utilization of existing facilities	47.8		
<u>Power, Housing and Others</u>	917.7	723.2	149.5
Electric power	243.9		
Housing	377.4		
Other	296.4		
TOTAL	2,096.8	1,581.4	396.4

3. The Gross National Product

The estimated gross national product in the base year, the first plan year and the target year is shown in Table III-19. These estimates indicate the expected growth of major sectors and the implied changes in the structure of the Korean economy.

4. Foreign Trade and the Balance of Payments

As might be expected, a development program of the size and character envisaged by the five-year plan implies a very substantial increase in foreign trade and marked changes in the structure of trade. By 1966, imports of merchandise of all types are expected to rise from an estimated \$343 million in 1960 to about \$492 million, an increase of about 43.5%. It is estimated that exports, which amounted to only \$33 million in 1960 will increase by about 318% to \$137.5 million in 1966. The plan indicates that the total trade deficit in merchandise is expected to increase from about \$310 million in the base year to about \$400 million in the second plan year, and then decrease to about \$350 million in the target year.

The surplus balance on invisible trade has been forecast to increase from about \$48 million in the base year to \$108 million in the target year, due largely to an estimated doubling of the sale of goods and services to UN forces. The net deficit on current account is therefore expected to decline from \$310 million in 1962 to about \$246 million in 1966 (as shown in Table III-22). The estimates of exports and imports of merchandise and of invisible trade are summarized in Tables III-20 and III-21.

Total exports and imports during the five-year period have been estimated at \$1.15 billion and \$2.58 billion respectively.¹ Of the total imports, \$683.6 million is required for the planned development and \$1,901.3 million is for general balance of payments support. The total deficit on current account is estimated at about \$1.4 billion. The plan assumes that this deficit will be provided for largely by grant aid and foreign loans. A summary of the balance of payments aspects of the plan is shown in Table III-22.

1. For a detailed listing of planned exports and imports, see "Summary of the First Five-Year Economic Plan, 1962-1966," Republic of Korea, 1962, pp. 64-70.

TABLE III-19

ESTIMATED GROSS NATIONAL PRODUCT, 1960, 1962 AND 1966
(billions of Hwan)

<u>Sector</u>	<u>Base Year 1960 Value Added</u>	<u>First Year 1962 Value Added</u>	<u>Target Year 1966 Value Added</u>	<u>Percent Increase</u>	<u>Average Annual Rate of Growth (%)</u>
Agriculture and Forestry	811.7	879.0	1,095.8	35.0	5.5
Fisheries	25.5	31.0	41.9	64.3	8.7
Mining	45.7	55.6	102.0	123.2	15.5
Manufacturing	295.1	317.9	573.6	94.4	15.0
Construction	82.9	102.3	177.6	114.2	14.0
Electric Power	15.5	30.2	61.2	294.8	21.1
Transportation and Storage	114.2	126.0	187.7	64.4	10.6
Communications	16.4	23.0	51.0	211.0	23.4
Housing	144.2	146.8	163.4	13.3	2.5
Public Administration and Defense	191.8	184.4	187.0	-2.5	0.4
Other Services	<u>579.7</u>	<u>556.5</u>	<u>627.9</u>	<u>8.3</u>	<u>2.8</u>
Gross National Product	2,322.7	2,452.7	3,269.1	40.7	7.1

TABLE III-20

ESTIMATED EXPORTS AND IMPORTS OF MERCHANDISE, 1960, 1962, AND 1966
(millions of U.S. dollars)

	Base Year 1960		First Year 1962		Target Year 1966		During the Plan Period		Percent Increase (Decrease) 1962-1966
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	
Exports	32.9	100.0	65.9	100.0	137.5	100.0	500.7	100.0	108.6
Food	10.3	31.1	20.1	30.5	35.8	26.0	138.2	27.6	78.1
Inedible crude materials	16.5	50.0	25.8	39.1	50.9	37.0	185.2	37.0	97.3
Mineral fuels	1.1	3.5	1.8	2.8	3.6	2.6	13.5	2.7	100.0
Animal and vegetable oils and fats	0.2	0.6	0.9	1.4	1.6	1.2	6.0	1.2	77.7
Chemicals	0.2	0.5	1.9	2.9	3.7	2.7	14.2	2.8	94.7
Manufactured goods	4.1	12.5	5.8	8.7	10.0	7.3	39.7	7.9	72.4
Miscellaneous manufac- tured articles	0.6	1.8	4.6	7.0	12.0	8.7	42.8	8.6	160.9
Bonded factory products	---	---	5.0	7.6	20.0	14.5	61.0	12.2	300.0
Imports	343.0	100.0	456.7	100.0	492.3	100.0	2404.7	100.0	7.8
Food	31.5	9.2	34.1	7.5	25.1	5.1	143.1	6.0	(26.4)
Inedible crude materials	68.5	20.0	77.5	17.0	84.8	17.2	410.5	17.1	9.4
Mineral fuels	23.0	6.7	26.3	5.8	31.9	6.6	145.5	6.0	21.3
Animal and vegetable oils and fats	2.5	0.7	2.1	0.4	2.2	0.4	10.6	0.4	4.8
Chemicals	76.1	22.2	75.3	16.5	65.8	13.4	358.7	14.9	(12.6)
Manufactured goods	47.0	13.7	56.5	12.4	58.8	11.9	290.4	12.1	4.1
Machinery and transport equipment	40.1	11.7	123.7	27.0	157.2	31.9	718.8	29.9	27.1
Miscellaneous manufac- tured articles	39.6	11.5	28.2	6.2	25.5	5.2	130.2	5.4	(9.6)
Special trade items	14.7	4.3	12.1	2.6	11.1	2.3	62.1	2.6	8.3
Others	---	---	21.0	4.6	30.0	6.1	134.9	5.6	42.8
BALANCE	-310.1		-390.8		-354.7		-1904.0		(9.2)

TABLE III-21

ESTIMATED INVISIBLE TRADE, 1960, 1962 AND 1966
(millions of U.S. dollars)

	Base Year 1960		First Year 1962		Target Year 1966		During the Plan Period	
	<u>Receipts</u>	<u>Payments</u>	<u>Receipts</u>	<u>Payments</u>	<u>Receipts</u>	<u>Payments</u>	<u>Receipts</u>	<u>Payments</u>
<u>Total</u>	84.0	36.2	109.0	28.0	153.7	45.5	663.6	180.2
Foreign travel	0.4	4.6	1.3	4.0	4.9	5.0	16.6	21.5
Transportation and insurance	5.6	5.0	6.2	7.6	9.5	8.4	38.5	40.0
Income from investment	4.5	0.2	4.5	0.8	4.5	13.0	22.5	31.9
Government transactions	70.2	22.9	93.0	11.4	128.0	12.0	549.0	58.7
Receipts from UN forces	62.6	--	85.0	--	120.0	--	509.0	--
Hwan sales	21.3	--	32.0	--	40.0	--	178.0	--
Utilities	8.8	--	10.0	--	24.0	--	86.0	--
Commodities	19.1	--	29.0	--	35.0	--	159.0	--
Services	13.4	--	14.0	--	21.0	--	86.0	--
<u>Others</u>	7.6	22.9	8.0	11.4	8.0	12.0	40.0	58.7
<u>Miscellaneous</u>	3.3	3.5	4.0	4.2	6.8	7.1	27.0	28.1
<u>Balance</u>	47.8	--	81.0	--	108.2	--	473.4	--

TABLE III-22

ESTIMATED BALANCE OF PAYMENTS
(millions of dollars)

	<u>Base Year</u> <u>1960</u>	<u>First Year</u> <u>1962</u>	<u>Target Year</u> <u>1966</u>	<u>Percent</u> <u>Increase</u> <u>(Decrease)</u> <u>1960-66</u>	<u>Total</u> <u>1962-66</u>
<u>Merchandise</u>					
Imports	343.0	456.7	492.3	43.5	2,404.7
Exports	<u>32.9</u>	<u>65.9</u>	<u>137.5</u>	<u>317.9</u>	<u>500.7</u>
Balance	-310.1	-390.8	-354.8	14.4	-1,904.0
<u>Invisible Trade</u>					
Receipts	84.0	109.0	153.7	83.0	653.6
From UN Forces	62.6	85.0	120.0	91.7	509.0
Other	21.4	24.0	33.7	57.5	144.6
Payments	<u>36.2</u>	<u>28.0</u>	<u>45.5</u>	<u>25.7</u>	<u>180.2</u>
Balance	47.8	81.0	108.2	126.4	473.4
<u>Net Trade Deficit</u>	-262.3	-309.8	-246.6	(6.0)	-1,430.6
<u>Estimated Financing</u> <u>of the Deficit</u>					
Grant Aid	273.6	243.6	173.5	(37.1)	1,037.2
Net Foreign Loans	3.2	49.9	75.3	--	384.0
Hwan Liabilities	-4.7	0.2	2.5	--	9.4
Korean Foreign Exchange	<u>-9.8</u>	<u>16.1</u>	<u>-4.7</u>	<u>--</u>	<u>--</u>
Total	262.3	309.8	246.6	--	1,430.6

Of the total estimated imports of merchandise during the plan period (\$2,404.7 million), about 40% is expected to be financed from Korea's own current foreign exchange earnings. An additional 27% consists of U. S. defense support assistance and it is hoped that the balance will be financed with foreign aid and loans, P. L. 480 food and commodity grants, and private foreign investment. These sources of funds are shown in Table III-23.

TABLE III-23

PROPOSED FINANCING OF PLANNED IMPORTS
(millions of U.S. dollars)

	Base Year 1960	First Year 1962	Target Year 1966	Total 1962-1966	
				Amount	Percent
Korean foreign exchange	95.3	174.3	231.5	989.9	41.2
Plan imports	--	26.1	38.9	226.0	9.4
Non-plan imports	95.3	148.2	192.6	763.9	31.8
U. S. defense support	175.6	148.1	108.2	661.7	27.5
U. S. development grants	36.4	17.2	1.8	31.6	1.3
P. L. 480	19.9	54.6	41.3	233.0	9.7
Foreign loans, including DLF	2.3	50.0	97.0	426.0	17.7
Foreign private investment	<u>13.5</u>	<u>12.5</u>	<u>12.5</u>	<u>62.5</u>	<u>2.6</u>
TOTAL	343.0	456.7	492.3	2,404.7	100.0

The Korean government currently has something in excess of \$200 million in foreign exchange holdings. The plan does not propose drawing down these reserves over the plan period. Small amounts are budgeted for capital import expenditures during the first half of the plan period, but it is expected that these amounts will be restored during the second half of the period.

To support the financial requirements of the plan, and to achieve some improvement in the unfavorable balance of payments, the plan emphasizes programs to achieve self-sufficiency in food, foster other import substitutions, curtail imports of consumer goods, expand exportable products, and obtain a larger share of the U. N. forces offshore procurement.

5. Private Foreign Investment

The plan speaks of the need for a program designed to attract foreign investment and emphasizes the Foreign Investment Law passed in January 1960. Nevertheless, it is quite conservative regarding the amount of foreign investment which it is believed can be attracted over the five-year period.

Almost no private foreign capital has been invested in Korea during the past decade. Korea's comparative poverty, in terms of natural resources and the size and character of the domestic market, largely precludes foreign investment based on domestic resources and market demand. In addition, the marked political and social instability of recent years plus certain other unfavorable factors has made Korea unattractive to foreign firms as a location for export production using imported materials and local labor.

It has been estimated that foreign private investment will amount to \$12.5 million in each of the five years, or a total of \$62.5 million during the plan period. This accounts for only about 2% of total planned gross investment and about 7% of the foreign exchange required to support the plan.

The plan does not identify specific projects for foreign investment. However, since its adoption, foreign investment has been sought for such industries as cement, fertilizer, oil refining, pig iron, straw pulp, soda ash, rayon and the manufacture of diesel engines.

E. SECTOR PROGRAMS

The plan as officially adopted by the Korean government is some 350 legal-size pages and consists mainly of aggregate and sector tabulations. Following a short introductory statement, about 25% of the document is concerned with summary schedules of resources, resource allocations and the over-all financial aspects of the plan. The balance of the document presents program and project details for eight economic sectors and the National Reconstruction Service. The final version of the full plan has not been translated into English nor has it been made public.¹ However, summary outlines of the plan are available in both Korean and English.

1. A hand-corrected English translation of the plan was used in the preparation of this report.

The following summaries of the principal sector programs briefly describe the aims and objectives of the programs and broadly outline their major quantitative dimensions. More detailed information about sector plans may be obtained from the English translation of the plan summary.¹

1. Agriculture, Forestry and Fisheries

It has been estimated that in 1960, Korea's imports of food exceeded exports by about \$20 million. A major objective for the agricultural sector is to eliminate the trade deficit in food by the end of the plan period. To meet this objective, to provide food for the increasing population and to support a more balanced diet for the Korean population, the plan proposes sizable increase in the output of food grains, fish, livestock and industrial commodities such as cotton, hemp and vegetable oils. Greater diversification of food grain production is scheduled to increase by about 30% over the plan period. Exports of food are expected to increase from about \$10 million in 1960 to nearly \$36 million by 1966. Total food exports during the five-year period are expected to amount to about \$138 million, of which about 65% will consist of food grains, fish and fish products. Livestock and fruits and vegetables account for the balance of the proposed food export program. The planned increases in the output of the principal agricultural and fishing commodities are shown in Table III-24.

The goals for agriculture and fishing are to be met by both increasing the amount of agricultural land and improving farming practices. It is estimated that about 550,000 additional acres will be brought under cultivation by means of planned reclamation and irrigation projects, and that the output of rice will increase by about 29% as the result of improved seed, deep plowing, and the increased use of fertilizer and insecticides. A price stabilization program is also planned, together with an agricultural credit program to provide farm financing at reasonable and stable interest rates. An expanded agricultural cooperative program featuring a "grain bank," farm loans, extension services and a community development program are also mentioned as important elements of the plan for expanding the output of food.

The waters around Korea abound with many varieties of fish and other seafoods. However, only a small proportion of Korea's fishermen operate on a commercial basis and most of their fishing fleet is obsolete or worn out. The plan proposes an increase of about 75% in the output of fish and other marine products, under the stimulation of a cooperative credit program, the construction of fishing vessels in Korea, the importation of larger offshore vessels, and improvement and expansion of processing and marketing facilities.

1. "Summary of the First Five-Year Economic Plan, 1962-66," Republic of Korea, 1962.

TABLE III-24

PROPOSED INVESTMENT IN AGRICULTURE,
FORESTRY AND FISHERIES, 1962-66

<u>Project</u>	<u>Currency</u>		<u>Total</u>
	<u>Dollars</u> <u>(millions)</u>	<u>Hwai.</u> <u>(billions)</u>	<u>Hwan</u> <u>(billions)</u>
<u>Horticulture</u>			
Livestock	3.9	17.7	22.8
Farm equipment	3.3	32.2	36.6
Land improvement	---	76.3	76.3
Seed improvement	---	8.8	8.8
Research and extension services	0.7	3.3	4.2
Community development	---	8.8	8.8
Tidal land reclamation ¹	8.8	25.8	37.2
Impounding of water ¹	0.9	14.5	15.7
Sericulture	---	15.8	15.8
Inventory (price stabilization)	---	177.2	177.2
Other	---	49.2	49.2
Total	<u>17.6</u>	<u>429.6</u>	<u>452.6</u>
<u>Forestry</u>			
Reforestation and erosion control	---	39.9	39.9
Inventory	---	2.2	2.2
Total	---	<u>42.1</u>	<u>42.1</u>
<u>Fisheries</u>			
Construction of large and medium vessels	6.3	4.5	12.8
Important vessels	0.7	2.3	3.2
Improvement of fishing and marketing facilities	0.8	1.9	2.7
Repair of vessels and ports	---	24.6	24.6
Tidal basin and inland water development	---	6.6	6.6
Inventory	---	9.8	9.8
Total	<u>7.8</u>	<u>49.7</u>	<u>59.5</u>
SECTOR TOTAL	25.4	521.4	554.2

1. To be constructed by the National Construction Service.

In forestry, a small reforestation and erosion control program is planned together with efforts to convert home heating from wood fuel to coal and the use of substitute materials for lumber. The principal projects proposed for the agriculture, forestry and fisheries sector are also shown in Table III-24.

2. Mining

A substantial increase in the output of electric power has the highest priority in Korea's five-year plan; since the power program relies mainly upon thermal generation, the program for expanding coal production has priority in the mining sector.

In 1960, six state-controlled coal mines and 57 private mines operated in Korea. Of these, four of the state mines and 38 of the private mines produced about 80% of the coal production; total production is estimated at about 5.2 million metric tons. The state mines produced about 50% of the total output; they are relatively large enterprises and utilize a considerable amount of modern coal mining equipment. The private mines, on the other hand, are small and poorly equipped.

It is estimated that, to meet the increasing demand for electric power and for household and industrial heating, coal production must be increased by about 120% to an annual output of 11.7 million tons by 1966. Virtually all of this expansion has been planned for the state-controlled mines. The program for coal includes further modernization of existing facilities and improvement of management, opening of new mines, geological surveys of coal fields, and the closing or merging of many small private mines. The program also demands substantial and timely improvement and extension of transportation and coal handling facilities.

In 1960, about 55 small iron ore mines produced a total output of about 400,000 metric tons, primarily for export. The five-year plan includes an integrated steel mill with an ore processing capacity of 600,000 metric tons which is expected to begin operations in 1967. It is therefore planned to increase iron ore production to about 600,000 tons during the target year.

Tungsten production for export is scheduled to increase from 5,000 to 8,000 short tons. Both graphite and kaolin output are scheduled to increase by about 50%, primarily for the export market. The five-year investment program for the mining sector is shown in Table III-25.

TABLE III-25

PROPOSED INVESTMENT IN MINING

	<u>Currency</u>		<u>Total</u>
	<u>Dollars</u> <u>(millions)</u>	<u>Hwan</u> <u>(billions)</u>	<u>Hwan</u> <u>(billions)</u>
<u>Mining</u>			
Coal	39.5	61.9	113.3
Iron ore	4.9	6.7	12.9
Tungsten	2.9	3.5	7.3
Graphite, kaolin, limestone and others	2.9	5.8	9.5
Inventory	<u>---</u>	<u>29.3</u>	<u>29.3</u>
Total	50.2	107.2	172.3
<u>Other Related Projects</u>			
Underground resources survey	---	1.4	1.4
Geological survey and research	---	3.3	3.3
Iron ore refinery	---	2.0	2.0
Other	<u>0.8</u>	<u>1.5</u>	<u>2.7</u>
Total	0.8	8.2	9.4
SECTOR TOTAL	51.0	115.4	181.7

3. Manufacturing

The introductory comments to the manufacturing sector of the plan outlines the objectives for this sector as follows:

"The Plan, which is directed toward eventual self-sufficiency, placed a particular emphasis on such manufacturing industries as cement, fertilizer, steel, oil refining, chemicals, etc. These industries will constitute a springboard for the economic activities envisaged in the Second Five-Year Economic Plan, during which period it is postulated that self-sufficiency of the economy must be obtained; and these industries will also exert stimulation on other sectors of the economy through external economy effects."¹

Nearly 30% of the total planned investment has been allocated to the manufacturing sector. About half of the investment in manufacturing is allocated to transportation equipment, fertilizer, food and fiber, iron and steel, cement and petroleum. It is estimated that the manufacturing sector will increase by about 94% during the plan period, with producer goods showing an increase of 168% and consumer goods advancing by about 70%. Manufacturing, together with electric power, account for about 60% of the total foreign exchange and about 33% of the local currency required to finance the total planned investment. The estimated demand and production of the principal manufacturing products are shown in Table III-26. The proposed investment in manufacturing is shown in Table III-27.

a. Iron and Steel

The only iron manufacturing facility in Korea is the Samhwa Iron Works. During 1961, only three of the firm's eight 50-ton furnaces were in working condition and only two were in actual operation. Korea's open hearth steel facilities consist of four plants with a total capacity of about 62,000 tons. Only one 50-ton furnace was in operation in 1961. In addition, Korea also has about 83,000 tons of rotary furnace capacity made up of a large number of small units installed in 1960. Only two or three are operating. The remainder are undergoing shakedown tests. Eleven electric furnaces in the two-to-seven-ton class have been installed in Korea. The shortage of electric power is said to be the reason for the failure of these units to reach capacity output of about 17,000 tons per year.

1. "First Five-Year Economic Plan, 1962-66," Republic of Korea, 1962.

TABLE III-26

ESTIMATED DEMAND AND PRODUCTION OF INDUSTRIAL PRODUCTS
(thousands of metric tons)

	<u>Base Year 1960</u>			<u>Target Year 1966</u>			<u>Percent Increase in Production, 1960-66</u>
	<u>Domestic Demand</u>	<u>Export</u>	<u>Production</u>	<u>Domestic Demand</u>	<u>Export</u>	<u>Production</u>	
Cement	650.0	--	430.0	1,200.0	170.0	1,370.0	218.6
Fertilizer							
Nitrogen	160.0	--	--	200.1	--	109.5	--
Phosphate	71.0	--	--	106.7	--	25.1	--
Pig iron ¹	27.0	--	13.9	260.0	--	43.2	210.0
Steel ingot	72.0	--	50.1	220.0	--	90.0	80.0
Pulp	39.3	--	13.1	81.9	--	35.0	166.3
Fuel oil ²	5,118.0	--	--	9,000.0	--	9,300.0	--
Soda-ash	13.6	--	--	32.0	7.6	39.6	--
P.V.C.	1.1	--	--	5.1	--	1.8	--
Caustic soda	5.0	--	0.3	16.5	--	10.2	--
Glacial acetic acid	0.8	--	--	1.2	--	0.8	--
Formalin	2.5	--	--	6.0	--	4.2	--
Methanol	1.0	--	--	1.6	--	1.1	--

1. Private domestic demand only.
2. Millions of barrels.

TABLE III-27

PROPOSED FIXED INVESTMENT¹ IN PRINCIPAL
MANUFACTURING INDUSTRIES

	<u>Sponsor</u>	<u>Foreign Exchange (\$ millions)</u>	<u>Hwan (billions)</u>	<u>Total Hwan (billions)</u>
<u>Iron and Steel</u>	Government	33.0	29.0	71.9
<u>Machinery</u>				
Machinery works	Government	12.0	2.4	18.0
Transportation shop	Government	12.2	37.2	53.1
Ship building	Private	24.2	38.6	70.0
Diesel and other vehicle	Private	2.0	1.8	4.4
<u>Cement</u>				
Expansion of two existing plants	Private	6.4	4.6	12.9
Third plant	Private	4.0	1.6	6.8
Fourth plant	Private	9.0	4.0	15.7
Fifth plant	Private	3.5	2.0	6.8
Total		22.9	12.2	42.2
<u>Fertilizer</u>				
Naju Plant	Government	2.7	5.9	9.4
Third plant	Private	30.0	6.0	45.0
Fourth plant	Government	30.0	6.0	45.0
Fifth plant	Government	15.0	3.0	22.5
Total		77.7	20.9	121.9
<u>Synthetic Textile Fibers</u>				
Nylon yarn	Private	2.6	0.7	4.1
First viscose rayon	Private	9.6	1.4	13.9
Second viscose rayon	Private	6.2	0.8	8.9
Acetate rayon	Private	6.0	3.0	10.8
Acetate fiber	Private	2.0	1.0	3.6
Total		26.4	6.9	41.3
<u>Petroleum Refining</u>	Government	16.0	3.5	24.3
<u>Miscellaneous Industries</u>				
Soda ash	Private	5.6	2.0	9.2
P. V. C.	Private	3.3	0.7	5.0
Tobacco	Government	2.8	20.3	30.4
Straw pulp and caustic soda	Private	1.0	1.3	2.6
Watches	Private	1.0	1.3	2.6
<u>Other Projects</u>	Govt. & Private	41.9	96.4	150.9

1. Includes only planned expenditures during the first five-year development period.

In steel fabricating, the Korea Heavy Industries Corporation and 27 small firms are equipped to produce small shapes and forms. A 6,000-ton tube plant and a 24,000-ton rolling mill began operations in 1960. Forty-four small firms supply the domestic demand for nails and wire.

The plan visualizes a substantial increase in future demands for pig iron and steel ingots and self-sufficiency for Korea in basic iron and steel products during 1967.

The estimated demand for pig iron in 1960 was 27,000 tons, of which about 14,000 tons were supplied by domestic producers. By 1966, it is expected that pig iron consumption will increase by almost 1000% to 260,000 tons. Domestic production in the target year is estimated at 43,000 tons or 16% of demand, which implies that most of the expected increase in pig iron consumption will have to be supplied from foreign sources. However, an integrated iron and steel mill capable of producing 250,000 tons of pig iron is planned for the target year, with production scheduled for 1967.

Consumption of steel ingots in 1960 is estimated at 72,000 tons of which about 50,000 tons were produced domestically. Over the plan period, demand is expected to increase by about 300% to 220,000 tons, with domestic output increasing to 90,000 tons, or 40% of consumption. The integrated steel mill is expected to supply Korea's full steel ingot requirements by 1967.¹

The plan also calls for modernization and rehabilitation of Korea's existing iron and steel facilities.

b. Machinery

This group of varied industries is expected to expand by about 250% during the five-year period. At present, it is a minor element in the Korean economy and is made up of a large number of very small firms, engaged to a considerable degree in repairing and rebuilding machines and equipment.

The plan visualizes a considerable number of new undertakings in this area including production equipment, generators, farm implements, automobiles and parts, and precision instruments. Among the specific facilities included in the plan are a diesel engine plant with annual capacity of 5000 units, the assembly of 5,000 automobiles of various types per year, a watch factory, and expansion of textile machinery capacity from about 600 units to 4,000 units per year. It is expected that private foreign and domestic investment will be attracted to ship-building, transport equipment, farm tools and electrical appliances and equipment.

1. Planned capacity of the steel mill has been recently increased to 350,000 tons of steel ingots. Construction is expected to start in 1963.

c. Cement

Domestic demand and production of cement is estimated at about 650,000 tons in 1960. Current production from the two existing plants appears to be about equal to demand. By 1966, the target year, it is believed that demand will have increased to 1.2 million tons. The plan calls for construction of cement producing capacity to produce 1,370,000 tons in the target year with the expectation that such capacity will fully supply Korea's requirements and allow for some exports.

According to the plan, the two existing plants are to be enlarged and three new plants are to be constructed. One of the three is expected to begin operations during the plan period. The other two plants are scheduled for full production by 1968, when it is estimated that total output will amount to about two million tons. It is hoped that this program will permit sizeable cement exports during the second five-year plan period.

d. Fertilizer

Korea imported its entire 1960 supply of chemical fertilizer under the U. S. AID program. The Chungju plant, with a capacity of 85,000 metric tons of urea fertilizer, began operations in 1961 and the Naju plant, also with a capacity of 85,000 tons of urea is expected to begin operations early in 1963. To hasten completion of the Naju plant, the Korean government has purchased stock amounting to Hw 3.5 billion and plans to buy the remaining shares in 1962.

The present demand for fertilizer is estimated at 160,000 tons of nitrogenous fertilizer and 70,000 tons of phosphates. During the plan period it is expected that two new plants will be built, one of which will begin operations in the target year. By that time it is estimated that domestic demand will amount to about 200,000 tons of nitrogenous fertilizer and 107,000 tons of phosphates.¹ Planned domestic production in 1966 is 110,000 tons of nitrogenous material, or about one-half of estimated requirements, and 25,000 tons of phosphates, or about one-third of requirements. By 1968 five fertilizer plants will probably be in operation, and producing 177,000 tons of nitrogenous fertilizer and 59,000 tons of phosphates.

-
1. The fertilizer program has been changed substantially. The current plan is to build a 250,000-ton urea plant in the Ulsan Complex. This output, together with the production from Chungju and Naju plants, presumably would supply Korea's total fertilizer requirements.

e. Textiles

Textile plants contribute an estimated 18% to total value added by manufacturing and therefore constitute Korea's largest manufacturing industry. Nevertheless, textiles have a low priority in the five-year Development Plan. The planned expansion is modest compared with other manufacturing industries, and most of it is scheduled for the latter years of the plan.

The textile industry now depends on foreign sources for about 90% of its raw materials. The planned program for textiles would provide a nucleus of synthetic fiber facilities including two viscose rayon yarn plants, a nylon yarn plant and an acetate fiber plant. Production of nylon yarn is scheduled for the second year of the plan. The balance of the synthetic fiber program is scheduled to come into production in the first year following the present plan period.

In textiles produced from natural fibers, the output of cotton yarn is expected to increase by 25%, silk fabric by 15%, and woolens and worsteds by 18%. Silk fabric exports are scheduled to increase from \$3,000 in 1960 to \$750,000 in 1966. No increase in cotton textile exports is visualized, while jute exports are expected to amount to about \$1 million in the target year.

In general terms, the textile development program reflects the austere living standards assumed in the plan and the assumption that Korean textiles have low export potential. The total investment cost of the textile program is estimated at about \$30 million in foreign exchange and about Hw 6 billion. The stated program is confined entirely to synthetic fibers and is expected to be carried out mainly by private interests.

f. Petroleum Refining

The plan includes a petroleum refinery having a capacity of 30,000 barrels of crude oil per day. Construction is scheduled to start during the third year. It is estimated that about 25% of the output from the plant will be gasoline, the balance will be kerosene and diesel oil. The plan calls for the plant to be built and operated by the Korean government, but it is understood that the possibility of constructing and operating the refinery in cooperation with an international petroleum company is now being considered. The total estimated cost is \$16.2 million or Hw 33.8 billion, including allowances for inventory accumulations. Currently, it is planned to locate the refinery at Ulsan in the southeastern part of Korea.

4. Electric Power

Korea's development strategy visualizes economic growth through industrialization and electric power is believed to be the key to industrial advancement. Power generating and distributing facilities, therefore, have the highest priority in the Five-Year Plan, both as to their claim on resources and investment timing.

It has been estimated that at the end of 1960, the demand for power under the existing rate schedule exceeded supply by about 172 megawatts, or roughly 50% of the installed capacity of 366 megawatts. The supply of electric power is currently estimated at about 75% of current demand.

The plan visualizes substantial and rapid increase in the demand for and supply of electric power. Over the five-year period, demand is estimated to grow at an annual rate of 12%, increasing from 460 megawatts in 1960 to 908 megawatts in 1966. To provide for the present shortage and to meet the estimated growth of demand, it is planned to increase generating capacity by almost 200%, from 366 megawatts to 1,048 megawatts. It is estimated that this program will provide excess capacity of about 80 megawatts by 1966. An additional 173 megawatts of capacity is scheduled for completion during 1968 and 1969.

The total power program (1962-1969) includes eight thermal plants, seven hydroelectric plants, rehabilitation of one thermal plant and one hydro plant, and extensive investment in transmission and distribution facilities. Rehabilitation of the present power distributing facilities is expected to reduce line losses and losses from unpaid consumption from about 30% to no more than 10% of the present total power output.

It is visualized that the shortage of power in Korea will be overcome during the third year (1964) of the plan period. To accomplish this, and to provide for increased demand, major emphasis is given to thermal power, with five of eight thermal plants scheduled for completion by the end of 1964. These five plants would increase total capacity by about 315 megawatts. Rehabilitation of the Yongwal thermal plant and the Chongpyong hydro plant would approximately double Korea's power generating capacity by the end of the third year of the plan period. Two of the five thermal plants, totaling 130 megawatts are currently under contract for engineering and construction. The contract for the construction of the Samchok plant No. 2, rated at 30 megawatts, was awarded to the Hitachi Company of Japan. The New Yongwal plant, with a capacity of 100 megawatts is reported to be under contract to a West German firm. Formal or preliminary loan applications on four additional thermal plants have been submitted to AID.

The high priority assigned to electric power in Korea's development program is indicated in Table III-28. The thermal and hydro units, the proposed construction schedule and the estimate costs are shown in Table III-29.

TABLE III-28

INVESTMENT SCHEDULE-ELECTRIC POWER

<u>Year</u>	<u>Foreign Exchange (millions of dollars)</u>		<u>Hwan (billions)</u>	<u>Total Hwan (billions)</u>
	<u>Annual</u>	<u>Cumulative</u>		
1962	23.1	23.1	31.2	61.2
1963	46.7	69.8	38.2	98.8
1964	49.3	119.1	39.7	90.9
1965	25.1	144.2	34.5	87.2
1966	14.9	159.1	34.4	53.8

5. Transportation

The plan provides for extensive development and rehabilitation of Korea's transportation system, with major emphasis on additional rail transport to handle the expected increase in production of coal and manufactured goods. The program of replacing steam locomotives with diesel units is to be accelerated. About 95 diesel locomotives are currently in operation in Korea and importation of 100 additional units is scheduled for the first year of the plan.

Construction of approximately 270 kilometers of new railway lines and 283 kilometers of industrial highways are also scheduled over the plan period and substantial allocations have been made for improving and maintaining Korea's existing highway system. The plan also calls for construction of 400 bridges, including a second highway bridge across the Han River at Seoul, and improvement of harbor facilities and coastal transportation. Virtually all of the proposed investment in transportation will be undertaken by the government. Substantial portions of the rail and highway programs have been assigned to the National Construction Service. The transportation program for the five-year plan period is shown in Table III-30.

TABLE III-29

ELECTRIC POWER DEVELOPMENT PROGRAM

<u>Thermal-Power</u>	<u>Capacity (mw)</u>	<u>Construction Period</u>	<u>Investment</u>	
			<u>Dollars (millions)</u>	<u>Hwan (billions)</u>
Kwangju	20	1961-1962	--	0.9
Samchok No. 2	30	1961-1963	4.0	2.7
Pusan	132	1961-1963	24.5	4.0
New Yongwol	100	1961-1964	6.0	9.7
Kunsan No. 1	33	1961-1963	8.3	2.4
Kunsan No. 2	66	1963-1965	12.7	2.4
Tanginri No. 4	66	1963-1965	11.6	2.8
Tanginri No. 5	66	1964-1966	12.2	2.0
Yongwol (rehabilitation)	100	1961-1963	4.5	0.8
 <u>Hydro-Power</u>				
Sumjin	14	1961-1964	2.9	12.1
Chunchon	50	1961-1964	6.1	13.1
Namking Dam	12	1962-1965	1.2	0.5
Soyang Dam	86	1962-1966	14.9	28.7
Pyongchang Dam	15	1962-1966	6.0	12.2
Andong Dam	23	1965-1968	4.0	7.0
Chungju Dam	150	1965-1969	5.0	7.2
Chongpyong (rehabilitation)	39	1961-1963	5.1	2.1
Transmission and distribution system	--	---	18.9	52.8

TABLE III-30

TRANSPORTATION DEVELOPMENT PROGRAM, 1962-1966

<u>Project</u>	<u>Quantity</u>	<u>Starting Year</u>	<u>Planned Investment</u>		<u>Total Hwan (billions)</u>
			<u>Dollars (millions)</u>	<u>Hwan (billions)</u>	
<u>Imported Railway Vehicles</u>					
Diesel locomotives	100	1962	15.0	--	19.6
Diesel cars	145	1963	9.4	--	12.3
Passenger cars	100	1963	5.0	--	6.5
Freight cars	1,000	1963	7.0	--	9.1
Production and repair of railway cars	4,025	1962	7.9	4.5	14.8
Railway construction (km)	271.4	1962	7.8	42.3	52.4
Highway construction (km)	283.0	1962	--	4.3	4.3
Construction and repair of bridges	400	1962	2.0	14.4	17.0
Harbor improvement	--	1962	--	23.4	23.4
Imported vessels	32	1964	38.6	--	50.1
Civil aviation	--	--	1.1	5.8	7.2
Other	--	--	<u>15.8</u>	<u>179.1</u>	<u>179.0</u>
TOTAL			93.8	273.8	395.7

6. Communications

Korea's present nonmilitary communications system is in poor repair and is greatly overloaded. During the five-year plan period, it is expected that the system will be substantially improved and extended. A total of \$4.2 million and Hw 54.6 billion has been allocated to the sector for installation of 37,000 additional telephone lines, a short-wave wireless network to link the major cities, construction of 836 new post offices in rural areas, and other projects. The planned program for communications is shown in Tables III-31 and III-32.

7. Housing

There is a great need for additional housing in Korea. According to the 1960 population census, about 10% of the existing dwellings are makeshift shacks and tents. Several thousand of them were torn down in Seoul during the early days of the present government, and the occupants, most of whom were unemployed, were provided other quarters in Seoul or relocated in rural tent villages. The average occupancy per residential dwelling in Seoul is estimated at 10.5 persons. Rural occupancy is estimated at 6.7 persons per dwelling.

The 1960 census indicated that in Seoul only about 50% of the dwellings required to meet estimated demand were available, and that the shortage was about 20% in the Provinces. Over the five-year plan period, it is expected that 475,000 dwellings will be constructed at a total cost of Hw 385.2 billion (\$296.3 million). Taking into account the projected increase in households and removal of the most substandard dwellings, it is estimated that this volume of construction during the plan period will reduce the housing shortage in Seoul to about 40% but that it will not improve the present deficiency of 20% in the Provinces.

The total cost of the five-year housing program is estimated at about Hw 400 billion. The plan indicates that actual construction will be left to individual households, with the government supplying mortgage credit and engaging in land development projects. An important objective of the housing program is to reduce the concentration of population in urban areas. It is also expected that the price of residential land will be reduced and stabilized and that an effective system of mortgage procedures will be developed.

TABLE III-31

COMMUNICATIONS PROGRAM

<u>Project</u>	<u>Base Year 1960</u>	<u>Target Year 1966</u>	<u>Percent Increase</u>
Telephone facilities (M circuits)	108	316	193
Carrier system and wireless circuits	427	3,670	759
Telegraph lines	520	1,370	164
Radio control facilities	610	1,210	98
Post offices	690	1,587	130

TABLE III-32

PLANNED INVESTMENT IN COMMUNICATIONS, 1962-1966

<u>Project</u>	<u>Dollars (millions)</u>	<u>Hwan (billions)</u>	<u>Total Hwan (billions)</u>
Telephone installations	28.7	24.0	61.3
Carrier and wireless facilities	8.8	8.9	20.4
Telegraph	2.1	10.3	13.0
Radio and laboratory facilities	0.4	0.6	1.1
Post offices	--	2.7	2.7
Training center	1.2	1.2	2.8
Replacements	<u>--</u>	<u>6.9</u>	<u>6.9</u>
TOTAL	41.2	54.6	108.2

8. Other Public Services

Substantial allocations of Hwan are planned for investment in education, public health, city water and sewage systems, tourism, and other public services. Expenditures for these services are estimated at Hw 290 billion or slightly less than 10% of the total planned investment.

Compulsory education has produced a high rate of literacy in Korea. Over the next five years, Hw 133 billion will be invested in educational facilities in order to eliminate the present substantial shortage of classrooms, renovate substandard facilities and reduce the current three-shift system to two shifts. About two-thirds of the planned public investment in education (Hw 108.1 billion) is earmarked for the construction of primary schools. The balance is allocated to a science center, a stadium, experimental equipment, and university facilities. It is estimated that about Hw 20 billion will be invested in private educational facilities over the plan period. The plan indicates a shift in emphasis from classical education to vocational training.

In most of the Korean cities, the water and sewage systems are inadequate and in poor repair. This condition is a serious menace to public health, and the plan proposes an investment of about Hw 32 billion to improve and expand water and sewage facilities.

A total of Hw 11.5 billion has been allocated to public health and social welfare programs. This includes transfer of about 600 doctors to under-staffed areas, renovation of 200 provincial and city medical clinics, greater efforts to control communicable disease, and legalization of and mass education in birth control.

Other public service programs planned for the next five years are development and promotion of tourism facilities, exports, and public information, including expansion of radio and television broadcasting and motion picture and color photographic facilities. The public service program is summarized in Table III-33.

9. National Construction Service

The National Construction Service Program was adopted by the Korean government during 1960. It was not activated, however, until the early months of 1962. The Service is similar to the U. S. Civilian Conservation Corps of the 1930's, in that its main purpose is to provide work for unemployed male citizens, particularly those in urban areas, and to put idle manpower to productive use.

TABLE III-33

PLANNED INVESTMENT IN SELECTED PUBLIC SERVICES, 1962-1966

<u>Project</u>	<u>Hwan (billions)</u>
Education and culture	133.4
City water and sewage facilities	31.8
Public health and welfare	11.5
Tourism	10.7
Public information	6.2
Export promotion center	3.0
Atomic energy	2.1
Technical survey	4.2
Other	<u>87.1</u>
TOTAL	290.0 ¹

1. Includes \$9.7 billion in foreign exchange.

The Service is organized along military lines and commanded by military officers. Members are to be conscripted from among those convicted of previously evading military service, and it is also expected that a large number of unemployed men will volunteer. Service members are provided with their essential needs and are given modest wages which are paid half in Hwan and half in kind.

The National Construction Service is expected to play a major role in implementing the five-year development plan. Of the total planned investment of Hw 3,214 billion, about Hw 450 billion (14%) is allocated to projects to be constructed by the Service. It is estimated that the Service projects will require approximately \$60 million in foreign exchange for imported equipment and materials.

As might be expected, the particular projects designated for construction by the National Construction Service are generally those in which large amounts of labor can be employed effectively. They include land reclamation, reforestation, flood control, water development, highway and railroad repair and construction, port and harbor improvements, water resources development, and city water and sewage disposal projects.

The Tae Back-Saw area development project is a good example of the types of work the Service is expected to perform. This project includes extensive development of the area's water resources, construction of 151 kilometers of industrial road and 283 kilometers of access roads, improvement and expansion of the port at Mukho, and construction of a dam for electric power generation at Pyongchang.

On March 15, 1962, the Office of National Construction announced that the first cadre of the Construction Corps, about 3,000 men, would be mobilized by April 25. A total of about 16,000 men are scheduled for conscription into the Corps during 1962. About 3,000 of these are expected from Seoul and the balance from the Provinces.

F. IMPLEMENTING POLICIES AND PROCEDURES

As indicated previously, the Korean Five-Year Economic Development Plan consists essentially of a set of statistical tables which successively translate a selected growth rate into aggregate resource requirements, sector allocations, and program and project detail. The plan offers little information on the means by which the stated objectives are to be reached, including organization, policies, programs and procedures. Implicitly, these matters have been left for development during the plan period.

This is not to say that the Korean planning officials were unaware of the critical importance of the implementation aspects in the planning process. This is evidenced in part by the fact that for each sector program a list of "Policies Required to Support Plan Implementation" is given. Examples from the agriculture, forestry and fisheries, and manufacturing sections of the plan indicate the general nature of the policy and procedural aspects of the plan document.

1. Agriculture, Forestry and Fisheries¹

- "a. To stabilize agricultural commodity prices, the government will provide adequate funds for the timely purchase of agricultural products.
- b. The financial resources reserved for agricultural use, such as the Grain Purchase Fund and the Rice Lien Loan Fund will be consolidated into a revolving fund for the above price support program.
- c. A quality control system for agricultural products will be renovated and reinforced.
- d. Funds for government purchase of industrial crops and raw silk will be secured, and the Agricultural Cooperatives will carry out a program for the purchase of industrial crops.
- e. Special Silk Production Areas will be established, each with 200,000 chongbos of land suitable for mulberry cultivation, and silk technicians assigned for extension services.
- f. No new irrigation projects will be undertaken, except for those in progress.
- g. Duplication of functions involving the Agricultural Extension Service, the Community Development Program, and the Agricultural Cooperatives will be avoided, and more efficient use made of financial resources.

1. First Five-Year Economic Plan, p. 93.

- h. Guidance work for agricultural cooperatives will be improved at the Li and Dong level, as well as at the Agricultural Cooperative Headquarters.
- i. Farm households will produce as much manure as possible.
- j. As far as possible, other materials will be substituted for lumber so that forests may be conserved.
- k. A nationwide program for renovation of heating units will be carried out to facilitate substitution of forest fuel by coal.
- l. A homestead policy will be promoted, through inducing urban unemployed to settle on farm lands, and to transform labor into capital.
- m. Projects for construction of fishing craft and other facilities including harbor improvement will be expanded.
- n. Fish processing plants.

2. Manufacturing¹

- a. Advanced techniques of production will be introduced.
- b. Industrial statistics, including periodical industrial censuses, will be improved.
- c. Measures to induce foreign investment in Korea will be implemented.
- d. Proposed projects, particularly those which are categorically new in Korea will be reviewed by engineers and adequate technicians will be provided.
- e. Industrial plants will be efficiently located with regard to transportation, water supply, power, raw materials, etc.

1. Op. cit., p. 154.

- f. Research will explore the possibility of utilizing, as far as possible, domestic resources in the case of the Integrated Steel Plant, and the various alternatives in determining the ownership and the manner of management in the case of the oil refinery will be thoroughly examined with reference to internal competition of oil products.
- g. There will be a reduction in the ratio of borrower's financial requirement to the DLF loans, and modification in the 'Buy American' Policy."

IV. EVALUATION OF THE FIVE-YEAR PLAN AND ITS METHOD OF PREPARATION

The preparation and announcement of the first Five-Year National Economic Development Plan for Korea marks an important step in the country's economic and social development. For the first time, Korea has declared social and economic advancement to be the central objective of national policy, and to this end it has developed and adopted a set of goals. These goals, by their very existence, are providing purpose, focus and a sense of urgency to Korea's efforts to achieve self-sufficiency. Excessive concern with the internal details of the plan and the deficiencies of its preparation could easily obscure this essential point. The plan is, however, only a first step and it is important that the government and people of Korea should clearly understand that much more work remains to be done. A blueprint for the country's future economic advancement has not yet been prepared.

Since the plan was drawn up on the basis of a theoretical growth model and not on a detailed assessment of the nation's resources for development, it will need constant reevaluation. It has been suggested¹ that the plan's investment and growth targets exceed, by far, the potential of the economy and that they should be scaled down. Although we do not concur with this view, we appreciate that the growth rates postulated are high in the light of experience elsewhere, and that a major national effort will be necessary to attain them, if indeed they can be attained on the basis of the physical, human, and foreign aid resources available to Korea. To scale down targets so recently announced before a detailed evaluation of resources demonstrates their impracticability will, however, seriously undermine public confidence in the Korean government. Such a detailed evaluation of Korea's resources for development might possibly indicate that an even higher rate of growth than that postulated in the plan can be attained. In short, there is insufficient evidence of the nature and extent of Korea's resources, the feasibility of and the interrelationships between planned projects and many other factors, to assert that any particular rate of economic growth is practicable during the next five years.

We are strongly inclined to the view that the Government of Korea would have been wiser to publish its development plan without reference to an average rate of growth of gross national product of 7.1%. Emphasis might have been placed on major investment projects, national policies in regard to taxation, commercial policy, financial, fiscal and other similar matters. It

1. IBRD, The Economy of Korea, February, 1962.

might be argued that the absence of aggregate projections would weaken a national economic development plan and leave little more than a list of projects. There is, of course, an important element of truth in this view, but by postulating a certain rate of growth the Government of Korea has not changed the situation in any fundamental way. The essence of a national economic plan lies in the economic and technical feasibility of the projects outlined in it; this cannot be changed by superimposing upon these projects a mass of mathematical calculations based on assumptions about capital-output ratios in broad economic areas and a postulated rate of growth of gross national product.

In a later section of this report we recommend that a greatly strengthened central economic planning organization be established to ensure that adequate information is developed to confirm or modify the projects scheduled for implementation during the plan period, and to prepare annual reassessments of the five-year plan and subsequent five-year national economic plans for consideration by the government.

The work of the central economic planning organization may reveal that substantial changes (not necessarily downwards) should be made in the present plan and these should be publicly announced when they have been accepted by the government. Modifications of the five-year plan, made in the light of more complete information and external changes over which Korea has no control, could probably be announced sometime in 1963 without imposing undue strain on public confidence. When such announcements are made, they can be accompanied by reference to the already achieved (and hopefully in some cases exceeded) targets. In this way, emphasis can be diverted from rates of growth to successfully implemented projects and a more sophisticated assessment of future problems and prospects.

A. PRINCIPAL ELEMENTS IN THE PLANNING PROCESS

Examinations of Korea's economic development plan have generally been concerned with statistical or mathematical measures of completeness, consistency and sector of project interrelationships. Without doubt, rigorous analysis along these lines helps the Korean planners to improve their knowledge and skills. However, where the objective is to gain understanding of the status of development planning in Korea, and the kind of technical assistance that might be effectively utilized, the principal focus should be upon the state of development planning and the planning processes employed. By centering attention on the aggregate goals and the sector and project values and relationships and the validity of the planning model and techniques employed, the underlying assumptions, and the basic data upon which it is based are either implicitly accepted or entirely overlooked. Analysis of Korea's planning activities thus tends to become a technical matter of ratios, statis-

tical projections and inter-industry relationships. For present purposes, the five-year plan does not warrant this kind of detailed attention.

The processes and procedures by which the plan was prepared are, of "key" importance to understanding its strengths and limitations and the organizational and procedural changes that must be made to ensure its implementation. We therefore present below an examination of the development planning situation in Korea from the standpoint of the principal elements or steps in the planning process. For each step a brief description of its nature and role in the process is followed by an analysis of the way in which the element was considered and treated in the preparation of the plan.

1. Defining the Objectives

in preparing a national economic development plan, the basic long-range aims of economic and social policy must be clearly established. Among those most commonly identified are

- a. increased per capita income
- b. reduction of unemployment and under-employment
- c. self-sufficiency in terms of food supply and the balance of payments
- d. better defense capabilities
- e. reasonable price stability
- f. more equitable distribution of economic opportunity and income
- g. better health and education.

Obviously, some objectives are more important than others and certain objectives may be inconsistent or otherwise in conflict with others. The objectives of national economic development planning should therefore be defined so as to clearly indicate their relative priority. Only if this is done can they serve as guides to the determination of the relative importance of specific investment programs and projects.

The Korean government views the five-year development plan as the first of several five-year programs leading ultimately to the achievement of sustained growth, reasonably full employment, higher per capita incomes and self-sufficiency for the country. The principal objective of the plan is to build an industrial foundation for later economic growth; it is expected to lead

to a substantial increase in national income and investment without appreciable increase in per capita consumption. Other plan objectives include self-sufficiency in food, a somewhat lower rate of unemployment, a stable price level and improvements in education, public health and housing. This latter group of purposes consists, however, either of assumed requirements for achieving the planned rate of growth, or the estimated effects of such growth. The problem, therefore, is that Korea's ultimate development objectives are long-range and have not yet been sharply defined. The five-year objectives are primarily technical changes in the size and structure of the economy; expressed in this way, however, they do not in themselves provide criteria for judging the relative contribution of sector programs and projects to the ultimate national objectives.

2. Formulating the Development Strategy

This step consists of a general appraisal of the country's economic position, the resources available to achieve the intended development purposes, visualization of the long-term future structure of the economy and assessment of the nature and direction of the principal economic activities through which development might take place. Thus, the formulation of a strategy is basically an attempt to develop a practical concept of how the country most logically might develop. The available natural resources, the outlook for population growth, the possibility of expanding agricultural output, the importance of industrialization, and the source of raw materials and markets for industrial production, are among the more important considerations. The relative balance among large economic areas and sectors is also relevant and should be considered in relation to some total time period as well as to lesser identifiable time spans.

Since the long-run strategy of the Korean five-year plan is to pursue development primarily through industrialization over a succession of five-year periods, the first period emphasizes investment in primary industries; this is expected to provide a base for the later growth of secondary and final goods sectors, increased per capita consumption and eventual national self-sufficiency.

The deficiency in this strategy is that it has been incompletely formulated. Its adoption stemmed from the belief that opportunities for expansion of the agricultural sector are limited and that major reliance will therefore have to be placed upon industrialization. This may well be true, but having arrived at this initial hypothesis, the development strategy was formulated by a somewhat academic consideration of the relative merits of balanced versus unbalanced growth and the "take-off" approach to economic development.

Thus, almost no consideration has been given to the question of how the structure of Korea's economy might develop beyond the first five-year build-up period. Will the succeeding industrial growth depend mainly on domestic resources or imported materials? Will the expanding industrial sector produce primarily for the domestic or the export market? Is it expected that the Korean economy will be able to support an expanding demand for capital goods or must a large part of these goods be imported? If the latter is the case, is there a need for further expansion of exportable agricultural products? The fundamental question, of course, is the nature of the economic activities toward which the Korean economy is expected to "take-off," after completion of the first five-year program. Because this question has not been answered, or even formulated, Korea's economic development strategy is quite incomplete.

3. Selecting the Planning Period

This element is closely related to strategy formulation. Apart from very short-range plans as reflected in the annual government budget, the period selected for detailed planning should be at least long enough to permit consideration of the impact, requirements and inter-relationships of the major capital programs and projects. A common practice is to prepare an intermediate plan (four to seven years) within the framework of a longer range plan (ten years or more). The five-year duration of Korea's present plan seems to have been determined mainly because acceptance of this period was considered a necessary condition for revision of the earlier draft five-year plan within the allotted two-months' time.

Unfortunately, five years is not long enough to permit adequate consideration of a plan's principal programs and projects. Korea has selected a long-range strategy, but is attempting to implement it by means of a short-range development plan. One result has already been noted. Korea's planning provides little or no perspective regarding the secondary and final goods industries that may develop during the "take-off" period. Also, most of the primary programs and projects that comprise the "take-off" base involve very long investment periods (20 years or more) and a number of these will have recently begun to operate or will not even be completed by the end of the plan period.

Thus the short duration of Korea's plan is responsible for a considerable part of the present uncertainty regarding the priority and feasibility of several of the major sector programs and projects, as well as the larger question of when or at what rate Korea might be expected to become self-sufficient.

4. Estimating the General Rate of Economic Development

Country-wide development planning usually starts with the establishment of tentative aggregate goals expressed in terms of national product, consumption, savings, investment, population, employment and foreign trade. Because capital is normally a major limiting factor, initial attention is often focused upon domestic savings and investment, the effect of alternative levels of capital formation upon consumption, production and employment, and the outlook for capital imports. Such estimates are useful as broad approximations of the effort and sacrifice required to achieve alternative rates of economic growth and, when expanded into sector estimates, they provide some guidance regarding sector relationships.

Thus, the logical procedure is to consider the target growth rate as the product of the values estimated for the aggregate factors which determine it. In Korean development planning a somewhat different procedure has been followed. The earlier five-year draft plan was developed on the basis of an average annual growth rate of 5.6%; a rate derived mainly by extrapolation with an allowance for technical change. Noting that the communist government of North Korea had announced a higher target rate, and assuming that the elimination of graft and corruption would permit more rapid development, an average annual compound rate of 7.1% was decreed as the required rate of growth of national output for the present five-year-plan period. The incremental aspects of economic growth were given recognition by estimating that the growth rate would increase from 5.6% in the first year to 8.6% in the target year. After this determination, the process of estimating aggregate values for savings, investment, consumption and capital imports, consisted of adjusting the old draft-plan to the higher growth rate, again using a simple Harrod-Domar growth model (the rate of growth equals the rate of savings divided by the capital-output ratio).

This, of course, is a highly mechanical method of establishing even tentative aggregate goals. However, given the decision to plan on a country-wide basis, the time available to the planning staff, and the kind and quality of data at hand, it seems unlikely that a more comprehensive procedure could have been employed. There is no particular harm in estimates of this kind, provided they are recognized as very broad and hence are not taken too seriously. The danger, of course, is that having been officially adopted they are regarded as goals that must be met at all costs.

Although the views of ROK officials on this point are not entirely uniform, the government's general position seems to be that the aggregate goals will not be modified at the present time. However, flexibility will be maintained with respect to internal programs and projects. The principal reason for adhering to the aggregate goals seems to stem largely from con-

cern over the political effect of changing them, rather than belief in their statistical validity. The official Korean position on this point is reflected in the following statement by the Prime Minister:

This plan, the first of its kind in Korea, is to a considerable degree tentative, and has been designed to be sufficiently flexible to accommodate unforeseen contingencies and discrepancies which may arise partly because of inaccuracies in the raw statistical data basis and partly because of inevitable shortcomings in the techniques of planning.

It is anticipated that in the light of experience gained during the early implementation of the plan, it may be necessary to modify the details of its further progress. This may well be inevitable, since however good the planner's estimates, or however well planned the measures for achieving the plan targets, perfect fulfillment is impossible. The planners have little control over a number of important factors--prices and volume of exports, agricultural output--and over others, all they can do is to try to exert their influence in the right direction."¹

5. Allocation of Gross Investment to Major Economic Areas

Essentially the same simplified approach described above was used to allocate total investment to the economic areas designated in the plan as primary, secondary and tertiary industries.² For each area, a separate

1. "Five-Year Economic Plan and Industrial Revolution," Yo Chon Song, Korean Affairs, February/March 1962, p. 3.
2. Agriculture, forestry and fishing are designated as primary industries; mining, manufacturing and industrial construction are classified as secondary industries; and electric power, transportation, communications, public utilities and other public services are called tertiary industries. This classification was originally developed by Colin Clark for the purpose of making international comparisons. The Planning Bureau in Korea's Economic Planning Board is organized into primary, secondary, and tertiary industry sections, plus an over-all planning section. It is said that lack of qualified staff precluded a more extensive (and logical) organization.

average annual capital-output ratio was estimated from estimates of past GNP relationships, judgments regarding future increases in productivity, and separate capital-output estimates for a few of the leading sectors. Total estimated output had been distributed to the three areas and to major sectors within the areas through a process of translating sector priorities into sector growth rates adjusted to yield an over-all average annual rate of 7.1%. Investment requirements for the three areas and the leading sectors were then estimated by applying the separate capital-output ratios to the output allocations.

This procedure needs little comment. It is highly mechanical and yields results that are obviously not more than preliminary and gross approximations. As such they may be of some slight value as general indicators. However, if the area and sector investment allocations calculated in this way are considered final, and are used to govern the size of specific programs and projects, serious misallocation of resources may result. For example, prior designation of area and sector priorities abstracts from the fact that priorities are greatly influenced by the size of the total development program, the composition of the program, and the individual projects selected for each area and sector. Also, the use of different capital-output ratios for the three major areas implies that the Government of Korea accepts a loss of growth over the initial five-year period in the interest of inducing additional and continuous investment in subsequent plan periods. This is not inconsistent with national economic development planning in Korea, but it is not the result of carefully balancing short-term losses against long-term gains. Furthermore, establishing priorities by broad industrial sectors implies that all projects proposed for a particular sector have priority over all other projects within sectors of lesser priority. This procedure is convenient but it is not likely to result in an effective total program.

6. Estimating Total Imports and Exports

There is no very satisfactory method of estimating the aggregate imports required to support a projected level of total production, or the exports needed in conjunction with imports to estimate a feasible balance of international payments. Rough preliminary estimates are sometimes made using coefficients developed from past aggregate relationships or borrowed from other countries.

The procedure used by Korean planning officials is not entirely dear. In part, total import-export estimates in the five-year plan are values derived by relating import requirements and export earnings to estimated past relationships between these factors and the growth of national income. Also, part of the procedure used to estimate exports consisted of unilaterally estimating the availability of foreign aid and working from this to an export

earning requirement, taking into account Korean foreign exchange holdings and estimated private foreign investment. Finally, the initial import and export estimates were to some extent adjusted to conform to the program and project detail supplied by the economic ministries.

In any event, it is clear that the export component of final demand was developed primarily by means of intuitive judgments. Consideration of future world markets, competitive conditions, quality and design factors, and the technical feasibility of expanding output in the exporting sectors has been minimal. Projected import requirements and the balance of payment estimates are equally tentative. The lack of time, data and experienced personnel may have precluded more detailed analysis, but this does not detract from the importance of such analysis when the aggregate values in an economic plan are seriously proposed as national development goals.

7. The Financial Plan

An essential element in over-all development planning is careful consideration of financial resources required by the government and by the private sector to accomplish the proposed increase in national output, plus an assessment of the possibility of meeting these requirements from personal savings, business savings, taxation, foreign investments, loans and grants, and possibly from forced savings enhanced by means of a budget deficit. If the required rate of investment cannot be met from the available sources of capital, the target rate of growth must be scaled down.

Korea's five-year plan is particularly fragmentary in its financial aspects. As indicated above, total investment was determined by assuming a capital-output ratio and calculating the rate of investment required to support a postulated rate of growth. Similar procedures were used to allocate this total to broad economic areas and to individual sectors. The financial requirements of the private sector were treated as a residual after calculation of the financial needs of the government and public enterprises.

The five-year plan was prepared with little or no coordination between the Finance Ministry and the Economic Planning Board. Given total financial requirements, the planning officials did not examine the possibilities of mobilizing financial resources but simply allocated the total to the various sources of financing. Thus, the estimates of taxation, savings, domestic borrowing, private foreign investment and grants and loans are broad projections, derivatives calculated from the expenditure side of the program, or values required to balance estimated income with estimated expenditures. Since no detailed long-term analysis of Korea's domestic financial resources has been made, this important step must necessarily be undertaken during the plan period.

The amount of foreign grants and loans and their allocation to sector programs and projects is a critical factor in Korea's development program. Yet the total annual amount of this type of financing and its allocation are unilateral assumptions made by Korean planning officials. Little or no coordination between ROK and U. S. officials of this aspect of the program seems to have taken place. This fact alone underscores the highly tentative nature of Korea's five-year plan.

8. The Private Sector

In planning public investment, a government assumes responsibility for developing and carrying out certain programs and projects in detail. In the private sector, however, central planning consists of estimating the private investment that might be expected under the conditions set forth in the plan and, if the estimate falls short of requirements, of developing fiscal, monetary, trade and commercial policies designed to induce the required additional investment. Private investment is ordinarily estimated by sectors or industries in cooperation with private industry but there seems to have been little or no contact between the officers of E.P.B. and private businessmen during the preparation of the five-year plan.

The plan estimates that about 40%¹ of total investment over the plan period will be undertaken by the private sector. However, this projection was not developed from consideration of past rates of private capital formation, the plans, or views of private producers or the estimated effect of various tax, credit or regulatory policies upon the rate of private capital formation. The total projected investment by the private sector was estimated by adding the public investments proposed for each sector by the ministries and subtracting this amount from the total investment required to achieve the 7.1% over-all average annual growth rate, given the assumed over-all capital-output ratio. Thus, the private investment projections in the Korean five-year plan, both in total and for individual sectors, are essentially residual values, having their

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1. The investment schedules in the plan indicate that direct investment by the Korean government is expected to amount to 35% of the total, with the balance (65%) to be undertaken by the private sector. However, the plan classifies public enterprises, notably electric power and coal, in the private sector. By shifting the proposed investment by the Korea Electric Power Company and the Dai Han Coal Company (both public enterprises) to the public sector, public investment amount to about 60% of the total.

basic origin in a simplified aggregate growth model. The efficiency and consistency of these estimates remain to be tested.

9. Public Programs and Projects

While aggregate planning is in process, the economic ministries and other public and private agencies should be developing sector programs, cost and benefit analyses of major projects and estimates of other factors, such as changes in the supply of labor, foreign capital resources, etc. These plans should then be evaluated by the planning agency from the standpoint of objectives, goals, priorities and internal consistency.

Unfortunately, the five-year plan is particularly tentative with respect to the probable cost, impact and consistency of sector programs and projects. After the total estimated investment had been allocated to individual sectors, the ministries were requested to supply program and project details. These were received in the form of project proposals showing estimated costs, annual outputs, foreign exchange and domestic investment requirements, and construction periods. For the most part, the projects proposed by the ministries were accepted by the Planning Board and incorporated into the plan with little or no evaluation of costs and benefits or the relationship of programs and projects to each other.

Furthermore, there appears not to have been a great deal of quantitative cross-analysis among the ministries, government enterprises and other operating agencies where programs and projects are closely interrelated. For example, the expansion of electric power, coal, cement rail transportation and steel will generate both direct and indirect demands among these and other sectors, but these basic interrelationships were not examined in detail. To a considerable degree, the ministries and agencies responsible for individual sectors have assumed that the facilities, equipment and materials required to support the proposed expansion will be available when needed from the expanded output of other domestic sectors or from imports. Thus the five-year program proposed by the government-owned Dai Han Coal Company implicitly assumes that the electric power transmission facilities, rail lines, hopper cars, shipping and harbor improvements which, according to the program, are essential to realization of the output target for coal, will be constructed or supplied in the required time sequence.

The amount and kind of analysis employed varies considerably among the several programs and projects. The program for coal is essentially a revision of an eight-year program developed prior to the Military Revolution. A considerable part of the plan for modernizing and improving Korea's railroad system has been under study for some time, with the assistance of foreign

experts. Detailed engineering plans have also been prepared for a number of other projects scheduled for early completion, including power, cement and fertilizer. Nevertheless, taking the five-year program as a whole, most of the sector programs are the product of analyses based on a few simple assumptions and relationships.

For example, although the five-year development program for coal is more detailed than a number of others, the annual estimates of demands for energy and coal are based primarily upon the assumed rate of increase in population (2.88%) and projection of an index of manufacturing prepared by the Bank of Korea. Neither measure is reliable because the data and methods which underlie them indicate a strong possibility of wide margins of error.

10. Testing for Feasibility, Efficiency and Consistency

In broad terms, the initial steps in the country-wide development planning process consists of (a) preparing a plan framework of aggregate values working from the top down, and (b) developing the details of sector programs and projects from the bottom up. The next step is to test the aggregate estimates by comparing them with the general implications of the sector programs. This involves examining sector programs for their resource requirements, their contributions to development objectives and their economic interrelationships. The procedure consists of a series of up-and-down adjustments until it is judged that at least most of the more important discrepancies have been eliminated. The participation of affected public and private organizations in this procedure is essential.

This important element is present only to a minor degree in Korea's planning procedures. The aggregate framework of the five-year plan is essentially the product of a mechanical application of highly abstract models with the details of programs and projects adjusted to "fit" the over-all values thus computed. Korea's development planning has therefore been primarily from the top down with very little up-and-down testing and successive adjustment of goals with the output and resource requirements of programs and projects. This is one of the major reasons why the present Korean five-year development targets, as well as many of the sector programs, should not be considered to be more than first approximate estimates.

11. Implementing Policies, Programs and Procedures

Apart from general descriptive listings by sectors of what are termed "Policies Required to Support Plan Implementation," the plan is silent regarding the ways and means by which the Korean government expects to

mobilize the required resources, or the specific policies, programs and procedures needed to implement the program. This important step in the planning process will therefore have to be taken during the plan period.

The implementing aspects of a development plan are concerned with the supporting policies and programs required to achieve the specific development targets and, with the organization of the government and the private sector, to carry out the plan. In Korea, this includes policies and programs to

- a. meet the target savings and investment in both the public and private sectors**
- b. increase exports**
- c. attract foreign capital**
- d. provide credit**
- e. mobilize and train skilled manpower**
- f. improve the management and operating procedures of public enterprises**
- g. reorganize the structure of the agricultural sector and induce more efficient farming practices**
- h. provide inter-sector coordination and continuous review of plans and programs**
- i. develop procedures and the competence to make detailed cost and benefit analysis of sector programs and projects**
- j. develop an effective fiscal system**
- k. integrate the planning function with the budget process**
- l. control prices**
- m. reduce the rate of population growth**
- n. establish an adequate supporting statistical system, and develop an organization, procedures and specific project plans for the National Reconstruction Service.**

The foregoing is not a complete list, but it clearly illustrates that virtually the entire task of planning the implementation aspects of Korean economic development must be accomplished during the plan period. Under any circumstances, this would be a formidable undertaking; in Korea it will be particularly difficult because the country has had no previous experience in development planning or implementation and because the institutions, attitudes, procedures, programs and policies inherited by the present government are quite inadequate for the task.

In this connection, it is important to emphasize that the available ways and means of accomplishing development goals and the skill with which a country is able to employ them are extremely important considerations in setting general goals and determining sector programs and projects. The fact that these considerations have played little or no part in the preparation of Korea's five-year development plan again indicates the highly tentative and approximate nature of the plan. It also suggests rather strongly that the development planning process is not well understood in Korea.

B. EXAMPLES OF FAULTY PROJECT PLANNING IN THE FIVE-YEAR PLAN

The following are examples of what we regard as faulty project planning in the preparation of the five-year plan. It should not be regarded as expressing a negative attitude toward the projects discussed. Indeed, we consider several of them vital to the further growth and development of Korea's economy. Our purpose is to point to defective procedures so that measures may be taken to ensure that future planning decisions are taken in the light of all the relevant facts and circumstances that can be ascertained and hence Korea's long-term economic interests as far as they can be determined by rational decision-making processes.

1. Electric Power Generation

During the period of the Reconnaissance Survey team's stay in Korea, the situation in regard to electric power development planning can be described only as disturbing--both in terms of Korea's economic future and the possible contingent obligations of the United States government under the foreign aid program.

Electric power generating facilities are undoubtedly inadequate at the present time to satisfy the country's potential level of domestic and industrial demand (at the current level of charges). The acute power deficiency in Pusan has recently been alleviated by the installation of a 30,000-kw power barge by the Korean government (through the good offices of the United States

AID Mission to Korea), but the Republic of Korea, with a total generating capacity of approximately 400,000 kw, remains seriously short of electric power. The view is widely (and we believe correctly) held by Korean government officials that a substantial increase in generating capacity is a prerequisite of further economic growth. Plans have therefore been prepared by the Korea Electric Power Company and the National Construction Service to increase the country's power generating capacity at a rapid rate. Unfortunately, these plans are uncoordinated and inadequately supported by economic, engineering and hydrological analysis.

During the summer of 1961, the Korea Electric Power Company estimated that in December, 1961, there would be a national power generating deficiency of 199,000 kw and that the demand for power would increase during the next five years at an annual rate of 12% of the base year's estimated potential demand (actual capacity + 199,000 kw). The estimated rate of increase in power demand is not unreasonable in the light of Korea's development plans, but it should be confirmed by means of a power survey that explicitly takes into account the projects set out in the five-year plan and should be predicted on a specific power rate structure. Without reference to the rates at which power will be sold, estimates of power demand are meaningless, at least for private domestic, industrial and commercial users.

The use by the Korea Electric Power Company of a purely notional base (estimated present potential demand) is however less defensible. It introduces the possibility of a very serious overstatement of Korea's power needs in 1966, since the estimated present capacity deficiency can be little more than a guess.¹ At 60% of December 1961 peak hourly output it is, however, a substantial guess that could lead to a major degree of over-investment in electric power generating facilities and hence under-investment in other sectors of Korea's economy.

Despite the serious possibility of error inherent in the acceptance of a very high estimate for unsatisfied present power needs, the Korea Electric Power Company has approached its task of supplying Korea's electric power needs in a responsible manner. Contracts have been let and are being negotiated for a number of thermal stations in various parts of the country. Although we believe that it may prove necessary to modify the timing and nature of certain of the projects scheduled for initiation in the later years of the plan period, the company's program should be vigorously implemented for at least the next two or three years. Further re-evaluation at the present time would result only in loss of time, frustration of the company's officials, and a serious danger to the success of the five-year plan.

1. Previous estimates range from 30,000 to 80,000 kw.

Unfortunately, the power generation plans of the National Construction Service are less well considered. They should be regarded as a list of potential projects which further study may eventually qualify for inclusion in a national power development program for Korea. There is no evidence to suggest that they were worked out with reference to either an understanding of the extent and nature of Korea's hydrological resources, an appreciation of Korea's power needs, or the plans for generation and transmission of the Korea Electric Power Company. Fortunately, they are not scheduled for initiation for several years. It is strongly recommended that construction not begin until a full-scale investigation into Korea's over-all energy resources has been made and carefully considered by the Government of Korea.

Our strictures on the plans of the National Construction Service should not be read as an endorsement of an "anti-hydro" approach to electric power development in Korea. Water power must be called upon to play its role in Korea's energy program and we are convinced that the United States government will be prepared to assist in the development of economically sound projects. They must, however, be developed in the light of Korea's over-all water and fuel resources and power needs. A considerable amount of valuable preliminary work on Korea's water resources has already been done by AID technicians, consultants and others, and this should be used as a basis for the preparation of an over-all energy development plan for Korea. This would constitute one of the major tasks of the reconstituted economic planning organization recommended in this report.

2. Transportation

There can be little doubt that considerable expansion and improvement of Korea's transportation system is essential to the economic growth of the country. The railroads have been poorly maintained and much of the equipment is make-shift or obsolete. Korea lacks an adequate highway network and most of the roads are in very bad repair. Many communities are virtually isolated from the rest of the country either because of the absence of transportation facilities or the destruction by periodic floods of roadways and bridges. Thus the need for additional transportation seems evident, but the extent and nature of the need is far from clear.

The five-year plan transportation program is essentially a collection of projects prepared by the Ministry of Transportation and supplemented by the National Construction Service. Estimated increases for certain of the transportation-using industries, such as coal, fertilizer, iron ore and cement were available to the Ministry prior to development of the transportation

program, but the location of many of these facilities had not then been established, and it does not appear that the location or markets was taken into account in any systematic way. Furthermore, the estimates of total ton/kilometers and passenger/kilometers over the five-year period are essentially simple projections of past GNP-traffic relationships. Because the data on both sides of these equations is highly suspect, the transportation requirements contained in the plan, and particularly the equipment estimates, cannot be considered reliable.

The Korean five-year plan attempts an over-all appraisal of the transportation facilities required to support the plan. This objective, of course, is sound, but because few projects included in the plan have been examined for feasibility, efficiency or priority, Korea's national plan affords very little basis for estimating the physical and financial requirements for specific transport projects. In other words, the plan does not provide the kind of information needed to produce even approximate estimates of the kinds of goods that are likely to be moving, the quantities involved and their origins and destinations. In addition, there seems to have been very little coordination in the development of the programs for rail and highway transport and virtually no consideration of the comparative cost and benefits of alternative combinations of these two types of transportation. The highway and rail programs of the Ministry of Transportation appear to have been prepared independently of the projects proposed by the National Construction Service.

The problem of planning a transport program for Korea is illustrated clearly in the close physical and financial relationships among energy requirements, coal and transportation. Under the Five-Year Plan the demand for electric power will probably increase from about 460 megawatts in 1960 to about 900 megawatts in 1966. To meet this demand and to provide coal for the projected industrial and civilian uses, it is estimated that coal production must be increased from about 4.8 million tons in 1960 to 11.7 million tons in 1966. To transport the increasing quantities of coal from the mines to points of utilization it is estimated that about 70 kilometers of new rail lines will be required, plus about 50 locomotives, 3000 coal cars, five coal ships and extensive repair and enlargement of port facilities at Mukho and Pusan. The transportation planning problem in these estimates is essentially that both the energy and coal demand projections are not reliable; therefore, estimated transportation facilities required to support these demands are equally suspect. The same conclusion, in greater or lesser degree, appears valid regarding the output projections of other transport-using sectors and industries, including passenger travel. And this in turn means that, to a substantial degree, the development of plans for specific transportation projects will probably have to be delayed until the development plans for principal commodities have been more specifically formulated and tested.

3. The Ulsan Complex

In February 1962 the government of Korea announced that it proposed to establish an industrial complex at Ulsan. Although this project has received consideration from time to time it has not been carefully investigated or included in any of Korea's economic development plans. Since the five-year plan had been announced only a few weeks before, the Ulsan project came as a surprise to the Korean public, Planning Board officials and foreign observers.

We do not wish to question the economic desirability of this development since there is inadequate information on which to base an economically rational decision, but we feel constrained to point out that the procedure adopted casts serious doubt on the government's ~~failure~~ in its own five-year plan. The absence of the Ulsan proposal from the plan need not of course have prevented the government from considering or even decreeing its implementation. It should, however, have been presented to the Economic Planning Board and the various ministries concerned for detailed examination in the light of its impact on and implications for the Five-Year Plan. The short-circuiting of the planning mechanism and cavalier modification of its so recently announced five-year plan is not a good omen for the success of economic planning in Korea.

4. Iron and Steel

The Five-Year Plan proposed construction of an integrated iron and steel mill with a capacity of 260,000 metric tons of pig iron and 220,000 metric tons of steel ingot. Recently, however, these estimates have been increased to 350,000 tons of iron and 370,000 tons of steel plus heavy, medium and small rolling facilities. The Plan also includes funds for modernizing and rehabilitating Korea's existing iron and steel facilities.

The economic justification for an integrated iron and steel mill in Korea is yet to be established. This project was inserted in the plan without consideration of its feasibility or its priority in terms of relative costs and benefits. The demand and production estimates for the first five years are not much more than guesses. In any event, they are not particularly relevant because the plant is not scheduled for production during the present plan period. It seems fair to conclude that Korea's proposed steel mill reflects the widely-held view that a country cannot consider itself on the way towards development unless it has a steel mill.

The Korean government has recently recognized that detailed examination of the technical and economic aspects of the proposed steel plant

is essential. Requests for proposals to survey the project have therefore been issued and it is expected that a report will be completed during November, 1962. A limiting aspect of this procedure is official adoption of the Ulsan Complex and assignment of the highest priority to this project. The steel survey therefore must be made under the assumption that the plant will be located within the Complex. The Korean government currently assumes that the Complex itself is economically sound and therefore is not prepared to examine this aspect of the project. Because the steel mill is essential to the Complex, and the Complex has been proclaimed essential to Korea's development, it is possible that a negative conclusion regarding the steel mill would be extremely difficult for the Korean government to accept. On the other hand, if the findings of the survey group are negative, it will be very difficult for Korea to obtain the necessary foreign financing of the iron and steel plant.

The iron and steel project illustrates several difficult problems regarding Korea's development planning:

a. Most of the industrial programs and projects included in the Five-Year Plan are highly tentative proposals and require detailed surveys before they can be considered serious candidates for investment. This, in turn, creates a great deal of uncertainty regarding Korea's development strategy, the projected pace of development and the feasibility and priority of sectoral programs.

b. The absence of technical and economic analyses of many of the more important projects included in the Plan means that this work will have to be done during the Plan period; and this suggests that "planning" in Korea is likely to be highly "project-oriented" over the next year or two. If the Economic Planning Board is to be effective it must adjust in both functions and personnel to this situation. The Board should concern itself with the most important and immediate problems of development implementation and at the same time attempt to initiate comprehensive sector programming. Eventually, it is to be hoped that sound country-wide planning can be undertaken, but at the present time it seems doubtful that such work would be of much practical value.

c. The firm (or firms) that undertake the iron and steel study will probably have considerable difficulty in arriving at definite conclusions regarding the general feasibility of the project, the scale of operations that may be warranted and the major technical aspects of the plant. This is due, in part, to the fact that reliable data on past consumption and production of iron and steel and associated products is not available. Other aspects of the problem include a lack of accurate cost information, uncertainty about Korea's iron ore reserves, and the unreliability of the Five-Year Plan as an indication

of Korea's future demand for steel and steel products. Thus, the possibility that objective studies of the iron and steel project, and other major projects, will be inconclusive is very real. This, in turn, means that decisions as to whether to proceed with such projects will rest heavily upon judgment. The possibility of conflict in this situation is readily apparent.

5. Cement

The Five-Year Plan estimates an increase in domestic demand for cement from 650,000 metric tons in 1960 to 1,200,000 metric tons in 1966. It is also estimated that 170,000 tons will be exported in 1966. Consequently, total production in the target year is estimated at 1,370,000 metric tons. These estimates are little more than broad judgments. Currently, Korea's cement consumption is considerably below production capacity and sizable inventories are on hand. Estimates of both domestic and foreign demand over the next five years are simple projections rather than a careful translation of the five-year plan into cement requirements.

An interesting aspect of the cement program is that it purports to represent the cement required to accomplish the industrial and other types of construction called for in the Five-Year Plan. However, if, according to the indicated strategy, the plan succeeds in providing a base of primary industry upon which secondary and final goods industries may be developed, it is possible that the demand for cement might decline during succeeding five-year periods and this, in turn, might result in excess capacity and mis-allocation of investment. Although this possibility is completely conjectural it does illustrate the difficulties of planning long-range investments over a short-term period.

C. KOREAN STATISTICS

A substantial quantity of economic statistical data is available in Korea, but unfortunately much of it appears to be of doubtful quality. By far the best statistical work is done by the Bank of Korea, but the resources available to the Bank for this purpose are limited, and because of its quasi-governmental status, the Bank has little influence over the statistical methods and standards of governmental agencies.

Thus, with few exceptions, the Korean statistical system suffers from the use of inappropriate techniques, faulty application of techniques, extensive fragmentation of the statistical function, a general shortage of trained statisticians, enumerators and other statistical technicians, ineffective management of statistical operations, poor understanding of the importance of adequate data, and other deficiencies.

This situation is a major handicap to Korea in planning and implementing its development program. Poor data or the lack of data casts doubts on the development goals, aggregate projections and forecasts, sector programs and individual projects. Korea's data problem makes it difficult for the government to measure results and take timely, corrective actions.

There is no easy or short-term solution to this problem. Clearly, Korea cannot and should not postpone or retard its efforts to advance because of inadequate data. For the immediate present, available economic information must be used with due recognition of its deficiencies and with substantial injections of judgment. Concurrently, however, strenuous effort should be made to fill the more important gaps, using techniques that will yield usable results quickly.

1. Nature of the Problem

The problem of developing adequate economic data in Korea has both technical and cultural facets. Basic to the problem in the immediate past has been the upheaval caused by the Korean War and its aftermath, political unrest and instability, and personal favoritism and corruption. But there are other problems which collectively present a formidable obstacle to the important task of building a sound statistical system:

a. There appears to be very little recognition in Korea of the importance of adequate and reliable economic data, nor does there seem to be any well-established tradition regarding the collection and utilization of statistical information. Korean government officials readily agree that their statistical system is deficient, but apparently it is very difficult to induce corrective action.

b. When new or later information is thought necessary, Korean technicians have a tendency to rush into the work with hastily improvised procedures which are frequently incapable of providing reliable results. This seems due to lack of qualitative standards, the common practice of senior Korean officials requiring that work be completed within a wholly inadequate period of time, and acceptance of Western statistical techniques without critical examination of their requirements and limitations when used in Korea.

c. In Korea, employment in the central government generally affords considerable social status. However, within the government, statistical workers enjoy very little social status, regardless of position. It is thus difficult to interest competent individuals in either statistical training or statistical operations. Officials have expressed marked preference for

other types of work, despite offers of higher positions and salaries in the statistical field. In the past, at least, statistical positions have been filled by misfits or have been used as rewards for political favors. Turnover in these positions has been heavy and the degree of competence achieved has been exceedingly low. It is reliably reported that in the present Bureau of Statistics only one or two employees out of a staff of several hundred can be considered trained statisticians. The Planning Bureau of the Economic Planning Board has so little confidence in the Bureau of Statistics that it did not utilize its services in preparing the Five-Year Economic Plan, nor has it since requested that obvious data deficiencies be remedied.

d. Statistical activities in the Korean government are conducted independently by a large number of government subdivisions, including the public enterprises. There is no central planning or control of statistics nor have uniform statistical standards been established. The Bureau of Statistics was transferred from the Ministry of Home Affairs to the Economic Planning Board in recognition of the importance of data in the economic planning process. However, the Bureau is technically weak and is otherwise incapable of coordinating and controlling statistical work within the Korean government.

Each Government agency is relatively free to initiate statistical work and select its own methods and techniques. Questionnaire surveys are popular, and a common procedure is to send questionnaires to the provincial governments which then pass these down through lesser political jurisdiction to the smallest. After the questionnaires have been completed, the information is returned through the same channels. At each level in this procedure the instructions, questions and replies may be freely interpreted or modified to the point where the results are meaningless or subject to wide margins of error. Pre-testing and other control devices are seldom used.

e. There is very little uniformity in the accounting definitions and methods used by the ROK government, the public corporations and private businesses. Most Korean business firms are small; a large number of these buy and sell only for cash and account for their activities largely by totaling the cash on hand. Even many of the larger firms use very simple accounting methods which omit essential elements of cost and revenue. Depreciation has been largely ignored in Korea and cost accounting as a control device is virtually unknown.

f. In the past, at least, there has been close interaction between business and government with marked bribery, graft, smuggling, and other forms of corruption. Under these conditions, there was strong incentive to conceal or distort economic transactions. The general unreliability of data collected in the past is increased by the long-standing tradition in Korea of general suspicion among business competitors and the practice of maintaining

secrecy regarding business and personal economic affairs. Thus, the Bank of Korea relies heavily on trade associations for production data but has substantive doubts about the completeness and accuracy of the information received. Similarly, and following the Revolution in May, 1961, data published by the Ministry of Commerce and Industry was found so inaccurate that 62 of the Ministry's 67 production series were discontinued. To replace these series, the Bank has developed 58 series of its own. However, the coverage is limited to a few large firms and reporting is voluntary.¹

g. It has been observed in many of the developing countries where unemployment is high and opportunities are limited, that a strong spirit of personally-oriented individualism prevails among government officials and employees. This appears to be so in Korea and the resulting competition among officials and agencies can be quite destructive, particularly where responsibility for functional activities has been fragmented, and agreement and compromise are essential to effective decision-making. Closely linked to this individualistic attitude is the importance of maintaining personal status.

In the statistical field, these factors have manifested themselves in various ways. Thus, it has been extremely difficult for foreign advisors to persuade Korean statistical officials to meet together even to discuss relatively noncontroversial matters such as product classification. Furthermore, when meetings have been arranged, there has been a strong tendency for each agency representative to automatically disagree with comments or suggestions put forth by others. Extensive maneuvering for control of such meetings is common.

In a somewhat different sense, the importance of status is illustrated in the fact that the surveys and Research Corporation reports its tabulation of the 1960 census data on population, housing and agriculture is lagging because, out of a total staff of 500 persons assigned to the work, only about 40 actually perform tabulating functions. The remainder are engaged in what might be loosely termed "supervisory" activities. The Korean director of the project has removed himself as far away from actual operations as the physical facilities permit.

Status is also maintained by permitting no outside interference with assigned functions. Thus, each ministry responsible for statistical series tends to perform this function without reference to or cross-checks on related work of other ministries. An indication of this attitude is the reported

1. Gabriel F. Cazell, Surveys and Research Corporation, Report on Economic Indicators in Korea, December 1, 1961.

policy of our bureau official who refuses to change any figure once it has appeared in print.

h. The practice of following communication channels prescribed by the chain-of-command is carefully followed in the Korean government and orders from above are seldom questioned. For example, after the Five-Year Plan had been officially adopted, the Economic Planning Board was asked to determine the implications of the plan with respect to the demand for managerial and engineering skills. The Planning Board was given 10 days to prepare its estimates. When the staff member responsible for this task was asked why he did not question the assignment when he knew that meaningful results could not be produced within the time allowed, he replied that this was not possible and that he had no choice but to proceed. When asked further why he did not pass on a part of the task to the manpower specialists in the economic ministries, he stated that this also was not possible because to do so would require going back up the chain-of-command to the Chairman of the Planning Board. In any event, the task had been assigned to him and he had no authority to communicate directly with anyone in the ministries.

The analysis was completed within the prescribed time by means of a simple model, a set of assumed relationships and data from a labor force survey which the Koreans now admit is worthless. This exercise resulted in the conclusion that there would be no general shortage of managers and engineers although some imbalance might develop among the several categories of these skills. This, of course, is nonsense. Korea is currently quite short of trained engineers and managerial talent and without question, if the plan is carried out, an enormous strain will be placed upon the meager supply of these skills in both the construction and operating phases of the plan period.

2. Selected Examples

a. National Accounts

The Bank of Korea is responsible for Korea's national product and income accounts. Despite the fact that the statisticians in the Bank's Research Department have shown considerable skill and ingenuity in developing these accounts, the underlying data are so suspect that the totals, the major components and the indicated trends cannot be regarded as more than broad, first approximations. In developing aggregate estimates of consumption, production, savings, investment and trade, the Bank, in many cases, has been forced to consider major components as derivatives of others, to assume proportionality of movement as between two or more components, to rely on projections where current data is lacking, and to treat some values as residuals. The

same situation has prevailed regarding the distribution of national income, the financing of investment, the composition of gross capital formation, the composition of private and public consumption, and other aggregate accounts.

In addition to the problem of filling important data gaps, the Bank has had to rely heavily upon information developed by other agencies. For varying reasons, including those outlined above, much of this data is of doubtful validity; some of it is clearly worthless. Thus, the 1960 census of mining and manufacturing, the labor force survey, and the data on agricultural output are little more than tabulated opinions collected by means of highly doubtful survey procedures. The bank's own statistical work is at an early stage of development.

The weakness in the Korean national accounts have particular significance for development planning because the Korean planning procedures have consisted essentially of successive translation of a growth rate and aggregate product and income values into sector, industry and project detail. This process of disaggregation tends to magnify and spread errors that might otherwise cancel out in the aggregate. This is one of the reasons why successive up-and-down review and adjustment of development programs is considered an essential part of general development planning. However, where the past performance of an economy and its sectors and industries is in doubt, where the nature and amounts of the country's resources are not known with any certainty, and where the existing data on basic economic factors (such as prices, costs, wages, living standards and employment) is highly suspect, the results of either general or partial planning are subject to serious question.

b. Prices and Costs

Monthly wholesale prices have been published by the Bank of Korea since 1955 and consumer prices have been published monthly since 1957. However, both sets of data are considered to be of doubtful validity. Wholesale prices are collected mainly in Seoul and the inclusion or exclusion of particular prices appears to be based mainly upon availability. Only about 200 individual wholesale prices are collected regularly which leaves substantial gaps in the coverage and has led to the practice of assuming that the prices of a few commodities are representative of the movement of a large number of excluded items. Many seasonal items are excluded, and the prices collected do not reflect the normal practice in Korea of determining prices actually paid by bargaining. Similar deficiencies have been observed in the consumer price series.

The principal source of information in Korea on the value and value added of products shipped by manufacturing establishments, the value of materials used in production, investment outlays, and the cost and wages of industrial workers is contained in the Census of Mining and Manufacturing taken by the Ministry of Commerce and Industry and the Korean Reconstruction Bank in 1955, 1958 and 1960. This 1960 census was taken by means of an elaborate questionnaire in which product classifications and many other details were borrowed uncritically from Western practices. Because very few establishments in Korea keep formal accounting records, the information received consisted mainly of data produced from memory. The census appears to have omitted a good deal of repair activity as well as the handicraft output of Korean farmers.

c. Mineral Resources

With the exception of coal and tungsten Korea's mineral reserves are largely unknown. The current production of gold, silver, copper, lead, zinc, graphite, molybdenite, fluorite and bismuth is about one-third of the amounts produced in 1940 under the Japanese; and this fact has led to the widely-held conclusion that large unproven reserves must exist. The minerals exploration program of the Korean Office of Minerals is concerned mainly with the discovery of iron ore.

In 1959 no proven reserves of iron ore were known to exist. By the end of 1961 about 7.5 million tons of 50 percent or better iron ore had been proven together with some 15 million tons of low grade ore. The iron ore situation illustrates the data problem in planning for the minerals sector. The five-year plan calls for erection of a 370,000 ton integrated steel mill which, on capacity output, would require approximately 800,000 tons of iron ore per year. The proved reserves of iron ore as of January 1962 were clearly inadequate to support the proposed investment in steel-making facilities. Inclusion of the steel plant in the five-year plan assumes that adequate iron ore reserves will be discovered. The proposed expansion of other minerals also assumes the existence and discovery of commercial-grade reserves.

V. ORGANIZATION AND ADMINISTRATION OF ECONOMIC PLANNING IN KOREA

In the preceding description and evaluation of the five-year plan, the functions and interrelationships of the various government agencies and departments concerned with economic development planning in Korea have been broadly described. Our purpose now is to present a series of recommendations designed to improve and refine the present organizational structure and existing procedures. These recommendations are based on an examination of the organization, administration, and procedures for economic planning observed during our stay in Korea and our understanding of the proper role of national economic planning in economically developing countries.

A. ROLE OF ECONOMIC PLANNING IN ECONOMICALLY DEVELOPING COUNTRIES

It is unfortunately true that there is no generally accepted definition of the proper role and purpose of economic planning. In fact, the acceptance of the concept of economic planning in a free-enterprise system is of comparatively recent origin and remains suspect in some conservative business, political and academic quarters. In recent years, however, planning for economic development, particularly in the economically developing areas, has been recognized as an indispensable component of responsible government.

This important change in economic and political philosophy is due to a complex of factors of which the following are perhaps the most important:

1. The success of national economic planning in mobilizing the economies of Britain and the United States during World War II;
2. The success of national economic planning in Europe after World War II (The successful adoption of economic planning techniques in France and the Netherlands was particularly impressive.);
3. The acceptance of national economic planning by a group of developing countries that includes Iran, Pakistan and India, and the propagation of economic planning techniques by numerous agencies of the United Nations, the Ford Foundation and several academic institutions of international standing;
4. The acceptance of long-range corporate planning by private business in free-enterprise countries--what is right for corporations can hardly be completely inappropriate for nations.

Of greater importance to the Republic of Korea than the newly-won respectability of national economic planning is the declared policy of the present United States administration that foreign aid will henceforth be provided within the framework of "carefully thought through programs tailored to meet the needs and resource potential of each individual country."¹

The type of economic planning appropriate to conditions in Korea at present and in the foreseeable future can best be described as "partial" and strongly oriented toward specific projects and the development of general measures and policies for the purposeful direction of Korea's economy. Unfortunately, the five-year plan has been prepared primarily on the basis of growth targets and is seriously deficient in its assessment of specific public and private projects and the policies that must be pursued to attain them. We are convinced that the five-year plan can influence the cause of economic development in Korea only if it is supported by a strong planning organization equipped to remedy these deficiencies and develop the policies and procedures necessary to ensure that it is implemented.

Our conception of what over-all economic planning can achieve in Korea and a broad outline of the methods that it should employ follow. The key point to establish that economic planning in Korea, or anywhere else, cannot ensure the attainment of growth targets that are not feasible in terms of natural resources, foreign borrowing capability and a sufficient number of carefully considered and coordinated projects. The rate of growth in a country's GNP, investment and per capita consumption is determined by these factors, as well as the energy and intelligence with which resources are employed and projects implemented. Of comparable importance in attaining an accelerated rate of economic growth is the development of policies in regard to monetary and fiscal measures, foreign exchange, foreign and domestic private investment, labor relations, and the many other important matters upon which economic advance depends.

National economic planning organizations cannot, and should not, attempt to make all the decisions. In the sphere of public projects and policies, the economic planning mechanism has an important role to play in stimulating and harmonizing the activities of all other government agencies; but many major, and all day-to-day, decisions will be made in the ministries and publicly-owned companies. In the private sector, a national planning organization has considerably less influence than in the public sector, but the influence it does have can be highly significant. It must provide information, coordination,

1. President Kennedy's Special Message to Congress, March 1961. See also Public Law 87-195, 87th Congress S. 1983, September 4, 1961, Part 1, Chapter 1, Section 102.

encouragement, and where necessary influence private activity by advising the government to pursue policies in relation to taxation, availability of finance and foreign exchange, licensing procedures and tariff and quota arrangements that will guide and assist private businessmen to employ their enterprise and capital in a manner consistent with the nationally planned targets and objectives. The five-year plan is singularly deficient in this important area and treats private enterprise and investment in purely residual terms. This deficiency should be remedied at an early date.

It is important to bear in mind that development planning of the type recommended in this report need not lead to increased government control over private industry. Indeed, it is probable that as Korea's economy grows, as private businessmen show increasing initiative and responsibility and as foreign exchange reserves increase, the Economic Planning Board will recommend lifting a number of controls on private industry to further encourage private initiative; this would be entirely consistent with the firmly directed and purposeful national economic planning recommended in this report.

The logic upon which this view of the compatibility of national economic planning and an expanding area of activity for private business (both domestic and foreign) is based, is clear. In countries such as Korea, economic institutions, business attitudes and practices, levels of technical and managerial competence are insufficiently developed to respond to the usual stimuli of private enterprise economic systems. Income levels are too low to provide markets sufficiently large to offer attractive profits to producers and distributors; traditional small-scale, high-profit and small-business attitudes persist because the methods and business attitudes of high-income economic systems are not appropriate. The mechanism by which private and corporate savings are directed into investment is weak or almost nonexistent, and economic growth waits upon government stimulation. The economic dynamism of North America, Western Europe and certain other areas has not yet been developed.

A determined government in an economically developing country can, however, do much to stimulate the latent forces of private initiative and enterprise by:

1. Creating an atmosphere of political and economic confidence.
2. Initiating a series of projects that will raise income levels and hence raise savings and the market for domestically manufactured products.
3. Improving and supplementing the nation's sources of finance for public and private enterprise and investment.

4. Adopting plans in regard to taxation, foreign trade, the availability of foreign exchange and other matters designed to assist private business.
5. Improving facilities for technical and managerial training.

In these and many other ways, the activities of government in carrying out a well-considered national economic development plan can stimulate the growth of private business and thereby reduce the nation's dependence on central government planning.

B. ECONOMIC PLANNING PROCEDURES AND METHODS IN KOREA

In the preceding description and evaluation of Korea's five-year plan, numerous references were made to the role played by the Planning Bureau of the Economic Planning Board and of the various other government departments concerned with economic planning in Korea. The following further comments on the procedures and methods by which they contributed to the preparation of the five-year plan are offered as a background against which our recommendations for the reorganization of economic planning in Korea may be evaluated.

1. Economic Planning Board

a. Bureau of Economic Planning

The Bureau of Economic Planning is staffed almost entirely by young economists and statisticians who have very limited experience in economic planning and almost no technical knowledge of the sectors for which they are responsible. For example, during 1961 no member of the Planning Bureau had any specialized knowledge of agriculture, electric power generation, petroleum refining, fertilizer manufacture or indeed any of the major areas of economic activity covered by the plan. It is, therefore, not surprising that the Bureau's role in preparing the plan was limited to carrying out certain statistical operations on information supplied by the ministries and government-operated corporations.

Since the essence of economic development planning is to provide direction to public and private economic activity and to harmonize the diverse objectives of the country's numerous centers of economic initiative, economic planning officials should be trained and experienced in the areas for which they are responsible. Despite the fact that they lack executive authority, their function should, to an important degree, be supra departmental and it can be

this only if they have status, authority and knowledge appropriate to the importance of their role. The status of the Economic Planning Bureau's officials is currently appropriate only to their training and experience and for this reason their influence on decision-making activity seems negligible. The Economic Planning Bureau was unable because of its status, competence and experience to play a determining role in the planning process. Hence, the functions of coordination and evaluation are essential to even the most rudimentary form of economic planning, and the application of priority criteria played only a minor role in the preparation of the five-year plan.

b. Budget Bureau

The Budget Bureau, despite the fact that it is now organizationally within the Economic Planning Board, prepared the 1962 budget with little coordination between its officials and those of the Planning Bureau. To a considerable degree, this deficiency was due to the speed with which both the plan and the annual budget were prepared, but it is most important that this be remedied before the 1963 budget is set. The budget's proposals for taxation and expenditure must be carefully devised to lead to results compatible with the plan's objectives, which these proposals should support and sustain. It is probably not an exaggeration to say that, for at least the next few years, the Korean government's principal influence on the country's economic development will be exercised through the mechanism of the annual budget. Close coordination and cooperation between the officials responsible for economic planning and for budget preparation is essential to the success of economic development planning in Korea.

c. Coordination and Foreign Investment Bureaus

These bureaus, responsible for the coordination of foreign, financial and technical assistance and the attraction of foreign investment, seem to have had only a minor part in preparing the five-year plan. However, since they are responsible for two important sources of financing for the plan, their potential contribution to economic planning in Korea should be explicitly recognized; they should be required to present their proposals, views and estimates to the planning officials and have an opportunity to present their evaluations of proposed targets, projects, and policies before they are made final. The unilateral assumption made in the five-year plan of the amount of foreign aid to be received by Korea during this period should be carefully reviewed by the Coordination Bureau as soon as possible and amended in view of its assessment of Korea's legitimate expectations in this regard.

2. Ministries and Government-Controlled Companies

The primary role of the ministries, The National Construction Service (a semi-autonomous section of the Economic Planning Board) and the government-controlled companies was to provide the Planning Bureau with lists of projects. There is evidence that many conferences and discussions between Planning Board and ministry officials took place, but these seem to have been mainly for clarification and explanation rather than coordination and harmonization. The particularly serious failure of the National Construction Service and the Korea Electric Power Company to coordinate their power generation plans is described elsewhere in this report.

It is our view that the ministries differed widely in their ability to present properly evaluated projects for inclusion in the five-year plan. This may have been due to numerous and frequent personnel changes, but we are of the opinion that the ministries generally do not have at their disposal a sufficient quantity of information on the various projects included in the plan or sufficient technicians to develop it. For this reason, many of the projects included in the plan require considerably more study and examination before they can be implemented.

3. Private Businessmen

Despite the fact that the plan calls on private enterprise to finance a substantial share of Korea's capital investment program during the next five years, we could find no evidence to suggest that representatives of private business had been consulted during the plan's preparation. This may have been due, in part, to reluctance by government officials to associate with a section of Korean society so severely criticized by the Supreme Council. The problem of stimulating and guiding private business in Korea must be solved if the plan's targets are to be achieved.

4. Cabinet, Central Economic Committee and Supreme Council for National Reconstruction

These three groups, whose functions are ill-defined and tend to overlap, served essentially as review boards. The Supreme Council instructed the Economic Planning Board to plan for an average annual growth rate of 7.1% in gross national product. It also reviewed the plan and supervised its preparation by the Economic Planning Bureau; finally it made a number of changes which the Economic Planning Board incorporated in the final document. The activities of the Cabinet and the Central Economic Committee did not extend to making major changes in the plan but, of course,

the Prime Minister, the Chairman of the Economic Planning Board, and most of the ministries, had an opportunity to influence the inclusion or omission of specific projects.

C. PROPOSED REORGANIZATION OF ECONOMIC PLANNING IN KOREA

The five-year plan is important principally as evidence to the Korean people that the Government of Korea is determined to do everything in its power to ensure the rapid economic and social development of the country. Unfortunately, the real work necessary to achieve this end lies ahead. As we have pointed out, many of the plan's basic assumptions are untested and few of its projects have been satisfactorily evaluated. To remedy these deficiencies and plan Korea's future development, Korea's economic planning organization must be strengthened and its present planning procedures modified.

An effort should be made to ensure that Korea's economic goals and objectives reflect a consensus of the country's informed government officials and private businessmen. Within the framework of the present plan, a continuing process of re-evaluation and future planning must be introduced as soon as possible. It is our belief that the principles upon which economic planning in Korea must be based include:

- a. upgrading the economic planning function and its recognition as a fundamentally important element in the nation's government
- b. integrating the economic planning activities of the Economic Planning Board, the ministries, the Cabinet and the Supreme Council
- c. employing, for at least the next decade, foreign economic planning advisors who will have the twin responsibilities of advising the government on substantive issues of economic development policy and training a corps of Korean officials to take over these responsibilities.

Acceptance of these principles by the Government of Korea requires a reorganization of Korea's planning organization and procedures along the following lines:

1. Economic Planning Board

From the point of view of carrying out its economic planning functions, the Board has several defects.

- a. It is too large and imposes unduly heavy and diverse responsibilities upon its chairman and senior officials.
- b. The Economic Planning Bureau's senior planning officials have the status of division chiefs despite the fact that they are called upon to evaluate the proposals and programs of the various ministries presented to them by bureau directors and vice-ministers.

It is of course true that these senior officers speak with the authority of the Board's chairman, but their function cannot be satisfactorily performed by officials of less than bureau director rank. Similarly the Board's key planning official should be of Vice-Minister rank. We therefore recommend creating several additional planning bureaus within the Economic Planning Board and appointing a Vice-Minister for Planning to whom they would be responsible.

This official should be Korea's senior planning officer and as such should be regarded as the chairman's deputy in all economic planning matters. The present situation, in which the Director of the Planning Bureau is one of a large number of bureau directors without the status or authority that his important function should confer, is highly unsatisfactory and likely to prove detrimental to Korea's future economic development.

To assist the Vice-Minister for Planning we recommend replacing the present Planning Bureau by four bureaus which would divide the work of economic planning into:

Over-all Economic Development Planning

Industry, Mining, and Energy

Agriculture, Forestry, and Fishing

Public Services.

At a later date, it might be appropriate to create additional bureaus for energy and water resources and for transport and communications, but we recommend deferring this for at least 18 months because of the difficulty of recruiting adequately trained and experienced staff.

a. Staff and Organization of Proposed Bureaus and Economic Planning Council

Each bureau should be directed by a senior government official with

training and experience in the area of his responsibility. Supporting staff should be carefully chosen to include men with relevant practical experience in government or private business. The staff of the present Economic Planning Bureau would be an excellent source of personnel for junior position within the bureau, but with few exceptions these men lack the training or experience required to head the bureaus.

1. Over-all Economic Planning Bureau. This bureau would be responsible for the formulation of national monetary, fiscal and commercial policies in cooperation with the Ministries of Finance and Industry and the Bank of Korea. It should be headed by an experienced economist and should include on its staff specialists in economic development planning, national income analysis and monetary and fiscal policy. A total staff of four or five senior officials with adequate supporting staff would probably be adequate for the early years of the Bureau's existence.

An alternative arrangement would be to attach the staff proposed for this Bureau to the Vice-Minister in charge of Planning (thus reducing the Economic Planning Bureaus to three) in the form of a secretariat. This procedure would have the advantage of emphasizing the primacy of general economic considerations over sectoral claims and providing the Vice-Minister for Economic Planning with a deputy (the Director of the Bureau of Over-all Economic Planning).

2. Industry, Mining, and Energy Bureau. This bureau should be headed by either a mechanical or chemical engineer with wide industrial experience, or a power engineer with experience in both thermo- and hydro-electric power generation. The man chosen for this post should, however, be more than an engineer and should have an understanding and appreciation of the economic, financial and management aspects of industry. Men of this kind are difficult to find even in highly industrialized countries and the Korean government is unlikely to find a wide choice of candidates for this position. It is suggested that the past and present ranks of the Ministry of Commerce and Industry and the electric power companies might contain a suitably qualified person. If, however, it proves impossible to secure the services of an engineer of the type described, an acting bureau director should be appointed for an interim period.

A group of at least six senior engineers and economists who have special knowledge and experience in power generation and transmission, chemical fertilizer production, the iron and steel industry, and mining, should be recruited to assist the director. A small group of clerks and assistants would also be required. The composition of the bureau's staff will depend greatly on availability, but we wish to stress the importance of including in the bureau men with practical experience in industry and power generation.

3. Agriculture, Forestry and Fishing Bureau. The director of this bureau should be a well-qualified agricultural economist, broadly familiar with Korea's agricultural, forestry and fishing resources. He should, if possible, have some experience of agricultural conditions in one or more other Asian countries. We believe that it would be possible to recruit a suitably qualified person from the past or present staff of the Ministry of Agriculture and Forestry. Since the problems with which this Bureau will be concerned are the primary responsibility of the Ministry of Agriculture and Forestry, we see the need for a comparatively small staff. A sufficiently large group of officials should, however, be assembled to interpret the plans and programs of the Ministry of Agriculture and Forestry to the other planning officials and the planning officials' views to the Ministry of Agriculture. As in the case of the other bureaus, a supporting staff of clerks and assistants is also necessary.

4. Public Service Bureau. Since this bureau will be concerned with a wide variety of activity (including transportation and communications, health, housing, and education), its director should be primarily a competent administrator and negotiator. Specific experience in a public service activity would be desirable but should not be regarded as a necessary qualification. On the other hand, it is desirable in senior assistants to have experience in one or more public service activities. The four or five senior officials required to staff this bureau can probably be recruited from past and present members of the various ministries.

After careful consideration, we have decided not to offer detailed recommendations for the organization of the bureaus into divisions. We are inclined to the view that the internal organization of the planning bureaus will for some time be primarily determined by the availability of suitably qualified staff and their special interests and experience. If, however, a divisional structure is considered to be necessary to ensure conformity with other government departments, the following 11 divisions suggested in our interim report (February, 1962) should be created with the understanding that they are of a provisional nature and subject to modification in the light of actual operating experience.

<u>Bureaus</u>	<u>Divisions</u>
1. Economic Development Planning	1. Economic Development Planning
	2. Monetary and Fiscal Policy
	3. Commercial Policy
2. Industry, Mining, and Energy	4. Industry
	5. Mining
	6. Electric Energy
3. Agriculture, Forestry and Fishing	7. Agriculture
	8. Forestry
	9. Fishing
4. Public Service	10. Transport and Communications
	11. Health, Housing and Education

It will be observed that no provision is made for a separate bureau or division for economic research. We believe that in practice a substantial amount of the Economic Planning Board's economic research will be carried out by the Economic Development Planning Bureau, but each bureau should be responsible for research in its own area. We believe that research carried out by the Economic Planning Board should be closely related to the country's planning needs and subordinate to them. Planning officials should, of course, familiarize themselves with the economic research being carried out in Korea and abroad and ensure that it is drawn upon in full measure.

Despite the fact that our recommendation calls for the creation of three additional planning bureaus and the appointment of a Vice-Minister for Planning, we do not believe that its acceptance would lead to a substantial increase in total personnel requirements. Rather, we see adding a group of high-quality experienced officials to the Economic Planning Board's planning staff and only moderately increasing the supporting staff. Since it is our view that the real work of planning Korea's economic future remains to be done, it is of utmost importance that those responsible for economic planning in Korea are adequately qualified in terms of experience and training; we wish to underline the need for associating such men with the Economic Planning Board and giving them suitable status and authority to carry out their responsibilities.

5. Economic Planning Council. As the Economic Planning Board is now organized, proposals and recommendations from the Planning Bureau are sent to the chairman for his approval and submission to the Cabinet. Experience in other countries suggests that this procedure will fail to ensure the necessary inter-ministerial cooperation essential for the successful planning and implementation of economic development programs. Decisions to modify, cutback or completely change proposals made to the Economic Planning Board by the various ministries will be strongly resisted, unless the relevant minister and his senior officials have had an opportunity to influence the decision-making process before it becomes final. For this reason, we suggest that an Economic Planning Council be created within the framework of the Economic Planning Board. This Council, under the chairmanship of the Chairman of the Economic Planning Board, should consist of:

As members;

**Minister of Finance
Minister of Industry
Minister of Agriculture
Minister of Transport
Director of the National Construction Service
Chairman of the Finance and Economy Committee of
the Supreme Council for Economic National Reconstruction**

As Executive Director;

Vice-Minister for Economic Planning.

We attach great importance to the inclusion of a senior member of the Supreme Council for National Reconstruction on the proposed Economic Planning Council. All important decisions are currently reviewed by the Supreme Council on an ad hoc basis. We believe that the Supreme Council can achieve its declared purpose of achieving rapid economic advance in Korea only by participating in the process of examination and evaluation that must precede all rational economic decisions. Its present procedure of cursorily reviewing decisions made by the executive branches of the Korean government may have serious dangers for its own high purpose. The inclusion of a Supreme Council representative on the Economic Planning Council would associate the Council with the process of evaluation that precedes major decisions but at the same time preserve its power to modify or veto decisions with which it did not concur.

The operating procedures we envision would involve the preparation of recommendations by bureau directors working in cooperation with the various ministries. Before completion, recommendations would be referred to the Chairman of the Board and with this concurrence recommendations would be presented by the Vice-Minister for Planning (the Executive Director) to the Economic Planning Council. At these presentations, bureau directors, division chiefs, and advisors and technicians would be invited to support the proposed courses of action. Matters of comparatively routine nature would be authorized after careful review by the Economic Planning Council and more important issues would be passed to the Cabinet which, when necessary, would refer them to the Supreme Council for final resolution. All such onward transmissions would, however, be accompanied by a recommendation for action from the Economic Planning Council.

2. The Ministries

The scope of our reconnaissance survey did not permit us to examine in detail the organization of the various ministries of the Korean government. Our interest was primarily confined to an assessment of their role in the preparation of Korea's five-year plan. It is our strong impression, however, that the ministries are currently seriously handicapped by a shortage of experienced officials qualified to handle the professional and administrative work that Korea's plans for national reconstruction will involve. To achieve this end we recommend that the Korean Government:

- a. Intensify its efforts to recruit trained and experienced Korean nationals. Consideration should be given to establishing pay

scales that reflect the fact that well-trained technical personnel are in short supply in Korea and that they can obtain higher salaries in private business than in government service.

- b. Recruit suitably qualified foreign officials and technicians on a contract basis.
- c. Commission foreign (and if available) domestic consulting firms to study the various projects under consideration. The Government of Korea is, of course, already employing the services of many consultants and is arranging to appoint additional ones. We believe, however, that there are several dangers to be avoided.
 1. Terms of reference given to consultants should be clear and precise. This may sometimes be achieved by dividing the assignment into two or more parts. A comparatively short and inexpensive initial study to establish prima facie feasibility may save considerable expense and loss of time. This can be followed by more detailed examination in which the project is studied not only from the point of view of its financial profitability but from the broader aspects of national advantage. These may include foreign exchange savings, technical inter-connections with other desirable projects, market development prospects and numerous other matters. Cooperation with the economic planning staff in drawing up criteria and achieving coordination with other studies and on-going projects is very important at this stage. Subsequent engineering studies can be carried out comparatively quickly if adequate preliminary work has been done.
 2. Government officials and consulting organizations should be given sufficient time to complete their work without undue haste. We strongly concur with the view that implementation of the five-year plan should not be held up pending completion of large numbers of studies and reports. On the other hand, the speed with which the five-year plan was prepared and the short time given to the initial evaluation of the Ulsan complex may eventually result in serious embarrassment to the Government of Korea.
 3. In general, firms and organizations with interests in the construction or supply of equipment should not be employed in the initial feasibility evaluation of projects. Organizations of this kind tend, throughout the world, to be unduly optimistic

about the economic prospects of the projects they investigate; they are also inclined to recommend types of equipment manufactured by their own firms or one of their associates. After a project's initial feasibility has been clearly established and the government "educated" in the principal problems to be faced, firms of this kind are important since they usually possess a high degree of skill and know-how. It is sometimes possible to obtain long-term credits or even equity participation from constructional and equipment firms for economically sound projects.

To ensure the necessary degree of coordination between the ministries and the Economic Planning Board, we recommend that each ministry appoint an Economic Planning Coordination official of bureau director rank, responsible for the day-to-day cooperation and coordination with the Economic Planning Board. It would be his function to keep the Board apprised of his ministry's problems and plans when they are likely to be of interest to the central planning officials. It is important that the Planning Coordination Officer have other major responsibilities in his ministry.

3. The Cabinet and Supreme Council for National Reconstruction

The economic planning role of the Cabinet and Supreme Council for National Reconstruction has already been outlined in our discussion of the proposed Economic Planning Council. We strongly recommend that, while neither the Cabinet nor the Supreme Council should abdicate its authority to dictate or modify courses of action, they should in general concern themselves with matters of broad policy rather than detail. When specific policies and projects appear to be of national or even international importance, the temptation to make quick decisions should be resisted unless adequate and reliable information on all aspects of the problem is available. Decisions made with undue haste, without reference to the ministers and officials concerned, may have seriously deleterious effects on the implementation of Korea's five-year plan; they may be at variance with some of its main provisions or they may prove economically unfeasible. In either case, Korea's progress toward national reconstruction would be hindered.

4. Central Economic Committee

This committee's role in the preparation of the five-year plan can only be described as nominal. Since it shares with the Cabinet and the Supreme Council the role and obligation of reviewing national economic plans, its present purpose is superfluous. We recommend that its composition be broadened to

include more senior representatives of private business in Korea and that it become a consulting body. As such, it could provide, possibly operating through industry subcommittees or working parties, valuable advice and assistance to the Planning Board's officials in their day-to-day activities and in the preparation of subsequent long-term plans. In due course, a reconstructed Central Economic Committee might become the mechanism through which private businessmen contribute to planning Korea's economic future.

D. PROPOSED ECONOMIC PLANNING ADVISORY GROUP

Arthur D. Little, Inc. recommends that the Korean government invite an economic planning advisory group from a foreign country to work with the Board's economic development planning officials:

- a. A sufficient number of suitably trained and experienced Korean nationals to ensure implementation of the five-year plan, its modification in the light of changing circumstances, and the preparation of subsequent plans is unavailable to the Government of Korea at the present time.
- b. Most Korean officials are at present unwilling to report unfavorably on projects and policies known to be favored by their superiors.

1. Composition of Proposed Economic Planning Advisory Group

The group should be headed by an economist with wide experience in economic planning procedures and techniques. He should be the Economic Planning Board's senior economic advisor and have the right to present his views to the Central Economic Committee and, with the concurrence of the Chairman of the Economic Planning Board, to the Cabinet and Supreme Council for National Reconstruction. Although it would be desirable for this man to be a resident in Korea for several years, an arrangement under which the senior economic advisor combined his work for the Korean government with a suitable academic or other pursuit elsewhere should be considered if a suitable full-time advisor cannot be recruited.

At least five other advisors should also be appointed:

- a. An industrial advisor with wide experience in industry. This man should have had the basic training of an engineer but should be familiar with the economic, financial, and managerial aspects of industrial enterprise.

- b. An agricultural economist with wide experience in agricultural conditions in Asia.
- c. An economist with special interest and training in monetary, fiscal and commercial policy.
- d. An electric power engineer with experience in both hydro- and thermo-power generation.
- e. An economist or econometrician with special interest in economic development planning techniques.

The power engineer and econometrician could be part-time members of the advisory group who, after an initial period of three or four months residence in Korea, would return to the country for short periods at fairly frequent intervals. These men should, of course, maintain a continuous interest in Korea's economic development and receive all the reports and memoranda available to other members of the group. They should hold themselves at all times ready to submit reports to the Board on matters referred to them and to return to Korea for consultations.

A group of this limited size could be fully effective only if it were strongly supported by a home office in an economically developed country. Such an office should be able to provide, on short notice, technical reports and memoranda on a wide variety of topics and a large group of industrial, agricultural, economic and other experts able to visit Korea for varying periods of time. The composition of the group could, of course, be modified in the light of experience and its size could be expanded or reduced as circumstances indicate. We believe that its optimum size would increase during the second and third year as the Planning Board's economic planning activities increase in scope and depth. Shortly thereafter, however, a sufficient number of Korean nationals should become available to permit the substantial reduction and eventual complete withdrawal of the advisory group. It would, of course, be an important responsibility of the advisory group to train Korean colleagues and arrange for them to undertake courses of instruction in other parts of the world.

2. Function of Proposed Economic Planning Group

Each member of the group would be designated as advisor to one or more of the economic planning bureaus. The senior economic advisor would work with the Chairman and Vice-Minister, but he too would take part in many of the day-to-day activities of the bureaus.

It is of primary importance to the success of the proposed project that the members of the group become deeply involved in the day-to-day activities of the Economic Planning Board. Although their role would be technically that of advisors, they would expect and be expected to press their views without specific invitation. Any reservations on the part of the Government of Korea in this matter would seriously prejudice the advisory group's chances of significantly contributing to Korea's economic development.

The group's first task would be to assist in the reorganization and restaffing of the Economic Planning Board and the establishment of planning techniques and implementing procedures. After this has been accomplished, it would help initiate technical economic analysis of the five-year plan's proposed projects where these have not already been made. Particular attention would be paid to those projects scheduled for early implementation and for which external assistance may be required. Simultaneously, an attempt would be made to develop the fiscal, monetary, trade and other economic policies necessary to ensure the success of the five-year plan.

Frequent measurements of the five-year plan should be made and the planning horizon advanced as progress is made. At all times the Economic Planning Board should look at least five years ahead; in this way Korea's subsequent five-year plans will be prepared on a running basis and the confusion and difficulty that was associated with the preparation of the first five-year plan averted.

After a short shaking-down period, the team should turn its attention to the problem of training Korean personnel and to initiating training programs within the Economic Planning Board and the government ministries; this involves on-the-job instruction and cooperation with Korean and foreign educational and training establishments.

3. Relationship between the Advisory Group and the Korean Government

The success of the proposed planning advisory group will depend on the establishment and maintenance of a high degree of mutual confidence between members of the group and the Korean government. This confidence can be secured only if the advisory group is independent of other governmental affiliations. From time to time, the Government of Korea might wish the advisory group to support its request for foreign loans and subventions and to examine tentatively formed or alternative courses of government action on a confidential basis.

After carefully weighing the evidence obtained from many interviews in Korea and our assessment of experience in other parts of the world, we have

concluded that an economic planning advisory group would be acceptable to the Korean government only if it were independent of the United States Government or, indeed, any other government. Since the United States Operations Mission to Korea (USOM) has expressed a willingness to consider providing the services of an economic planning advisory group to the Korean government, the problem of the appropriate relationship between the group and the USOM arises. It is our recommendation that whether the services of the advisory group are financed by the United States government or not, the group should be answerable only to the ROK government. The most satisfactory solution would be for the contractor involved to contract directly with the Korean government on the understanding that its charges would be defrayed in whole or in part from an AID grant made to the Republic of Korea. This arrangement would offer certain additional advantages:

- a. The Korean government could be called upon to provide housing, office accommodation, per diem allowances and other non-dollar costs from its own resources.
- b. Members of the team would be free from the costly delays inevitably associated with U. S. government contracts. This would be particularly important in the case of short-term visitors who might otherwise have to wait months for security and other clearances to authorize them to spend very short periods of time in Korea.

Because of the special circumstances existing in Korea at the present time, we believe that the United States Government should make certain privileges available to at least the resident members of the Advisory Group. These should include APO and PX privileges, the use of officers' clubs in South Post and other military establishments, limited commissary rights and the provision of transportation on the terms that it is made available to USOM officials. USOM should also make transportation available to the Economic Planning Board for the specific use of the Advisory Group but the vehicles employed should be:

- (a) marked "Economic Planning Board"
- (b) available for the use of Planning Board officials when they are not required by the Advisory Group.

It would, of course, be a condition of the contract between the contractor and the Korean Government that the Advisory Group would have a special responsibility for assisting the USOM mission director and his staff to cooperate with the Korean Government in its joint endeavors to stimulate the economic development of Korea. We believe that the unofficial bridge that could in this way be built between the two cooperating governments would be of considerable mutual value.