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*Perspective and Proposals
for United States Economic Aid*

*United States Economic Survey Team
to Indonesia*

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INDONESIA

*Perspective and Proposals
for United States Economic Aid*

*A Report to the
President of the United States*

*Yale University Southeast Asia Studies
New Haven, 1963*

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August 1, 1962

His Excellency
Dr. Sukarno
President of the Republic of Indonesia

Dear President Sukarno:

On behalf of President Kennedy, I have the honor of transmitting from the Government of the United States of America to the Republic of Indonesia a report of the U. S. Economic Survey Team entitled, *Indonesia: Perspectives and Proposals for United States Economic Aid*.

During the month of August 1961, the Team visited Indonesia at the request of President Kennedy for the primary purpose of reviewing the Eight-Year Plan and making specific recommendations regarding future economic assistance to your country. The membership of the Team included three professional economists, a professional historian, and two from the staff of the U. S. Agency for International Development. The members were independent of the U. S. Government, though their recommendations were made to President Kennedy, the Secretary of State, the Administrator of the Agency for International Development, and heads of other government bodies concerned with the assistance program of the United States abroad.

The Team's report is now under active review by the Secretary of State, the Administrator of the Agency for International Development, and senior officials of the U. S. Government. Some of the principles and priorities recommended by the Team have already been incorporated into the proposed program of the Agency for International Development for Indonesia which has been submitted to the U. S. Congress.

While in this report there are specific dollar recommendations regarding the future A. I. D. programs, that fact does not commit the U. S. Government to provide the specified amounts.

On behalf of my Government, I would suggest that your Government review the Team's report and evaluate the Team's recommendations. Then, in the common interest of advancing the economic development of Indonesia, our governments can better cooperate in formulating a program which will be in the interest of both countries.

Sincerely yours,
HOWARD P. JONES
Ambassador

FOREWORD

April 24, 1961, the day President Sukarno visited President Kennedy in Washington, marked a new departure in the relations between Indonesia and the United States. After a full and frank discussion between the two Presidents of many problems bearing on these relations, President Kennedy inquired about Indonesia's Eight-Year Development Plan. President Sukarno and his advisers sketched the highlights of the Plan. President Kennedy then offered to send a team of American economists to Indonesia to study the Plan and, in cooperation with the Indonesian Government, to make recommendations to the United States Government as to how it could best help Indonesian development. This offer, which was mentioned in the communique issued by the two Presidents the following day, was accepted. Early in July the Team was chosen, consisting of the following members:

Don D. Humphrey

William L. Clayton Professor of International Economic Relations, Fletcher School of Law and Diplomacy, Tufts University, Leader of the Team

Walter S. Salant

Senior Member, Economic Research Staff, The Brookings Institution, Deputy Leader of the Team

David S. Burgess

Director, Office of Indonesian-Burma Affairs, Bureau for Far East, Agency for International Development

Allan M. Cartter

Professor of Economics and Dean of the Graduate School of Arts and Sciences, Duke University

Allan B. Cole

Professor of East Asian Affairs, Fletcher School of Law and Diplomacy, Tufts University

Robert S. Smith

Chief, Planning Division, Bureau for Far East, Agency for International Development

The Team was given the following general terms of reference:

- "1. to analyze the Eight-Year Development Plan of Indonesia;
- "2. to learn how the Indonesian Government hopes to put this Plan into effect, particularly in regard to its local resources and the contemplated volume of economic support from abroad;
- "3. to determine the areas of the Indonesian economy in which U. S. aid should be concentrated;
- "4. to recommend the ways in which the United States could be of assistance to Indonesia, particularly in regard to the execution of its Eight-Year Plan;
- "5. to analyze in broad terms the general economic assistance program of the United States in Indonesia and, within the context of the Team's conclusions, to make recommendations about future U. S. aid programs in Indonesia."

The Team assembled in Washington on July 26 and was briefed for four days by officials of the departments and agencies of the U. S. Government concerned with Indonesia. It arrived in Indonesia on August 6 and departed on August 30. During this period of 24 days it met with almost all the Ministers of the Inner Cabinet and with many other Central Government officials, as well as with some members of the University of Indonesia and the business community and with some citizens of other countries. (A list of Indonesian officials with whom the Team had formal official meetings appears in Appendix A.) Some members of the Team visited Central and Northern Sumatra. Others visited Bandung, Bogor, Bekasi, Djatiluhur, Jogjakarta, Surabaya, and Gresik in Java. Unfortunately, the time was too limited to permit other visits outside Djakarta.

Upon the Team's return to the United States at the beginning of September, 1961, Dr. Salant took over responsibility for the preparation of its report. Although all members of the Team contributed drafts of sections, Dr. Smith, Mr. Burgess and particularly Dr. Salant, who devoted full time to the report for over five months, did most of the writing, and Dr. Salant coordinated and edited all of the chapters.

The report was submitted to the United States Government in February, 1962. It was made available to the Government of Indonesia at the end of July, in the form presented in this edition. Thus, statistics cited and analyzed include only such material as was available to the Team up to the very beginning of 1962. No attempt has been made to bring this material up to date since that time.

The report was transmitted to President Sukarno at the end of July, 1962, by Ambassador Jones on behalf of President Kennedy. The Am-

bassador informed President Sukarno that the Team's report was under active review by the Secretary of State, the Administrator of the Agency for International Development and senior officials of the United States Government. He added that some of the principles and priorities recommended by the Team had also been incorporated into the proposed program of A.I.D. for Indonesia which had been submitted to the United States Congress. He also pointed out that, although the report contains specific dollar recommendations regarding the future A.I.D. programs, that fact does not commit the United States Government to provide the specified amounts.

Ambassador Jones concluded by suggesting to President Sukarno that his Government review the Team's report and evaluate the Team's recommendations so that, in the common interest of advancing the economic development of Indonesia, the two Governments can better coordinate their efforts to formulate a program which will be in the interest of both countries.

PREFACE

by the

ECONOMIC SURVEY TEAM

In this Report, we present the analysis and conclusions which we reached as a result of our mission to Indonesia. Although our terms of reference refer only to economic problems, we have also devoted attention in the Report to political and other questions that do not fall within a narrow definition of "economic." We have done so because the stage of a country's economic progress and the priorities of its economic development cannot be accurately analyzed or appraised without analysis of the polity and the society in which the economy operates. The distinction between "economic" and other matters does not exist in Nature. It is an artificial one that Man has devised to overcome the limitations of his intellectual grasp.

We have also sought to supplement information about the current state of the Indonesian economy with whatever information we could gather that would help us evaluate its direction and rate of change. A motion picture that shows which way a country is moving is at least as important as a snapshot that shows where it is at one moment. The effort to evaluate change added greatly to our task, for change cannot be detected from only one observation; observations over a period of time are needed. They are available for some relevant facts in the form of statistics and we have, of course, used statistical data where they are available.

But, aside from the fact that some types of statistics available in other countries are not available in Indonesia or are not regarded as reliable, there is the difficulty that many factors for which change is most important to appraise are not measurable, at least by any methods yet devised. The lack of data bearing on these questions—one which we understand the new Agency for International Development will seek to make good—forced us to interrogate Indonesians and others, both inside and outside Indonesia, and to read as intensively as possible in an effort to supplement our observations of how things are now with the observations of others about how the same things were several years ago.

The time we had for both direct observation and supplementary study was far too short to do full justice to Indonesia. We were able to learn a great deal more about the country and its economy, however, than one might suppose would be possible in so short a period. This we attribute to the splendid cooperation given us by all ministries and individuals of the Government and by others. We found the Indonesian officials to be most generous with their time, frank in discussion, willing to be asked hard questions, and generally willing to give candid answers. In fact we found them eager to hear our opinions and, where we had formulated opinions, we in turn expressed them with equal candor. Our efforts were also greatly aided by the assistance generously but tactfully and unobtrusively given us by Ambassador Howard Jones and the Embassy staff and by Director Raymond Allen and the staff of the United States Operations Mission.

We can summarize our conclusions briefly by saying that we found Indonesia still in the early stages of economic development but moving in the right direction. The native ability of her people and her rich natural resources make the outlook for progress in economic development promising, once the pre-conditions of self-sustaining growth are developed. In the metaphor that has become familiar in discussions of economic development, we conclude that Indonesia is not yet ready for the take-off into self-sustained growth; the plane has only been brought out of the hangar. But this is the necessary first step. We predict that when the Indonesian economy does take off, it will fly high and fast.

DON D. HUMPHREY
WALTER S. SALANT
DAVID S. BURGESS
ALLAN M. CARTTER
ALLAN B. COLE
ROBERT S. SMITH

CHAPTER I

SUMMARY

The appointment of a six-member Economic Survey Team to Indonesia grew out of discussions between President Kennedy and President Sukarno in Washington last Spring, as indicated in the communique issued jointly on April 25, 1961. The Team was instructed:

1. to analyze the new Eight-Year Development Plan of Indonesia;
2. to learn how the Indonesian Government hopes to put this Plan into effect, particularly in regard to its local resources and the contemplated volume of economic support from abroad;
3. to determine the areas of the Indonesian economy in which U. S. aid should be concentrated;
4. to recommend the ways in which the United States could be of assistance to Indonesia, particularly in regard to the execution of its Eight-Year Plan;
5. to analyze in broad terms the general economic assistance program of the United States in Indonesia and, within the context of the Team's conclusions, to make recommendations about future U. S. aid programs in Indonesia.

The Team was intensively briefed in Washington by officials of the departments and agencies of the U. S. Government concerned with Indonesia, spent four weeks in Indonesia, and has written its report in the months since its return. During the period in Indonesia we met with almost all of the Cabinet Ministers and members of their senior staffs, with many other Central Government officials and with officials in provincial government offices, with members of the university and business communities (both Indonesian and foreign nationals), and with members of other Embassies. Members of the Team visited Central and Northern Sumatra, and travelled widely on the island of Java. The courtesies extended to us, the degree of cooperation from the Foreign Office and the various Ministries, the willingness of high government officials to talk frankly of problems, weaknesses, plans and proposals, and the general warmth of our reception appeared to augur well for future United States-Indonesian relations.

POLITICAL, SOCIAL AND ECONOMIC BACKGROUND (CHAPTER II)

The transition from a colony to a nation involved major costs, particularly in the economic sphere. Nationhood was achieved only twelve years ago, preceded by seven years first of Japanese military occupation and then of struggle for independence from the Dutch. The expulsion

of Dutch nationals in 1957-58, the removal from village localities in 1959-60 of the Chinese who were not Indonesian citizens, and internal rebellion beginning in 1958 have taken their toll. The parallel might be drawn between Indonesia today and the young United States of America in its first decade of independence, particularly in terms of the revival of separatist tendencies when the war for independence had been won, and the conflict between the desires for strong regional and strong central authority. When one also considers that Indonesia began its independent status with a populace much less experienced in political and economic affairs and less well-educated, a land mass far in excess of the original thirteen American colonies, and a total population twenty-five times as great, a dozen years does not seem excessive to find a workable method of government.

The young nation of Indonesia bears the hopeful motto on its official crest: "Unity in Diversity". Diversity is seen in the persistence of strong regionalism, the cultural leavening of successive Buddhist, Hindu, Muslim and Christian influences, and the great variety of native languages and dialects. Unity is strengthened by the ethnic predominance of the Malayan stock, the rapid acceptance of Indonesian as a national language, and the shared experiences of the struggle for independence.

Preliminary census returns indicate that Indonesia's population is approximately 97 million, making it the fifth largest nation in the world (behind China, India, the U. S. S. R. and the U. S. A., and just ahead of Japan and Pakistan). From its administrative center in Java, one of the most densely populated islands in the world, the Government of Indonesia controls the activities of the other large islands of Sumatra, Kalimantan (Borneo), and Sulawesi (Celebes), as well as of the thousands of smaller islands which make up the archipelago.

During the first nine years of independence, political instability characterized the Indonesian Government. With 45 political parties, government was always by coalition, and twelve cabinets fell between 1949 and 1958. Following the rebellion of provincial military groups, the Constitution of 1945, with its more centralized form of government, was reinstated by decree and elections were suspended. The elected Parliament was dissolved and replaced by a Parliament appointed by the President to include representation from regional and functional groups. Most of the political parties, including two of the major ones, were banned, and steps were taken to create a national front organization.

The return to the 1945 Constitution has resulted in a measure of stability; with less turn-over in Cabinet posts, Ministers have had an opportunity to gain greater experience in their jobs and to provide for more consistency in policy.

Because of historical experience, many Indonesians tend to associate capitalism with social injustice, exploitation and colonialism. Their own conception of freedom however, leads them to reject repression and forced collectivization. They have sought to apply traditional village principles of cooperation and mutual assistance to national life in developing their own pragmatic brand of socialism (or "guided economy").

Indonesia's attitude towards the West has been deeply affected by the failure to settle the issue of West Irian (West New Guinea) with the Dutch. As a part of the former Netherlands East Indies, West Irian was claimed by Indonesia, upon the transfer of sovereignty, as an integral part of its territory. In their 1949 Round Table Agreements, the Dutch and the Indonesian Governments agreed to settle its future status by further negotiation within a year. The failure to achieve agreement led to the nationalization of Dutch interests in 1957 and finally to the break in diplomatic relations in 1960. Indonesia claims that its sovereignty is incomplete without West Irian.

Socially and economically, Indonesia is still essentially a peasant agricultural economy. Concentration of land ownership in the hands of a small minority, however, is not the major curse in Indonesia that it is in much of Asia. Perhaps 70 percent of the population lives in rural areas and exhibits little concern for long range economic development or international crises. Literacy has been raised from under 10 percent at the time of Independence to over 50 percent today. Perhaps the most remarkable achievement has been the fourfold increase in primary school enrollment and the fifteenfold expansion in secondary school attendance since 1950. University education has similarly expanded so that today almost one out of one hundred persons of college age attends, as contrasted with only one out of 2,500 ten years ago. United States aid has been instrumental in expanding higher education, both by providing advisors and faculty members in Indonesia and by training Indonesians in American universities; this expansion of higher education has been greatly facilitated by the adoption of English as the second language for students in the secondary schools. The whole field of education and vocational training, and training in administrative and managerial responsibility, had been very much neglected by the Dutch. The substantial effort of Indonesia to remedy this situation since Independence is now beginning to pay dividends in the availability of young skilled artisans and professionally educated civil servants.

Indonesia has always been relatively self-sufficient in food production, although it has imported an average of approximately 8 percent of the rice it has consumed in the last five years. Large tracts of arable land, a tropical climate and year-round rainfall provide excellent conditions for

intensive agricultural cultivation. The climate is tropical and lacks great seasonal variations in temperature, making rural housing needs minimal. In this sense Indonesia is a country which can afford to experiment, for the basic necessities of food, housing and clothing are not as difficult to obtain as in more rigorous climates. The roughly 2½ percent annual rate of increase in population, however, does create pressures, and efforts to encourage outward migration from Java and Madura (where there are almost 1,200 persons per square mile) to the Outer Islands have had limited results.

There is evidence of economic progress in a number of areas, and signs of deterioration in others. Since before World War II, output of estate agriculture has declined, mineral production (other than oil) has diminished, and Indonesia has been living on accumulated capital by failing to maintain the tangible assets of some sectors of the economy. On the other hand, transportation has improved from the low point of 1957-58, internal security has been restored in most regions, output of some manufacturing industries has risen, and new building and construction is in evidence in the larger cities.

In summary, Indonesia is still in a very early stage of economic development, but there is a growing awareness in high government circles of needs and priorities and a growing sense of commitment to policies to promote development. We believe that this fact, combined with the native ability of her people and the presence of rich natural resources, make the outlook for economic progress promising in Indonesia. Certain pre-conditions of self-sustaining growth are only now in the process of development, so that in the familiar metaphor of growth we feel that Indonesia is not yet ready for the take-off but has only recently left the hangar. However, location, climate, human and natural resources are such that when the plane does take-off it has the potential to fly high and fast.

THE CURRENT STATE OF THE ECONOMY (CHAPTER III)

The political decision to oust Dutch nationals in 1957 left Indonesia with a poorly staffed agricultural and industrial administration. Indonesians could take over some day-to-day operations, but were poorly prepared to take over others. With limited leadership provided by inexperienced and unstable ministries in Djakarta in 1958, with uncertain policies and ineffective administration increasing the difficulties in securing foreign exchange allocations for raw material and spare parts imports, and with the Rebellion unsettling the Government and the economies of the islands, production suffered. The experience gained in the last few years and the re-establishment of internal security give some hope for improvement in the period immediately ahead.

Rice production in 1960 was about 30 percent above the 1935-39 average. This increase resulted from a rise in acreage rather than in yields. The recent increases of about 4 percent per year, however, are well below the annual 9 percent increases implied by the target set for the Eight-Year Plan. The development of government-sponsored "paddy centers" has not been altogether successful so far, partly because of distributional bottlenecks, and partly because of government price policies and management difficulties. Rice imports have cost the Government about \$100 million a year, and the rice subsidy for military and civil servants has added considerably to the expense.

Rubber production, normally accounting for a third to a half of export earnings, has suffered from insufficient replanting, owing first to the dislocations of the war years, then to post-war uncertainties, and more recently to administrative and planning defects. As a result, Indonesia has been eating into her capital investment in rubber. Today close to half of all rubber trees are over 35 years of age, the normal age for cutting down and replanting. Consequently, production is bound to decline sharply in the future, particularly on the small holdings. World rubber prices have declined recently, and it is likely that they will decline further as stereo-regular synthetic rubbers increasingly enter the world market. Replanting with high-yielding stock is therefore urgently needed if Indonesian rubber is to continue to compete in world markets.

Transportation facilities, other than air, have noticeably deteriorated since Independence. Paved roads in many areas have not been maintained, despite the added demands on road travel for both persons and produce. The railroads are in a serious state of disrepair. There was almost no capital investment in this field from the early 1930's until 1949, and today over half the locomotives and almost two thirds of the rolling stock are over 40 years old.

Prior to 1958 two-thirds of the sea tonnage was foreign-owned, and the eviction of the Dutch in that year deprived Indonesia of most of its fleet and merchant marine staff. Although the tonnage was replaced within two years, the merchant marine has not regained its former level of efficiency. Inexperienced management and inadequate port facilities have hampered inter-island and international sea transportation, to the detriment of the economy as a whole.

Although air transportation has developed moderately well since the departure of KLM equipment and staff, Indonesia's commercial air fleet is inadequate for domestic needs and inter-island travel is also restricted by inadequate ground fields and facilities.

In mid-1961, manufacturing production, which depends greatly on imported materials, was at its highest level since 1957, largely because of

the temporary easing of import restrictions. Raw material and capital goods imports in the first half of 1961 were almost double the rate for the previous two years, and unused capacity in existing plants was noticeably diminished, although it remained substantial. The current balance of payments crisis will probably reverse this gain.

Mineral production other than petroleum has been disappointing in recent years. Wartime destruction, neglect of old mines, the shortage of skilled workers and managers, inadequate maintenance and shortages of spare parts, and antiquated machinery are the basic causes of reduced output. The production of tin, bauxite and coal is down about one-third from its level of a decade ago, and quotas granted by the International Tin Agreement have been unfulfilled. The new Eight-Year Plan calls for expanding mineral production.

In all countries government policy plays a vital role in creating an appropriate atmosphere for economic development. The burden on government is particularly great in a directed economy such as Indonesia's, where much of industry is state-owned, and great reliance is placed on direct controls, such as those over internal prices and foreign trade. Unfortunately, the role that prices can play in a planned economy has not been fully exploited by the Indonesian Government. Many commodities in short supply are underpriced, while taxes are levied on exports.

An experiment is now being made to encourage exports through the payment of "disparity" prices (i. e., higher than the foreign price converted to rupiah at the official rate of exchange) to private producers who sell their goods to the government for export. Also, the products of some state enterprises have been priced so as to obtain a surplus for reinvestment in development projects. The extension of this principle to such sectors as railroads, buses, electric power, and the recognition that low prices encourage less urgent demands would promote economic development. Thus, there have been some tentative signs that more rational price policy is being learned by experience.

Protected by a moderately favorable balance of payments in past years when rubber prices were high, and failing to recognize that much of her capital stock was being consumed through insufficient replacement and maintenance, Indonesian officials have not regarded inflation as a serious barrier to economic development. They have not recognized the degree to which it has diverted production from exports to domestic consumption and has increased the demand for imports.

A "free list" for non-essential imported consumer goods at a high rate of exchange (200 rupiah to \$1) was established in mid-1960. This and other relaxations of import restrictions did halt the price spiral by increasing the flow of goods into the country, bringing hoarded goods

onto the market, and "mopping up" considerable excess spending power. Coming at the same time as a sharp fall in rubber prices, however, they did so at the cost of seriously draining foreign exchange reserves. An export drive was begun in mid-1961, and a few months later, as the balance of payments situation became increasingly serious, a moratorium was declared on new projects with heavy import requirements, and restrictions on imports had to be tightened again.

Concurrently with the easing of import restrictions in 1960, added pressures were applied to improve tax revenues. A substantial increase in revenues resulted, although some of the improvement—collection of back taxes and tax penalties imposed on traders—was of a "one-time" nature.

While the Team does not think that the government should pursue fiscal and monetary policies so stringent as to produce price stability at the cost of seriously restricting production, it appears that the government has been too little concerned with the adverse effect on growth of a rapid rate of inflation. There is now a growing recognition of the problem, however, and the current balance of payments crisis is illustrating and high-lighting the difficulties.

With a large part of the economy under direct or indirect government control, efficiency in making and in executing decisions is critically necessary. At present there is considerable duplication of function and excessive complexity of organization in the government. This is particularly noticeable in the area of economic planning, where the responsibilities for planning and execution of the Eight-Year Plan are not clearly delineated. A number of proposals for simplifying the decision-making process have been submitted, and a choice among them is pending.

The government bureaucracy is seriously underpaid, which accentuates the need for supplementing incomes by one means or another. Some public employees hold two jobs to supplement earnings. In any economy where government plays so vital a role as it does in Indonesia, the temptations for corruption are great. Corruption does not now appear to be serious enough to impede appreciably the course of economic development, although in such an economy there is an ever-present danger that it may become an acute problem in the future. Its main impact at present is to sap the energy and disfigure the image of a government that is undertaking the serious task of development. Efforts are being made by the Government to reduce corruption, however. In addition to intensified anti-corruption activities on the part of the public prosecutors, a Committee on Government Operations, responsible only to the President, has the power, when it finds real evidence of corruption, to bring pressure for corrective action on administrators at any level. Although the Com-

mittee has no power to prosecute, it has substantial influence and moral authority.

In summary of current conditions, we feel that while there are many deficiencies in the way the economy and the government operate, there is evidence of and promise for further economic development. The restoration of internal security, largely completed in the summer of 1961, is a propitious sign. If the West Irian issue is soon settled, the great drain of military expenditures on the budget may be considerably reduced. We sensed a new willingness on the part of Indonesians to be self-critical and to examine their own shortcomings. There is an increasing tendency to seek pragmatic, rather than ideological solutions.

Perhaps one of the most favorable signs is the presence of a growing number of well-trained personnel who show an awareness of the magnitude of Indonesia's economic problems and exhibit a desire for resolute action.

THE INDONESIAN EIGHT-YEAR NATIONAL DEVELOPMENT PLAN (CHAPTER IV)

Indonesia's first attempt at planning, the Economic Urgency Program in 1951, was not very successful, chiefly because of inexperience. The 1956 Five-Year Plan was a marked improvement.

The new Eight-Year Plan is by far the most ambitious, having taken a year of preparation by the National Planning Council in cooperation with various government ministries. In general outline, the Plan is divided into two separate parts. "A" projects, of which there are 335 costing 240 billion rupiah (plus 39 provisional additions), are intended to contribute directly to national economic development. "B" projects, classified in eight major categories, are designed to earn sufficient rupiah and foreign exchange to finance the A projects.

The distribution of A projects by category is as follows:

	In billions of rupiah	As percent of total
Cultural	1.6	0.6
Educational	16.3	6.8
Research	2.6	1.1
Public Welfare	6.2	2.6
Government	3.6	1.5
Food	25.1	10.5
Clothing	28.9	12.0
Industry	52.0	21.7
Health	2.2	0.9
Transport and Communications	60.2	25.1
Finance and Tourism	11.3	4.7
Special Project (Military)	30.0	12.5
Total	240.0	100.0

Of the 240 billion rupiah expenditure, 133 billion are planned expenditures of rupiah and 77 billion (\$1.7 billion) are in foreign exchange. (The distribution between local and foreign currencies of the remaining 30 billion, representing the "Special Project" for the military, is unknown.) If it is assumed that three-quarters of the Special Project is in foreign exchange, total foreign exchange requirements are \$2.2 billion.

The strategy of the Plan is to concentrate during the first three years on achieving self-sufficiency in food, a substantial measure of self-sufficiency in textile production, making preparations for later major capital projects, and refining the Plan. In the latter five years, emphasis shifts to industrial plants—e.g. steel, aluminum, and petro-chemicals. The Plan also includes an expansion of educational facilities at the secondary and higher levels, and a number of cultural projects.

The B projects are expected to produce nearly 120 billion rupiah in domestic currency and nearly \$2.5 billion in foreign exchange (compared with the \$2.2 billion assumed foreign exchange requirements of A projects). Of the \$2.5 billion expected foreign exchange revenues, over \$1.9 billion is expected to come from export of oil and the portion of new oil company investment that is spent in Indonesia. These B project revenues are gross revenues, however. Since it is not known what expenses will be required to earn them, the net revenue from B projects is unknown. On the least favorable assumptions as to these expenses, the planned gross foreign exchange revenue would yield a net revenue that falls short of planned requirements by over \$1.1 billion (an average of about \$140 million a year). On the most favorable assumptions as to expenses, however, the net foreign exchange yield would exceed the foreign exchange costs of the A projects.

The inclusion of cultural projects in the Plan, the emphasis on consumption in its early years, and the reluctance to increase taxation are sometimes regarded as inconsistent with a serious effort at economic development. We note that the Plan is intended to promote "overall," not merely economic development. We think, moreover, that a sense of nationhood and loyalty to and faith in the institutions of a new country, which these features of the Plan are intended to promote, may be essential to attaining political and social pre-conditions even of economic development.

The best use of a nation's resources depends partly on its objectives, about which economics has nothing to say. To carry out these objectives, however, requires using economic resources and making rational choices, which do involve economic questions. Our principal concern about the Plan arises from doubt that the true economic costs of the projects have been correctly assessed and that the priorities implied in the

time scheduling of projects are rational. An effort has been made to evaluate the capital costs of projects but apparently none has been made to evaluate their future operating and maintenance costs, the alternative uses to which the resources might have been put and the possibilities of accomplishing their purposes with use of fewer resources. The goal of self-sufficiency in rice and clothing, and, more specifically, the proposal for a vertically integrated rayon complex, illustrate some of the economic issues involved in correctly evaluating costs and allocating resources.

Indonesia's capacity to absorb capital for new projects is severely limited, mainly by lack of adequate skilled personnel—managers and supervisors, technicians, and skilled labor. To its credit, the Government recognizes the need to improve technical and managerial skills and is acting to remedy them. Officials agreed or suggested that United States aid in financing capital projects should be accompanied by technical personnel that will supervise operations and maintenance and will stay long enough to teach these functions to Indonesians.

The fact that Indonesia's capacity to absorb capital is limited implies that activities which increase it deserve highest priority. It also implies that investment, rather than being kept within the limits of present absorptive capacity, should be pressed to or slightly beyond its limits for only in that way can the experience necessary to expand absorptive capacity be acquired.

Another problem is the timing of proposed expenditures for all projects combined. A well scheduled plan should contemplate a growth in the aggregate of domestic expenditure to correspond with the expected growth in total resources and in capacity to absorb capital. The Indonesian Government has not made a time schedule of expenditures for the A projects in the Plan, beyond President Sukarno's decree that, in the first year, expenditures on these projects should be one-eighth of the planned eight year total. The Team has estimated the time schedule implied by the proposed dates of initiation and completion of projects, however. These dates imply a sharp absolute decline of both domestic and foreign expenditures between the first four and the last four years of the Plan, mainly because of the concentration in the first four years of expenditures on projects in the Food, Clothing and Finance categories. This pattern of decline is not consistent with good scheduling. If the first half of the Plan is feasible, the second half is not sufficiently ambitious, and if the second half is of the appropriate order, the first half is unattainable.

The time scheduling of B projects, as well as that of A projects, appears to deserve attention, for much of the net foreign exchange revenue from B projects will be required to finance A projects before they can

be earned. In any revision of the Plan, the timing of B projects should also be reviewed.

Another timing problem is raised by the decree that all A projects should be completed by the end of the eight-year period. Such a policy implies, however, that no work on A projects would be in progress when the Plan ends. This is undesirable; there should be no break in development expenditures merely because the present Plan gives way to its successor. Such a policy also interferes with rational scheduling of projects within the eight-year period. It requires that all projects requiring more than a year to complete be initiated before the end of the seventh year, that all requiring more than two years be initiated before the end of the sixth year, and so on. This alone may limit the possibilities of rational scheduling. Furthermore, it may introduce a positive bias toward scheduling in the reverse of a rational order, because the projects that take long to construct have longer periods during which they yield no return. They are therefore more costly in the first part of their lives than projects that can be completed more quickly, so that it is preferable, other things being equal, to start them later, when the economy can better afford their high early cost.

Fortunately, however, there is time to reconsider questions of scheduling, and it is a good sign that officials realize that the Plan needs continual review and perhaps substantial revision.

The Plan is optimistic, both about what can be executed in the eight-year period and about the financial resources that can be obtained. The rice production target for 1968 calls for production increases averaging about 9 percent a year. With recent annual increases of only 2 to 4 percent and the paddy center program working unsatisfactorily, this target appears unattainable. Expectations of foreign exchange revenue from B projects, especially of \$750 million from the portion of foreign oil company investments that the companies convert into rupiah and of \$1,180 million from the Government's share of increases in oil exports, also seem overoptimistic. Some foreign exchange resources that would be made available by the Plan, however, apparently have not been taken into account. Any shortfall of revenues from B projects will probably be matched or exceeded by a shortfall in the rate of which A projects can be initiated, so financing would probably keep pace with execution, even if both fall short of what is proposed.

In appraising the demands that the Plan will make on Indonesia's economic resources, the planners appear to have taken into account only the capital costs of the projects. They have apparently left out of account the imports and domestic resources required to operate the projects, both those that the projects require for their own use and those

that are required by other domestic enterprises that supply the projects, directly and indirectly. They have also left out of account the demands on foreign and domestic resources that will arise from the increases in demand for consumer and investment goods that will be generated by the capital expenditures made under the Plan. An expanding economy requires growing inventories, especially inventories of goods in process. These additions to inventories use economic resources and have to be financed out of current saving, just as do other forms of investment. The resources required for this purpose may constitute a substantial fraction of domestic saving. Failure to take this use of resources into account, which is a common one in planning, leads to underestimation of inflationary pressure and pressure on the balance of payments.

These defects in the planning process could be remedied by an increase of economic sophistication in the planning process.

Indonesian officials, with a few exceptions, feel that efforts to prevent inflation would conflict with development and that development is an objective of higher priority. They also feel that the problem of inflation will be less severe than in the past because the Development Plan will increase output and thereby help keep prices down, and because, now that the Rebellion has ended, military expenditures can be stabilized.

The Team thinks that this view underestimates the adverse effect of inflation on development. Although its adverse domestic effects are not as serious as in more monetized economies, inflation has diverted resources from production for exports to production for domestic consumption, has diverted goods from producing to hoarding, has expanded the demand for the imports, and will create difficulties in meeting the rupiah costs of projects. The effort to deal with it by direct controls, moreover, absorbs much of the energies of skilled administrators and policy makers, diverts foreign exchange to the black market, thereby depriving the Government of control of a scarce resource, and increases the incentives for and rewards of graft and corruption.

The Team also believes that Indonesian officials are overestimating the price-restraining effects of output increases. Because such increases are accompanied by equal increases of money income, which cause increases of demand, they do not cut excess demand by the amount of the increases in output but by only a fraction of that amount.

Indonesia has been living on its capital by failing to maintain inventories, to keep capital equipment in repair, and to replace overage rubber trees, oil—and coconut palms. The highest priority should be given to bringing utilization of existing plant and equipment to its full potential capacity. The Team believes that Indonesia would progress faster by

postponing new capital projects that do not serve this end directly or indirectly.

Maintenance of capital and efficient operation in general is not merely a matter of improving technical and managerial skills in individual plants, a need which is well recognized. It also requires improved general planning and especially management of foreign exchange to assure sufficient allocations for spare parts and materials. It must be recognized that any economy, irrespective of its social organization, is limited by certain constraints. Capital must be maintained; inventory expansion absorbs resources; increases of current output give rise to other indirect demands for imports and current production; and inflation increases the demand for imports and diverts resources from exports to domestic uses, and from production to hoarding.

We consider the Eight-Year Plan a big step forward. It is more than a mere list of desired projects. An effort was made to match expenditures and the means of financing them. The need for review and reappraisal is recognized. Its most important aspect, one that outweighs its deficiencies, is that it was formulated, and has behind it the full authority of the Government. President Sukarno's assumption of personal responsibility for the Plan is a new element in the situation. The attention of officials has been focused on development. They have been doing serious thinking about their problems and that is an important first step toward solving them. According to observers of the Indonesian scene, there has not been before such concern for economic progress.

OBJECTIVES AND CRITERIA OF UNITED STATES AID (CHAPTER V)

The above description and analysis lead us to certain conclusions about the objectives and character of aid to Indonesia that need to be stated before we present our recommendations for aid. The Team believes that the primary objectives of United States policy toward Indonesia should be (1) to help Indonesia gain the strength to maintain its independence; (2) to help it become a politically viable nation; and (3) to assist Indonesia in developing an expanding and self-supporting economy.

These objectives, and the belief that aid can help attain them, rest on a number of premises. The first is that *Indonesia's ability and willingness to maintain her national independence is of great present and future importance to the United States.* With a large population, occupying a vast archipelago, with its western islands in sight of the Southeast Asia mainland, its northernmost point only a few hundred miles from the Philippines, and its southeastern islands close to Australia, the future of Indonesia will certainly have a major influence on all of Southeast Asia

and the South Pacific. Her economic potential—over an extended time horizon—can be translated into greater actual strength than that of other countries with poor resources.

The second premise of our recommendations is that *Indonesia has not only the willingness but a strong desire to maintain her national independence.*

In the third place, we believe that the *potentiality for strengthening Indonesia's ability to maintain her independence through foreign assistance is substantial.* This ability will depend on her internal strength and on the loyalty of the people to their government and institutions. The Government is trying hard to build up a national identity, both through economic development and through other less tangible means; it is significant that the Eight-Year Plan is called "The National Over-All Development Plan," and not simply a plan for economic development. Aid of the appropriate kind can help develop this internal strength.

This leads in turn to our fourth premise; *that aid should be designed to give effective long-term support to Indonesia's development.* It takes time to develop internal strength.

In terms of the "self-help" criteria of foreign aid, the identification of high priority development objectives, the recognition of the need to mobilize resources, and the formulation of the new Eight-Year Plan are evidence of progress. The extension of primary, secondary and technical education and the concern with improving transportation are also evidences of the attempt to mobilize the resources of the whole population. In fact, the great effort in the field of education over the last ten years is strongly favorable evidence of the desire to improve the level of skills of the people and of effective performance. We interpret the criterion of reducing dependence on external resources as strengthening the ability to service foreign loans and equity investment, since development generally calls for increasing, not reducing, the use of foreign resources. Over the years Indonesia has not managed its foreign resources well. However, it realizes the need to manage them better. It also has a program to increase its exports, and its Development Plan emphasizes reduced dependence on imports of foods and textiles.

Efforts to tap the energies of the people are being made by a number of means. The energies of private enterprise have not been sufficiently tapped, but private enterprise continues to exist alongside State enterprises in manufacturing and the distributive trades. Legislation to establish a new Development Bank for Private Enterprise is pending, and certain limited portions of the Eight-Year Plan are designated for private enterprise.

Our analysis suggests some of the characteristics of desirable United States aid. First, since long-run influence of aid is likely to be greater the more fundamentally it is related to the promotion of Indonesian national objectives, we should be willing to support these objectives. Our aid programs, therefore, should place major emphasis on helping Indonesia build a strong and independent nation.

Second, the United States should accept the Indonesian view that her over-all national development requires some increase in consumption in the first three years of the Plan.

Third, since the most severe limitation on Indonesia's capacity to absorb capital is deficiency in skills and experience, our aid for any given project should include all necessary training of personnel and should otherwise be comprehensive enough to assure that the project can be successfully operated by Indonesian personnel after it is completed. We should encourage investment to or slightly beyond the limits of existing absorptive capacity, recognizing that mistakes may be made but that they are an inevitable accompaniment of the increased experience necessary to expand Indonesia's economic capabilities.

Finally, we should not support projects that are so technically advanced that they cannot be run with even reasonable efficiency and do not contribute to Indonesia's total national development.

Our recommendations are designed to carry out these principles.

RECOMMENDED NEW AID PROGRAMS (CHAPTER VI)

The new aid programs we recommend involve total foreign exchange costs which we estimate at between \$325 and \$390 million. In most cases, these costs cover a five-year period. Of the total, we recommend that programs involving \$125 to \$155 million be financed multinationally. The remainder, ranging from nearly \$200 million to nearly \$235 million, would be financed by the United States through the grants and loans that are described below. (The costs of the twelve recommended new programs are summarized in Table I-1).

Table I-1
**PROPOSALS OF ECONOMIC SURVEY TEAM FOR NEW U. S. DOLLAR
EXPENDITURES IN INDONESIA**

Recommendation Number	Proposed Program	Duration of program (years)	Amount (Million Dollars)
Grants			
1	Education		30 to 40
	Fellowships for graduate study	5	10
	American faculty for Indonesian universities	5	9 to 12
	Technical and vocational training, including Army program	5	5 to 7
	Research institutes of Council of Sciences	5	4 to 8
	Smaller educational projects	5	2 to 3
2	Transportation		6.6
	Roads	5	0.9
	Railroads	5	2.0
	Sea	5	2.7
	Air	5	1.0
6, 9 & 10	Resource surveys, including tin and coal	3	2.1 to 3.1
7	Food production and distribution	3	3
11	Statistical services		^a
12	Regional Research Center	8	10 ^b
	Total grants		51.7 to 62.7

^a Proposed for U.N. financing at total cost of \$1 million.

^b U.S. share of proposed multinational financing. See Chapter VI.

Table I-1
 PROPOSALS OF ECONOMIC SURVEY TEAM FOR NEW U. S. DOLLAR
 EXPENDITURES IN INDONESIA

Recommen- dation Number	Proposed Program	Duration of program (years)	Amount (Million Dollars)
Loans			
2	Transportation		40.2
	Roads	5	6.2
	Railroads	5	19.0
	Sea	5	5.0
	Air	5	10.0
3	Spare parts and machine shops	3	25 to 30 ^e
4	Inventory replenishment	1½ to 2	20 ^f
5	Acceleration of rubber replanting	8	g
6	Tin	3	12.5
8	Capital for light industry	3	30 to 50
9	Energy		18.0
	Electric power	4	15.0
	Coal	2	3.0
	Total loans		145.7 to 170.7
	Total grants		51.7 to 62.7
	Total grants and loans		197.4 to 233.4

^e U. S. share of proposed multinational financing. See Chapter VI.

^f U. S. share of proposed multinational financing, excluding sales of surplus commodities.

^g Proposed for financing by International Bank for Reconstruction and Development. Cost roughly estimated at \$45 million.

These programs are recommended as additions to the existing grant programs of about \$17 million for the fiscal year 1962 that we recommend be continued. (See Chapter VII for our recommendations regarding existing grant programs). The average annual cost of the programs financed by the United States would be \$56 to \$63 million in the first five years, excluding aid under P. L. 480 and assuming that AID grants would be continued at the rate we have recommended for the fiscal year 1962. This is approximately three times the \$20 million annual average of economic aid in the past five years, again excluding aid under P. L. 480.

1. *Education and Training*—\$30 to \$40 million (grants).

No expenditure in an underdeveloped economy pays larger dividends than investment in human capital. Aid to education and training is also one of the activities which the United States can provide most successfully, particularly aid to higher education. We recommend an expansion of fellowship aid for graduate study in the United States, estimated at \$10 million over five years. Continued aid in providing American professors to support new or strengthened university faculties is recommended, costing \$9 to \$12 million. The great need for technical and vocational training is recognized by the Indonesian Government, and its Development Plan calls for a large expansion in facilities. Aid of \$5 to \$7 million, chiefly for technical equipment and teacher training, is recommended to support both the Ministry of Education and the Army's program of training soldiers for return to civilian life. \$4 to \$8 million is recommended to aid the Council of Sciences in creating seven new scientific institutes. An additional \$2 to \$3 million is envisaged for smaller primary and secondary school projects, particularly the further development of English language training, including aid for publication of English language textbooks.

2. *Transportation*—\$46.8 million (\$6.6 million grants, \$40.2 million loans).

One of the basic prerequisites for economic development is improvement of transportation; this is particularly necessary in a country like Indonesia, with its thousands of islands. American survey teams have recently completed studies of both land and sea transportation (including port facilities). Our recommendations take account of their proposals, with due allowance for the fact that some types of equipment and aid are best provided by other countries. Our recommended aid is divided approximately as follows: Roads, \$7 million; Railroads, \$21 million; Sea, \$8 million; and Air, \$11 million.

3. *Spare Parts and Machine Shops*—\$50 to \$60 million (loans), one-half to be the U. S. contribution.

In Indonesia, as in most developing economies, excess industrial capacity coexists with great shortages of industrial products. Two of the critical reasons are the shortage of skilled maintenance and repair personnel and the inadequate supplies of spare parts. These problems cannot be solved overnight, and we are aware of the difficulties to be surmounted in successfully attacking them. However, improvements will yield the greatest immediate return of any investment in Indonesia, and thus make a major effort worth the cost and energy expended. We propose the establishment of spare parts depots under trained American technical supervision, beginning with a few selected industries. Attached to these central depots would be machine shops (some mobile units) for making unavailable parts, and performing the vital function of training skilled machinists and mechanics. We believe the successful operation of a few major depots would have an important beneficial effect on attitudes toward maintenance and on the development of improved maintenance services throughout industry, and would focus attention on the critical need to provide for adequate procurement of spare parts.

4. *Replenishment of Inventories*—\$75 to \$100 million (loan), U. S. contribution to be \$20 million, excluding sales of surplus commodities.

Another critical factor limiting output from existing industrial plants is the chronic shortage of raw materials. Insufficient financial reserves on the part of both public and some private enterprises, the inability of any large group of private importers and middlemen willing and able to maintain adequate inventories to function effectively, and the erratic management of foreign exchange, all contribute to this problem. The shortcomings of sea, port and land transportation facilities further aggravate the problem of getting orders to factories with much regularity. We recommend multinational financing by many of the suppliers of Indonesia's raw materials to finance the building and maintenance of adequate inventories of vital material imports. Training in the management of inventories and appropriate controls in order to maintain them will be essential to minimize the harmful effect on production of variations in the balance of payments and foreign currency reserves and to attain the basic objectives of this program. The marked improvement in production during the brief period in 1960-61 when import restrictions were eased is evidence of the high yield of such an inventory program.

5. *Acceleration of Rubber Replanting*--£75 million (loan), recommended for financing through IBRD.

Indonesia depends on rubber for approximately one-third to one-half of export earnings, and the decline in her competitive position in the world rubber market makes the maintenance of rubber production critical. Successive problems have left Indonesia with a dangerously high proportion of overage trees and declining output. Replanting and new planting have been insufficient to maintain the number of trees, much less to make up for two decades of under-planting. A vigorous program of cutting down overaged trees and replanting with new high-yielding stock is required. Replanting, however, involves an immediate loss as the old, low-yielding trees are replaced with new ones, which produce nothing for five to seven years. We recommend, therefore, that Indonesia be helped in securing a long-term loan to compensate for the temporary loss of approximately \$39 million of rubber earnings during the period of accelerated replanting, and to purchase necessary equipment and materials, supplemented by some technical assistance. We estimate that export earnings will decrease by approximately \$39 million due to this program over an eight-year period. We feel that this is a productive loan, and should be "bankable". We suggest that it be financed by the International Bank for Reconstruction and Development.

6. *Increase of Tin Production*--Up to \$100,000 grant and up to \$12.5 million loan.

We recommend aid for surveys of certain existing tin mines with a view toward rehabilitation, and of another site that offers mining possibilities, financing such surveys by development grants. Indonesia has been unable to fill her international tin quota in recent years, and has thus failed to realize a significant amount of potential export earnings. If the survey warrants it, a loan is recommended for the reopening and improvement of existing tin mines and the opening of others in Bangka and Belitung.

7. *Improvement of Food Production and Distribution*--\$3 million (grant).

Indonesia now spends approximately \$100 million a year on rice imports, and her population is growing at a rate of about 2.5 percent annually. Thus, increasing rice production is of paramount importance. We recommend the continuation of United States aid to agriculture, concentrating on technical assistance to improve high-yield seed production and distribution, fertilizer distribution, and control of pests and plant diseases. This, we believe, is an adequate program for United States participation, supplementing our continuing agricultural education program. Support of additional facilities for fertilizer production would be useful, but should be postponed. (See page 22.)

8. *Capital for Light Industry*—\$30 to \$50 million (loan).

Shortages of fixed capital have restricted the growth of light industry, partly because such projects are not as dramatic as heavy industry projects and therefore do not always get sufficient government attention, and partly because about 85 percent of this sector is privately owned and operated. We recommend that a loan of \$30 to \$50 million be made to provide foreign capital for light industries. Part of this sum should be lent to the State Development Bank; the use of the remainder should await the establishment of the proposed Private Development Bank. The United States and Indonesian Governments should work out procedures to ensure the best use of funds to speed the development of private and public enterprises in light industry. Direct foreign aid (public or private) to private industry is not favored by the Indonesian Government; however, foreign funds lent through one of the Indonesian Development Banks, we have been assured, would be welcome. Since the aid is institution-building, this would seem to be an appropriate means of United States assistance.

9. *Energy*—\$18 million (loan).

Indonesia is expanding her electric power facilities, a prerequisite for further industrial growth. The Team believes the United States can be of most assistance in improving the long-term efficiency of distribution of power. We recommend \$15 million to aid in developing interconnecting regional grids on Java in order to make better use of the existing and proposed additional power capacity.

In order to help the Indonesian Government develop the Bukit Asam coal mine, the Team recommends a grant to finance a survey of this mine. If the survey confirms that the output of this mine can be effectively expanded, the Team recommends a loan of up to \$3 million to finance technical services and equipment.

10. *Other Resource Surveys*—\$2 to \$3 million (grant).

In addition to tin and coal, above, other mineral and forest resource surveys are essential to adequate planning for development. We recommend that favorable consideration be given to requests where United States participation is appropriate.

11. *Statistical Services*—\$1 million (grant) recommended for financing by the United Nations.

Economic planning is severely restricted by the absence of adequate data on population, manpower, production, trade, national income, etc. \$1 million has been requested from the United Nations Special Fund for training personnel and improving data collection in economic and social statistics. If the United Nations does not act favorably on Indonesia's

request, the United States should initiate other multinational support for it.

12. *Regional Center for Technological Research*—\$10 million (grant) as United States share of multinational financing.

Students of economic development have become increasingly aware of the need for research to develop technical methods that are more appropriate to developing nations, where labor is plentiful and capital scarce. The techniques of the Western nations are appropriate to their own environment, where the relative proportions of labor and capital are very different, and Western technicians find it difficult to think in terms of any other environment.

We recommend the establishment of a research center, preferably in Bandung (already a scientific center, and unusually blessed with temperate climate and a certain symbolic significance in Asia), with an international staff of technicians. In such a center, technicians from developing countries could learn from each other as well as from technicians accustomed to the ways of the more technologically advanced countries. Such a center in Indonesia could service a wide region, or might be one of a number of related centers in various countries in Asia. We feel such a project could be one of the most successful demonstrations of American friendship and interest. It should not be considered aid to Indonesia specifically, however, since it is designed to benefit other countries as well.

Deferred Proposals for Assistance

The Team has considered many other proposed projects but refrains from recommending them on the ground that they seem either premature or of questionable desirability.

Expansion of fertilizer production is highly desirable, but three large projects (one U.S.-supported) are under way and further expansion should await the successful operation of these facilities and solution of distributional problems.

Aid to provide *additional ships for the maritime fleet* is not now recommended because existing ships are not now being fully utilized, and trained masters and crews are lacking.

Indonesia's *transmigration program* for moving people from Java to other islands has not worked with much success. Although such movement is highly desirable, we believe that improvements in transportation and in economic conditions in the other islands will, over the course of time, stimulate spontaneous movement. In any event, the program is largely dependent upon internal financing and organization, and should not receive a high priority in our foreign aid.

An American firm is now making preliminary surveys and plans for an *integrated rayon complex*. We have misgivings about this project, first because experts regard the present proposal as not suited to Indonesia's resources, and the cost of alternative proposals is not known; second, because the manufacture of rayon from timber to yarn is too complex a process to be a good next step in the present state of Indonesia's industrial skills; and third, because an integrated project involves high capital costs and would be a poor use of scarce capital, compared to alternative uses. A revised proposal, however, will deserve careful consideration and study.

Indonesia desires aid in *construction of petro-chemical plants*, but we feel that plans are too vague at this time to permit us to judge its need and practicality.

We see no strong reasons for suggesting United States participation in areas where other nations are better suited or where satisfactory arrangements are already in prospect. We believe that our goal should be to encourage economic development, even if it is financed from a variety of sources, in the belief that a prosperous and developing nation will have the best chance of maintaining independence.

THE PRESENT UNITED STATES TECHNICAL AID PROGRAM (CHAPTER VII)

The Team was requested to review the present program of the United States Operations Mission (USOM), which administers the AID portion of our aid.

CONCLUDING REMARKS (CHAPTER VIII)

We recommend a program of aid to Indonesia designed to help develop the pre-conditions for self-sustained growth in the light of the long time perspective that we regard as appropriate to Indonesia's development problem. Although we have not recommended any large capital projects at this time, continuing review may bring to light industrial projects which the United States should consider for support. As Indonesia makes further headway the United States should be prepared to expand its initial commitments. There are hopeful signs of rising competence in government agencies, and United States support at this time may be a means of strengthening this trend.

We recognize however that, at best, management of the economy can improve only slowly. At the beginning of Indonesia's Eight-Year Development Plan, is the time for the United States to decide to use all possible means of strengthening Indonesia's economy. The Team is strongly of the opinion that an expanded program in Indonesia is well worth undertaking in the interest of America's long-run goal of a free world.

CHAPTER II

THE EMERGING NATION: POLITICAL, SOCIAL AND ECONOMIC CONDITIONS

Upon arrival in Indonesia, one finds many conditions which mark a young, developing nation. There are many signs of activity and bustle, but also of easy-going traditional behavior. Contrasts and paradoxes are many. One sees at first hand that Java is responding to modernity, though with an already dense population, and that Sumatra is rich in partly developed natural resources and is sparsely settled. The standard of living is relatively low; but Nature is kind in Indonesia, and poverty is not as dire as, for example, in parts of the Indo-Pakistan subcontinent. The surviving degree of rural economic and institutional autonomy limits the competence of central administration, but has enabled this nation, which is rather well endowed, to weather a series of crises with resilience.

A walk in a crowded retail section of the capital, or an evening of dances and gamelan orchestras, impresses one with the cultural and linguistic complexity of this archipelago. Such pluralism presents many problems for administration and nation-building. No wonder that the national crest bears the hopeful motto: "Unity in Diversity." Diversity is apparent in such facts as the resistance of regionalism, the cultural leaven of successive animist, Buddhist, Hindu, Muslim and Christian influences, the ninety or more native languages or dialects.

Unity is strengthened by the facts that 95 percent of the people are of Malayan stock and that Indonesian has become a national language, by the shared experiences of Japanese occupation and the revolution, and by antipathy to the Netherlands.

National self-determination is obviously generating new energies and motivations. While wanting to avail themselves of many of the material and institutional features of more developed countries, Indonesians wish to modernize in accordance with their own identity. In rejecting liberal parliamentarianism and promoting "guided democracy" since 1956, President Sukarno has sought justification not only in the need for greater political stability but also in the desire to preserve and extend traditional communal values and practices. There are, of course, opportunities for individualism, but much official emphasis is given to the quest for new modes of collective organization and action. Foreigners note the marked nationalism and the ideological content of many state pronouncements.

In reaction to their colonial experience, Indonesians are inclined to identify individualism with selfishness, and capitalism with acquisitive in-

justice and imperialism. Their own conception of freedom and voluntarism leads them to reject repression and forced collectivization, thus producing their own brand of socialism.

Appropriation of 3.25 billion rupiah for structures for the 1962 Asian Games, the proposed building of a massive national monument which will displace 17 usable buildings in Merdeka Square, and the construction of one of the world's largest mosques, are significant symbolic acts for the Indonesians in their effort to build a nation. While usually modest in personal behavior, people in mobilized groups and persons of special status, such as national officers, are often proud and sensitive about national issues. In contrast to the Japanese, who readily hired expert advisors during their Meiji period of modernization and who had no real colonial experience against which to react, some Indonesians have been less willing to accept foreign assistance. This reluctance appears to be changing, however, as they gain more experience with "turnkey-plus" capital projects, and similar types of cooperative developments.

POLITICAL FORCES AND CONDITIONS

When one meets an Indonesian official of, say, thirty-two years of age, it is probable that he fought in his country's war for independence when he was aged fifteen to nineteen. If he is older, he may have participated in nationalist movements before and during the Japanese occupation. Although he has been a citizen of an independent country for the past 12 years, his present attitudes are still affected by the years of colonial rule and the struggle for national self-determination. Nationalism and resentment have led to the elimination of the Chinese from retail and money lending roles in rural areas. The large sector of state enterprises has placed heavy burdens on public administration. Thus, attitudes can produce political and economic facts. While still reacting to their colonial past, Indonesians are seeking a respected place in the constellation of nations. Economic development is seen not only as a means to improve livelihood, consumption and cultural advantages; it is also considered necessary for a place of importance among the nations of the world.

In colonial days and through 1957, the existence of a dominant Dutch capitalism, in the eyes of most Indonesians, prevented the emergence of the nation's true identity. This fact, therefore, lent force to one of Lenin's central theses, imbibed decades ago by local nationalists, that capitalism and foreign imperialism are one. Many Indonesian citizens today recognize that foreign oppression can take many forms, and that the type they combatted is a waning phenomenon; but publicly they continue to denounce vestiges of the old system.

The avowed domestic policy of Indonesia is to proceed by stages to a socialist economy in the interest of social welfare and justice. Indonesian leaders argue that scarce capital must be channeled by the state and that the weak must be protected. Those who control policies have been prejudiced against the functions of a market mechanism, not fully recognizing that, as, for example, in Yugoslavia, it can serve as incentive and regulator in both public and private sectors. Modification of this view is becoming apparent, and more people realize that state enterprises producing certain domestic, as well as export, commodities can use private interests to provide a sizeable surplus to facilitate more rapid capital formation in the public sector. Actually, the Indonesian economy is at present a blend of public, cooperative and private enterprises, with the first sector occupying a dominant position. Private businesses are mostly modest in scale, and many form part of associations in which the Ministry of People's Industries has an interest; access to credit from state banks also entails controls. But many an underpaid official holds a second job, or supplements his salary by private trading or investment in manufacturing. Some consider the latter an assurance that private business interests will continue to be tolerated. Moreover, Chinese who are Indonesian citizens continue to be active as merchants and petty entrepreneurs in cities and sizeable towns.

Indonesian leaders are ideologically selective. They have rejected such Communist doctrines as the inevitability of class struggle, dictatorship of the proletariat, denial of God, and international Communist disciplines. They conceive of a developing social harmony fostered by a distinctly Indonesian variant of socialism.

Another paradox in Indonesian politics and administration is the sometimes tense, though usually tacit, coexistence of centralism and regionalism. The present leadership is opposed to federalism, since that system was connected with Dutch schemes and the Round-Table settlement in 1949. Within a decade or so the archipelago will doubtless be more completely integrated by lines of transportation and communication.

Interpersonal relationship among Indonesians strike the Westerner as particularly good. One sees relatively little evidence of emotional stress and strain in family and societal relations. A sense of egalitarianism is strong; the village headman's house is not much larger, nor more ornate, than those of his fellow villagers; there are no great extremes of poverty and wealth within a village.

So, too, the traditional village decision-making process emphasizes a shared and cooperative endeavor. *Gotong-Royong*, or mutuality of assistance, *Musjawara*, or discussion, and *Mufakat*, or consensus, are the

expressions of this process. It involves a joint endeavor in which all issues are put forth and thoroughly discussed, and agreement is reached without vote, on the lowest common denominator. It is in concept almost like the Quaker meeting. In recent years these traditional village terms have crept into the phraseology of Indonesia's leaders when they describe the objectives and methods of "socialism à la Indonesia", and their expression strikes a responsive chord in the ways of thought of the Indonesians.

The pattern and influence of traditional values are inevitably changing, but much time will be required for the many subtle adjustments to a new technology, new institutions, and the policy-making requirements of an independent—and interdependent—nation. During this era of transition there are bound to be many disruptions in interpersonal relationships which will in turn affect Indonesian policies. The United States must understand the causes for such disruptions and adjust to them, at least in part, if it is to maintain satisfactory relations with Indonesia.

INDONESIA'S FOREIGN POLICY

As the young nation has sought domestic institutions which would suit and express its ethos, composition, and aspirations, so in foreign affairs it has sought recognition of its dignity and status. Since Independence, Indonesian foreign policies have been developed to achieve objectives which can be summarized under six headings as follows:

1. *The rapid and complete elimination of Western colonialism in Asia and Africa.* In his speech on Independence Day in 1960, when President Sukarno broke diplomatic relations with the Netherlands, he declared:

"We continue to hold fast to the basic spirit of the Revolution, that is, to gather up all national and international forces to fight against and finally to wipe out imperialism and colonialism, wherever they are, and in whatever form they may be".

So, for example, Indonesia has supported the strivings of Algerians and Angolans for independence. Reacting, as they naturally do, to their own colonial past under a European, capitalist, imperial authority, Indonesians have not always been ready to recognize imperialism in other forms, particularly in revolutionary guise.

2. *Incorporation of West Irian (West New Guinea) into the Republic of Indonesia.* Indonesia's attitude toward virtually all international issues has been deeply colored by the West Irian question. Since the transfer of sovereignty in 1949, there has been no settlement of rival Dutch and Indonesian claims to this sparsely peopled wilderness. Indonesia asserts that its sovereignty is incomplete without West Irian. When

repeated negotiations with the Dutch failed and appeals to the United Nations brought no satisfactory results, Indonesia shifted in 1957 from a policy of what Sukarno called "friendly persuasion" to one of "confrontation of all our national forces with those of the Dutch". All remaining Dutch interests in the archipelago were nationalized late that year. When, in mid-1960, the Dutch sent a naval squadron, including an aircraft carrier, to West Irian and added military reinforcements, Indonesia broke diplomatic relations with the Netherlands.

Indonesia has continued to seek world sympathy for her side in this dispute. Her claims have been fully supported by the Sino-Soviet Bloc, and the USSR has offered munitions and equipment which could be used for an attempt at forcible annexation. Indonesian leaders have felt that, by contrast, the United States could exert more influence on the Netherlands and in the United Nations to achieve a formula for peaceable transfer of this insular possession. Since the issue was again not resolved by the United Nations at the 1961 session of the General Assembly, Indonesia has intensified its campaign.

3. *Freeing the Indonesian economy from domination by foreign interests particularly Dutch and Overseas Chinese.* As already noted, Dutch interests were taken over beginning in December, 1957. Pressure was then placed on the Overseas Chinese (those who are not naturalized Indonesians) in late 1959 and 1960, as a result of which Chinese traders are no longer permitted to function in communities smaller than the *kabupaten* (sub-district) level; many Chinese departed for Singapore and Communist China, and activities of Chinese-owned banks were sharply curtailed. This pressure led to a series of tense diplomatic incidents with the Chinese Communists.

This concern with foreign domination is strongly reflected in Indonesia's policy toward foreign aid. Apart from the residual—although very important—investment in oil and rubber by certain United States and other private companies, the Government has refused to accept further direct foreign investment in Indonesia in any form which entails control. Although it recognized the importance of foreign capital for its economic development, the Indonesian Government prefers to receive it in the form of loans; it will accept foreign licensing of Indonesian companies, "production-sharing" agreements, and "turnkey" construction arrangements. Indonesia continues to accept aid, without strings, from any and all sources.

4. *An "active and independent" position in respect to the Cold War.* Indonesia has made it a point to avoid adherence to any of the alliances and groupings of either the Free World or the Sino-Soviet Bloc. It has claimed to examine issues on their merits without prior commitment, and

President Sukarno has insisted that the nation is "non-aligned" rather than neutral or passive, without principles, or without a standpoint. In neutralist assemblies and in the United Nations, Indonesia has advocated disarmament, hoping that it would not only relax tensions, but also make more funds available for economic aid. Indonesia has been outspoken in its criticism of the United States' role in Cuba, seeing this as a colonial issue. It has also criticized other Western actions, usually for their failure to conform to Indonesia's conception of its own interests.

As a corollary of non-alignment, Indonesia did not join SEATO. Although Indonesia is a member of the Colombo Plan, it has declined to participate in the newly created Association of Southeast Asia (ASA), which has more recently been initiated by the Philippines, Thailand and Malaya.

5. *The active promotion of solidarity and mutual cooperation among all Afro-Asian nations.* President Sukarno's MANIPOL speech of 1959, and many others, have referred to friendly relations with all nations, but most particularly with those of Africa and Asia. The Bandung Conference of 1955 was a high point in Indonesia's search for status among the newly emerging nations, and President Sukarno seeks to capitalize on and even recreate the "Bandung spirit" whenever he can. There was a suggestion at the Belgrade Conference that the next meeting of neutral nations should be in Bandung. President Sukarno has been particularly interested in Africa in the past two or three years:

"Africa is ablaze like a burning fire!" he said on Independence Day, 1960. "The ammunition has exploded, fused by the spirit of Bandung . . . Continue your struggle, oh Brothers and Sisters in Africa, your victory will certainly come!"

6. *Support for the United Nations.* Indonesia has supported the United Nations. For the most part, the voices of Indonesian delegates have been heard in the world forum on issues which reflect the nation's foreign policy objectives, such as revision of the United Nations Charter to give a greater voice to Asians and Africans; the seating of Communist China; transfer of the headquarters from New York—because it is in the major nation of one of the two blocs—to Africa, Asia or Geneva; and support for the anti-colonial struggle.

SOCIAL CONDITIONS

As in most economically underdeveloped societies, the population of Indonesia is "young" in terms of its distribution among age groups. Increasing by probably between 2.3 and 2.6 percent annually and concentrated as it is on densely populated Java and Madura, there is concern

about the "population explosion" in these islands. As public health and other services are restored and further improved, life expectancy at birth (now about 32 years) will continue to increase and the rate of population growth must be expected to rise. Unemployment and underemployment have increased. This situation, as well as the nature of Indonesian culture and socialism, help to explain the initial emphasis on food and textiles in the Eight-Year Plan.

In contrast to Java and Madura, which have nearly 1,200 persons per square mile, the Outer Islands, some of which are even richer in resources than Java, are sparsely populated. Sumatra and Kalimantan especially, with 80 and 18 persons per square mile, afford ample land frontiers. Craft skills and agricultural products have been fairly well developed in some outlying islands, but better economic and political integration would both encourage, and be encouraged by, improved transportation and trade. The government's program of "transmigration" has lagged for a number of reasons, among which are the attachment of Javanese and Madurese to their locales and the reluctance of Outer Islanders to accept the movement of whole communities from the more densely peopled regions. Migration will require expensive preparations to clear land, build roads, construct housing, provide health facilities, schools and other services, ensure law and order, and help to mobilize capital for productive enterprises. One indicator of when Indonesia has reached the "take-off" stage may be the acceleration of what must some day be a great movement of peoples to the Outer Islands.

According to a recent survey, approximately 36 million people (40 percent of Indonesia's population of 96 million) are members of the general work force; 22 million persons are engaged directly in agriculture and 14 million in non-agricultural occupations. Of this last number, about 2 million are employed by the Government.

There are no exact figures for the volume of unemployment, except for the islands of Java and Madura during 1956. Of the city residents on the two islands, 7 percent were totally unemployed; of the rural population, 38 percent were "under-employed". With the steady flow of workers from rural to urban areas each year, urban unemployment is likely to become an increasing problem.

Despite the abundance of total manpower, there is a severe scarcity of skilled workers. This scarcity is another serious limitation on production.

Three and a half centuries of foreign rule contributed to the crystallization, and in some respects, to the atrophy of ancient Javanese culture. Nationalism, urbanization, and other modern forces are quickening the decline of such traditional Indonesian cultures and are intensifying transi-

tions to new patterns of institutional life, with their changed systems of values and motivations. Education and careers in government, in the services, in the professions, in politics and in business, all contribute to this change. In this context, change and instability should rather be expected than evoke surprise.

Religion, and with it, traditionalism, continue to play a large role in the lives of the villagers, the vast rural population. Almost 95 percent of the people are Muslims, with small numbers of Hindus (primarily in Bali), Christians (in Sulawesi and North Sumatra) and adherents of other faiths. As a result of the variety of influences to which it has been exposed, Islam in Indonesia differs from what it is in the Middle East: local natural medicine vies with prayer and Western medicine; offerings to good spirits and protection from evil spirits often mean more than the *mulah's* blessing; and the status of women is much higher than it is in the Middle East.

Education

One of the most impressive accomplishments of Indonesia since Independence has been the rapid expansion of education at all levels. When Indonesia declared its independence in 1945, it had only a handful of men trained in economics, about 200 engineers (all in the field of civil engineering, but including such national leaders as President Sukarno and First Minister Djuanda), less than 400 physicians, and a scattering of persons with advanced training in history, the classics and philosophy—roughly a thousand college graduates in all. In 1950, the year after independence was won, the literacy rate was less than 10 percent and less than 20 percent of children of primary school age attended school. In 1960, by contrast, literacy was up to about 55 percent, 49 percent of the primary school age children were enrolled, secondary school enrollments were up from 0.3 to almost 4 percent of the 12-17 year age group, and college enrollments had risen from .04 percent to 0.8 percent of the college age group.

While there has been some deterioration in quality of teaching at the upper levels as contrasted with the pre-war periods, Indonesia has been surprisingly successful in filling the vacuum left by the departure of the Dutch colonial government in 1949, and the subsequent departure of most private Dutch nationals in 1957-58. In purely quantitative terms, Indonesia's achievement of the last decade is impressive and is probably comparable to that of India and the Philippines. Its accomplishment in the task of raising the educational level of the population is perhaps best illustrated by Table II-1, which brings together data from a number of sources.

Table II-1
SCHOOLS AND SCHOOL ENROLLMENT IN INDONESIA

	Year 1950-51	Year 1958-59	Year 1959-60
Elementary Schools:			
Number	24,775	34,124	37,336
Enrollment	4,977,304	7,380,767	8,552,476
Secondary Schools:			
Number	953	4,817	7,007
Enrollment	139,353	719,526	1,071,341
Higher Educational Institutions:			
Number	77	228	278
Enrollment	1,164	46,495	49,773

As remarkable as this achievement appears, the problem of training an adequate supply of manpower in a variety of skills is far from resolved. Many schools are ill-equipped and faculties are inadequately trained and poorly paid. Although teachers have high social status, the financial inducements in this profession are so low as to discourage better trained personnel from continuing in education, or to force them to teach only part-time while earning a living primarily in other work. The Central Government's 1961 budget for education is only about 4 percent of total government expenditures (6 percent of non-defense expenditures), and is equivalent to less than 1 percent of estimated national income. Vocational education has, until very recently, lagged behind general education at the secondary level, and the needs at the university level in the areas of science, engineering, and the various administrative and management skills have hardly begun to be met. Attrition rates are very high at the college level, and the average student who completes his studies takes about twice the minimum prescribed time.

Despite these recognized weaknesses, the gains made since Independence have been very great. Fourteen universities have been established since 1949, the oldest being Gadjah Mada. Because of past privations and expanding professional opportunities, education and vocational skills are avidly sought. Admission to one of the better universities is a great honor; to become one of approximately 2,500 university students now studying abroad is a much desired goal. During this period of university growth, faculties have been strengthened by the use of foreign professors; roughly 250 are currently serving in posts in Indonesia, about half from the United States, and most of the rest from other non-Bloc nations. The early emphasis upon medicine, law and economics has shifted in the last

two years; now about 70 percent of higher education expenditures are in science, engineering, business and public administration.

Social Welfare and Health

Some advances have also been made since Independence in the area of social welfare and health. Indonesia has paid special attention to eradication of malaria and prevention of tuberculosis and yaws. The campaign against malaria has been waged in Java, Madura, Bali, and South Sumatra by the Ministry of Health cooperating with USOM and the World Health Organization, and it is hoped that the campaign will be completed by 1967. Already several tens of millions of people have been protected by preventive action.

The number of hospitals and available hospital beds has barely kept pace with the growth of population, however, and the number of doctors has increased only from 1,504 in 1954 to 1,612 in 1960. Important gains have been made in increasing the number of orphanages, work centers, and rehabilitation institutes for cripples. New programs have been initiated since 1950 for rehabilitation of prostitutes. Some of these gains in the past decade are indicated by the following figures, taken from Minister Yamin's speech in August 1961, presenting the National Planning Council's draft of the 8-Year Overall National Development Plan:

Social Welfare:	1950	1960
Cadres trained for social work in villages	250	70,000
Village social institutes	—	13,847
Cultural centers for isolated areas	—	15
Orphanages	147	238
Work centers	54	145
Rehabilitation centers for cripples	1	11
Institutions for destitute women	4	24
Pilot projects for rehabilitation of the homeless	—	6
Rehabilitation centers for prostitutes	—	16
Health:		
Hospitals	664	768
Hospital beds	63,080	70,624
Polyclinics	3,020	4,326

GENERAL ECONOMIC CONDITIONS

Indonesia is richly endowed with a diversity of natural resources. Soils which—though not all fertile—respond to the use of fertilizers, a tropical climate, and adequate rainfall provide conditions for intensive agricultural cultivation, particularly on the island of Java. The islands also have a wide variety of mineral resources—some well developed, such as petroleum in Sumatra and Kalimantan, and tin in islands near Sumatra; others in less developed and under-explored reserves, such as manganese on Java, iron ore in Sumatra, Kalimantan and Sulawesi, bauxite in and near Sumatra, nickel in Sulawesi and coal in south Sumatra.

Indonesia was formerly nearly self-sufficient in food, although rice imports have risen to an average of about 8 percent of consumption during the last five years. Since the earliest days of Dutch settlement, Indonesia has produced a large surplus of exportable vegetable products, notably rubber, tea, coffee, copra, palm oil, and pepper. With a modest investment in terracing for water retention, rice will grow in most parts of the islands, and bananas, pineapple and papaya will thrive with a minimum of attention. A majority of Indonesia's rural population is largely self-sufficient, consuming most of their locally grown products, perhaps bartering or selling up to 20 or 25 percent of their farm production. Rural housing needs are minimal. A tight roof and a dry floor give adequate protection; woven matting normally serves as walls and dividers.

A tradition-bound agricultural peasantry, accustomed to the village's subsistence economy, has been both an obstacle to economic development and a partial safeguard against crises. A typical view is that "Indonesia is a country which can afford to make mistakes; the worst that can happen if we make too many is that we may have to reduce food consumption by 5 to 10 percent". At least half of the population exists in a non-monetized sector of economic life where the exchange of a few pounds of rice for labor services, or a piece of batik for a few chickens, is of more importance than the international terms of trade or movements in the cost of living, although many smallholders produce rubber, copra, and other products that are affected by international price fluctuations. The expanding demand for imported textiles, the rising level of rural education, the growth of farmers' cooperatives, the development of paddy centers, and similar changes are beginning to bring about a greater involvement of the roughly 70 percent of Indonesia's population in non-estate agriculture with the affairs of the national economy.

Landlord-tenant problems have not been the major problem in rural Indonesia that they have been in much of arable Asia. After 1870, the Dutch legally prevented alienation of lands, though long-term leases of estates to foreigners were permitted. Most cultivated lands have belonged

to communal entities or hereditarily to individuals who could dispose of properties only after approval by local governments. But where cultivable land is scarce and population has grown dense, as on Java and Madura, an estimated 60 percent of the agrarian population is landless. Since 1945 there has been a mild trend toward concentration of land ownership in some parts of Java and some of the Outer Islands, including Bali. On the latter island, between one-quarter and one-half of the arable land is cultivated by tenants. In 1960, the Government enacted a new Agrarian Law (plus two supplementary measures) providing for minimum and maximum limits on land holdings—depending on type of land and density of regional populations. Excess amounts are to be purchased by the State and resold to landless farmers, but there has been a lag in execution of this program. The laws also prescribe narrowly for the use of lands by foreign agencies and foreign firms incorporated in Indonesia.

During the last thirty years of Dutch control, approximately 20 to 25 percent of Indonesia's national income consisted of production of agricultural and mineral exports. Just prior to and following Independence, export earnings were divided into three approximately equal categories, one-third from minerals (mainly petroleum and tin), one-third from estate crops (chiefly rubber and tea), and one-third from smallholder agriculture (rubber, copra, tobacco, etc.). Since Independence, two major trends can be noted: (1) Although the quantity of petroleum exports has risen greatly over the past decade, that of rubber, tin, copra and some other products has fallen, and export earnings have declined as a percentage of rising total national output; (2) Estate production has been falling absolutely since 1940 (and smallholders' output rising) and now accounts for less than 25 percent of export earnings, as contrasted with 30 percent in 1955-56, and 40 percent in 1938-39. (See Table II-2 for recent production and export data for selected commodities).

Table II-2

PRODUCTION AND EXPORTS OF SELECTED COMMODITIES
(in thousands of metric tons)

	1956	1957	1958	1959	1960
<i>Rubber:</i>					
Production	698	696	678	705	640
a) Estate	266	258	243	226	214
b) Smallholders	432	438	435	479	426
Exports	679	677	660	689	587
Ratio of exports to production	97%	97%	97%	98%	92%
<i>Petroleum and its Products:</i>					
Production	12,730	15,468	16,110	18,800	20,800
Exports	10,527	14,314	14,788	16,568	18,000
Ratio of exports to production	83%	92%	92%	82%	86%
<i>Tin (in concentrates):</i>					
Production	30.5	28.2	23.6	22.0	23.0p
Exports	31.7	28.0	18.4	18.7	25.3p
Ratio of exports to production	104%	99%	78%	85%	110%
<i>Copra and its Products:</i>					
Production	1,100	1,093	1,048	1,086	1,077p
Exports	398	441	246	253	278p
Ratio of exports to production	36%	40%	22%	23%	26% ^p
<i>Sugar (total):</i>					
Production	n.a.	1,101	1,061	1,120	978p
Exports ^a	n.a.	267	191	210	208p
Ratio of exports to production	n.a.	24%	18%	19%	21%
<i>Sugar (centrifugal only):</i>					
Production	786	828	769	856	675
Exports	175	143	87	39	35
Ratio of exports to production	22%	17%	11%	5%	5%

Source: Tin data from *Statistical Bulletin*, International Tin Council, November 1961. Data for centrifugal sugar from *Statistical Bulletin*, International Sugar Council. Rubber data from *Rubber Statistical Bulletin*, International Rubber Study Group, December 1961. Other data from International Monetary Fund and *Statistical Pocketbook of Indonesia, 1960*, except for 1960 petroleum figures, which were obtained from industry sources.

^a Includes manufactured sugar, residues, and molasses.

^p Provisional data.

With a very small, although expanding, manufacturing sector, Indonesia depends heavily on its export earnings to buy imports of non-agricultural consumer goods, raw materials (particularly fertilizers and other chemical products, construction materials and textiles), and capital goods. With the rapidly growing population steadily increasing the demand for imported consumer goods, and additional foreign exchange needed to finance economic development and to service past and present development loans from abroad, Indonesia needs expanding export earnings.

Among the various islands, Sumatra is the main source of export earnings. With only about 15 percent of the total population, it accounts for about two-thirds of Indonesia's export earnings, as may be seen from the figures below. Its contribution to the total tonnage of exports, which is significant in connection with the need for transportation facilities, is even greater. Java, with about two-thirds of the total population; contributes only about 15 percent of the value of export earnings.

SOURCE OF EXPORTS, BY ISLANDS

(Average percentage, 1955-1960)

	By value	By gross weight
Java and Madura	14.9	5.6
Sumatra	68.0	79.4
Kalimantan	13.9	13.9
Other	3.2	1.1
	100.0	100.0

Source: Based on data for exports by ports, from *Statistical Pocket-book of Indonesia, 1960*.

The failure of export-earning industries, other than petroleum, to expand or, in some cases, even to maintain output over the last ten years can be attributed to a number of factors. Most of the export commodities were produced by foreign-owned (principally Dutch) companies or estates before 1958. From Independence until 1957, their position was increasingly uncertain, and re-investment programs sharply diminished. The Government has been reluctant to remove squatters from plantations and has not undertaken vigorous program of rubber, coconut and oil palm replanting and of industrial rehabilitation.

Perhaps of equal importance to the relative decline of export industries has been the chronic difficulty in developing adequate management and administration. When the Dutch departed they did not leave well-

trained and experienced Indonesian staffs to carry on management of foreign-owned companies and estates. Rapid "Indonesianization" after 1949 meant that, on many estates, former low-level supervisors or students fresh from agricultural schools suddenly had to be put in charge of operations; in many manufacturing and trading companies, junior clerks or army officers inexperienced in these fields of activity became managers overnight. It is to their credit that the economy did not grind to a standstill but continued with only modest diminution of output.

It is clear that Indonesia has a highly developed traditional culture, but one which will be compelled to change and develop in many ways—not just economically—to cope with the needs of a modern national society. President Sukarno, while constantly evoking memories of colonialism, is aware that the political problems of the present and the future go beyond its eradication. As recently as September 1961, he said to the Belgrade Conference of non-aligned nations:

Yes, Mr. Chairman, let us continue our struggle against colonialism and imperialism relentlessly! If we do this, if we speed up the eradication of colonialism and help to halt the colonial wars now raging, we shall have done something indeed. Deliberately, I use the word "something" because I am fully conscious that, having achieved this, we will not yet have achieved all our aims. In Indonesia, I have repeatedly told the people that independence is only a bridge, though a precious golden bridge, a bridge for nation-building, a bridge for national construction, a bridge for winning better living conditions, a bridge for the establishment of social justice.

He was right in recognizing that Indonesia has much to do before it reaches the next stage of development. How much will become clear as we examine its economy more closely.

CHAPTER III

THE STATE AND PROGRESS OF THE ECONOMY

Before any conclusions can be reached as to the desirable amount and forms of U. S. aid to Indonesian development, it is necessary to assess in greater detail both the present level of its development and the direction of change that is occurring. We emphasize the direction of change as well as the state of development because if two countries appear to be in the same state, but one is standing still or regressing and the other is making progress, their abilities to use aid probably differ and the forms of aid that are appropriate presumably also differ.

In making such an appraisal of Indonesia, we have been hampered by the gaps in reliable statistics. For example, Indonesia lacks any reliable estimates of national income and its composition, whether considered from the point of view of investment, saving, and consumption, or the industries in which income originates, or the distribution of personal income by size. Even reliable data on the size of population, the rate of growth, its composition by age and the characteristics of the labor force were lacking when we were there, although the census of population now being conducted will supply much of the needed information. The best data available seemed to be those on production in individual sectors, some elements of the balance of payments, and retail prices in Djakarta. Data for production of major commodities give a good indication of general trends and areas of special difficulty, but we are handicapped by not knowing much about the trends of production in the less highly organized sectors of the economy and the relative importance of the different sectors. These and other statistical limitations should be borne in mind in weighing our judgments.

Our effort to penetrate beneath the surface, however, is less handicapped by lack of statistics. Any such effort must go beyond evidence which statistical data can provide. Our judgments of subsurface trends are based largely on the currents of thought that we observed in talking to Indonesian officials and to other Indonesians who appeared to be important in the formation of opinion and decision-making, and in talking to foreign observers as well. Despite our inability to spend a great deal of time outside of Djakarta, the intensity of our discussions, the willingness of Indonesians to spend much time talking with us, and the frankness with which many of them did so, give us confidence in our conclusions.

FOOD PRODUCTION

Though nature has made Indonesia a land of potential agricultural plenty, the production of food in recent years is not keeping pace with population growth. Although by 1960 rice production had risen 30 percent since 1935-39, compared with an estimated 33 percent growth in population from 1940 to 1960, total food production had risen only 22.5 percent. Cassava and sweet potato production were far above pre-war levels, but production of sugar, tea, coffee and tobacco were below pre-war levels, and that of sugar and tea was actually less than the already reduced level of 1957. Sugar production, like that of other crops, is plagued by increased pest and plant disease, obsolete equipment and shortage of skilled labor.

Since about three-quarters of the Indonesian people, occupying an average of one-half acre per capita, are engaged in agriculture, and since only 12 percent of the land area is regarded as arable, the Government realizes that the main thrust for greater agricultural production in all major foods, such as corn, cassava, sweet potatoes, soybeans, peanuts and rice, must come from higher yields.

Rice

By far the most important product is rice—which is the basic staple of the Indonesian diet and the common man's measurement of abundance. Most of it is grown in Java. In response to popular demand, the Indonesian Government has imported rice in recent years; it has subsidized the price of domestic and foreign rice, and it has inaugurated a rice-growing program aiming for self-sufficiency by the end of 1962.

The Indonesian Government reports milled rice production in recent years as follows:

	Production (Thousands metric tons)	Annual Percentage Increase
1935-39	6,230	—
1957	7,338	—
1958	7,672	4½
1959	7,795	1
1960	8,100	4

Production goals are 8.7 million tons in 1961, 10.2 million in 1962 and 15.8 million in 1968. The 1968 target is more than 90 percent above 1960 production and its attainment requires an average percentage increase of nearly 9 percent a year. The Government justifies these ambitious targets, which are part of the *Sandang-Pangan* (Clothing-Food) program of the Eight-Year Development Program, on the basis of four national

objectives: to increase national security, to eliminate the need for rice imports (e.g., 960,000 tons costing 100 million dollars in 1960), to meet the increased rice demand resulting from the expected growth of population, and to permit an increase of about 15 percent in the average per capita consumption of rice.

In the meantime, the Government is pursuing a policy of supplying rice to certain categories of citizens at a price well below cost. In 1961 it supplied rice to civil servants, employees in state enterprises, and members of the Armed Forces at a fixed price of Rp. 4 per liter, even though it pays Rp. 5.5 per liter for rice from Burma and Thailand, and Rp. 7 per liter for American PL 480 rice. According to one estimate, which the Team members could not verify, the annual cost of the rice subsidy to the Government is Rp. 3 to 4 billion. This assumes, however, that no subsidy is involved in the official exchange rate of Rp 45 per \$1 charged to the rice importing agency. Because this exchange rate is unrealistic, sale of imported rice involves an additional subsidy. Assuming that the tourist rate of 90 rupiah to the dollar (which is still lower than the reported August 1961 black market rate of Rp. 165-175 to the dollar) is near the equilibrium rate, the hidden exchange subsidy alone accounts for half the real cost of importing rice.

The Ministry of Agriculture has launched a number of projects to improve the rice yield. With the help of the Institute of Rice Research at Bogor, three or four varieties of high-yielding seed have been produced. These seeds have been transferred to the village seed gardens, where they are planted under the guidance of Agricultural Extension Service officials. There is also a special institute at Bogor devoted to research on plant diseases and pests.

Paddy Center Program

Following the successful experience of the Philippines, the Ministry of Agriculture has undertaken to establish 500 rural centers for the distribution of high-yield rice seed, fertilizer, insecticides, and farm tools, as well as information on how to make best use of these commodities. By the end of 1960, 150 of these "paddy centers" were reported to exist, and by August the reported number had risen to 469. If a paddy center functions according to plan, it is expected to make available on credit the necessary seed, fertilizer, and insecticides to individual farmers. They are sold at cost plus a charge of 25 percent. (This compares with the free market interest rate of 36 to 48 percent per annum.)

To obtain the rice for sale to government employees at concession prices, the Government attempts to obtain a certain quantity of rice—10 percent of the crop in 1960—at the height of the harvest season. Its valua-

tion of the rice is competitive with the open market price at this season, but is lower than the price the village rice broker and the farmer can get on the open market at other times. Brokers and farmers are therefore disinclined to sell part of the crop to the Government, preferring to hold it, and sell on the open market later when the price has risen.

Evaluation of Rice Program

For a number of reasons, the program to raise domestic rice production has been only partially successful. Some of them are organizational and administrative. For one thing, the Government's budgetary provision for training seed growers and extending seed farms has been inadequate. For another, there is a good deal of evidence that logistic planning has been inadequate to get the required amount of fertilizer delivered at the right time, and little indication that the Ministry has yet taken account of differences in soil conditions in determining what types of fertilizer should go to what places. Storage facilities for the fertilizer are also inadequate. There has also been some evidence of resistance to the use of urea as a fertilizer because farmers are unfamiliar with its special characteristics and because they are often unwilling to believe that the small amount required will do the job.

The research on plant pests and diseases at Bogor is reported not to be reaching the field. At the same time, the Research Institute lacks the funds to disseminate the results of research that is completed.

Most reports indicate that the paddy center program has not worked well. Most of these centers are manned by young officials or retired estate workers who have had little experience of this sort and who receive few directives as to what is expected of them. They distribute the fertilizer but often do not have the technical competence to advise on how it should be used. The agricultural extension workers, who are supposed to advise on use, do not cooperate well with the personnel of the paddy centers. Both are government officials, are regarded as outsiders, and must deal with the village headmen who exercise great control over the villagers. Not having been very successful in dealing with these headmen, they have been unable to make much progress in modifying traditional farming habits.

Although the Minister of Agriculture and several of his top aides told the Team that the paddy center program was in operation, it soon became evident that they were aware of at least some of the difficulties. For example, the Minister recognized that the problem of getting rice growers to repay government loans has yet to be solved. These loans were originally supposed to have been repaid in rice at valuations that were often below market prices. Since it proved difficult to get repay-

ment in kind, repayment in cash is now required. Although this has not solved the problem, it is evidence of willingness to revise programs that do not work.

The whole paddy center program is in process of being studied and revised. There were even some reports that an effort would be made to transfer it to the cooperatives at the village level. Some agricultural specialists expressed the view that this would be a change for the better, but others advised the Team that, by and large, agricultural cooperatives have been unsuccessful in Indonesia. They were encouraged by the government to replace the functions of local storekeeper and money-lender, formerly handled by Chinese merchants who are now confined to the large cities; they are also manned by unskilled young officials and retired agricultural extension workers and are regarded by the villagers as "government organizations to keep control." An observer sees the cooperative as ineffective because its effort to get high returns is contrary to the non-competitive *Gotong-Royong* (mutual assistance) tradition of the village. It therefore appears unlikely that the cooperatives will succeed in increasing food production within the term of the Eight-Year Plan.

Though the bounty of nature probably makes self-sufficiency in rice, at present or even higher levels of per capita consumption, an attainable goal in Indonesia, the Team believes that domestic agricultural resources would be used to better advantage if corn and tapioca were allowed to continue to serve as rice substitutes, as they have in the past. That other cereals are used instead of rice is indicated by the wide variation in per capita consumption of rice among the provinces. In East Java, for example, people eat less rice but more corn and cassava than do people in northern Sumatra. If the goal were one of self-sufficiency for foodstuffs as a whole, Indonesia could export corn and import rice if this proved as profitable as seems likely. Moreover, such a goal would still allow Indonesia to substitute rice for inferior foods as incomes rise, and would still leave Indonesia self-sufficient in foodstuffs if, in an international crisis, shipping were cut off. With higher rice prices, the people of some important regions have, in the past, substituted competitive foods, though these were regarded as inferior.

Given the target of self-sufficiency in rice alone, an obvious built-in obstacle to achieving it is that rice consumption is stimulated by government distribution of domestic and imported rice at prices well below the market price. This makes consumption, and hence production, targets higher than would be dictated by normal market criteria. At the same time, the low price paid by the government to the peasant for his rice creates no incentive for him to increase his output. Moreover, it reduces

the amount of rice which he will be willing to sell to the government, even if non-price measures succeed in encouraging him to increase his production. As long as the government has difficulty in obtaining a domestic market surplus for subsidized distribution, it will be forced to make purchases abroad. On the other hand, if the government pays a higher price for rice to the peasant and continues selling it to civil servants and others at a loss, the subsidy for each kilogram of rice will rise, more persons will be demanding that they, like the civil servants, benefit from concessionary prices, further increasing subsidy costs, and inflation will be accelerated.

We would not expect that price, by itself, would provide sufficient stimulus to change the traditional practice of peasant agriculture drastically. What is required is a combination of measures that provide fertilizer and seed, and the education and credit requisite for their use. But a higher price for rice is likely to be an important part of the combination.

If this combination is provided, however, the harvesting of a bumper crop could temporarily depress market prices to unprofitable levels for growers who are forced to sell in order to pay their debts. Storage facilities, transport and marketing organization must therefore be adequate to handle a large increase of market supply, lest a couple of bumper crops resulting from much larger inputs of fertilizer and improved seed, plus good weather, set the program back several years.

We doubt that growers can be induced to assume the risk of large fertilizer costs unless they have reason, backed up by experience rather than promises, to expect that the use of fertilizer will increase their incomes. Moreover, if growers are to be induced to increase their money incomes, the supply of consumer goods available in local markets will need to be larger than in the past. In other words, the rice program calls for a system of exchange, with terms of trade sufficiently favorable to the grower to encourage production of a much larger surplus above his home consumption than that to which he is accustomed.

In Chapter VI, we shall deal with our recommendations for aid concerning food.

RUBBER PRODUCTION

Rubber production and rubber exports are of major importance to the Indonesian economy. In the past thirty years rubber has contributed between 30 to 50 percent of the total value of its exports and during the past decade it has brought dollar earnings fluctuating between \$260 million and \$430 million per year (except in 1951, when the Korean War caused a sharp rise in the world price and increased Indonesian exports to about \$650 million).

Indonesia continued after World War II to be the world's largest producer of natural rubber, contributing 35 to 45 percent of world natural rubber production and approximately 20 to 30 percent of total (natural and synthetic) world rubber production, but since 1959 Malaya has out-produced Indonesia and now seems to be well established as the largest producer. Indonesia's production dropped about 10 percent between 1950 and 1960, while Malaya was successfully developing and planting new high-yielding trees, which produce two to four times as much rubber per hectare. At the same time, synthetic rubber has become almost fully substitutable for natural rubber.¹ Whereas in 1950, synthetic rubber represented a little over 20 percent of world rubber output, by 1960 it amounted to almost 50 percent. Between 1950 and 1960, synthetic production soared from 0.5 million metric tons per year to 1.9 million, while natural rubber production increased only from 1.9 million to 2.0 million.

The latest synthetics are currently selling in the United States for 25 to 30 cents per pound, depending on type, while high grade natural rubber sells for about 30 cents per pound, with the lower grades a few cents cheaper. Experts expect prices for high grade rubber to drop to a little over 20 cents per pound during the 1960s, as competition between natural rubber and the various synthetic rubbers intensifies.

Nevertheless, the total world demand for rubber continues to increase. As more and more nations industrialize, mechanize their transportation, and provide consumer goods for their people, it is bound to grow even further. It is generally believed that natural rubber can continue to compete with synthetics, provided production is shifted to high-yielding trees. This conclusion is supported by the experience of Malaya and, even more convincingly, by the decisions of private American companies to replant on their Indonesian estates. Among these companies is Good-year, which has made one of the largest investments in producing synthetic rubber and is on the frontier of rubber technology.

Estates and Smallholders

Rubber is produced in Indonesia by 700 to 750 estates on a total of less than 500,000 hectares, and by about one million smallholders on a total of 1,300,000 hectares. Most of Indonesia's estates are in Sumatra, principally on the northeast coast, while smallholders production occurs both in Sumatra (about 65 percent) and Kalimantan (about 30 percent).

¹The past two years have witnessed the development of commercial production at competitive prices of two forms of stereo-regular synthetic rubber which is the so-called "synthetic natural rubber". One, *cis*-polyisoprene, is molecularly identical with natural rubber, and is almost completely substitutable for it. The other, *cis*-polybutadiene, when mixed with equal quantities of natural rubber, yields a product which for many uses is superior to natural rubber alone.

Economically, the distinction between estates and smallholders is primarily that the estate labor force is "permanent" whereas the labor force of the smallholder normally consists of his own family, assisted perhaps by a few casual laborers or "share tappers".

Despite having more than 70 percent of the area devoted to rubber, the smallholders produce only about 60 percent of the rubber and the estates the remaining 40 percent. The reasons for their lower share in production lie in the fact that smallholders, without any standard system of exploitation, tap their trees with the primary objective of obtaining the maximum yield and give little consideration to the well-being of the trees. Furthermore, smallholders consider their rubber as secondary to their rice or other crops, so that they often stop tapping during the months when rice or other food crops are being planted or harvested. What is more, they plant rubber trees in lowland areas, which are flooded in the rainy season, thus causing damage to rubber trees and preventing their tapping.

Whereas between 1952 and 1959 dry rubber output of smallholders varied between 320 and 395 kilograms per hectare with no clear trends, average yields on estates declined from 755 to 538 kilograms per hectare. This marked decline in recorded yields of estates was probably due to several factors: more or less widespread stealing of estate rubber for smuggling; the inability of most estates to undertake a normal replanting program in the face of uncertainties as to their future land tenure, their status as foreign investors, the political and security situation, and the generally unsettled post-independence conditions; the resultant slow decrease in yield per hectare as existing trees became older and were not replaced; the lower day-to-day efficiency of management and technology of the former Dutch estates since they were nationalized in 1958, coupled with the rebel movement in Sumatra which caused labor to flee from the disturbed areas, and a shortage of chemicals for processing, deterioration of processing equipment, a shortage of spare parts, and even destruction of rubber factories by the rebels. In contrast, smallholders increased production; responding to higher prices by using methods which threaten the long-run future of the trees and by cultivating additional land. Unfortunately, their new planting has been with low-yield seedlings.

Aging, Replanting and New Planting

Thirty-five years is considered to be the average economically productive life of a rubber tree. This includes the five to seven years required for a tree to mature sufficiently before tapping begins. It is estimated that about 30 percent of the estate area planted in rubber is of trees more than 35 years old. What is more, another 25 percent of that area is estimated to be planted in trees 31 to 35 years old and another 11

percent in trees 26 to 30 years old, there having been no replanting to speak of between 1941 and 1949, and relatively little since then (see text table below). Since 1952 there has been only negligible change in the total area planted in rubber (which is lower than before pre-World War II).

Specific data on the age distribution of smallholder rubber trees are not available, although a study based on an intensive field survey estimated that from 50 to 60 percent of smallholder plantings is no longer productive, or produces so little as to be uneconomic except when rubber prices are high.

Against this aging estate and smallholder acreage one must set the replanted acreage. During the past ten years, according to the Ministry of Agriculture, replanting of rubber trees has been accomplished in the following areas (measured in hectares):

Year	Estate	Smallholder
1951	4,900	n.a.
1952	5,300	n.a.
1953	6,100	n.a.
1954	7,300	n.a.
1955	6,400	1,571
1956	8,900	2,935
1957	9,100	14,182
1958	10,700	6,294
1959	11,000	10,638
1960	12,000	6,000

From the reporting in the past six years, and data for the immature area in 1958, which take account of new planting as well as replanting, we estimate that immature estate areas that will come into production in the next six years are less than 12 percent of the total estate area. For smallholders, the corresponding figure is probably no more than 3 percent.

These data on recent replanting and the age of trees lead to the conclusion that nothing can prevent a further decline in Indonesia's rubber production during the next several years, and that vigorous planting, using high-yielding planting material, is needed if the decline is not to continue indefinitely. Indonesia has been living off pre-war capital in rubber. It is now in the vulnerable position where, on the one hand, it must do much planting to restore its capital, but where, on the other hand, the feasible new planting is not sufficient and the replanting needed to supplement it in sufficient volume involves a further loss of exports for several years in the future.

Future goals call for replanting 18,000 hectares per year for ten years on the estates and 24,000 hectares per year by smallholders. To help

finance this program a new uniform tax of 79 rupiah per 100 kilograms on estate rubber production and on smallholder rubber exports was introduced in January 1961, and is intended to yield annually about 400 million rupiah to a central fund. Out of this fund will come bounties to be paid to estates and smallholders that replant or undertake new plantings. A start is being made at replanting on the estates this year, but there is a delay in starting an organized campaign among smallholders.

If replanting can be raised as proposed, it would increase the rate on estates from about $2\frac{1}{2}$ percent per year to about $3\frac{1}{2}$ percent. The average rate of replanting by smallholders has been about $\frac{1}{2}$ to 1 percent; the proposed increase would bring this to about 2 percent. Since 25 percent of the estate area will become overage and about 10 percent will come into production in the next five years, there will be a net reduction in producing acreage of estates over the five years of about 15 percent, or of about 3 percent per year. A $3\frac{1}{2}$ percent goal would offset this, but would contribute only about $\frac{1}{2}$ to 1 percent of acreage per year to replacing the 30 percent that is already overage. This target is clearly inadequate. Moreover, much of the replanting that has been done over the past ten years is not of high-yield seedlings. In view of the competition from Malaya and the much more serious competition from synthetics, the new targets are clearly not ambitious enough.

Since most of the estates are operated by the Government, there appears to be no reason why, with good planning and management, a higher rate of replanting could not be achieved. Technical knowledge and high-yield seedlings are available to the Government for replanting purposes so that a yield as high as that of Malayan rubber trees appears feasible. Nevertheless, up to now, the level of replanting has been low, due to poor organization and a shortage of manpower on the estates.

A much greater problem is that of the smallholders. The Government of Indonesia has been aware of its responsibilities in this respect, and in 1950 established a Smallholders Rubber Office in the Ministry of Agriculture, the objectives of which were to stimulate replanting with high-yield seedlings, approved tapping practices, etc. In 1957, 10 million rupiah, were allocated from counterpart funds for planting and replanting of smallholder rubber. By the end of 1957, that sum had been nearly exhausted and the Government never allocated any more money for this purpose, presumably because of more pressing needs in relation to ousting the Dutch and the Rebellion, so the intensive replanting activity rapidly fell off. (See table above.) The Government subsequently financed several seed gardens, but failed to establish an adequate distribution system.

Another problem, important for both estates and smallholders, is price policy. Rubber exporters are paid in rupiah at the official rate of

45 rupiah per dollar's worth of export proceeds, whereas domestic prices reflect a much lower rupiah value. Thus, while the producer's rupiah price from rubber exports has borne a fixed relation to world prices, production costs have risen in relation to them. The fall in world rubber prices has aggravated the situation. If domestic prices continue to rise while the exchange rate applicable to rubber exports remains unchanged, estates and smallholders who export legally will, in a relatively short time, lack the rupiah with which to do even the present replanting, and the Government will face a substantial loss in tax revenue from rubber exports.

In order to be successful, the program for smallholders must do a great deal. While the short-term objective is to increase the amount and quality of rubber produced, there is also a need to improve marketing arrangements and provide adequate supplies of tapping equipment and other materials for production on a continuing basis. More also needs to be done to reduce smuggling: it has been estimated that in previous years as much as 25 to 50 percent of the foreign exchange revenue from smallholder rubber production has been lost to the Government through illegal trade. The long-term objective is clearly that of planting new high-yield rubber planting material. This will require adequate price incentives and technical supervision and a suitable training program, accompanied by an education and information campaign among the smallholders to shake them loose from their traditional production methods.

There is no doubt, however, that adequate land is available for an intensive planting and replanting program. An ICA survey of smallholder rubber production in 1956^{1a} showed that much old land could be restored to efficient production and new land could be developed, with the help of heavy machinery to eradicate grass pest and prepare land for planting and a regrouping of smallholdings to obtain more efficient use of transport, milling, and marketing facilities. There is also need for long-term, low interest credit to stimulate replanting, with repayment beginning when planting comes into production. In Kalimantan, the emphasis would be on new planting, both for regrouping and to get away from low, wet areas. New planting also appears possible in Northern and Central Sumatra, particularly since activities of the Rebellion have come to an end.

Apparently the basic organization of the Smallholders Rubber Office, including a series of staffed field offices, has been established. Sources of high-yield seeds and other planting material have been set up, but the Office lacks funds for financing substantial production of high-yield seed

^{1a} Beery, Lawrence A. Jr., *Smallholder Rubber in Indonesia*, International Cooperation Administration, Djakarta, 1956.

material and an adequate distribution system throughout Sumatra and Kalimantan.

To remedy the serious conditions that exist in Indonesia's rubber industry, we make several recommendations in Chapter VI, Section 5.

PRESENT STATE OF TRANSPORTATION

A well developed transportation system is one of the prerequisites to successful economic growth. In a vast island chain like Indonesia, sea and air transport have an important role to play. While the main roads of Java serve the country well, the road network is an old one and frequent repairs are needed because of lack of proper drainage. As a result of heavier traffic, bridges need to be strengthened. Better roads are needed in Sumatra and, to a lesser extent, in Kalimantan and Sulawesi, to move export commodities to the ports. Java needs large scale rehabilitation of her railroads. For all these reasons, investment in transport holds a high priority and foreign assistance should play a major role in this field.

Although the Eight-Year Plan allocates 25 percent of planned investment to transportation and communication, it is doubtful whether even this will be adequate, since much needs to be done to rehabilitate the existing transport system, to say nothing of developing it further. In this respect, as in others, lack of investment in the depression years of the 1930's, war's devastation, postwar political uncertainties, and inadequate planning of resources since Independence have resulted in Indonesia's living off capital. As a result, transportation will have to absorb a relatively large part of planned investment in the early stage of Indonesia's economic development.

Roads²

In the twenty years from 1939 to 1959, the number of trucks has increased almost four-fold, motor busses and passenger cars increased substantially and the number of motorcycles increased six-fold. (See Table III-1.) In the same period, the kilometers of asphalted highways are reported to have declined about 20 percent. (Although official statistics presented in Table III-1 also show a large increase in kilometers of roads of all types, some or all of the reported increase may be due to a change in the method of reporting, suggested by the absence of a figure for the "unspecified" category in 1939.)

² With ICA assistance, the Government of Indonesia contracted for a survey of road and rail transport with the United States engineering firm of DeLeuw, Cather and Company. The survey was completed in the summer of 1961. Members of the U.S. Economic Survey Team had the opportunity to meet the director of the DeLeuw, Cather Team and to study his preliminary findings before writing this report.

Table III-1
MOTOR VEHICLES AND ROADS

	1939	All Indonesia	1959
	All Indonesia		Java and Madura
<i>Motor Vehicles (units)</i>			
Passengar cars	53,090	74,819	58,995
Motor Busses	7,216	9,882	4,115
Trucks	9,655	46,552	26,164
Motorcycles	13,239	113,339	91,592
Total	83,200	244,592	180,866
<i>Roads (kilometers)</i>			
Asphalted Road	12,269	10,047	5,827
Non-asphalted roads	40,521	22,910	3,780
Unspecified	—	46,400	20,250
Total	52,790	79,357	29,857

The dense population of Java provides adequate numbers of unskilled workmen for road maintenance gangs, so that Java's highways are reasonably well maintained, and capable of handling the increasing traffic load.

The transport system of Sumatra is less developed than that of Java, and, while it is not necessary to have two fully developed networks, one of roads and another of rails, to cover the island, some connecting links between existing systems are needed. For although Sumatra is relatively sparsely populated (i.e., 80 persons compared with nearly 1,200 persons per square mile in Java), an adequate transportation system is essential because Sumatra produces the great bulk of Indonesia's exports. The less developed road system of Sumatra has not been maintained and, in addition, was damaged by the Rebellion.

The largest of the islands, Kalimantan (Borneo), has more than one-third of the nation's land area, but only about 5 percent of its population and roads. Since the island is laced with rivers and swamps and overgrown with jungle, the cost of roads would be excessive except as justified by the marketing of exports. Presumably, the potential supply of exports would justify constructing bridges in the port areas of Pontianak, Banjarmasin and Balikpapan. (The Minister of Land Transportation is thinking of using hovercraft, hydrofoils and light sea planes, as well as ferries, for much of the Kalimantan traffic.)

Sulawesi (Celebes) has a road network at its southern tip, around Makassar, but has few roads elsewhere. The consensus is that, apart from

roads near the major ports, most transport for this long, narrow island can be handled by sea.

Ferries are inadequate to link the road and rail lines of Java with Sumatra, Bali and Madura: Existing ferries to Sumatra do not carry rail cars or motor vehicles; the motor vehicles ferry to Bali holds too few cars and lacks sufficient power; and there is no railway or automobile ferry to Madura. Traffic among these islands justifies improved cross-channel links.

Little has been done to locate road-building materials, although opinion is that supplies are adequate. A survey is needed to locate sources of aggregate gravel and sand for road construction and maintenance within an economic distance of the construction sites.

Indonesia has been importing about half of its asphalt from the Middle East. Most of its indigenous supply has come from deposits, left by the processing of one type of crude oil, which are running out. A major deposit of asphalt rock in southeast Sulawesi near Buntung has been used locally. This deposit has not been fully exploited.

Some road construction and rehabilitation is already in process. According to the Minister of Public Works, 3,000 kilometers of roads were being rehabilitated by his Ministry in 1961.

Indonesia has received substantial foreign assistance for road construction and rehabilitation. The United States has provided PL 480 funds to cover local costs for the rehabilitation of 1,700 kilometers of roads and has also provided participant training in the United States and advisory services to the Department of Highways. A loan of \$8 million was also granted for construction of the Djakarta By-Pass.

Soviet credits of \$35 million are available for road building in Kalimantan between Sampit and Muaratewe. A 1959 Czech survey in western Kalimantan may lead to a loan for road construction. Japanese reparations have provided \$7 million for road-building equipment. Under the Colombo Plan, Australia surveyed 1,700 kilometers of roads in the Lesser Sunda Islands in 1959 and has a survey underway in northern Sulawesi.

Railroads

Indonesian railroads suffer from a generation of neglect. The rail system has deteriorated, as there was virtually no investment in the period 1931 to 1949 and little since that time. The following figures attest both to the deterioration and to the added strain on facilities caused by the great increase of passenger traffic.

RAILROADS, PASSENGERS AND FREIGHT

	Length of route open (km)	Loco- motives	Passenger cars	Passengers (millions)	Freight cars	Freight (thous. tons)
1939	7,324	1,263	3,553	68.4	27,201	10,797
1959	6,640	1,209	3,027	192.7	22,956	6,110

More serious still, in its implication for future investment needs, is the excessive age of locomotives and rolling stock. Over half of the locomotives and two-thirds of the rolling stock are more than 40 years of age. (Our source does not indicate how many of these older cars are actually in use today.) In the United States the average life of a freight car is regarded as about 30 years. Compared with other Asian countries, however, railroad specialists describe the state of Indonesia's railroads as "fair."

Eighty-five percent of the railway route is located in Java and Madura, and is said to be in good shape. The rail system in Sumatra is in poorer condition and justifies being improved as coal production is expanded.

Maintenance of rolling stock suffers from lack of tools and spare parts and, more important, from lack of qualified foremen in the shops. Although about 100 supervisory personnel have been trained by the United States, West Germany, and Colombo Plan countries, these trained men are often rewarded with administrative posts several stages removed from supervision of repair and maintenance.

Adequate maintenance policies are also impeded by the low level of rates, which are set by the Ministry of Distribution. We were informed that freight costs are only approximately 1½ to 2 percent of the value of goods. Profits from railroads go to the Central Government and are not automatically available to the railroads for reinvestment.

Capital for the railroads has been available from abroad. An Export-Import Bank loan of 1951 included about \$23 million for railroads, of which \$3.5 million went for track and the remainder for locomotives, shop equipment, etc. A loan by the DLF in 1959 provided \$3 million for rehabilitation of 167 kilometers of track between the coal mine at Tandjung Enim and the port of Kertapati in Sumatra, covering both equipment and a team to direct the operation.

Assistance from other sources includes loans for purchase of railway cars from Czechoslovakia, Poland and West Germany, and of rails from West Germany, and training in West Germany, France, Japan and Colombo Plan countries.

The railway communication and signal system, a type that was outmoded in Europe after the First World War, is also inadequate. Sweden is assisting in the replacement of part of the system.

Sea Transport³

That Indonesia needs an adequate shipping fleet with supporting shore facilities is evident from her geographical position and the great distances between her many islands.

Before removal of the Dutch in 1958, about two-thirds of the Indonesian fleet was foreign-owned. In addition, a majority of the nationally owned companies were managed by foreign personnel. Withdrawal of the Dutch fleet and personnel, representing 85 per cent of the fleet and 85 to 90 per cent of the administrators and technicians, confronted the newly-created Ministry of Sea Communications with overwhelming problems.

By purchase and charter, Indonesia has acquired a national fleet of over 600,000 tons, more than double the tonnage at the time of the Dutch departure. More than half of the present tonnage is owned and operated by PELNI (the initials of the government inter-island shipping company). Two other government companies own and operate ocean-going vessels. The remainder of the Indonesian fleet is owned by over 100 companies. The Eight-Year Plan calls for 1,200,000 tons of additional shipping, to be divided equally between inter-coastal and ocean-going vessels. The latter would enable Indonesia to carry an estimated 10 to 20 per cent of its own international trade. The 1961 budget allocates foreign exchange for 80,000 tons of secondhand vessels, most of which will be purchased from Italy, West Germany, Yugoslavia, Poland and Japan.

The larger fleet is not well managed. Despite the increase in the number and tonnage of ships, the volume of freight and the number of passengers carried is far less than before 1958. Although the Maritime Services Review Team says there is now "insufficient shipping capacity, even if efficiently used," nothing in that Team's recommendations (referred to in what follows) is inconsistent with our view that other measures to improve the efficiency of shipping have a prior claim on resources.

Cargo Handling and Clearance

Incredible delays in moving cargo between ship and shore make the real cost of shipping unnecessarily high. A U. S. advisor estimated that

³ In studying sea transportation in Indonesia, the Team had access to a variety of sources including detailed reports by the Maritime Services Review Team (MSR) which had been provided under an ICA contract late in 1960.

turn-around time in ports is three to four times greater than standard practice. To remedy this situation requires not one, but a series of improvements in management, in equipment, and in other facilities.

Stevedores and dock workers are paid the wages of unskilled workers. Instead of working two shifts of less than 38 hours per week, stevedore gangs should work around-the-clock, as is the universal practice of maritime nations. Because of the high cost of holding ships idle, pay scales should be adequate to get good performance. Inefficiency in the use of labor is aggravated by the fact that few Indonesian ship operators understand the importance of storing cargo with a view to the unloading of the ship. As a result, cargo has to be shifted in the hold and much time and labor are wasted in unloading.

As in other fields of transportation, little has been done to maintain and improve shipping facilities since 1940. Both dock-side cranes and floating cranes are said to be inadequate for the task of handling increasingly heavy cargo. Heavy goods pile up on the pier for want of forklifts and tow-motor trucks to move cargo to the warehouse. Clearly, the work force should be managed so as to hold the need for mechanical equipment to a minimum, but investment in some loading and handling equipment may be justified to avoid excessive delays in the turn-around time of vessels in port. The danger is in attempting to substitute mechanical equipment for good management. Training in the repair and maintenance of equipment and provision for spare parts are also essential.

French government loans have made it possible to expand sheds and warehouses at Djakarta's port of Tandjung Priok and Medan's port of Belawan. More are needed.

Because of port congestion, ships are typically required to wait in the harbor (or even in the roads) for long periods. Wharf space could be economized by greater use of tugs and barges for unloading. Indonesia has facilities to build barges, but needs to train a labor force to operate the facilities.

To realize the full benefit of the measures already outlined requires a radical overhaul of customs procedures. Although about 60 percent of imports clear through the port of Tandjung Priok, this port employs less than 20 percent of the customs inspectors. Even so, the staff would probably be adequate if properly organized and given authority to make some decisions. Moreover, the customs force works shorter hours than stevedore gangs, so that a day may be lost between unloading and clearing customs. As is common throughout the government service, customs inspectors are underpaid in relation to their responsibility.

The long delays are partly due to the complexity of tariff schedules, compounded by multiple exchange rates and price differentials adminis-

tered by an undertrained customs service. Even after documentation is in order, the inspector must open every package, and goods cannot be cleared until all supplementary charges are paid. According to the Chief of Customs, 80 percent of the freight forwarders are "unreliable" and cannot handle or do not know the regulations. Not only individuals but Ministries frequently do not have the funds to clear imports from customs, and as a result, government as well as privately owned goods are held in custody.

What can be done when charges are settled *after* the goods are cleared and when labor is put on a three-shift basis was made clear in April, 1961, when the Army had to take over the transfer of equipment and supplies for construction of the Asian Games complex in order to move commodities out of the clogged transit sheds at the port. (The Customs, however, still frets because duties on these goods remain unpaid.) Another example is the clearance of insecticides used in the program to eradicate malaria—again with the help of the Army and with payment of customs *after* clearance. Obviously, reform is needed at many levels to introduce some rationality into customs clearance, including calculation of the cost of delays to the government.

Inland storage facilities are also inadequate. The old go-downs, built a hundred or more years ago, are too small and are located in the wrong place, owing to changes in the traffic pattern. To make matters worse, most exporting and importing is now carried on by State Trading Corporations, which cannot utilize the many small storage facilities formerly used by private traders. The General Management Board of the State Trading Corporations submitted a list of warehouse requirements to the Team for the storage of rubber and copra at or near ports prior to export. For rubber, this amounted to 86 warehouses at eight export harbors of Java, Sumatra and Kalimantan. For copra, it represented 31 warehouses at three Javanese ports. Lacking these, transit sheds at the ports are used for storage space by government enterprises, leaving a great deal of cargo in the open, unguarded and unprotected from the elements for long periods of time, even after customs clearance.

Finally, shipping, cargo handling and clearance are still further complicated because they involve a multiplicity of government agencies which do not necessarily work easily together: The Ministry of Sea Communications, the Ministry of the Navy, the Ministry of Finance, the Ministry of Land Transport, and many state enterprises.

Harbors

It is generally recognized that harbors are inadequate for present traffic and that the problem is growing more acute. Few of the 260

vessels sunk in Indonesian harbors during World War II have been salvaged. About 100 wrecks, some of which are hazards to navigation, are still in the harbor at Surabaya.

A great deal of work needs to be done in dredging harbors, but dredges remain out of operation because of a lack of spare parts and trained crews. The government already has contracts with a French firm, CITRA, for the extension of wharves in Tandjung Priok and Belawan. It also obtained a loan of \$6 million from DLF in 1959 for development and rehabilitation of 14 ports outside Java, including anchorages, wharf and shed construction, cargo handling equipment, salvage operation within harbor areas, improvement of fresh water supply to harbors (in order to provision ships and thereby reduce the supply of fresh water that they have to carry), and surveys of currents in order to reduce siltage.

Ship Repair and Maintenance

For the inter-island fleet, the average ship-time in commission is below the standard of maritime nations. Little is done to make repairs while ships are underway and officers furnish only a poor description of what is needed when they make requests for repair in port. Lack of parts, planning failures, and the diversity of marine engines used by the PELNI fleet further complicate the maintenance problem.

The Maritime Services Review Team indicates that, although drydocks and slipways should be adequate to meet current needs, they are used only to about half of capacity because of single shift work schedules, poor planning, and the deterioration of drydocks. It is reported that West Germany has contracts for three new drydocks which will meet part of the future needs.

Other Maritime Services

Aids to navigation are all more than 30 years old and, in the words of the MSR Team, "completely inadequate". Only 10 of the 97 light-houses are electrified, although 10 additional sets of equipment have remained in storage for 10 years. Lighted buoys are underserviced and some remain without light for as long as a year. The reasons are familiar—lack of parts, inefficient procedures and lack of trained personnel.

Because of inadequate equipment and bad management, messages frequently do not reach their destination, radio stations are inoperative, vessels are unable to contact harbor masters, and ship sailings are delayed.

Australia has made a grant for procurement of 11 new transmitters and plans are underway to reorganize the radio service system which is now split between the Ministries of Land and Sea Transport.

Hydrographic charts are out of date and little is done to collect data from masters of inter-island ships. This is a serious matter for a nation with almost half a million square miles of coastal waters, subject to almost constant change because of coral bottoms and the volcanic nature of the archipelago.

Air Transport

Garuda Indonesian Airways holds a monopoly of domestic air transport in the commercial sphere. Its route covers almost 10,000 miles, linking 30 island stops and also extending to Singapore, Hong Kong, Manila, Kuala Lumpur and Bangkok. The fleet now includes three new Electras, 19 Convairs and 19 Dakotas.

In 1958, Garuda flew about half the distance it flew in 1957, when it had the technical assistance of Royal Dutch Airlines, (KLM formerly provided almost 50 percent of the technical staff, including 40 percent of the pilots.) By 1959, however, the number of kilometers flown was only about 40 percent less than 1957; in 1960 it was only about 35 percent less.

The International Civil Aviation Organization has given considerable assistance to Indonesia since the Dutch were removed, including technical assistance to the Tjurug Academy and advice to the Ministry of Air Communications. An Export-Import Bank loan financed the purchase of the three Electras and Australia provided communications equipment. AID has a technical assistance program with the Ministry of Air Communications and is assisting with VOR system (very high frequency omnidirectional range, for short range landings), and also provides technical assistance through a Lockheed contract.

To enable provincial air fields to handle more traffic, there is a real need to improve facilities of at least six of the most important ones. The Djakarta airfield is limited to four jet landings per week and some international lines would like to make greater use of the port, both as terminal and as a transit point to Australia and Southeast Asia.

Indonesia would like to convert its air fleet to jet and turbo jet aircraft at least for its international operations. The Team believes that this is premature, in view of many other more pressing requirements for economic development. In the field of aviation, we believe that improvement in air navigation and communication are more urgent.

MANUFACTURING PRODUCTION

Manufacturing production in mid-1961 was at its highest level since 1957; mid-1961, however, is not typical of the last three years, nor is it likely to be representative of the immediate future. The period from October 1960 to the middle of 1961 was an interlude of rising production

following the easing of import restrictions in August, 1960, and preceding the balance of payments crisis which became apparent by June 1961. During this interlude, both raw material and spare parts shortages were eased, permitting increased production of textiles, leather goods, electric lamps, rubber tires, and coconut oil processing. Illustrative of the easing of import restrictions are comparative figures for the first four months of the most recent three years:

IMPORTS OF RAW MATERIALS AND CAPITAL GOODS, JANUARY-APRIL, 1961
(Million dollars)

Year	Raw materials and auxiliary goods	Capital Goods
1959	60	24
1960	63	29
1961	108	55

Production of high priority goods and materials has remained high; the Gresik cement plant, for example, has a high priority on the importation of both raw materials and spare parts, and has been able to operate at full capacity since its completion. Textiles, on the other hand, despite the stress on the *Sandang-Pangan* program during the first three years of the Eight-Year Plan and the recent increase in output, are still operating far below capacity. The Minister of Peoples' (Light) Industries, Dr. Suharto, gave figures of approximately 170 million meters produced in knitting and weaving mills in 1958; the target for 1961 (claimed to have been more than half reached by mid-1961) is 350 million meters with a total plant capacity of 550 million. Capacity, it should be noted, is based on maximum production with a *two* seven-hour shift system; thus the 1961 target assumes production at 64 percent of capacity (so rated), as contrasted with reports of about 50 percent during the preceding year. The current tightening of import controls, however, may again reduce textile production when current stocks of raw materials are depleted near the end of the year.

In early August (1961), Minister Suharto announced rates of planned production "based on available raw materials," which would utilize plant capacity at the following rates in light industry: foodstuffs, 40 percent; non-textile clothing, 84 percent; transport manufacturing, 55 percent; building materials, 51 percent; health products, 66 percent; educational materials, 80 percent; miscellaneous-general, 40 percent. Allowing for the fact that 1961 is a better year than the preceding two, and that production targets are not likely to be fully reached, these figures illustrate the chronic problem of under-utilization of plant capacity faced by the manufacturing sector. This problem is attributable to shortages of mate-

rials and spare parts, poor maintenance of plant, and inadequate electric power capacity aggravated by frequent breakdowns.

The easing of import restrictions in the second half of 1960, besides permitting some increase in manufacturing production, tended to attract onto the market hoarded stocks of both raw materials and finished goods. The effect, although temporary, was wholesome; it caused an actual drop in the consumer price index between August 1960 and February 1961 despite the rapid increase in the supply of money during the same six months. This experience suggests the possibility of rapid improvement of production and reduction of inflationary pressures if raw material and parts bottle-necks could be broken for a sustained period.

MINERAL PRODUCTION

Although Indonesia is rich in minerals, these resources have not been properly tapped since World War II. Wartime destruction, mines left unattended, the loss of managerial skill as a result of the forced exodus of the Dutch after 1957, and the shortages of spare parts throughout the mineral industry are some of the basic causes of this condition. The comparison of production figures for some of the most important minerals, in Table III-2 below, reveals the magnitude of this problem:

Table III-2

MINERAL PRODUCTION; PRE-WAR, 1951, 1954, AND 1957-60

(thousand metric tons)

	Coal	Tin (concentrates)	Bauxite (crude ore)	Manganese (ore)	Natural gas	Oil (crude)
1939	1,781	28.3	231	12.1	1,263	7,949
1951	868	31.5	642	n.a.	1,013	8,093
1954	900	36.4	173	20.2	2,041	10,775
1957	717	28.2	241	53.8	2,798	15,468
1958	603	23.6	344	44.4	2,693	16,110
1959	638	22.0	387	43.0	2,877	18,218
1960	657	23.0	396	10.9	3,137	20,800

Source: *Statistical Pocketbook of Indonesia, 1960*; 1960 data from *Minerals Yearbook, 1960*.

Thus, although the production of crude oil and natural gas has increased since 1951, the production of tin, coal, and bauxite has dropped substantially. Tin production declined steadily from 1954 to 1959 and increased only slightly in 1960 so that Indonesia did not reap the benefits of the high export quotas granted her under the International Tin Agree-

ment. Resources like nickel and manganese have been very much neglected since Independence.

In October, 1960, the Government of Indonesia announced a mining ordinance which classifies all minerals in three basic categories:

Category A—*Strategic Minerals*, such as crude petroleum, natural gas, coal, uranium and other radioactive minerals, tin, bauxite, iron, copper, manganese, nickel, sulphur, etc.

Category B—*Vital Minerals*, such as gold, silver, all precious and semi-precious stones, asbestos, nitrates, phosphates, lead, etc.

Category C—*Other Minerals*, such as limestone, clay, marble, etc.

Rules for the exploitation of mineral resources reserve Category A strictly for the Central Government but give it the right to join exploitation with regional governments, through state enterprises or joint state and regional enterprises. Category B resources can be exploited by state or regional governments as well as Indonesian private corporations or any combination of these. The Central Government's Mineral Advisory Council must approve all applicants. Category C minerals are to be exploited exclusively by regional governments. Mineral rights which were in existence prior to the ordinance remain valid only for the shortest possible transition period. All holders of mineral rights are required to pay the Central Government certain fixed fees, exploration and exploitation charges.

The Minister of Basic Industries and Mining, Chaerul Saleh, and members of his staff, outlined to the Team some of their minerals programs and the ways in which they are seeking assistance for them.

Oil

Petroleum has been the source of about 25 to 35 percent of Indonesia's exports, although not all the resulting foreign exchange has been available to meet Indonesia's general foreign exchange needs. Eager to increase oil exports and at the same time to obtain the maximum possible government revenue from oil extraction, officials of the Ministry have been engaged in protracted negotiations with the three foreign private companies that are now the major producers of Indonesia's oil: Caltex, Stanvac and Shell.

There is also a question of oil exploration by companies that do not now have concessions. The Government had originally offered rights to the three companies now in Indonesia, but it is now inviting all who have an interest in oil exploitation to bid.

The Government of Indonesia recognizes its need for an agreement since oil revenues are needed to finance the Eight-Year Plan.

Tin

The Ministry of Basic Industries and Mining wishes to rehabilitate one existing tin mine, reopen another, and open one new mine. On the basis of the rehabilitation and development they propose, the tin mines are expected to produce 29,000 tons annually instead of the present 23,000 tons.

Bauxite

An alumina plant is to be built by the Soviet Union in the Asahan complex in North Sumatra. It is estimated that this plant will require 120,000 tons of bauxite per year. So far, the Soviet Union has not been willing to make geological surveys for additional bauxite deposits, and therefore the Indonesian Government has asked the United States for technical assistance in finding additional deposits in the Riau Archipelago and West Kalimantan. Once deposits had been surveyed, there would be a need for mining engineers for a three-month period to advise the Government on the exploitation of these deposits.

Coal

After declining during most of the 1950's, coal production rose in 1959 and 1960 but was still less than half of prewar output. Most of the total output comes from the Bukit Asam deposit in Southern Sumatra. The Indonesian Government seeks United States aid in an effort to raise production from this deposit. The Government is not so much interested in finding new coal deposits as in deciding how best to expand existing mines. There is at present a DLF project to enlarge and improve a southern Sumatra rail line from the coal fields at Tandjung Enim to the port of Kertapati. More coal shipping space might be required.

Nickel

The Japanese Government has recently signed a production-share contract with the Indonesian Government to exploit nickel deposits in one section of Sulawesi. The Indonesians will receive help under this agreement to explore laterite nickel deposits. Again American geologists would be welcomed.

Iron

Soviet geologists are now conducting surveys to find additional iron ore deposits in Indonesia. United States assistance has not been sought by the Indonesians.

Cement

Soviet geologists are also surveying sources of additional supplies of the components of cement production, and no United States assistance has been sought by the Indonesians. There are two principal cement

plants in Indonesia, one constructed before World War II in Sumatra and the other, financed by an Export-Import Bank loan, at Gresik in East Java. The present capacity of the Gresik plant, 375,000 tons per year, is to be raised to 506,000 tons with the addition of a fourth kiln financed by a supplementary Export-Import Bank loan. Poland has agreed to build a new plant in North Sumatra with an estimated capacity of approximately 200,000 tons a year, and Czechoslovakia has agreed to build a plant of similar capacity in Sulawesi.

Gold

Rehabilitation of a gold mine in Central Sumatra is said to require \$2.5 million for rehabilitation and \$5 million for new equipment. The Ministry would also like to have further surveys undertaken to determine whether there are additional gold deposits in the same region.

It becomes clear from these statements of requirements for mineral development that, during the past ten years, the Government of Indonesia has not undertaken an extensive coordinated plan of conducting geological surveys. This requirement underlies almost all of the previously cited requests for assistance and should be given serious consideration.

FORESTRY

About 60 percent of the land area of Indonesia is forested, more than double the percentage for the world as a whole. In 1959, the Forest Service of the Ministry of Agriculture estimated the forest area as 903,000 sq. km. Kalimantan has 415,000 sq. km. of forests and Sumatra 284,000, with another 99,000 in Sulawesi. Java has only 30,000 sq. km. Despite the fact that it has only about 3 percent of the forest area, Java accounted for more than half of the total forestry production in 1959. A major reason for this is that its forests are used mainly for firewood.

Nevertheless, even logs and sawn wood are produced in Java and Madura more intensively, in relation to the forested area, than in Sumatra and still more than in Kalimantan. The immense forests of Sumatra and Kalimantan appear to have been barely touched.

Little progress appears to have been made in increasing forestry production. Production was approximately the same in 1955 as in 1939. As Table III-3 below indicates, an increase in 1957 was reversed in 1958, and the subsequent recovery had not, by 1960, restored the 1957 output. Moreover, the proportion of logs and sawn timbers that is exported, which declined between 1939 and 1955, has fallen further from 1955 to 1959.

Table III-3
FORESTRY PRODUCTION, 1955-60^a
(in thous. of cubic meters)

	1955	1956	1957	1958	1959	1960
Logs and Sawn Wood	2,034	2,112	2,287	1,812	1,888	2,060
Teak	609	572	600	536	519	461
Other	1,425	1,540	1,687	1,276	1,369	1,599
Firewood	1,610	1,464	1,484	1,471	1,520	1,546
Teak	857	838	774	756	814	723
Other	753	626	710	715	706	823
Charcoal	380	376	477	433	488	402
	4,024	3,952	4,248	3,716	3,896	4,008

^a Recorded fellings measured in thousands of cubic meters of rough timber.

Source: *Statistical Pocketbook of Indonesia, 1961.*

Forest products represented only about 1 percent of the total value of Indonesian exports in 1959 and preceding years. Yet there are pine stands in Sumatra and Kalimantan which seem suitable for wood pulp use, and the combined resources of Kalimantan's forests appear adequate to support a large lumber industry. Part of the difficulty lies in the fact that these trees are in heavy jungle areas where it may be costly to separate the useful from the less useful trees.

It became clear to the Team that there is real wealth for Indonesia in its forest resources, but that extensive surveys, including particularly aerial surveys, are essential before any ambitious development plans are laid. Only in this way can the forests most suitable for exploitation be discovered. For the Team's recommendation, see Chapter VI.

GOVERNMENT FINANCE

In every year after 1951, the first year for which figures are available, the Central Government's expenditures have exceeded its gross revenues, including receipts from counterpart funds, foreign loans, and repayments by local administrations and government enterprises of loans made to them by the Central Government. During this decade annual accounting deficits were never less than 11 percent of expenditures; they reached 32 and 35 percent in 1958 and 1959, the years when the Rebellion broke out and was at its height.

Expenditures had been kept stable at between 15 and 16.3 billion rupiah in the four years 1952 to 1955. They then jumped by 27 and 24 percent, respectively, in 1956 and 1957, by 38 percent in 1958, and another

26 percent in 1960, bringing them to 60.5 billion rupiah. More than half of the increase from 1957 to 1960 was in the security sector of the budget, which rose from 40 to 50 percent of the total, but there were also substantial increases in the general administrative and economic sectors, resulting partly from large outlays for the Asian Games and related projects, and from increased development activity. For 1961, another 36 percent increase in expenditures has been budgeted, but this includes virtually no increase in the economic sector during the first year of the Development Plan, and to a lesser degree, from an increase in cultural and social expenditures. To some extent, these increases in expenditure represented larger demands by the government upon the country's real economic resources that were not offset by revenue increases capable of reducing private demands. Thus they helped generate inflation. To a substantial extent, however, they were also a response to inflationary pressure, which raised the consumer price index for Djakarta in 1960 to approximately 2½ times its 1957 level.

Although the percentage rise of expenditures, which had slackened in 1959, accelerated again in 1960, the budgetary deficit fell from approximately one-third of expenditures in 1958 and 1959 to only 11 percent of expenditures in 1960, a figure as low as in any year since 1951, as may be seen from Table III-4. This resulted from the fact that, while expenditure rose by 16 billion rupiah in 1960, gross revenues rose by more than 23 billion or 77 percent. The principal reasons were new tax measures, stricter tax collection, and to some extent increased economic activity and inflation.

Table III-4
CENTRAL GOVERNMENT FINANCES
(billions of rupiah)

	Gross Expenditures	Gross Revenues	Surplus (+) or Deficit (—)
1951	10.6	11.8	+ 1.2
1952	15.0	12.3	— 2.7
1953	15.7	13.6	— 2.1
1954	15.1	11.5	— 3.6
1955	16.3	14.2	— 2.1
1956	20.7	18.4	— 2.3
1957	25.6	20.5	— 5.1
1958	35.3	23.0	—12.3
1959	44.4	30.4	—14.0
1960	60.5	53.7	— 6.8

Source: Biro Pusat Statistik.

The new tax measures included increases in the rates of sales tax, excises, and various other direct and indirect taxes or extension in their scope, or both, and also the imposition of a new tax on agricultural land based on its output. They also included what is in effect a tax on "free list" (non-essential) imports, resulting from the spread between the government's charge of 200 rupiah per dollar for the foreign exchange and the official rate of only 45 rupiah which it pays. Non-tax revenue doubled between 1959 and 1960. The increase resulted mainly from new revenue measures. One involved increases in rates charged by government-owned public utilities and in prices charged by distributors of petroleum products, which increased their profits, in which the Treasury shares through various taxes. Another was the institution of government drafts on the profits of newly established state trading enterprises, mostly import agencies.

The 1961 budget is divided into routine and development revenues and expenditures. It envisages routine expenditures of 53 billion rupiah (an increase of 3 billion) and development expenditures of 30 billion (an increase of 17 billion), making a total of 83 billion. Although the outlay for development is not likely to reach the 30 billion figure, ordinary expenditures have risen further than was expected, mainly for security purposes and for such related matters as the rehabilitation of former insurgent troops that have been surrendering in increasing numbers.

Ordinary revenues are estimated at 47 billion rupiah, only 3 percent above 1960 actual revenues, and extraordinary revenues are estimated at 19 billion, including foreign credits of 6 billion and sales of government bonds and of Treasury bills and notes totalling 2 billion. This total revenue of 66 billion would leave a deficit of 17 billion rupiah, 10 billion larger than the (provisional) actual deficit for 1960. The expected revenue increases, which apparently are being realized so far, involve no new tax measures. There has been some increase in yields from the personal income tax and the land tax due to more rigorous collection, but these are relatively small sources of revenue. The expected yields of the import and export duties and the proceeds from sale of "free list" imports can hardly reach the estimated levels, since the deteriorating balance of payments situation made it necessary to suspend the "free list" late in the spring of 1961.

A decision has been made not to impose any further tax measures in the near future but to concentrate on strengthening the machinery for tax collection. The Ministry of Finance believes that improved collection would enable it to obtain much more revenue under existing laws. Ministry officials stated that the main revenue collection problem is a lack of trained personnel. The Ministry has instituted training course in cus-

toms and tax collections, accounting, and general public finance and budgeting. The lack of personnel trained in this kind of work was attributed to the fact that, in the past, the tax collecting function was performed by the Dutch, down to and including the middle ranks of personnel. Officials say they will certainly consider what new revenue sources should be tapped after the first three years of the Development Plan, but that they have not considered this question yet. It was recognized that an excess demand for "free list" imports at the 200 rupiah-per-dollar price for foreign exchange would permit raising the price charged for dollars to get more revenue, but there was a difference of opinion as to whether the rate should be changed.

In 1959 the government offered for sale a 6 percent premium loan of up to 2 billion rupiah. Although buyers of this loan receive certain tax advantages and the possibility of a prize of 1 million rupiah, only 300 million rupiah had been sold up to the middle of 1961. The loan must compete with other uses of funds that yield much higher rates of return. The adequacy of the interest rate paid on this issue is being studied and a campaign is being initiated to mobilize voluntary public saving.

INFLATIONARY PRESSURES

As a result of large government deficits financed by bank borrowing, Indonesia's money supply increased by 41 percent in 1957 and by 55 percent in 1958. In 1959, further large government borrowing from the banks was accompanied by an increase of gold and foreign exchange reserves, but the increase in the money supply was held down to 19 percent by a cut in the value of banknotes and deposits in August, 1959, amounting to approximately 14 billion rupiah, nearly 50 percent of the amount that had been outstanding at the end of 1958.

In 1960, the Central Government financed its 8.2 billion rupiah cash deficit largely by using bank deposits that it had frozen in the monetary measures of August, 1959. Although this method of financing made it unnecessary for the Government to borrow large sums, as it had in preceding years, it was an equally inflationary method of financing. During the first part of 1961 this source was drawn on further. The Government also resumed borrowing from the Bank Indonesia. Owing principally to use of these frozen deposits, the money supply increased by 35 percent during 1960 and by an estimated further 10 percent in the first half of 1961.

The large annual injections into the stream of money income, caused principally by government deficits, and the large increase in the money supply resulting from the method of financing them, have raised the Indonesian domestic price level to more than five times that of 1952. (See

Table III-5.) Since 1957, the rise has been persistent, although interrupted. It stopped in the second quarter of 1958, in the second quarter of 1959, and again after the monetary measures in August of that year. Prices declined for six months from July 1960 to January 1961 and again for five months from March to July 1961. A new rise began in July, however, apparently explained partly by a severe drought in Central Java, which cut production of rice by 2 or 3 percent. This and other causes, probably reinforced by hoarding, have quintupled the urban price of rice since August 1961. The accompanying electricity shortages have also cut manufacturing output, while the depletion of foreign exchange reserves, which forced the government to clamp down on "free list" imports, has further reduced the supply of goods. As a result, the Ministry of Labor's Consumer Price Index for Djakarta reached a level nearly three times that of the year beginning in March 1957. (See Appendix Table B-1 for this index and its major components.) Fiscal policy and the resulting precarious international financial position are in the background of this recent price rise, of course, since a temporary decrease in rice and manufacturing production could have been offset by emergency increases in imports if foreign exchange reserves had been maintained.

Table III-5
CONSUMER PRICES IN INDONESIA, 1952-1961

Period	Index (1953 = 100)	Annual percentage increase
1952	94	—
1953	100	6
1954	106	6
1955	141	33
1956	161	14
1957	177	10
1958	258	46
1959	311 ^a	21
1960	420	35
1961 Jan.-Sept.	469	11 ^b
Sept.	535	21 ^b

^a An index of the Djakarta prices of 19 foodstuffs is linked in 1959 to the Ministry of Labor Cost of Living Index, which begins in 1958. See Appendix Table B-1 for quarterly and monthly Ministry of Labor figures but note that they are shown there with a different base period.

^b Annual percentage increases over corresponding period of 1960.

Source: *International Financial Statistics*, published by International Monetary Fund, and the Indonesian Ministry of Labor.

INTERNATIONAL TRANSACTIONS

In the five year period 1956 to 1960, Indonesia has had a persistent, although fluctuating merchandise export surplus, offset in all but one year by a steadier deficit for services (including net payments of investment income). The volatility of the merchandise surplus has resulted chiefly from fluctuations of imports, which varied between \$487 million and \$744 million during the period; exports varied little except in 1958. (See Table III-6.)

Table III-6
BALANCE OF PAYMENTS OF INDONESIA
(millions of dollars)

	1956	1957	1958	1959	1960	1st half 1961 ^p
<i>Goods and services, net</i>	-165	-85	-65	25	-62	-92
Merchandise, net	99	196	160	235	154	14
Exports (f.o.b.) ^a	843	848	647	817	870	371
Imports (f.o.b.) ^a	-744	-652	-487	-582	-716	-357
Services, net	-264	-281	-225	-210	-216	-106
Investment income, net	- 65	- 85	- 68	- 78	- 67	- 29
Other	-199	-196	-157	-132	-149	- 77
<i>Means of financing net goods and services</i>	159	81	74	- 2	65	142
Private transfer payments and private capital	3	3	5	1	20)
Official transfer payments and miscellaneous capital ^b	30	49	66	139	141) 44
Change in monetary position	126	29	3	-142	- 96	98
<i>Net errors and omissions</i>	6	4	- 9	- 23	- 3	- 50

^p = preliminary.

^a Based on adjusted foreign exchange records.

^b Includes increases in Indonesian liabilities to the United States Government amounting in the five years to 36, 46, 8, 9, and 28 million dollars, respectively, arising from purchases of United States surplus agricultural commodities.

Source: International Financial Statistics. For more detail, see Appendix Table B-2.

The current account deficit has averaged about \$70 million a year, which is of the order of magnitude of approximately one percent of Indonesia's gross national product. It thus appears that Indonesia has not been supplementing its domestic production by any significant net draft on foreign output.

Between 1956 and mid-1960, net imports of goods and services were transformed into net exports, while the inflow of capital and grants increased. As a result, the outflow of monetary reserves was transformed into an inflow. Large changes in both imports and exports since mid-1960, however, brought the payments situation to a new crisis by mid-1961.

Although the dollar value of Indonesia's export surplus improved greatly from the low point reached in 1958 and the balance of payments position in 1959 and 1960 was good, the direction of change during most of the past two years has been unfavorable, according to customs returns. These figures, which differ from those based on exchange records, show the following quarterly movements (expressed in millions of dollars):

Year	Quarter	Exports	Imports	Trade Balance
1959	1st	157	88	69
	2nd	274	112	162
	3rd	207	112	95
	4th	241	146	95
1960	1st	214	121	93
	2nd	220	141	79
	3rd	195	142	53
	4th	209	171	38
1961	1st	134	200	- 66
	2nd	187	189	- 2

Exports have been declining since the second quarter of 1959, with some interruptions that do not affect the underlying trend. Rubber and petroleum, the two major exports, have fallen irregularly in volume. At the same time, a steady decline has been occurring for a number of years in the shipment abroad of other significant exports, such as tin, copra, and sugar. The reason the value of exports rose in 1959 and 1960 was that prices, especially that of rubber, increased. This favorable development was reversed in the latter half of 1960; however, rubber prices, which had averaged 42 cents per pound in New York in the first half of 1960, fell to 30 cents by the middle of 1961.

The favorable position in 1960, the gradual restoration of internal security after the Rebellion, and a belief that other problems hampering exports had been overcome led to optimism about 1961 exports. A fall in the value of rubber exports was foreseen but it was expected to be nearly compensated by an expansion in other export earnings, especially from a higher volume of oil and tin. With this prospect and the relatively high level of foreign exchange reserves, more exchange was allocated for major consumer goods, materials, and capital equipment, and the Government established a "free list" of imports of non-essential consumer goods, for which foreign exchange was made available at 200 rupiah to the dollar.

With a high level of money demand pressing against the available foreign exchange resources, imports have continued to rise steadily. The expected decline in the value of rubber exports was reinforced by a fall in earnings from exports of copra, coffee and tobacco. The rise in imports, combined with the decline of exports, has sharply reversed the 1959 and early 1960 international payments position and has reduced net official reserves in July 1961 to about half the July 1960 level. The Government had to restrict the non-essential "free list" imports in May, tighten controls on other imports, and draw \$82.5 million from the International Monetary Fund between August 1961 and January 1962.

Since August 1960, imports have been subject to five effective exchange rates. Imports classified as "basic" necessities, Government payments for invisibles, and other important invisibles and capital payments pay the official rate of 45 rupiah per \$1. Most imports of capital equipment and raw materials pay the official rate plus a 25 percent levy, or an effective rate of approximately 56 rupiah per dollar. Imports of certain consumer goods and less essential raw materials pay the official rate plus a 60 percent levy, or 72 rupiah per dollar. Specified nonessential invisibles and capital payments pay the official rate plus a 100 percent transfer tax, or an effective rate of 90 rupiah. Finally, less essential imports, the Class B or so-called "free list" imports already mentioned, pay a special rate of 200 rupiah per dollar. All imports require licenses. In April 1961 some imported commodities were shifted to categories paying higher levies or, in effect, more rupiah per dollar's worth of goods purchased.

All receipts of exchange are bought by the Government at the official rate of 45 rupiah per dollar. Exports are subject to a tax of 10 percent. Since this tax replaced a 20 percent tax on all exports (as well as on all other foreign exchange receipts), it raised the rupiah value of a dollar's worth of exports from 36 to 40.5 rupiah, or by 12½ percent. In May, in an effort to stimulate tourism, an effective exchange rate of 90 rupiah per dollar was instituted for tourists.

The shift in classification of some imports, the cut in the tax on exports, and the special rate for tourists have meant, in effect, a gradual reduction in the weighted average of effective dollar exchange rates of the rupiah, both for imports and exports. Despite this reduction, the free market valuation of the rupiah has for some time been below the average of these rates. During most of the summer of 1961, it was reported to be around 165 rupiah per dollar and the Team is informed that by the end of September it had decreased to about 220 to the dollar, a fall of 25 percent. This fall coincided with the rapid increase of domestic prices in the third quarter of 1961.

The discrepancy between the free market price and the effective legal rates gives rise to smuggling, under-invoicing of exports, and disparities between the local and world market prices for some exports that make it difficult for the state trading enterprises to procure goods from private producers for export. These practices must cause a substantial volume of foreign exchange that is earned to get into non-official hands. They reflect the disparity between the domestic price level and the official exchange rates, despite successive adjustments in the latter. Before further adjustments of the exchange rate structure to correspond to the domestic price level can be lasting and these practices reduced, domestic inflationary pressures will have to be brought under control.

CENTRAL GOVERNMENT POLICY AND STRUCTURE AS THEY AFFECT THE ECONOMY

Underlying these trends in specific industries are certain features of the Indonesian economy and society that we noted in the earlier parts of this chapter. They condition the environment in which all industries operate. Underlying them all is inexperience.

Government Controls and the Price Mechanism

The Government of Indonesia is trying to establish a new economic order. It calls this order "Socialism à la Indonesia" to stress that the society it seeks to build is one appropriate for Indonesia's customs, psychology, and culture and that it will differ from both the Marxian concept of the good society and the "anarchy of liberal democracy." The Government is committed to a directed economy and, like most governments so committed, it relies to a great extent on direct controls and very little on the price mechanism and economic incentives to achieve its objectives.

Many of Indonesia's problems are a familiar and predictable result of this reliance. When prices paid to producers of essential goods are held down, producers consume more of their own product, divert their resources to producing less essential goods, or lose out to producers of other

commodities in bidding for labor, land, or other resources needed in production. Where it is also possible to control the retail price, usually by a tightly controlled distribution system, demand for the product is also encouraged. Low producers' prices of essential goods force the Government to accept either shortages in relation to market demand at the controlled prices or substantial subsidies. When trade is in the hands of thousands of small dealers, it is virtually impossible to enforce control over retail prices; the controls on producers' prices then more often divert profits to traders. That trade is profitable in Indonesia is evident from the fact that traders are willing to pay the free market interest rate of three to four percent a month.

Suppression of producers' profits has two adverse effects that impede economic development. First, the business saving needed for expansion is suppressed and diverted. Second, the Government loses revenue which it could collect on the profits of producers but which is likely to escape the tax net when profits accrue to traders. Thus, both revenue and business profits which the Government might be able to direct into priority channels are diverted to less essential uses, while financial requirements may be increased by subsidies.

That Government revenue in Indonesia is inadequate is evident from the fact that inflation is endemic and inflationary finance is an accepted method of operation and development. While new capital projects are started by the creation of credit, established industries are often unable to finance purchase of spare parts and inventory. Imported spare parts for state-owned enterprises, which in any case arrive in the country from six months to over a year after they are ordered, may be held at the dock for longer periods because the Government department responsible for importing them does not have the funds to pay the customs duty. Some of the funds that would normally be used to finance inventories needed for production are diverted into financing of fixed investment or to hoarding. The serious shortage and diversion of spare parts and imported materials are well recognized by Government officials, one of whom commented that any increase of supplies might be diverted to the black market or hoarded, but their causes seem to be too little understood.

Control of foreign exchange gives the Government a potentially powerful instrument for directing new investment and influencing production, but it uses the power erratically. The Government, for example, in the past year allowed importation of textiles in such quantities as to discourage production temporarily. It placed automobiles on the so-called "free list" of non-essential imports, which are subject to a 200 rupiah-to-\$1 exchange rate, rather than the normal rate of 45 rupiah to \$1.

It is quite evident from the large number of cars which were imported that a much higher rate could have been charged and from the subsequent depletion of foreign exchange resources and abolition of the "free list" that this was a poor use of these resources.

To its credit, the Government recognized that state enterprises will have to earn profits to finance economic development. But by keeping the price of state-produced essentials low, the government is weakening this source of saving and encouraging market demand. Electric power, water and railroad services, for example, are generally underpriced. Consequently, electricity is used for less essential uses while industry, hindered by shortages and frequent interruption of services, is forced to operate below capacity. The state-owned railroad company is not able to replace worn-out equipment and maintain track, not only because of shortages of foreign exchange, but because of low earnings. It is doubtful that the Indonesian Government's bus service, established with the gift of busses from Australia, is earning enough to replace, let alone expand, the equipment.

An acute shortage of water already exists and it seems predictable that it will become more acute with urban expansion. Water is underpriced and non-essential uses and waste are thereby encouraged.

The Government has been embarrassed by its inability to obtain goods for export, even to carry out trade agreements. This inability results partly from the fact that inflation has raised the domestic prices of many exportable goods and made it unprofitable for producers to sell them for export at prices based on the official rate of exchange. A 10 percent tax on exports must add to the difficulty.

While the Government was trying to resolve the dilemma created by the conflict between the official exchange rate and rising domestic prices, private traders found ways of exporting. By under-invoicing their exports or otherwise falsifying the documents and by converting the foreign exchange proceeds from the sale of unreported exports to rupiah at the black market rate, they have been able to stay in business in the face of domestic inflation. Rather than try to enforce its regulations by suppressing the competition of private traders who succeed in procuring goods for export, and thereby further destroying export markets, the Government has now taken a pragmatic approach. It has authorized the State Trading Corporations to pay "disparity prices" to producers or private traders for exports, i.e., to pay prices in the domestic market that exceed the foreign prices converted at the official exchange rate (the "parity prices"), while continuing to sell on the basis of the parity prices. Thus, exportable goods will be paid for on an *ad hoc* basis to the extent that the State Trading Corporations can cover the resulting losses either

from the Government budget or by taxing imports in one way or another. This new policy illustrates one way in which the Government is learning from its experiences.

If this plan is administered by a competent staff, it can be a powerful and effective instrument for stimulating production of export crops, as well as avoiding diversion from foreign to home markets. Obviously, it must raise the domestic price of exports to be effective. The total or selective elimination of the general 10 percent export tax, which appeared to be an obvious first step, was apparently not considered. This tax apparently is valued as a source of revenue and some officials say it is not significant in inhibiting exports.

If the State Trading Corporations buy from private traders as well as producers, we believe that they will be more effective than if they attempt to monopolize the trading function. This view rests on the judgment that the staff of the State Trading Corporations is likely to encounter serious difficulties in coping with the variety of marketing problems.

A further new policy is to allow private traders to retain for their own account any foreign exchange resulting from an increase of foreign price after the export is authorized at a so-called "check price." This means that private traders who correctly forecast a rising foreign market will gain a premium and be able to sell exchange in a legitimate open market in Djakarta. But exporters who foresee a falling foreign market are likely to sell to the State Trading Corporations. It does not seem difficult to predict who will win under this arrangement, and one wonders if it will last.

The issue of controls can be summed up by saying that the Government has yet to deal effectively with the difficulty of operating a directed economy in the face of price relationships that pull resources in the directions it does not want. Even the most highly trained civil servants would not be able to administer direct controls effectively under the policies and conditions which prevail.

Officials also have yet to appreciate the many ways in which prices could be used to supplement direct controls. Governments whose economic policies spring from early versions of socialist doctrine, and who appear unaware of the substantial literature on the role of pricing in a socialist economy, seem to assume that the price mechanism can be used only in association with individually, rather than collectively, determined economic objectives. They fail to recognize that, if supplemented by appropriate selective tax policies, the price mechanism could supplement or replace direct controls as a means of carrying out objectives, provide needed incentives and, by enlisting greater effort on the part of private individuals and subordinate levels of government, reduce the burden on

the central administrative mechanism. It is encouraging, however, that the Government of Indonesia is tending increasingly to recognize these problems and is showing a willingness to try new approaches.

Economic Administration

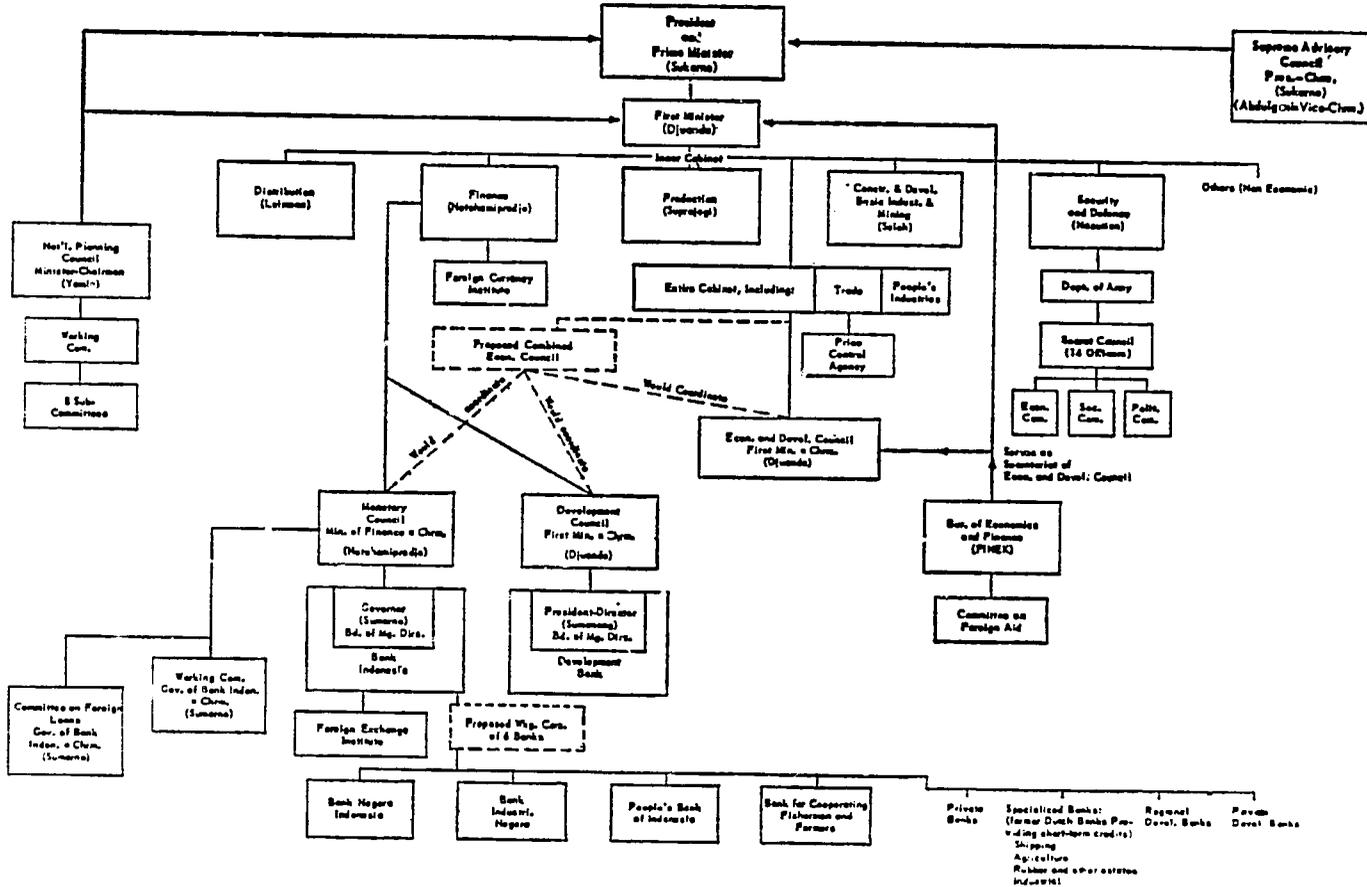
With so much of the monetized part of the economy under direct governmental control, efficiency in making and in executing decisions is especially important. Officials recognize that at present there is much duplication of function and excessive complexity of organization. An outline of how the economic agencies of the Government are related will convey some idea of the complexities of the present structure. (See accompanying chart showing the economic agencies of the Government and their organizational relationships.)

The Ministry of Finance tries to coordinate fiscal activities and decisions. Its Minister is a member of the Inner Cabinet, which also includes the portfolios of Distribution, Production, Construction and Development, Basic Industries and Mining, Security and Defense, and five others. The whole Cabinet, chaired by the President, decides on budgetary and other economic questions of high importance. The First Minister (at present Dr. Djuanda) or his Deputy (at present Dr. Leimena, who is also Minister of Distribution) presides over the Inner Cabinet when it deals with other economic matters sufficiently important to come before it.

Four more specialized agencies are of central significance: the Economic and Development Council (EDC), which also tries to coordinate the activities of the economic ministries; the Monetary Council, which oversees the Bank Indonesia; the Development Council, which oversees the State Development Bank; and the Bureau of Finance and Economics (FINEK), which is a staff arm of the First Minister.

The Economic and Development Council, a creature of the entire Cabinet, is the highest economic coordinating body. It formulates the Government's total economic policy, not merely its economic development policy, and its decisions are expressed in Presidential decrees. Its chairman is the First Minister and its members are the Ministers of Departments having jurisdiction over economic administration, plus the Minister-Chairman of the National Planning Council, the Governor of the Bank Indonesia, and the President-Director of the State Development Bank. With a membership of 14, however, it is cumbersome as a working group and its present actual role is somewhat obscure. There is a plan to clarify this role and to reduce its membership by half.

MAJOR GOVERNMENTAL ECONOMIC AGENCIES of INDONESIA



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The staff work of EDC is performed by FINEK, the economic staff arm of the First Minister. FINEK alerts the First Minister to bottlenecks and other problems, collects data, submits proposals, and makes follow-up investigations. It tries to coordinate the use of all foreign aid through a Committee on Foreign Aid, which deals with grant aid only. This Committee cooperates with the Committee on Foreign Loans, which is subordinate to the Monetary Council.

FINEK also submits to the First Minister suggestions as to priorities. He in turn discusses these with the Monetary and Development Councils, whence they can be taken to the Cabinet. The ministries were instructed to plan programs for 1961 under general priorities (foods, textiles, roads and bridges, paper, medicines, surveys of population and resources) decreed by the President. Within categories of industries under the jurisdiction of a single ministry, priorities are determined by a coordinating committee in that ministry. Indirect means to principal objectives have the same priorities as their respective objectives.

The Monetary Council directs the uses of foreign exchange and also formulates general policies for the Bank of Indonesia and supervises its operations. It exercises general supervision over loans sought by ministries from the Bank, and over the allocation of foreign exchange. All its members are members of the EDC, but there is no legally specified link between it and the EDC. Although the Finance Minister presides over this Council, the Governor of the Bank Indonesia, who is Vice-Chairman, heads its Working Committee. This Working Committee, which consists of civil servants representing claimant ministries (and the Attorney-General), makes advance estimates of foreign exchange resources and needs, with the aid of a Foreign Exchange Institute (a body connected with, but separate from, the Bank Indonesia, which administers the allocation of foreign exchange), and recommends allocations to the Monetary Council, which decides them in accordance with the overall budget, but subject to the EDC. This Council also tries to plan the timing of allocations. Rivalry among ministries for foreign exchange, however, is supposed to be resolved by the Chairman of the EDC (the First Minister), who may discuss the issues with that Council. Conflicts may be taken to the Inner Cabinet for decision, and, in the case of allocations for development projects, directly to the President.

The Bank Indonesia serves the Government as a central bank; it also lends to the four other principal state banks, to certain commercial banks, and has power to lend to regional and private development banks. It is closely associated with the new State Development Bank. The Bank Indonesia's Board of Managing Directors receives directives from the Monetary Council. It instructs other banks regarding interest and dis-

count rates, and a bill is pending which, if enacted, will make the Bank a depository for "guided savings." It advances funds to the Government, draws on and repays loans from the IMF and IBRD, and administers other foreign exchange assets and liabilities. Staff work on balance of payments problems is centered in the Bank Indonesia and the keenest awareness of these problems and that of inflation is to be found here. Although anti-inflationary measures can be proposed by the Monetary Council and decisions regarding restrictions of credit or taxation are made by the Cabinet (subject to approval or amendment by Parliament or, temporarily, by the Inner Cabinet when Parliament is not in session), the Bank Indonesia would play a key role in designing any anti-inflationary program.

The Development Council (DC) has the function of formulating general policies for the State Development Bank, the institution which is to help promote and finance capital projects under the Eight-Year Plan, much as the Monetary Council formulates general policies for the Bank Indonesia. The chairman of the Development Council is the First Minister, but it is ordinarily supervised by the Ministry of Finance. The Governor of the Bank Indonesia and the Minister-Chairman of the National Planning Council are among its members. Both the DC and the State Development Bank are still in their formative stages. The Bank gives promise of becoming an effective institution. It has power to issue bonds and receives 55 percent of profits that state enterprises must contribute to the financing of the Development Plan. It channels foreign loans for development projects and after 1961 it has kept accounts of all expenditures for development undertakings. Hereafter, it will also cooperate with the Ministry of Foreign Affairs and other Ministries in negotiating foreign loans, the proceeds of which will be allocated according to instructions from the DC. The State Development Bank makes the loans to finance national projects, while regional development banks will help to finance local enterprises. Some new industries will receive loans from the Bank for working capital through the year 1961, but after that commercial banks are to perform this function.

These agencies are all policy-deciding or operating agencies. The general formulation of the Development Plan was the responsibility of another body, the National Planning Council (DEPERNAS), which was created in 1958-59 for the specific purpose of formulating a development plan. This Council consists of 83 members representing many interests, but has a smaller Working Committee. The Chairman of DEPERNAS, Professor Muhammad Yanmin, a nationalist historian, has ministerial rank. Its staff work is directed by a vigorous and able administrator, whose specialized knowledge and considerable past accomplishments, however,

are in the field of education rather than economics and who has fewer economists on his staff than FINEK or the Bank Indonesia. Besides formulating the Eight-Year Plan, DEPERNAS has responsibility for evaluating it, but the relative roles to be played by its staff and by FINEK in coordinating, evaluating, and revising the Plan appear not to have been settled.

In addition to these bodies and working agencies, and the committees we have briefly mentioned, the ministries are responsible for economic operating functions which the Government either performs directly or which, if conducted by private enterprises, it regulates. These ministries are claimants for capital and operating funds in the form of both rupiah and foreign exchange.

While this governmental structure is far less complicated than that of the United States, it has less complicated problems to deal with and involves a good deal of duplication of function. The administrative burdens on government officials would be heavy in any event because of the important role that the Government plays in the operation of the economy. The duplication adds to the burden. Many decisions funnel into the Central Government machinery and, owing both to the number of agencies concerned with the same matters and the lack of trained administrators able to take responsibility for decisions, operations are often held up for protracted periods.

These difficulties are recognized. We were told often of the need to remedy duplication and excessive complexity. A proposal is now being considered to reduce the membership of the Economic and Development Council, to place the Monetary Council and the Development Council explicitly under its jurisdiction, and to have the three Councils serviced by a single secretariat.

These and other measures are needed to reduce the number of places where decisions must be made. The number of people skilled in analyzing policy problems, in administration, and in other aspects of the operation of governmental and private organizations is too few, as Indonesian officials recognize clearly, to permit the luxury of adding to the demand for them by duplication of government functions.

Corruption and Development

Government employees are so seriously underpaid that it is virtually impossible to live at expected levels without extra income from some source. At the lower levels, many government employees take outside jobs in order to supplement their meager salaries. Even highly trained employees of government-owned estates earn such small salaries that they are forced to supplement their income by one means or another.

No economy is free of temptations to corruption. They are accentuated by the combination of direct governmental control of the economy and inflationary pressures, which puts a premium value on things that government officials can dispense: licenses to import, to export, and to perform many other activities, and freedom from prosecution for black market activities. The low level of government salaries, whose purchasing power has been reduced by rising prices, adds further to the temptation.

Efforts are being made by the Indonesian Government to combat, or at least reduce, corruption. A five-man Committee on Government Operations has been given the task of overseeing the efficiency of the governmental apparatus and the honesty of officials, and of checking on governmental expenditures. This Committee is under the chairmanship of the Sultan of Jogjakarta. If the Committee finds real evidence of corruption, it reports the evidence to the administrator who is in a position to deal directly with the matter; if he does not act, the Committee takes the evidence to the next highest level, and, if necessary, to successively higher levels, including the minister concerned and even up to the President himself. Although the Committee has no power to prosecute, or to execute a judgment, it nevertheless has substantial influence and moral authority, and can thus be a deterrent to the more flagrant abuses of governmental responsibility.

IMPLICATIONS OF RECENT TRENDS FOR DEVELOPMENT

Our review of recent developments and current tendencies in Indonesia leads us to conclude that there are many deficiencies in the way its economy operates, that in some areas of the economy there has been little progress or actual retrogression, but that in others there is evidence of important progress. The evidence of lack of progress or retrogression is near the surface and visible in statistics. Most of the evidence of progress, in contrast, lies beneath the surface; to only a limited degree does it take forms that can be identified statistically or that can be otherwise seen from a distance. It is of a kind that cannot be, or at least is not conventionally, expressed quantitatively. Unfortunately, the things that cannot be so measured tend to be neglected. They are sometimes the more fundamental; however, they are often preconditions for gains in production and other variables that are measured. Because of the low visibility and importance of such forms of progress, they deserve more extended mention.

A most important gain is the restoration of internal security and the acceptance of the rebels back into the Armed Forces or civilian life. Those who surrender are now being accepted without being prosecuted

and those who had previously been sentenced have been granted amnesties. With the restoration of security, production in the areas where the rebellion cut it down can be restored. At the same time, members of the Armed Forces can more readily be returned to civilian life.

Another important advance is the solution of the problems of diversity of language. From a condition in which more than 84 languages were the common means of communication, Indonesian is increasingly becoming the common language. Indonesia is solving the problem of language diversity better than some other large underdeveloped countries. The obvious direct effect of improving communications carries with it the more subtle effect of speeding up the development of a sense of nationhood, which is a necessary condition for support of the Central Government and for willingness to put forth the energies and accept the tax and other burdens that will be required by economic development.

One hears self-criticism about the operation of the economy. Efforts are being made to identify the difficulties that face the country and the problems of development. Increasingly, people in Indonesia are asking themselves and each other hard questions. Even though they may not yet have the answers, this is the first stage of progress. There is a tendency—not yet widespread, but increasing—to apply pragmatic criteria: “Is this method working?” It is clear that the tide is in that direction. The very deterioration that is often cited as evidence of retrogression and ground for despair is what is launching Indonesia into this stage of the development and learning process. Declines in production, rising prices, balance of payments difficulties, breakdowns in transport and other equipment, diversion of goods from export to domestic markets—all these should give major stimuli to facing up the problems of development.

Another important stimulus is the effort to frame and to set in motion the new Development Plan, and the assumption by the Government, and recently by President Sukarno personally, of responsibility for its execution. We emphasize effort and assumption of responsibility because we think that, for a country at Indonesia's stage of development, they are more important than the Plan itself. We do not share the currently fashionable view that a well-worked out national development plan is indispensable to progress in economic development. That progress does not inevitably depend on having such a plan is clearly demonstrated by history. Until the past half century, all the countries now in an advanced state of development—those of Western Europe as well as the United States, Canada and Japan—reached that state without integrated plans. Nevertheless, where resources are centrally directed, a development plan contributes to development progress, provided that the government and

the country take it seriously. It focuses attention upon the problem of development by showing the complexities of economic relationships and by raising questions that officials and the public may not have thought about before.

Largely because it performs this function, rather than because it provides a realistic guide to the course of future events, we devote the next chapter to describing and analyzing the current Indonesian Eight-Year Development Plan.

CHAPTER IV

THE INDONESIAN NATIONAL DEVELOPMENT PLAN

The formulation of Indonesia's new National Development Plan in 1960 should be compared with two earlier attempts at central planning. In 1951, the Government adopted an Economic Urgency Program, intended mainly to raise output of consumer goods and processing of domestic raw materials and to mechanize small firms. Some new plants were built under this program, but few were operating until the next planning period. Only a quarter of the small firms in the mechanization program had received any new equipment five years later, and less than half of these firms were using the equipment.

In mid-1956, a new Five-Year Development Plan was drawn up under the guidance of the then Director of the National Planning Bureau, Ir. Djuanda. Although the Cabinet undertook to implement it, the Plan did not receive formal approval of Parliament until 1959; approval was made retroactive to 1956. This Plan included twenty-year projections of Indonesia's needs, population growth, desired growth rates, sources of financing, etc. and called for Rp. 30 billion expenditures on capital formation in the first 5 years (1956-60). Development expenditures were not specifically ear-marked in the government budget, so that while total expenditures in each category were approximately met in money terms, the inflation caused much of the budgeted amounts to be absorbed in ordinary government operating expenditures. The decision to nationalize remaining Dutch interests late in 1957 and the spreading rebellion in 1958 also created major obstacles to the carrying out of that Five-Year Plan. Major emphasis shifted from the initial industrial targets in the plan to foodstuffs in 1957 (reflecting concern over a quintupling of rice imports from 1955 to 1956), to maritime shipping in early 1958, as the Dutch withdrew their vessels, and to internal security in late 1958 and 1959.

The 1951-56 "Urgency Program" fell far short of its goals, due to general lack of experience in planning and execution, and the first Five-

Year Plan (1956-60) suffered some of the same defects plus the blows of dislocation arising from the departure of the Dutch and from political unrest. The 1956 plan was a much more realistic assessment of long-run needs and objectives for Indonesia, but it lacked detailed targets and the budgetary and administrative means for carrying them out. Some noticeable forward strides were made, however, during the 1956-60 period.

PREPARATION OF THE EIGHT-YEAR DEVELOPMENT PLAN

In August, 1959, the National Planning Council (DEPERNAS), consisting of 83 members representing major political segments of the country, was created and charged with the development of an economic plan for Indonesia. Dr. Muhammad Yamin, former Minister of Education, was placed in charge and was given ministerial rank. The former Secretary-General of the Ministry of Education, Dr. Hutasoit, assumed the same position in the Planning Council. A small working committee of the Council was largely responsible for drawing up a draft plan from the various proposals submitted by ministries and representatives of private and public sectors.

The Draft Plan was presented to the Cabinet in October, 1960, where it was discussed at length. Despite considerable criticism, it was sent on to the Provisional National Assembly in November, 1960, for discussion, without specific recommendations from the Cabinet. After review by the Assembly and the President's Advisory Committee, it was unanimously approved "in principle" in December 1960, with some additions and modifications.

Unlike the Five-Year Plan, which was drafted by a department within a ministry, the Eight-Year Plan was prepared, pursuant to a Presidential decree, by a policy-making group, representing regions and functional interest groups. It therefore began its life with greater public support and interest. On the other hand, unlike the earlier Plan, which devoted considerable attention to long-range aims of the economy (and perhaps too little to specific immediate details), the Eight-Year Plan, although voluminous, is lacking in supporting statistical data and economic justification of its recommendations. Its eight books, 17 volumes and 1,945 paragraphs (symbolizing the August 17, 1945, Declaration of Independence) and more than 5,000 pages show signs of haste in preparation. The job of the Council was to weigh the relative merits of the many thousands of proposals submitted, and to select those items which they felt should receive the highest priority. Priorities were not always based on the immediate and direct contribution a project might make to economic development. In addition to the aim of fostering more rapid economic growth, the Council obviously had other (and sometimes conflicting)

objectives in mind. For example, self-sufficiency in food and clothing was a paramount goal, even though in some degree it conflicts with an efficient use of resources and with development; cultural values were to be stressed, as evinced by the allocations for construction of religious buildings and for translating and printing millions of copies of the Koran. One-eighth of the total development expenditures was allocated to military uses, over and above the military's roughly 50 percent share of the regular government budgets, reflecting nationalistic concern over West Iran. The apparent conflict of economic and other goals is mentioned to emphasize the difficulty DEPERNAS faced in assigning priorities to projects, not to suggest that non-economic goals are unimportant. As we note more fully later in this chapter, outlays for "nation-building" may contribute much to "development".

DESCRIPTION OF THE PLAN

The Plan, in general outline, is divided into two separate parts. "A" projects, 335 in number (plus 39 provisional ones added later), are the core of the development program, and are intended to contribute directly to national development. They include projects to increase domestic production for capital and consumption, including, as will be seen, both intangible and tangible forms. "B" projects, falling into eight categories, are projects which, it is hoped, will provide additional rupiah and foreign exchange revenues sufficient to finance the capital costs of the A projects. They consist primarily of projects to expand agricultural and mineral exports (e.g., rubber, tea, coffee, copra, oil, tin, etc.) and of mere allocations of rupiah to the Development Plan budget.

The A Projects

The A projects fall into twelve major classifications, with planned expenditures as shown in Table IV-1.

Table IV-1
 "A" PROJECTS IN EIGHT-YEAR DEVELOPMENT PLAN^a
 (Money figures in billions of rupiah)

Classification	No. of Projects	Planned Expend. Amount	Percent of Total	Allocation of Expenditure		
				Local Cur- rency	Foreign Exchange	Not Allocated
Cultural	9	1.6	0.6	1.6	—	—
Educational	43	16.3	6.8	16.3	—	—
Research	16	2.7	1.1	0.8	1.9	—
Public Welfare	11	6.2	2.6	6.0	0.2	—
Government	6	3.6	1.5	3.6	—	—
Food	8	25.1	10.5	14.0	11.1	—
Clothing	7	28.9	12.0	14.2	14.7	—
Industry	81	52.0	21.7	28.2	23.8	—
Health	6	2.2	0.9	1.7	0.5	—
Transport and Communications	144	60.2	25.1	36.2	24.0	—
Motor transport	90	30.9	12.9	23.9	7.1	—
Rail transport	2	7.0	2.9	3.0	4.0	—
Sea transport	6	10.1	4.2	3.2	6.9	—
Air transport	14	4.5	1.9	2.2	2.3	—
Communications	32	7.7	3.2	4.0	3.7	—
Finance and Tourism	3	11.3	4.7	10.5	0.8	—
Special Project (Military)	1	30.0	12.5	—	—	30.0
Total	335	240.0	100.0	133.0	77.0	30.0

^a See Appendix Tables C-1 to C-13 for more detail and Table IV-2 for source.

It will be noted from Table IV-1 that the estimated foreign exchange cost of the A projects (excluding the "Special Project," which is a military project about which no information is given) is about 37 percent of their total cost. Most discussions of the Plan state that foreign exchange costs are 50 percent of the total. This figure apparently results from the assumptions that all the foreign loans included in B project revenues would yield foreign exchange (which is not true of U. S. loans under PL 480) and that the 50:50 distribution of B project revenues between rupiah and foreign exchange which results from this assumption matches

the currency distribution of A project costs. Even if all costs of the "Special Project" were foreign exchange costs, these costs would be only 45 percent of the total, assuming that they have been correctly translated into rupiah.

It should be noted in passing that some "projects" are single plants or other construction items, while others encompass a large number of smaller items. For example, the proposed rayon project consists of four rayon plants with varying capacities, plus a chemical cellulose plant to provide materials for the rayon plants. Similarly, a project referred to as "road building in Kalimantan" may be a network of twenty or thirty smaller inter-related projects.¹

The Plan is based on the general strategy of concentrating in the first three years on increasing production for consumption and preparing for capital development; the major effort in other fields is to be delayed until the latter five years. The emphasis in the first three years on the "*Sandang-Pangan*" (Clothing-Food) program is on achieving self-sufficiency in rice, which requires an increase of output of about 20 percent, and a substantial measure of self-sufficiency in textile production (although not in the production of the basic textile raw materials). Thus, the paddy center program, fertilizer production, erection of cotton textile spinning, weaving and finishing plants, receive high priorities. Other items which are related to the production and distribution of these commodities, however, such as roads (particularly rural road rehabilitation), river and irrigation projects, harbor improvements, and inter-island shipping, also receive emphasis in the first three years.

Also concentrated heavily in the first three years are other projects which are necessary forerunners to the heavier industrial projects in the latter five years. Thus, hydro-electric and other power facilities, expansion of cement production, additional technical high schools, research institutes in metallurgy, geology, physics, etc., and surveys of mineral and timber resources are to be initiated in the first two or three years of the Plan.

In later years of the Plan, the emphasis shifts to larger industrial projects. In these years it is intended to build steel, aluminum, metals fabrication, petro-chemical, rayon, pulp and paper plants, and to embark on additional hydro-electric facilities, development of a pharmaceutical industry, and expansion of light industries producing consumer goods.

¹It should also be noted that the categories in the table above do not correspond to ministries under whose control these projects will be carried out. Thus, an item called simply "Tin" is listed under "Finance and Tourism", probably because it is designed to improve the balance of payments position. Another project for a tin smelter, however, is listed under "Industry".

The Plan also includes some cultural and other projects which are not ordinarily thought of as contributing to economic development, such as "Collection of Cultural Heritage", "National Museum", "National Library", "Cultural Garden", and translation of the Koran, of the Bible, and of the Veda and Dharma Paddha. Except for the Cultural Garden and the Translation projects, these are distributed evenly through the eight years.

Transportation and communication projects, representing about 25 percent of total planned expenditures on A projects, are similarly distributed, with a step-up in the third year. Seven-eighths of expenditure in this category is for transportation. Because of the poor transportation facilities on Sumatra, which produces two-thirds of Indonesia's exports, and on the other Outer Islands, the distribution among islands of the land transportation expenditure, shown in Table IV-2, is of interest.

Table IV-2
DISTRIBUTION OF PLANNED EXPENDITURES ON ROADS AMONG ISLANDS
(Millions Rupiah)

	<i>New Construction</i>	<i>Modernization and Rehabilitation</i>	<i>Equipment and Training</i>	<i>Total</i>
Java	540	2,836	—	3,376
Sumatra	5,495	7,509	—	13,004
Kalimantan	—	1,599	—	1,599
Sulawesi	1,311	1,995	—	3,306
Lesser Sunda Islands	366	1,156	—	1,522
Moluccas	316	140	—	456
Unallocated	—	—	1,350	1,350
Total	8,028	15,135	1,350	24,613

Source: *List of Projects, National Overall Development Plan*, Secretariat, National Planning Council. Djakarta, 1961.

The B Projects

Coincident with the starting of A projects is the planned expansion of agricultural, oil, and other mineral export production under B projects. Other B "projects" are mainly increases of receipts from existing sources that are to be reserved for financing the Development Plan. The Plan contemplates obtaining gross foreign exchange receipts of nearly \$2.5 billion, equivalent to about 111 billion rupiah at the official exchange rate, and gross rupiah receipts of 120 billion rupiah, or a total equivalent to about 231 billion rupiah. Table IV-3 shows these sources more specific-

ally. More than \$1.9 billion out of nearly \$2.5 billion, over 75 percent, is expected to come from oil.

Table IV-3

EXPECTED RECEIPTS FROM B PROJECTS IN EIGHT-YEAR DEVELOPMENT PLAN

	<i>Foreign exchange revenue</i> <i>Million</i> <i>Dollars</i>	<i>Rupiah^a</i> <i>equiv. (bill.)</i>	<i>Rupiah</i> <i>revenue</i> <i>(billions)</i>
Oil: Gov't share of exports	1,180	53.1	
Foreign companies' capital converted into rupiah	750	33.7	
Timber export increase	52.5	2.4	
Saving on fish imports	12.5	.6	
Copra export increase ^b	76	3.4	
Rubber export increase ^b	320	14.4	
Tin export increase	15	.7	
Aluminum export increase	11.5	.5	
Tourism	45	2.0	
Result of 1959 "monetary reform"			10
Share of state enterprise profits			32
Community Saving			8
Sales of shares and bonds			8
Sale of capital goods			16
Sale of consumer goods			46
Total	2,462.5	110.8	120

^a Converted at official exchange rate of 45 rupiah per \$1.

^b Through efforts to eliminate smuggling.

Source: Same as for Table IV-2.

To obtain those receipts, however, the Plan contemplates that substantial expenditures in foreign exchange and rupiah are needed. Thus, the Government expects to get \$750 million of foreign exchange by buying it from foreign oil companies that bring this amount of capital in to finance local expenditure. Such transactions require the Government to pay out an equivalent amount of rupiah. While they are a source of foreign exchange to the national economy, they yield no net revenue to the Government. Similarly, the sale of capital and consumer goods is expected to yield 62 billion rupiah, but these goods are imported and may require expenditure of foreign exchange. We do not know how much the Government contemplates paying for these goods, but it is possible that they must pay something, so it cannot all be net revenue, and, of course, if they do not sell these goods at a profit, none of it is net revenue.

If we assume, as the most unfavorable possibility, that the foreign exchange cost of the capital and consumer goods are \$1,378 million (the foreign exchange equivalent of 62 billion rupiah at the official exchange rate) and take into account all other foreign exchange and rupiah expenditures for B projects (estimated in the Plan at nearly 39 billion rupiah), then total B project expenditures would be equivalent to nearly 101 billion rupiah, in foreign exchange and rupiah. The nearly 231 billion rupiah of total gross receipts would then yield net receipts of only 130 billion rupiah. Thus total net receipts from B projects would fall 110 billion rupiah short of the 240 billion rupiah cost of the A projects. If we also assume that 75 percent of the cost of the Special Project is in foreign exchange and 25 percent in rupiah, this deficiency would consist of a foreign exchange deficiency of \$1,142 million and a rupiah deficiency of 58 billion. (See Table IV-4).

Table IV-4

GROSS AND NET RECEIPTS ON B PROJECTS AND COSTS OF A PROJECTS

	<i>In foreign exchange</i>		<i>In rupiah</i>	<i>Totals</i>
	<i>Mill. \$s</i>	<i>Bill. rp.^a</i>	<i>(Billions)</i>	<i>(Bill. rp.)</i>
Gross receipts from B projects	2,462.5	110.8	120.0	230.8
Expenditure for B projects	1,391.3 ^b	62.6 ^b	38.0 ^c	100.6
Net receipts	1,071.2	48.2	82.0	130.2
Cost of A projects ^d	2,213.0	99.6	140.0	240.0
Net receipts from B projects	1,071.2	48.2	82.0	130.2
Financing not provided for	1,141.8	51.4	58.0	109.8

^a Dollars expressed in rupiah at the official exchange rate.

^b Includes most unfavorable assumption of 62 billion rupiah cost of capital and consumer goods and officially given 600 million rupiah foreign exchange cost of tin project. Dollar cost obtained by converting from rupiah at official rate.

^c Includes 33,750 million rupiah cost of purchasing foreign exchange from oil companies and 4,230 million rupiah costs of reducing rubber and copra smuggling and of Tin and Tourism projects.

^d From Table IV-1. It is assumed here that 75 percent of the cost of the "Special Project" consists of foreign exchange cost and 25 percent consist of rupiah costs.

On these assumptions, the required additional foreign financing alone would be an average of about \$142 million a year over the eight-year period. This sum, although substantial, might well be available, judging from what has been available in the past.

If we assume, however, that the capital and consumer goods to be sold would involve dollar costs of only \$690 million instead of \$1,378 million (reflecting resale at an exchange rate of 90 instead of 45 rupiah per dollar), net dollar receipts would then be correspondingly higher and the dollar deficiency would be reduced equally. Instead of being about \$1,140 million, it would be only about \$450 million, or an average of about \$56 million a year. Obviously, on this assumption, the difficulties would be much less. Or, if the consumers' goods involved no foreign exchange costs, net planned receipts of foreign exchange would exceed the foreign exchange costs of A projects.

In any case, there would still be a question whether expectations of gross receipts, particularly those from oil, are realistic. This question is considered in our general analysis of the Plan.

ANALYSIS OF THE PLAN

The inclusion of cultural projects in the Plan, the emphasis on consumption in its early years, and the reluctance to raise taxes are sometimes taken to mean that Indonesia is not serious about economic development. We think this inference reflects too narrow a view of what economic development requires. To understand the long run problem of development in Indonesia requires a broader view.

Illustrative of this broader view was made by Sukarno in 1945 on the eve of Indonesia's Declaration of Independence. Speaking before the Body for Investigating Efforts to Prepare for Independence, the future President was refuting the opinion, expressed by some other leaders of the revolutionary movement, that independence should not be declared before certain conditions, still absent, were established. In a speech impressive for its passion and power, he frankly acknowledged that some of the conditions of nationhood had not been achieved, but asserted that political independence did not require meeting all these conditions. He said: ". . . if a nation has other capabilities, of course, it is better, but when any nation is ready and able to defend its country with its own blood, with its own flesh, then at that moment that nation is ripe for independence." He then referred to his statement in a 1933 pamphlet that "political independence is nothing but a bridge, a golden bridge —, that *on the far side of the bridge* we would perfect our society." (Our italics.) Sukarno's 1933 pamphlet and this speech are only two among many indications that he has long been aware that political independence is only the first stage of a long process.

Further evidence that the Government seeks to create the political pre-conditions of development is the strategy underlying the Eight-Year Development Plan. As Minister Yamin explained to the National Plan-

ning Council in August, 1960, the Plan contemplates raising total investment to no more than approximately 15 percent of the national income, because the low standard of living of the people make it "impossible to burden them further" (i.e. by reducing current consumption).

As late as 1959, President Sukarno told the Colombo Plan Conference, meeting at Jogjakarta, that "Development is interdependent, with all its aspects and facets closely linked . . . Any scheme of pure economic development can be no more than an irritant in the body-politic and the social organization of the nation. Only when such a scheme fits into its social, political, and cultural context can it be successful."

It is thus clear that, as early as 1933, Sukarno had formulated his long-run objectives for the nation and that he still holds to them. The programs designed to increase literacy, to familiarize the people with their cultural heritage, the emphasis on "Socialism à la Indonesia" and in general to develop a national identity, appear as parts of a grand design of which economic development is only one part. It is significant that the Eight-Year Plan is not officially entitled a plan for economic development but is called "The National Over-All Development Plan."

Although students of economic development have come to recognize that it requires certain political, social and cultural pre-conditions, they have been slow to identify them. Even less progress has been made in identifying the pre-conditions of political development toward a stable democratic society. This is clear from the fact that persistent emphasis on written constitutions, on voting procedures, and on other aspects of the form and machinery of government has so often been shown to be misplaced, and from evidence that success in using these forms itself requires pre-conditions that have not been identified. Where austerity and sacrifice in the larger interests of a nation are required for economic progress, development of a sense of nationhood may be a pre-condition for economic as well as political development. In identifying this pre-condition of total development, Sukarno, whether by analysis or intuition, may have been several steps ahead of the "experts".

In short, we see no firm basis for the often-heard conclusion that the initial emphasis on consumption and the inclusion of some "non-economic" projects in the Plan serve no rational economic purpose, let alone the conclusion that they serve no rational purpose of any kind.

Choice of the A Projects

Although the best use of a nation's resources depends partly on the nation's objectives, the choice of methods to achieve its objectives does involve economic questions, for rational choice involves a calculation of what has to be given up when economic resources are used in a chosen

way, and such calculation is the central concern of economics. Since projects which serve non-economic objectives use economic resources that are limited, such projects, too, involve sacrificing alternative uses of the resources. Our principle concern about the Plan arises from doubt that the sacrifice of alternative uses, which are the true economic costs of the projects chosen, have been properly assessed, and that the choice of priorities, implied in the way the projects have been scheduled over the eight years of the Plan, is rational.

Correct appraisal of a project requires not only an accurate evaluation of the cost of the capital outlays, but an evaluation of its future operating and maintenance costs, an evaluation of what is foregone when the resources are used in the chosen way instead of in other ways, an estimate of whether the same wants could have been satisfied with use of fewer resources, and an assessment of how long in the future a project (or various parts of it) will satisfy, directly or indirectly, wants that seem important today. Refined analyses of these questions can be very complex and technical matters; we do not set such analyses as standards. The point, rather, is that little effort appears to have been made to answer these questions.

This problem arises more generally in connection with the goal of self-sufficiency in food and clothing, and specifically in connection with the projects designed to attain it. Indonesia has reasons for wanting to be self-sufficient in rice that seem good to it: security and national pride. The country was cut off from imports during the war and does not want to risk dependence on imports in the future. The cheapness of imported rice and textiles, however, may mean that self-sufficiency involves economic loss. It is true that even on economic grounds it may be desirable in some circumstances for a country to produce domestically what it could import more cheaply. The point is not that the decision is wrong, but that the costs to the economy appear not to be recognized by the Government, except by a few of the younger civil servants, and that nobody has tried to measure them. For example, 10 percent or less of Indonesia's rice is imported. Since self-sufficiency in total food supplies seems attainable without great difficulty, what is risked by continuing to depend on imports of rice is not acute hunger but only the possibility of having to substitute other foods if enough rice is not available. The question is whether the sacrifice that self-sufficiency in rice seeks to avoid has been properly assessed, whether the assessment has been discounted for the probability that the sacrifice would never have to be made, and whether the sacrifice, thus discounted, has been compared with the certain costs of self-sufficiency.

The Rayon Complex: an Illuminating Example

The proposed rayon complex illustrates three important aspects of economic calculation. This project looks toward construction of a wholly integrated complex of plants to produce rayon from indigenous forests. The main positive motive for the complex is that self-sufficiency in textiles is valued for its own sake. When imports were cut off during the Second World War, many people were in the humiliating position of not having enough cloth to cover themselves in the accustomed manner. The project appears to make sense because Indonesia cannot grow raw cotton, it has abundant forests, and, even though the capital cost of rayon fabrication is higher than that of cotton, it may be able to finance the project with loans costing only 2½ percent interest.

The first question is whether the objective—in this case avoiding the risk of a short supply caused by a possible interruption of shipping—can be achieved more cheaply in some other way. One reason that curtailment of imports made clothing supplies so inadequate was that stocks in consumers' hands or elsewhere in the economy, were insufficient. Recognition of this fact shows the need to ask further questions. In the time that is required to develop a fully integrated rayon complex, might real income not increase enough to enable consumers to acquire larger stocks? If it were not safe to assume that sufficient stocks would build up automatically with growth, could the Government not supplement private inventories by stockpiling cloth? Again, the question is whether the sacrifice implied by an interruption of imports has been correctly assessed and discounted for the probability that it will not occur, and whether the sacrifice, thus discounted, has been compared with the certain cost of avoiding it.

The second point is that the physical presence of forests does not mean that production of the raw material for rayon would be economical. To convert forest into timber, construct the roads and create the other facilities to transport it, and convert it into cellulose, involves real sacrifices of alternative output for the Indonesian economy. The chemical cellulose needed for rayon production may not be economically obtainable from Indonesian timber, and Indonesia, like other developing countries that have both forests and rayon plants, would then remain dependent on imports of such cellulose. Even if Indonesia has timber of the right sort, however, a decade or more would probably be required to get this phase of the complex into production and Indonesia would have to depend on imports of chemical cellulose in the meantime.

The fact that cellulose would have to be imported, at least for a long time, raises a new issue: Should fabricating facilities using imported cellulose be built to avoid importing finished cloth? In calculating the

answer to that question it must be recognized that the substitution will save foreign exchange only in the amount that the cost of finished cloth exceeds the cost of the imports needed to make equal amounts of rayon plus service on the loan, and that it also absorbs domestic resources with alternative uses. If the costs, translated into alternatives foregone, are greater for rayon than for cotton, producing rayon would be rational only if Indonesians prefer to have fewer yards of rayon cloth to more yards of cotton cloth.

The third illustration of erroneous economic calculation arises in connection with the belief—a common one in all countries—that the high cost of using the capital to build a rayon plant is avoided if the interest charge on the capital is low. This belief ignores the sacrifice of a better alternative use. To make the point concrete, let us suppose that a loan is available at $2\frac{1}{2}$ percent and that facilities to fabricate rayon from imported cellulose will yield, say, 7 percent. In the light of urgent needs for transport, it appears realistic to suppose that investment in transportation would yield, say, 15 percent, if its services were properly valued. While from the point of view of business accounting, the rayon investment yields a profit of $4\frac{1}{2}$ percent (the difference between the 7 percent yield and the $2\frac{1}{2}$ percent cost), the answer that it is “profitable” is the right answer to the wrong question. From the point of view of rational economic development, which is the one relevant to planning, the rayon project would involve a loss of 8 percent (the difference between the 15 percent yield that is foregone and the 7 percent that is obtained). The point is that the terms of the foreign loan are irrelevant to the choice of how to use it, unless the funds available at that price are unlimited, or those available for the rayon complex are not available for alternative uses.

Capacity to Absorb Capital

Closely related to the question of the real costs of proposed projects is the question of how efficiently they can be constructed and operated. When one observes the many bottlenecks that restrict growth in Indonesia, the rarely defined concept of “capacity to absorb capital” takes on more concrete meaning. Absorptive capacity does not depend merely on current saving, on total available manpower, on total foreign exchange earnings available to repay principal and interest on foreign loans, or on all of them together. It also depends on the adequacy of specific resources to meet specific requirements. Every important capital project requires detailed planning—of location, construction, and operation. It requires power. It requires transport to bring materials in and move products out. It requires managerial and supervisory personnel. With Indonesian transport undermaintained and inadequate, new factories will

not be able to operate efficiently until additional investment is made to overcome transport difficulties. Workers must be trained for each new plant. Management personnel is lacking. Even the structure and operation of government can become a bottleneck in the effective use of capital on a scale required by an ambitious development plan. It would be wasteful, for example, to enlarge the Indonesian shipping fleet without reforming the customs service and the budgetary practices that now block the movement of goods through ports.

That deficiencies of skilled manpower, and some of the other practical obstacles to rapid development progress, are officially recognized is clear from the speech of Minister Professor Muhammad Yamin in presenting the Draft Development Plan to the Special Plenary Session of the National Planning Council on August 13, 1960. He stated that the decision to take a period of eight years (1961-1969) is based on the following considerations:

- a. The projects of Plan I (the Eight-Year Plan) need rather a long time to obtain administrative approval and preparations;
- b. Many of the projects are entirely new and require preliminary survey and research;
- c. The choice of suitable equipment and machinery and its construction will take time;
- d. Internal communication and transport are still extremely slow;
- e. Manpower for execution of the projects must be gotten ready;
- f. Significant production from most of the projects can be expected only in the fourth year."

He then went on to say:

"The first Plan must have the function of being a means of obtaining experience in development in the widest sense of the term, a time of preparation of manpower for large-scale construction and development, and must provide a foundation for the Second and subsequent plans . . .

"The National Planning Council fully understands that the number of workers to carry out even the day to day work is far from sufficient. With the addition of so many projects, we will suffer from an even greater insufficiency."

Nothing impressed us more than the widespread appreciation of the need to improve technical and managerial skills. One of the most promising evidences of this appreciation was that all the officials with whom we discussed the problems of operating foreign-financed projects agreed, or suggested on their own initiative, that United States aid in

financing capital projects should be accompanied not only by United States responsibility for delivering completed facilities in a form ready to operate (so-called "turnkey projects") but by technical personnel who would stay for two or three years to supervise their operation and maintenance and to teach these functions to Indonesians on the job ("turnkey plus").

Although there is some tendency to be overoptimistic about what can be administered and executed, it apparently diminishes the more closely the problem is faced. This is a clear indication that the too-rosy view of what is technically feasible reflects merely inexperience, that it will disappear in time, and that it will disappear the more rapidly, the greater the opportunities Indonesia has to get experience, and the more it avails itself of the benefit of expert help.

The purely economic, as opposed to the technical limitations, however, are not so readily visible. For example, construction and operation of a new plant may be perfectly feasible, but the supply of power, the materials, or other inputs it requires may be so limited that its operation impairs the operation of some other plant. The connection between the two plants may be very indirect and therefore not apparent. For that reason, expert help should include not only technical assistance in a narrow sense but assistance in planning, at a level that can take into account the relationships of individual projects to the whole economy.

The fact that Indonesia's absorptive capacity is now limited leads us to two conclusions. One is that the activities deserving highest priority are those that increase absorptive capacity. The other conclusion, less obvious but equally important, is that investment, rather than being kept well within the limits of present absorptive capacity, should be pressed to or slightly beyond them. Only in that way can Indonesia acquire the experience necessary to expand these limits.

The corollary of this conclusion is that many mistakes and a good deal of inefficiency must be expected, and tolerated as part of the cost of learning.

The Time Pattern of Expenditure

Besides a rational calculation of what is to be included and what excluded, a well-planned development program requires careful planning of the time scheduling of expenditures within the period of the Plan. Timing demands the closest attention if projects are to be completed in orderly sequence. Some projects are prerequisites of others. Material supplies have to be balanced with installed capacity. Export-producing investments should be started before extra imports are required. Projects requiring several years to construct should be started long before demand

for the product makes itself felt in the market. A program that seeks to be both ambitious and feasible should put projects that increase absorptive capacity ahead of those that do not.

In addition to these criteria for specific projects, there are at least two aggregative criteria. One is that, in an economy that has a growing total labor force and expanding domestic capital resources and that expects absorptive capacity to grow as specific bottlenecks diminish, a well-scheduled plan should contemplate a growth in total domestic expenditure overtime. The other is that planned foreign expenditure should not exceed the foreign exchange resources, including loans, that will be available to finance them. In the limited time available, we were not able to appraise the time scheduling of individual projects in the Indonesian Plan, but we did seek to find out how the Plan meets these general criteria.

It appears that little attention has been given to how aggregate expenditures on A projects are to be distributed among the eight years. President Sukarno, faced with the need to decide on the development budget for 1961, simply decreed that 1961 expenditures should be one-eighth of the 240 billion rupiah total. Since the Plan assumes that the total real output of the economy will rise, distributing the expenditures equally over the years implies that they will be a constantly diminishing percentage of total output. Although it was acknowledged that 30 billion rupiah would not be spent in the first year, this was attributed to a late start and difficulties of execution, rather than to a policy of having expenditures increase over the eight-year period.

Although there is no clear expenditure schedule for the entire period, the Draft Plan shows when most A projects are to be started and completed. At our request, the staff of DEPERNAS provided us with the first English translation of this table. This table enabled us to work out the approximate timing of expenditures on dated A projects, based on the admittedly crude assumption that spending on each project is spread evenly over the period between initiation and completion (including the terminal years). The resulting patterns, for both total expenditure and expenditure in rupiah, are shown in Table IV-5 below, and in the accompanying bar chart.

Table IV-5
ESTIMATED TIME PATTERN OF EXPENDITURES ON DATED "A" PROJECTS^a
(In billions of Rupiah)

	<i>Expenditures</i>		<i>Annual Percentage Change in Expenditures^b</i>	
	<i>Total</i>	<i>In Rupiah</i>	<i>Total</i>	<i>In Rupiah</i>
1961	30.8	19.9	—	—
1962	30.1	19.4	-2	-2
1963	32.0	19.9	+6	+2
1964	28.7	18.2	-10	-8
1965	21.4	13.7	-25	-24
1966	17.3	11.5	-19	-16
1967	16.7	11.2	-3	-2
1968-69	18.3	12.0	+10	+7
Total	195.2	125.9	-41^c	-39^c

^a Components do not add to total because of rounding.

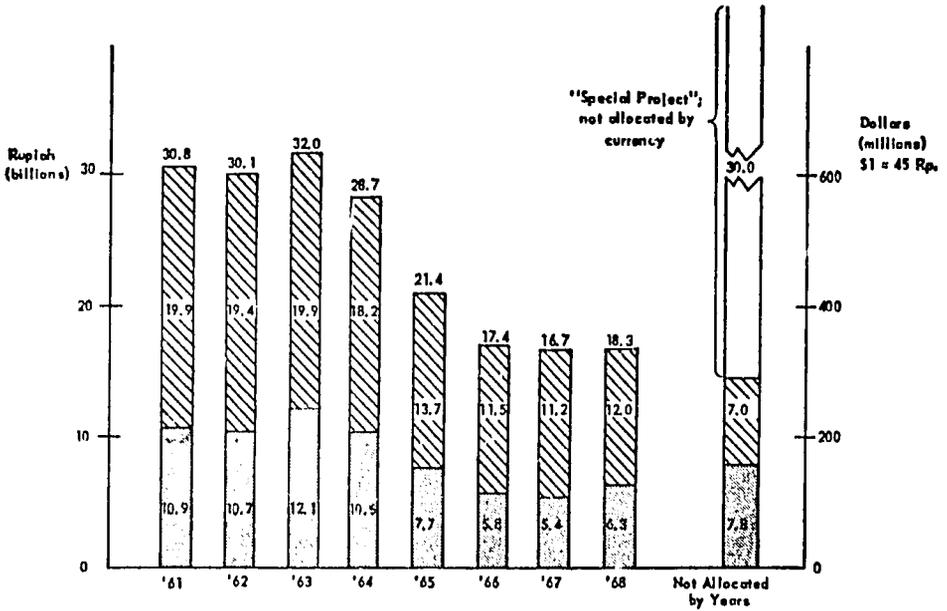
^b Percentage changes are based on unrounded figures in Appendix Table C-1.

^c Percentage change from first to last year.

Source: Appendix Table C-1.

According to these estimates, the time pattern is the reverse of the appropriate one. Total expenditures on dated projects fall from 30.8 billion rupiah in the first year to only 18.3 billion in the last year, a decline of 41 percent. If the decline in total dated expenditure resulted from concentration in the early years of expenditure on foreign goods, it would not necessarily be inconsistent with good planning, since the availability of such goods need have no close relation to Indonesia's total production. The second column shows, however, that rupiah expenditures on dated projects, which are demands on Indonesian economic resource, decline at about the same rate. This decline cannot be merely the result of omission of undated expenditures from our estimates. The known rupiah component of these undated expenditures is only 7 billion rupiah. Even if as much as one-half of the 30 billion expenditure on the Special Project is in rupiah, which we think unlikely, the total undated rupiah expenditure would be only 22 billion. If this entire amount were spent in the last four years, rupiah expenditures would still decline between the first and the second half of the Plan.

CHART IV.1
Estimated Time Phasing of Eight-Year Plan



Note: Figures represent billions of rupiah.

Source: Based on proposed years of initiation and completion of projects.

Key:  Rupiah expenditure
 Foreign currency expenditure

The main explanation of the declining time pattern is that rupiah expenditures on dated projects in the Food, Clothing and Finance categories combined fall by three-quarters from the first to the second half of the Plan. They fall by more than two-thirds in the Food sector, by more than half in Clothing, and from nearly 11 billion rupiah to almost nothing in Finance (See Table IV-6).

Table IV-6
ESTIMATED TIME PATTERN OF RUPIAH EXPENDITURES ON DATED
"A" PROJECTS, BY CATEGORIES
(In billions of Rupiah)

	<i>Total</i>	<i>Food</i>	<i>Clothing</i>	<i>Finance</i>	<i>Industry</i>	<i>Other</i>
1961	19.9	2.6	2.8	2.6	3.5	8.3
1962	19.4	2.6	2.8	2.6	3.2	8.1
1963	19.9	2.6	2.8	2.6	3.6	8.2
1964	18.2	2.6	1.2	2.5	4.3	7.5
1965	13.7	0.8	1.2	b	4.2	7.5
1966	11.5	0.8	1.2	b	2.3	7.1
1967	11.2	0.7	1.1	—	2.3	7.1
1968-69	12.0	0.7	1.1	—	3.1	7.1
Total ^a	125.9	13.7	14.1	10.5	26.6	61.0

^a Component figures do not always add to totals because of rounding.

^b Less than 50 million rupiah.

Source: Appendix Table C-1.

Apparently the piling up of planned expenditures in the first half of the Plan reflects the effort to achieve both self-sufficiency and higher per capita consumption in food and clothing, and completion of the Finance projects (mainly establishment of a Rural Development Bank), without postponing Industry and other categories of projects sufficiently to provide even a partially offsetting rise.

While our crude estimates are subject to some error, it seems clear that the dates assigned to the projects are not consistent with good scheduling of the Plan as a whole. If the first half of the Plan is feasible, the second half is not sufficiently ambitious; if the second half is of the appropriate order, the first half is unattainable.

A drastic rescheduling is needed to make expenditure on domestic resources, measured in constant prices, rise more rapidly than total output. It may be noted that this objective might be achieved by extending by a year or two the target date for achieving higher consumption and

self-sufficiency, or by extending the target date for only one of these two goals, which are quite separable. In our judgment, it would be desirable to stretch out expenditures on projects designed to achieve these goals enough to permit not only a rise of total rupiah expenditures but a shift to earlier years of some expenditures that would contribute most to increasing absorptive capacity and total production, such as those for transportation projects.

One other implication of good time scheduling in a plan is that it take account of the needs and capabilities of years subsequent to the plan. President Sukarno decreed that all projects in the present Plan must be completed by the end of the last year. This dictum implies that no projects should be in progress when the next plan begins. It ignores the fact that the development process takes place in time. Time is a continuum, and so should development expenditures be. There should be no break in them merely because the present Plan gives way to its successor.

Moreover, the policy of completing all projects by the end of the Plan interferes with their rational timing even within the period of the Plan. For if all projects must be completed by the end of the eighth year, then all projects requiring more than a year to complete must begin before the end of the seventh year, all requiring more than two years must begin before the end of the sixth year, and so on; the longer the construction period, the earlier is the latest permissible starting date.

The announced policy, furthermore, does more than introduce a merely random limitation on rational timing. It introduces a positive bias toward anti-rationality. The longer the construction period of a project, the lower its total net yield is likely to be, because a project yields no output during the period of its construction. Thus, insofar as its yield is determined by the time required for construction, imposition of the same deadline for all projects exerts pressure to start projects with low net yields earlier in the planning period, when capital is presumably scarcer and absorptive capacity is lower, leaving until later in the planning period the start of those with higher yields.

Undoubtedly, the motive for the Presidential edict was to put pressure on government officials to get into action and brook no delays. But the praiseworthy intention of setting a deadline for the start and completion of *individual* projects was confused by setting a common deadline for completion of *all* projects, with no allowance for a spill-over of expenditures when the present Plan ends. Good planning, in fact, requires not only that work-in-progress continue but that it expand. It thus implies that the work-in-progress be even greater at the end of the Plan than at any earlier time.

We can say little about the relation between the timing of foreign exchange expenditure and foreign exchange receipts without knowing more than we do about the timing of expected gross and net foreign exchange revenues from B projects. However, the importance of the expected revenues from additional oil exports, and the time that is required before they can be earned, clearly suggest that a large part of the net foreign exchange revenue will become available only several years after initiation of the A projects they are intended to finance. Foreign financing will therefore be needed in the interim. Unless the lag is financed by foreign loans or grants, both domestic prices and the balance of payments will be subject to excessive pressure. We believe, therefore, that the timing of B projects, as well as that of A projects, deserves attention.

Much of the disorder in the timing of the Plan undoubtedly arises from the speed with which it was drawn up. It was disappointing, however, to find that annual budgets had not been drawn up beyond the Plan's first year. The process of making annual budgets would have clarified some of these problems. It cannot be overemphasized that the essence of planning is to look ahead. There is time to reconsider these matters, however, and it is a good sign that the planners are aware that constant review of the Plan is required and that such reviews may call for substantial revision.

Realism About Execution of Projects and Availability of Resources

In addition to the defects of timing, the Plan implies a good deal of optimism about what can be done in the whole eight-year period, both as to the execution of projects and the amount of financial resources that can be obtained.

As we noted in Chapter III, the rice production target calls for an increase in production of more than 90 percent by the end of 1968, or an increase of about 9 percent a year. With the rate of increase in the recent past having averaged only 2 to 4 percent a year and the paddy center program not working out satisfactorily, it seems doubtful that this target is even close to being attainable. The rice program is simply one example of what appears to be a general tendency not to distinguish adequately between the paper Plan and a realistic assessment of what can be executed. Officials recognize the difficulties more clearly, however, the more direct is their responsibility for execution of the Plan and the closer the time period being discussed.

How the Government expects to obtain from the B projects funds to finance the A projects was described in the preceding section of this chapter. As we noted there, oil is by far the most important expected

source of revenue. The Plan counts on getting \$750 million in foreign exchange from the portion of foreign oil companies' new capital that is converted into rupiah to finance expenditure in Indonesia, and \$1,180 million, or an average of nearly \$150 million a year, from an increase in the Government's share of profits from an expansion of oil exports above its 1959 share, which was \$100 million or less. These revenues depend upon extension of agreements with the foreign oil companies and contracts covering production from new fields. Even with such extensions and new contracts, however, the expectation that the companies will spend \$750 million in Indonesia for more capital outlays appears over-optimistic. The expectation of \$1,180 million from the Government's share of exports also appears optimistic in the production and marketing possibilities that it implies.

Whether elimination of smuggling of rubber and copra exports can yield \$320 million and \$76 million will probably depend less on the vigor of the Government's enforcement efforts than on its policies for procuring these commodities for export, and on its general financial policies. We say this because it is the overvaluation of the official exchange rate for the rupiah that provides the main incentive for smuggling. It should also be noted that the net foreign exchange yield of any increase in the physical volume of legal exports may not be as great as the Plan assumes, because rubber prices have probably fallen more than was foreseen when the Plan was formulated.

At the same time that it overestimates some resources, the Plan does not, explicitly, take into account various others. Among these are foreign exchange saved by the planned reduction of imports of rice, textiles, fertilizers, cement and several other goods because of increased domestic production, and the additional exchange proceeds resulting from exports of new mineral products, such as nickel and manganese, or the remaining Japanese reparations. Some of these resources may have been committed for non-development purposes, and the Japanese reparations may be regarded as among the means for financing the import of capital and consumers goods, the sale of which is mentioned as a source of rupiah revenue.

It is probable that rupiah revenues from the proposed B projects have been overestimated, at least in terms of rupiah of constant purchasing power, which are the basis for measuring the cost of A projects. If the foreign loans and grants that Indonesia can get, and is willing to take, are needed to finance the foreign exchange costs of A and B projects, it will be necessary to find sources of rupiah revenues that are not now contemplated, and to scrap the idea that the Plan can be financed without either additional taxation or deficits. It may be desirable to do so in any event,

since a policy of using foreign exchange to finance rupiah costs places unnecessary burdens on the future balance of payments.

We say only that it *may* be necessary to find new sources of rupiah revenue, because any shortfall of revenues from B projects may be matched or exceeded by a shortfall in the rate at which A projects can be initiated.

Treasury Financial Resources versus Nation's Economic Resources

Thus far we have considered and compared financial requirements and resources, i.e., the money that the Government will need and plans to get, but not the domestic economic resources of the nation that are required and available for development. There is some reason to doubt that the Indonesian planners see the distinction clearly. For example, because projects that save foreign exchange are a means of financing the foreign exchange costs of A projects, they are often referred to as though they are in the same category as foreign exchange obtained by the Government through transfer of exports from illegal into legal channels. The two differ greatly, however. Projects that reduce imports save the country foreign exchange but do not provide net revenue to the Government. In fact, the loss of imports duties reduces net revenue. A shift of exports from illegal to legal channels, however, adds nothing to the nation's total exports but does enable the Government to buy more foreign exchange (and, through the additional export taxes, increases its net revenue).

We had little basis, unfortunately, for making any extended analysis of the availability of economic resources, owing to inadequate statistics on manpower, national product, income and other relevant matters. The abundance of underemployed manpower and other resources leaves little doubt, however, that enough total resources are available potentially. (This is true even of land, when the sparsity of population in the Outer Islands is taken into account). The problem is one of realizing the potential and of translating it into the specific kinds of resources needed. The basic problem here is the inadequacy of skilled and trained manpower. Until this is overcome, the additional resources that can be brought into action, e.g. by an expansion of money expenditure without price rises, are very limited. As these inadequacies are overcome, however, the possibilities for expansion of output will increase and the expenditure of given sums, even if financed by deficits, can be expected to involve less and less inflationary pressure.

Indirect Demand Upon the Economy

Some of the indirect demands that the Plan will make upon the country's real economic resources have not had attention. Only the resources required to meet capital costs of a project have been taken into account.

One demand thereby neglected is the demand for imports required to operate these projects. This demand includes not only the imported materials that have to be purchased by the specific A or B project enterprises, but imports that their operation requires indirectly, such as imports by their domestic suppliers, and imports required in turn by the domestic suppliers of the domestic suppliers. Accurate estimates of indirect requirements call for more detailed knowledge of the interrelationships among Indonesian industries than now exists, but lack of data should not lead to neglect of the problem. Failure to allow for these imports will lead to underestimation of foreign exchange requirements and, insofar as the Plan is carried out, to unexpected balance of payments difficulties. Furthermore, failure to allow for corresponding requirements for domestic goods will lead to unexpected inflationary pressures and, indirectly, to further balance of payments difficulties.

Additional demand for goods and services will also result from increases in money income associated with the planned expansion of investment, since other investment or consumer expenditures are not to be curtailed correspondingly. A substantial part of this additional money income is bound to be spent on consumers' goods. The resulting increase of consumer expenditure will give rise to further increases in the income of people who produce and sell consumers' goods and services, part of which they, in turn, will spend.

In addition, all these increased demands must be expected to give rise to efforts on the part of domestic suppliers to expand their productive capacity. This induced investment spending will also add to the demands made on domestic and foreign resources. Failure to allow for increase in demand from this source was a major element in the unexpected balance of payments difficulties that confronted India in 1953.

The major reason these sources of demand have not been taken into account in the planning process, is probably that the costs considered were primarily those that are costs to the Treasury. Demands upon the nation's domestic and foreign resources that appear as financial costs to other units in the economy appear to have been given secondary, if any consideration. This defect is one that could be remedied by an increase of economic sophistication in the planning process.

The Problem of Inventories

¹ One component of additional demand for resources, which is part of the direct and indirect demands that have just been mentioned, deserves special emphasis because it is so often neglected in development planning: investment in addition to inventories. There is a general tendency to think of inventories as consisting only of raw material awaiting processing

and of finished goods awaiting sale, and not to realize that the contents of trucks in transit from one plant to another, the rice growing in the fields, the clay tile baking in the sun, the yarn on the loom, the dough in the baker's oven—all these and other goods in man's or nature's productive machine are also part of inventory. The value of this component alone is great. (In the United States, goods in process in manufacturing industries, amount to about 30 percent of total manufacturing inventories.) Even if production could be increased with a less than proportional increase in inventories of raw materials and finished goods, inventories of goods in process would have to expand (given the techniques of production) in proportion to the increases of the output in which they are used. Consequently, the expansion of output that is implied by economic development requires increasing the level of inventories.

The additions to inventory required to expand output use economic resources. These resources thus become unavailable for production of consumers goods and services, or of fixed capital; they are part of total investment and have to be financed out of current saving. In a country like Indonesia, where the transportation system is overburdened so that goods pile up awaiting shipment, the additions to inventories associated with any given expansion of output are presumably abnormally high. The errors resulting from a failure to take this essential use of resources into account are therefore likely to be more serious in such a country than elsewhere.

The proportion of domestic saving required to satisfy this resource requirement is the quotient of two percentages: the percentage of total investment plus government expenditure that consists of addition to inventories, divided by the percentage of total current saving plus taxes that consists of domestic savings.² Assuming that inventory investment is 20 percent of total investment, that government expenditures and taxes are equal, and that current domestic savings is 80 percent of total current saving, then one-quarter $\frac{(.20)}{(.80)}$ of domestic saving is required merely to finance inventory investment.

The figures of 20 percent and 80 percent are only hypothetical; we do not know how near they come to describing the situation in Indonesia. (In the United States, manufacturing inventories alone are about 20 percent of total annual commodity output). But they are plausible magnitudes and bring home clearly how large a percentage of domestic saving

²Total current saving consists of domestic saving plus saving from abroad made available to the country in question, i.e., the current account deficit in its balance of payments. An explanation of the above formula and its derivation is given in Appendix F.

may be absorbed by inventory investment alone. If this requirement for saving is not recognized, upward pressure on the price level and pressure on the balance of payments will be underestimated and execution of the Plan may face repeated unexpected crises. Where inflationary pressures have also not been taken into account, the omission is doubly dangerous.

Inflationary Pressures

The Team asked many officials about their plans for dealing with the excess demand for both domestic and foreign goods. The answers given made it clear that outside the Bank Indonesia and one or two other agencies, inflation was not a source of much concern as a development problem, although the great mass of government workers and others on fixed salaries are greatly concerned as consumers.

We recognize that, since a large part, probably around 70 percent, of the Indonesian economy is largely subsistence agriculture, the internal effects of inflation are less destructive than in more fully monetized economies. We recognize also, that price stability can become a dogma, offered by those who are more concerned with fiscal respectability than with economic development, and we do not regard the cure of inflation as the answer to all of Indonesia's economic problems. Although we also have sympathy with the view, expressed to us several times, that development is more important as a goal than price stability, we think the tacit assumption that these two goals necessarily conflict misconceives Indonesia's inflation problem. Inflation, whether expressed openly by rising prices or repressed by direct controls, may endanger Indonesia's own development goals more than most Indonesian officials realize. The objective of limiting the degree of inflation is in harmony, not in conflict, with the goal of promoting economic development.

In the first place, monetary expansion is reducing exports of exportable commodities by increasing the pull of home consumption on supplies of these goods that otherwise would be exported. Thus, inflation increases domestic consumption of tea, coffee, and sugar at the expense of exports. In addition, total production of such commodities is restricted because production of goods used more exclusively in the home market is made more profitable by the higher prices which the home market returns, and thus enables producers for the home market to bid labor and land away from export crops. The reason for both of these effects is that the foreign price of exports, converted into rupiah at the fixed exchange rate, does not keep pace with the rise of domestic prices and, when the rate is adjusted to eliminate the disparity, it does not continue to do so for long. Sugar illustrates both effects: From 1957 to 1960, exports declined by 22 percent and production by 11 percent. So long as

many plants are operating at about half of capacity, the real sacrifice from loss of export receipts is not merely the imports foregone, but also the extra value that could be added to imported materials by manufacture.

Inflation also increases the demand for imports; with fixed exchange rates and import licensing, pressure mounts on the authorities who have to ration foreign exchange. When the foreign exchange situation is good, as it was in 1960, pressure to allow imports of consumer goods, including luxury products, becomes irresistible. Increases of such imports, permitted at high surcharges, are rationalized as a means of sopping up excess rupiah. While some of the excess is mopped up, the loss of valuable foreign exchange could be avoided if the excess purchasing power were not created in the first place.

Inflationary pressure has also made it profitable to hoard goods, as can be inferred from the high rates of interest—equivalent to 35 percent and more a year—that traders are willing to pay for short-term financing. The incentive to hoard, and thereby to divert materials from the productive process, grows stronger if the rate of inflation is allowed to increase. Conversely, measures that reduce the rate of inflation would reduce the incentive to hold idle stocks, and thus cause release of goods from hoards, which is equivalent to an increase of output.

Suppression of Inflation by Direct Controls

The attempt to suppress inflation by direct controls adds to the difficulties of carrying out the Development Program. One form of direct control is the fixing of an unrealistic exchange rate. The combination of inflationary pressure and an unrealistic exchange rate gives rise to a black market in foreign exchange, which prevents the Government from gaining control of all the foreign exchange that is earned. Because private exporters, by using the black market, can obtain more rupiah with a given amount of foreign exchange than state enterprises get, they can and do outbid the state enterprises in buying exportable goods from domestic producers. Or, if they do not sell the foreign exchange in the black market, they can buy goods abroad and bring them into Indonesia for sale above the controlled price for the imports, with the same result. Thus, valuable resources are used in ways inconsistent with the Government's development policy.

Another waste resulting from the attempt to suppress inflation by direct controls is less well recognized, but very serious in Indonesia: the waste of the services of skilled administrators and experts, of whom there are far too few in relation to the work requiring their skills. The fixing of prices and the efforts to avoid the diversion of goods to which price-fixing leads require that regulations be devised, administered, and enforced.

With inflation, the rupiah cost of projects will rise and the revenue returned by B projects will also have to be reassessed. All these and related tasks divert the energy of civil servants from the constructive task of development. Since trained officials and experts are among the scarcest resources and their scarcity limits the capacity to absorb investment, the extra burden of administration is far more serious than in more developed societies.

It should also be recognized that the operation of direct controls invests power in administrative officials to grant licenses, to overlook violations of regulations, and to do other favors for people who, in an inflationary environment, find such special dispensations valuable and can afford to pay much for them. These controls therefore add greatly to the incentives for, and the rewards of graft and corruption. The problem of graft is the Siamese twin of direct controls.

Expected Dampers on Inflation

On several occasions, we noted that officials had not taken full account of the inflationary pressures implicit in the Plan. They countered with the arguments that the planned expenditures would increase output and thus dampen inflation, and that expenditures for national security are likely to decline because internal security has been largely restored.

While the first point is partly true, its importance is more limited than is often supposed. An increase of output does not cut down excess demand by an equal amount because it is accompanied by an equal addition to incomes. This, in turn, generates additional demand for goods and services. Thus, excess demand is reduced only to the extent that the additional demand falls short of the additional output. This amount is only a fraction of the addition to output, perhaps between 10 and 30 percent, depending mainly on the fraction of the additional income that is saved or paid in taxes.

With regard to the second point, rising security expenditures have been a source of past inflation. It is true that a past source of inflation will be eliminated merely by stopping the *increase* of expenditure. Nevertheless, a word of caution is in order about this point, too. The increase of defense expenditures between 1959 and 1960 was apparently in considerable part the result of adjustments to prior inflation—increased pay, larger food subsidies, and higher family allowances. If inflation is allowed to continue, it may require an actual reduction in the physical quantity of domestic resources used by the Armed Forces—manpower, food, housing and other resources—to stabilize money expenditures for defense.

A SUMMARY JUDGMENT OF THE PLAN

As other parts of this Report make clear, Indonesia has been living on capital by failing to maintain inventories and to procure sufficient spare parts, by neglecting road repair, by failing to replace rolling stock and railroad track, and by failing to replace over-age rubber trees. The decision to raise living standards in the early years of the Plan makes it especially important to get more output from the existing stock of capital. Investment devoted to this objective will provide relatively higher living standards than investment in new capital projects, and higher incomes will produce extra revenue. The highest priority should be given to increasing the nation's capacity to absorb new capital by bringing installed plant and equipment up to capacity levels of operation. Our considered judgment is that Indonesia's progress would be accelerated by postponing new capital projects that do not, directly or indirectly, serve the objective of raising the output from present fixed capital. If too much is started, the whole Plan may be endangered.

Nothing impressed us more than the widespread recognition of the need to improve technical and managerial skills. But more efficient management of individual plants with regard to maintenance and inventories depends also on the Government's managing foreign exchange with a view to ensuring sufficient allocations to spare parts and materials. Resources allocated to maintenance are grossly inadequate and the failure to maintain capital is critical in relation to exports.

The lack of clearly defined lines of responsibility for allocating foreign exchange so as to promote development is a serious weakness in the structure of government. *Ad hoc* dispositions of foreign exchange have costly consequences.

We believe that the decision to get moving under the Eight-Year Plan without waiting for elaboration and refinement was the correct one. Our concern is whether the resources including the human talents, available for economic planning are being used to the best advantage. Whatever its objectives, the Government will have to recognize that the type of constraints on economic decisions discussed in this chapter do not differ significantly as between societies with different types of economic organization. In any society, capital has to be maintained, additions to inventory require the use of resources, new production generates indirect requirements for domestic resources and for imports, and inflation diverts resources from more to less essential uses. Objectives have to be ordered in the light of such constraints, and expenditures have to be scheduled accordingly.

Despite elements of unrealism and internal inconsistency, we regard the Eight-Year Plan as a distinct step forward. It is more than a mere

list of projects; at least some effort was made to match sources of finance against expenditures. The planners recognize, moreover, that continuous review and reappraisal of the Plan are necessary. If the revenue realized from B projects turns out to be less than expected, we do not regard the rescheduling of expenditures that will be required as a serious handicap to Indonesian development, even if all projects are not carried out within the term of eight years.

The most important aspect of the Plan, one that outweighs its deficiencies, is that it was formulated and has behind it the full authority of the Government. President Sukarno has assumed personal responsibility for it and that is a new element in the situation. Our interviews made clear that officials have been doing serious thinking about development and are by no means complacent about solving their problems. According to observers of the Indonesian scene, there has not been before such concern for economic progress. These facts appear to us more important than the Plan's defects and implausibilities and the probability that it will not be fully carried out in the proposed time.

CHAPTER V

OBJECTIVES AND CRITERIA OF UNITED STATES AID

As indicated by Appendix A, the Team talked with many government officials in most of the major ministries in Djakarta and other centers. Our conclusions about the objectives of U. S. economic assistance in this country are based on these conversations as well as their own study.

INDONESIA AND THE UNITED STATES

We believe that the primary objectives of United States economic assistance should be (1) to help Indonesia gain the strength to maintain its independence; (2) to help Indonesia to be a politically viable nation; and (3) to assist Indonesia to develop an expanding economy, capable of supporting its own people and of earning its living in the world economy. We believe that United States aid can contribute toward fulfilling these objectives for a number of reasons.

The Team members found that Indonesia is a large and important country endowed with the riches of nature and with vast human resources.

With some 96 million people, Indonesia may have outdistanced Japan in population. If so, it is in that respect the fifth largest country in the world, being surpassed only by Communist China, India, the Soviet Union,

and the United States (in that order). Its islands cover a large area. If they were superimposed on the United States, they would stretch into both the Atlantic and Pacific Oceans, even if the disputed territory of West Irian (West New Guinea) in the east were excluded. Located at the junction of the Indian and Pacific Oceans, the Indonesian archipelago is an important area. The northeast coast of Sumatra is separated by only 50 miles from the Malayan Peninsula and thus the mainland of Asia. The north coast of Kalimantan (Borneo) is less than 500 miles from Mindanao in the Philippines. Timor is less than 400 miles from the north coast of Australia, and West Irian is less than 200 miles from the nearest point of Australia. Apart from its large population, large area, and strategic location, Indonesia is rich in natural resources such as oil, tin, and other mineral products, and its climate gives it a capacity to produce rubber, copra, rice, fruits and other agricultural products in abundance. Nature's bounty does not make it a strong country now, for the natural resources are not fully exploited.

The Team also discovered that Indonesia has not only a willingness but a strong desire to maintain her independence.

The Team also concluded that the United States by giving aid could help Indonesia maintain her independence.

What will determine Indonesia's ability to maintain her independence? We believe that for Indonesia, as for any other country, it will depend on internal strength and on the loyalty of the people to their Government and institutions. It has little to do with such expressions of gratitude as foreign powers may win by financing spectacular projects. Determination to maintain independence cannot be measured by the degree of Indonesian approval or disapproval of American domestic institutions. The truth of this general proposition becomes clear if we ask ourselves which countries will most surely fight for their independence if they are attacked. Anyone's answer must include the traditional neutrals, Switzerland and Sweden, and countries which in past major conflicts have sought to remain neutral, such as Norway and Denmark. Our confidence that they will resist aggression arises from the knowledge that their populations are quietly but, in the event of need, fiercely loyal to their own institutions.

INDONESIA AND THE SELF-HELP CRITERIA FOR AID

In judging the most desirable types of further United States aid to Indonesia, the Team has attempted to apply the criteria outlined in "A Program for the Decade of Development," submitted to Congress in 1961 as a basis for the new foreign aid legislation. The major criteria revolved around the four areas of self-help identified in that Program: (1) effective

mobilization of resources; (2) reduction of dependence on external resources; (3) efforts to tap the energies of the entire population; and (4) honesty and efficiency in government. These four criteria must be applied to Indonesia, or to any other country, in a way that is relevant to its current condition.

Effective Mobilization of Resources

As we have already made clear, when Indonesia became independent, it was in no position to realize the potentiality of its natural resources and its man-made capital. Transportation and communications and other industries had deteriorated during World War II and the post-war struggle for independence. More basic, however, was the lack of experience, skills, and education of the population. Literacy was low and skilled administrators and members of the professions few in number. The expulsion of the Dutch in 1957 accentuated the deficiency of skilled personnel. The drainage caused by the 1958 Rebellion, the tight restrictions placed on Chinese traders in 1959, and inflation all have had further adverse repercussions on the nation's economy since Independence. Indonesia had to live through a period of trial and error before it came to realize that resources do not necessarily mobilize themselves and before it could learn what are the strategic resources to mobilize.

The current Eight-Year Plan, though deficient in ways we have pointed out earlier in this Report, represents the first genuine effort of the Indonesian Government to create a framework for the economic growth of the country. The planners are slowly becoming aware of the fact that new capital projects are dependent in large measure upon the prior existence of a strong national infrastructure; they therefore placed better education and improved transportation, along with larger agricultural production, at the top of their priority list. The guided saving plan reflects some awareness that little progress can be made without increasing current saving and directing it into investment. The chief weakness is the apparent lack of concern about proper mobilization of internal financial resources. No realistic plan, for example, has as yet been set forth to raise domestic taxes. The emphasis on consumption in the first three years of the Plan implies postponing significant increases in public and private investment. As we have indicated, however, the Government believes an increase in consumption is a political necessity.

Taking into account Indonesia's stage of political and economic development, we think its Government is correct in identifying education and training, and rehabilitation of transport as the areas to which it should give highest priority in its own effort. We have already noted that in a decade it has raised the literacy rate from under 10 per cent to

approximately 55 percent, increased the number of elementary school students from less than 5 million to 8½ million, the number of secondary school students from 139,000 to over 1 million, and the number of students in institutions of higher education from less than 1,200 to nearly 50,000. Eighty-three separate training schemes have been established within the Government itself and, as a result, the number of qualified technicians and administrators has increased.

There is evidence of accomplishment in other fields as well. Although the operations of inter-island shipping and railways have not been restored to full efficiency since they were disrupted by the departure of the Dutch in 1957, the volume of freight and number of passengers carried have been increased above the 1958 low. In addition, the oil installation in North Sumatra that was destroyed during and after World War II has been rehabilitated and is now producing oil. Electricity generated has increased from 795 million kilowatt hours in 1954 to 1,050 in 1960. These are among the indications that some of the efforts to mobilize resources are successful. It cannot be said that they are being mobilized "effectively" relative to the standards of developed countries, but the effectiveness is increasing, which is the more relevant point.

Reduced Dependence on External Resources

This criterion must be interpreted in a long run sense, for rational development planning may call for increasing, not reducing, the use of foreign resources over short and intermediate periods, just as rational financing of an expanding business may call for borrowing or obtaining additional equity capital from the public. Presumably this criterion does not imply that a developing country should decrease its foreign borrowing or should discourage investment by foreigners, but merely that it should strengthen its ability to service foreign loans and equity investment. Indonesia has not managed the use of its foreign resources well, but it appears to be taking steps to manage them better. It also has a program to increase its foreign earnings and a more ambitious program, perhaps a too ambitious one, to reduce its dependence on imports of food and textiles. The training of Indonesians to operate new projects is receiving great emphasis, although insufficient attention is given to operation of facilities that already exist.

Tapping Energies of the People

In addition to education and training, which we have already cited, other efforts are being made to mobilize the energies of the people. The magnanimous treatment of the rebels, the desire of the Army to train soldiers for useful civilian skills prior to their discharge, the establish-

ment of state regional development banks, the governmental effort to mobilize the country behind the new Development Plan—these are other signs that steps are being taken to upgrade the capabilities of the people and use them in the nation-building process.

The major source of energy that has not been effectively tapped is that of private enterprise. The Government has tended to be suspicious of private business, whether it be of domestic or foreign origin, because of the history of colonial exploitation by foreign firms prior to Independence, the fear that a new and subtle form of foreign “economic colonialism” may take the place of old Dutch colonialism, the fact that the native entrepreneurial class is small. Restrictions have been placed on the private sector since 1949, and the Government attitude toward this sector still remains unclear. Yet there are signs of change. Legislation (with Presidential backing) has been drafted and is pending to establish a Development Bank for Private Enterprise. Also pending is a bill to establish regional development banks, which will be subsidized by the Central Government, but will seek to mobilize private capital within their regions, will be directed by regional authorities, and will have the function of supporting regional development. Foreign investment is accepted under production-sharing arrangements or contracts with a local firm, government or private. Several cabinet ministers inform us, in fact, that more would be welcomed in some fields. The reasons there are problems, according to Indonesian sources, are that foreign capital resists dilution of ownership and also prefers to stick to conventional fields, not recognizing the opportunities in other fields where it would be welcomed. It remains to be seen whether top officials are coming to realize that a growing and self-generating private sector can contribute much to economic growth, and to recognize that a sovereign government has the power to limit activities that it regards as harmful.

Increasing Honesty and Efficiency in Government

Some corruption exists in the government, caused in part by the low pay of most civil servants and accentuated by the opportunities for graft presented by direct economic controls under inflationary conditions. We have no evidence, however, that it is more prevalent in Indonesia than in many other Asian countries, not to mention some local governments in the United States.

The efficiency of government suffers from the lack of personnel trained and experienced in administration and technical subjects, and from duplication and lack of coordination among Government agencies. The former deficiency is being overcome gradually with the passage of time. As to the latter, the Government is a young one relative to the life of a

country and it would be little short of a miracle if it were so well organized for undertaking new tasks that it did not need subsequent shake-downs. What is relevant is whether these deficiencies are recognized and whether they will be remedied. That they are recognized is clear from the plans for streamlining of agencies in some fields, and from establishment of the Committee on Government Operations, headed by the Sultan of Jogjakarta, to track down corruption and inefficiency. It is too soon to judge how effectively these deficiencies will be remedied.

In summary, the Team believes that Indonesia has done some things well and others less well. Its performance has been weakest in managing economic affairs and best in fields whose significance Westerners tend to underestimate. Even in the areas where Indonesia has made mistakes, however, it is making an effort to learn from them and to help itself. It would benefit from aid that is designed with appropriate safeguards. In this sense, we have no doubt that it meets a well-considered interpretation of the new criteria for aid.

THE CHARACTERISTICS OF APPROPRIATE AID

The Team believes that the long-run influence of our aid is likely to be greater the more fundamentally it is related, and the more it is seen by the Indonesian to be related, to the promotion of their national objectives. There may, of course, be divergencies between the Indonesian Government's judgments and ours about the internal conditions and popular aspirations that determine some of their policies, but in such cases the assumption that we know better is questionable.

If the long-run influence of our aid is greater when it is more fundamentally related, and is seen by the Indonesians to be related to promotion of their national objectives, its dramatic effect and its visibility are for the most part of secondary importance, although of some short-run value. The first requirement of our aid programs, therefore, is that they should place major emphasis on helping Indonesia build a strong and independent nation, rather than on immediate dramatic and visible impact. At the present stage of Indonesia's history this means that the major emphasis should be placed upon training, learning, institution-building, and improving the general infrastructure of the economy.

Recognizing that Indonesia has good reason to feel that the development required is one of total nationhood and not merely of the economy, we should accept the Indonesian view that fuller use should be made of existing plant and equipment, because directly or indirectly most of their existing plant and equipment produces consumers' goods. We also think that a rapid increase in output is important in view of the dangers of rising urban unemployment.

While aid that helps Indonesia stand on its own feet furthers Indonesia's objectives and ours, whether it has a visible impact or not, we also should do all we can to be sure that Indonesians realize that our assistance furthers their objectives.

Another principle of our aid follows from the deficiencies in technical and managerial skills, which we identified earlier in this Report as the most severe limitation on Indonesia's ability to absorb capital. Rather than refuse to support a project merely because it will be run below our standards of efficiency, we should provide, along with it, comprehensive technical assistance to minimize waste and build skills. This requires examining all facets of a proposed project carefully and, if we decide to support it, providing extensive training of Indonesians, along with construction of the project and managerial personnel sufficient for operation until Indonesians are trained to manage it. We must expect the Indonesians to make mistakes but we must nevertheless encourage investment that presses to, or slightly beyond, the limits of absorptive capacity, recognizing that Indonesia can only in this way acquire the experience necessary to increase its economic capabilities.

Finally, we should not fear to refuse support for projects that are so technologically advanced that they cannot be run with even reasonable efficiency, or that will not, in our judgment, contribute to Indonesia's over-all national development.

The program of aid we recommend is designed to carry out these principles.

CHAPTER VI

RECOMMENDED NEW AID PROGRAMS

The new aid that we recommend consists of 12 parts, all of them designed to assist in solving the specific problems of the Indonesian economy but all looking toward developing the pre-conditions for self-sustaining growth, including the ability to absorb more capital, both domestic and foreign, than the economy now can absorb effectively. Most of the recommendations are designed to accomplish more than one specific purpose, so any classification by purpose is necessarily incomplete. Nevertheless, to give a general picture of the logic of the program as a whole, it may be noted that five of our recommendations are directed primarily toward investment in the social overhead capital that we regard as essential for further progress, including the intangible capital of human resources and knowledge, as well as tangible capital.

Of the remaining seven, two are designed mainly to get a rapid and substantial increase of domestic output by increasing the utilization of existing industrial plant and equipment; four look toward improving Indonesia's international economic position by revitalizing existing major exports, developing new ones, or increasing production of import substitutes; and one is designed to expand capital in light manufacturing industries. Our recommendations include some programs that, in our opinion, might most appropriately be financed by international organizations of which the United States is a member, rather than by the United States Government.

Because Indonesia's ability to absorb capital is very limited at the present time, we do not now recommend support of large-scale capital projects. At the end of this chapter, however, we discuss certain other programs that we have considered, which we believe to be premature now but worthy of consideration in the future.

Many of the programs we propose below require the use of domestic manpower and other economic resources, and the raising of rupiah to finance them. We have concentrated our discussion below on the foreign exchange costs because it is primarily these costs that United States aid would finance, not because the mobilization of resources in Indonesia is a simple matter. On the contrary, we believe that the mobilization of both physical resources and rupiah will present a difficult problem. Our findings concerning financial policy in Chapter IV indicate that there is danger that the Government will try to obtain the needed physical resources simply by trying to bid them away from other uses, either through spending newly created money, or spending money that exists but is otherwise immobilized, including rupiahs owned by the United States Government. If it does, it will increase pressure on the domestic price level and the balance of payments. The foreseeable result is that it will either have to postpone or abandon some of its plans or seek further foreign assistance which, unlike the receipt of rupiah owned by the United States, can finance additional imports and thus supplement domestic physical resources. Even if the rupiah requirements of new programs are financed by non-inflationary means, moreover, there will still be difficulties in obtaining some of the required non-financial resources that are in short supply, such as skilled managers and workers and specialized forms of equipment. The execution of our recommendations should include provision for meeting these problems.

1. EDUCATION AND TRAINING

Probably no expenditure in an underdeveloped economy pays larger dividends than investment in general education and technical skills. This type of aid, particularly at the level of higher education, is one of the things which the United States can do most successfully. Over 3,000 Indonesians have pursued advanced studies in the United States since 1949. Today they represent the core of the new young elite in government, education, and industry.

Our review of the most pressing needs of Indonesia, as well as American experience with the past and present forms of educational aid, leads us to place an expanded educational program among our highest priority recommendations. Our recommendations under this heading cover five types of aid for a period of five years.

Fellowships for Graduate Study

A considerable expansion of fellowships for graduate study in the United States (or possibly in third countries for such specialized subjects as tropical agriculture, tropical health, and veterinary medicine) is important both to raise the level of expertise in Indonesia directly, and to provide additional teachers for expanding university faculty needs. Advanced study is the seed corn of education; every Indonesian graduate student who teaches—and most who have done advanced study do teach—makes possible further training of many more Indonesians. In a country such as Indonesia, where the shortage of educated and trained personnel is so great, however, merely sending large numbers of Indonesians abroad for study would dilute the desired impact of such a program upon the country's economic development. Therefore, the program of advanced study should be developed in the light of the need to supplement specific skills, and, in assessing the need for study abroad, it should allow for maximum use of local university facilities. Since major shortages of trained personnel are in the fields of sciences, engineering, business and public administration, statistics, and applied economics, these are the fields in which study abroad should be concentrated.

Study abroad should generally be for a period of 18 months to two years, with a maximum of approximately three years in special cases. Experience shows that foreign students generally need approximately a half year to become accustomed to a new academic environment, and that the value of the second year is far greater than that of the first year, while its additional costs are much less. Since the process by which students are selected is not perfect, however, all appointments should be made for a year in the first instance, with a presumption of renewal, so that further funds need not be spent on students who prove to be linguistically or otherwise unqualified.

The most effective size of the program would be about 200 or 250 additional fellowship awards per year. Total cost would approximate \$10 million for a five-year period. This would be in addition to the participant programs now conducted by USAID.

American faculty for Indonesian Universities

The faculties of Indonesian universities must continue to be supplemented by teaching and research personnel from other countries. We recommend that a larger number of foreign faculty teams be provided under the new program than under the present one, but that all teams be of smaller size. While programs for providing faculty personnel can be very successful, they involve great dangers of failure if faculty is not selected carefully. We recommend the use of contract teams from reputable American universities, rather than personnel under direct hire, and somewhat greater dispersion of teams in the newer universities outside Java. An experiment might be made to provide, say, an eight-man team to a university, with members divided between two or three different faculties.

A continuing program with 60 to 80 American faculty members in residence at Indonesian universities would cost roughly \$9 to \$12 million over a five-year period, including the cost of the existing program.

Technical and Vocational Training

The most rapid expansion of educational programs over the next five years should come in technical and vocational training. President Sukarno has called for a ten-fold expansion in technical education during the Eight-Year Plan and we agree that this is justified. United States aid in this area should be offered, but it should be limited in form. It would be a waste of resources to train Indonesian carpenters, bricklayers, and automobile mechanics in the United States, and unduly expensive for us to provide much technical assistance. American aid, particularly that provided by the Ford Foundation, has already given momentum to the training of technical teachers, and Indonesia now has a cadre of administrative and teaching personnel. Help is needed mainly in equipping the new and expanded technical schools, primarily by providing shop equipment, motors, small generators, hand tools, and the like. Some training and technical assistance may nevertheless be necessary; third country training in the Philippines, Japan, Hong Kong, or Australia may be most effective. Support should be given to the civilian technical training program within the Ministry of Education and the vocational training programs of the Department of Labor.

The Team recognizes, however, that past efforts of the United States Government to assist vocational training in Indonesia have suffered from the Indonesian Government's tendency to relate vocational education more to academic degrees than to the needs of industry for skills and services. Under these circumstances, the Indonesian Government should be encouraged to draw up a practical national plan for vocational education. The duties of each ministry should be spelled out and the relationship of its plan to the needs of industry should be clearly defined.

Another possibility of useful training assistance arises in connection with the community development program.

The Team believes that serious consideration should be given to assisting the ministries concerned, in a pilot project in community development, linked closely with assistance for increasing Indonesian food production.

We recommend that \$5 to \$7 million be provided to supply technical equipment for these civilian technical and vocational training programs for a five-year period.

Research Institutes

One of the most promising developments in education and scientific research has been the establishment of the Council of Sciences (MIPI) in 1956. Under the leadership of a distinguished physician, Dr. Sarwono Prawinohardjo, the Council has established itself as a major force separate from, but closely allied to, Indonesian universities. During the first half of the Eight-Year Plan, the Council is to establish seven research institutes in the fields of chemistry, physics, geology and mining, metallurgy, electronics, biology and social economics. The work of the institutes is to be practically oriented to problems of industrial development.

Large-scale support of the Council of Sciences may have many benefits, if the necessary care is taken to acquire only qualified personnel. Personnel of the institutes are likely to play increasingly important roles in the development of basic industry and mineral resources, as have other highly trained persons with university or medical backgrounds over the last decade.

The total costs of this program over five years has been estimated by the Indonesian Government at \$41.4 million, of which about \$30 million is estimated to be in foreign currency. About one quarter of the foreign currency cost is for training of advanced scientists and technicians; the remainder is for scientific equipment. There is some question, however, whether enough qualified personnel could be provided to use this amount effectively. The Team believes that \$15 million would be a more realistic estimate of the foreign currency requirements. We recommend

that the United States provide at least one-quarter, preferably one-half, of this lower estimate of the foreign currency needs of the Council, or about \$4 to \$8 million spread over a five-year period. If Recommendation No. 12, for a Regional Research Center, is acted upon, it should be carefully reviewed in conjunction with proposed support for the Council's research institutes.

Smaller Educational Projects

Provision should be made for support of a small number of priority educational projects which may arise from time to time. For example, one of our greatest assets in Indonesia is the teaching of English as a second language. A number of textbooks have been developed for English language teaching in Indonesia, but have not yet been published. Provision of paper as a partial publication subsidy might be an invaluable project to consolidate the dominant position of English as a foreign language. Continued help will be necessary in the provision of library materials and services. Some technical assistance may appear warranted for curriculum revision in primary and secondary schools. A number of important small projects of this sort will arise which, without too great a dispersion of resources, should be given serious consideration. Up to \$2 million to \$3 million over the next five years might be allocated for such priority items.

The total United States aid recommended by the Team for these five parts of the education and training program is \$30 to \$40 million.

2. TRANSPORTATION

As we stated in Chapter III, improvement of the transportation system is one of the most important requirements for improving the operation of the Indonesian economy. Our recommendations regarding transportation have been framed in the light of surveys of land and sea transportation referred to in that chapter.

Roads

AID has been criticized in several Far Eastern countries for unsatisfactory "highway" construction projects. One of the reasons is a tendency to use in the Far East the same methods used in the United States to construct parkways, throughways, and highways. Such methods are certainly not required or even applicable in Indonesia. Where manpower is abundant, as it is in Java, and where there are trained supervisors, grading, ditching, laying and reconditioning can be done with simple equipment. It may take longer, but that delay has to be weighed against the cost of using scarce foreign exchange to import heavy road-building equipment. In the Outer Islands, if sufficient manpower cannot be im-

ported, more machines will be required, but even there the machines should be used to save labor, not to build fancier roads. We therefore recommend that all cost estimates for road construction be carefully analyzed to see whether additional machines are required or whether more labor can accomplish the same work.

Development of Materials Supply—The Team recommends United States assistance in conducting a study of the supplies of asphalt and aggregate in Indonesia. According to a recent survey, the natural asphalt in Butung (Sulawesi) “is ideal for road construction use and it could even be refined to produce asphalt if need be.” A study of these deposits is needed to determine the quantity of material available, the desirable mining methods, and the equipment required to move it to ports for ocean transport. Before proceeding with such a study, however, it should be ascertained whether the Japanese Government, under its reparations agreement with Indonesia, is already contemplating a similar survey. The survey might cost \$100,000 and subsequent construction of facilities about \$250,000.

The Team also recommends United States assistance in organizing and carrying out a survey of the supply of aggregate throughout Indonesia. Such a supply is needed for the railroads as well as the roads. Although such a survey would be carried out by the provincial highway departments, it might be necessary to provide United States technicians to assist them—not necessarily one per province, but a team large enough to be available when required in various provinces. Such a survey could be undertaken in a period of six months, provided it were properly organized and the teams had adequate boring equipment at their disposal. Depending on how much new equipment is required and how many United States technicians would have to be brought in, the dollar costs of such a survey might be as much as \$300,000.

Road Construction—To cover the foreign exchange costs of road construction, the Team recommends a loan of \$5 million over the next five years, as follows:

Feeder Roads—Observation of road conditions in some of the rural areas of Java and Sumatra and information about local price differences make it clear that a program for construction of feeder roads, where they do not exist—and for maintenance and improvement where they do—would make a great difference in moving commodities to markets and to ports for export. Substantial rice price differentials occur between places only 25 kilometers apart in Sumatra, because of the unavailability of feeder roads from the rice-growing areas to the main roads. The differential applies as well to export crops. Most of the rehabilitation and construction of feeder roads can be done without using any foreign

exchange, but if road equipment is needed, spare parts are lacking, or the absence of maintenance training has led to the deterioration of such equipment, then foreign currency should be made available for this purpose. The United States should work closely with the provincial highway departments in a survey of needs for feeder roads (allowing a grant of \$500,000 for this purpose), as sources of aggregate are developed.

Java Roads—Most of what needs to be done for the roads of Java can be done with rupiah, although the reconstruction of bridges on the main highways may require some foreign exchange expenditure. DeLeuw, Cather and Company's report will set forth priorities for this rehabilitation work. They will also propose studies on the construction of two new highways of about 50 to 75 km. each, from the projected Djakarta Bypass south to Bogor and east to the Tjikampek area (not far from the site of the Djatiluhur multipurpose dam). The Team hesitates to recommend this new highway construction until priorities have been established for construction of new roads and rehabilitation of existing roads in all Indonesia.

Sumatra Roads—The Team recommends extensive rehabilitation of existing roads in Sumatra, and points out that the Eight-Year Plan devotes almost half its road rehabilitation requirements to that island. Once again, the DeLeuw, Cather report will fix priorities for this rehabilitation work. Indications are, however, that the most urgent priorities are for conditioning and/or rebuilding the Pekanbaru-Bukittinggi road across mid-Sumatra and the Padangsidempuan-Sibolga-Prapat modern road across northern Sumatra. These are both important trade arteries and have fallen into serious disrepair because of neglect and the Rebellion. A new road that should be given favorable consideration because it links railheads of south and central Sumatra, is one between Muarabungo and Sawahlunto. Another lower priority new road might be one from the Pekanbaru area to the railhead at Rantauprapat, leading into Medan.

Kalimantan Roads—The Team recommends that, as on the other islands, rehabilitation of existing roads have first priority, and particularly those leading into Pontianak, the principal seaport, and Bandjarmasin. In addition, the recent survey will report on considerable needs for bridge construction, including one or two in the city of Pontianak, which is split in three parts by two rivers over which there are now no bridges. Before recommending new road construction in Kalimantan, however, the Team recommends that careful consideration be given to the view of the Minister of Land Transport that water routes be cleared and more use be made of water transport, both within and around the islands, and light sea planes. The present size of the population outside the main cities would not appear to justify extensive new construction at this time.

Sulawesi Roads—The highest priorities for Sulawesi are for maintenance of roads in the Makassar area in the south. As noted in Chapter III, the Australian Government, under the Colombo Plan, is surveying roads in the Menado area in the north, with a view to assisting in their reconstruction and further development.

Other Islands—Elsewhere, the road requirements are fairly limited, except for the development of aggregate supplies and rehabilitation of existing roads.

Inter-Island Links—The Team supports the recommendations of the DeLeuw, Cather survey for the provision of a railroad car-passenger-vehicular ferry for the crossing from Merak (Java) to Pandjang (Sumatra), to facilitate movement between the two islands. The Team also favors provision of a passenger-vehicular ferry including dock and ramp facilities for the Banjuwangi (Java)—Gilimanuk (Bali) run, capable of holding 10 to 20 vehicles and designed with adequate power for the currents, waves, and wind conditions of this strait. A third ferrying operation that would greatly facilitate trade, in this instance between Java and Madura, would be a railroad car-passenger-vehicular ferry, including docking facilities, with a crossing from Surabaya to the railroad on Madura. The estimated cost of these facilities is approximately \$1 million, plus some rupiah costs.

In summary, our road recommendations total \$.9 million in grants for surveys of materials and feeder roads; and \$6.2 million in loans for asphalt production facilities, road construction, and inter-island links.

Railroads

The Team places high priority on repair and replacement of overage railroad equipment and improvements in maintenance. We recommend support for training in maintenance supervision, coupled with recognition from the Land Transportation Ministry and the National Railways that the people so trained shall be used for maintenance supervision and not for administrative functions. We also recommend financial support for maintenance, replacement, and improvement of existing rail and bridge facilities, spare parts and shop improvement, and a share of the improvement of the signals system. Surveys for additional rail lines in Sumatra would also be useful.¹

¹ The DeLeuw, Cather group recommended surveys with a view to construction of: (a) an alternate low grade railroad from Nira to Probumuith in southern Sumatra, to complete a section already being rehabilitated; this can be constructed without any foreign exchange costs; (b) relocation of the tract sections east and west of Padang Pandjang in Sumatra, to allow for more rapid movement of coal and other freight; (c) the linking of existing southern, western, and northern Sumatra lines. A study is also required of the type of diesel locomotives most effective for Indonesia.

Although large scale expenditures for rehabilitation and replacement of overage railroad equipment are urgent, we believe that loans for this purpose should be contingent on establishment of a rate structure that is high enough to permit replacing equipment. Otherwise, we shall find that railroad transport is consuming its capital and is being subsidized by foreign loans. In addition, it is highly desirable that the railroads should earn a surplus above operating and replacement costs. In considering the problem of rates, it must be recognized that when the foreign exchange needed for imported equipment is bought at the official rate, its apparent cost greatly understates its real cost to the economy. Rates that cover only the apparent costs thus involve a hidden subsidy. To make the real costs clear, the rupiah price of imported equipment must be calculated at a more realistic exchange rate and, to eliminate the subsidy, the railroads must charge rates that cover these costs.

Another need is to overcome the severe traffic bottlenecks which delay the movement of goods and people in densely populated Djakarta. This need can be met by using existing rail lines through the city to create a rapid transit system. The Team recommends examination of this project. If it can be operated so as to cover its full costs, the Team recommends support for it. Since time is, and for some time will continue to be, less valuable in Indonesia than in more developed countries, it would be a mistake for the government to incur the heavy capital cost of a rapid transit system on a subsidized basis. In any case, support should also depend on evidence that the need cannot be met more economically by additional facilities for motor transport; gasoline involves very low real costs and is a potential source of government revenue. Our support of this project is contingent, therefore, upon evidence that the expected return will justify the investment in the light of these considerations:

These recommendations represent the following sums of money, expressed in millions of dollars, over a five year period:

<i>Grants</i>	<i>Amounts</i>
Training in maintenance supervision	1
Surveys for additional rail lines	1
<i>Loans</i>	
Track	2
Railroad bridge improvement	1
Spare parts and shop improvement	5
Signals equipment	1
Djakarta rapid transit system	10
	<hr/>
Total	21

Because further rehabilitation of the lines is required before much more rolling stock is added to them, the Team does not recommend the immediate provision of these items, but suggests that consideration be given to them only after a period of several years, when the physical condition of the railways and their price policies can be re-evaluated. In the meantime, the Indonesian Government is planning to get some additional rolling stock and locomotives from other countries.

Sea Transportation

It is difficult for the Team to indicate a detailed order of priorities for the improvements needed in Indonesia's sea communications. To do one part of the job without doing a number of others would barely scratch the surface of the problem and might have no noticeable effect on development. Part of what needs to be done requires foreign aid—for training and certain commodities not available in Indonesia. But a substantial part also requires the use of Indonesian resources. Most of all, improvement of the existing situation requires far better cooperation and coordination than has so far existed among the ministries and other agencies concerned with sea matters, and their full understanding and agreement as to what needs to be done once the overall requirements are agreed upon. Then it would be up to the Ministry of Sea Communications, jointly with the AID Maritime Advisor, to establish priorities. This said, we proceed to our recommendations.

Training—The need for training, both on-the-job and overseas, appears again and again in this field. The Team is strongly in favor of substantially increasing our assistance for this purpose. There is a need for more people who are qualified in administration, port operations, statistics, accountancy, legal affairs, ship handling (ship's officers, both deck and engineering), stevedoring and cargo equipment, customs, ship repair, dry-docking, ship building, navigation aids, communications, and hydrography. As to numbers of officials and length of training required, this depends on the detailed judgment of the ministries concerned, in consultation with the AID Maritime Advisor. One realistic limiting factor is how many men can be released for training at any one time by a given ministry.

Cargo Handling and Maintenance—Improvement of cargo handling and maintenance requires support for a variety of specific improvements, concerning which the Team makes the following recommendations:

Tugs and Barges—We recommend that funds be made available, either directly in the transportation field or in conjunction with the proposed loan for inventory replenishment (see Recommendation 4), for the purchase of steel plating so that Indonesia can build more harbor

tugs and barges to facilitate cargo handling in congested harbors, as well as in those harbors where it is difficult to handle deep draft vessels. The use of barges would also permit greater use of existing canals and rivers for moving cargo directly from sea-going ships to end-use or transfer points.

Cargo Handling Equipment—There are not sufficient mobile cranes, either for land or floating uses, to handle the increasing imports of heavy equipment to various Indonesian ports. Four floating cranes are in use at Tandjung Priok (the port of Djakarta) and one at Belawan (the port for Medan); others are needed at Palembang and Balikpapan. With such apparatus, it is extremely important to provide training in operations and maintenance. The Team recommends that funds be provided for Indonesia to purchase a substantial number of fork-lifts, with cargo boards, and tow-motor trucks, for pulling small flat-cars around the port. The flat-cars can be constructed in Indonesia. It is also imperative that spare parts be provided with all this equipment, as well as on-the-spot training in operations and maintenance.

Sheds and Warehouses—The Team recommends that the Ministry of Sea Communications be urged to construct more sheds and warehouses at the ports; these do not require much foreign exchange.

Stevedore Force—The Ministry should be encouraged to improve working conditions for stevedores by giving on-the-job training and by increasing safety precautions and pay, to initiate a two—or even three—shift system wherever possible so that cargoes can be handled “round-the-clock,” and to train supervisors in handling cargo.

Customs Procedures—Even if the physical handling of cargo is substantially bettered, many improvements in the Indonesian Customs Service are required before cargo can be efficiently moved from the docks; higher pay scales, working hours corresponding to the requirements of the ports for clearance, better delegation of responsibility to individual officials on the basis of clear-cut regulations, more training for existing personnel (rather than expansion of the inspection force), and so forth. Even more fundamental, however, is the necessity for revising customs regulations so that they can be more readily understood by the shippers and so that supplementary custom charges, which can only be determined at the time goods are inspected, can be paid after the goods have been delivered, instead of before they are cleared. This should not be difficult to arrange, since 80 to 90 percent of all imports today come through state trading corporations. The Team hopes that the existing Improvement of National Fiscal Administration project, will be used by the Government of Indonesia for modernizing customs procedures.

Movement of Goods Away from Ports—The slowness with which goods are moved away from the ports *after* they have cleared customs is another major cause of congestion of port facilities. Measures should be taken by the Indonesian Government to speed up this process. Recommendations for improving roads to ports are contained elsewhere. The Government should also consider ways of assisting shippers and end-users, particularly government agencies and enterprises, to construct required storage facilities inland.

Harbor Development—In 1959 the Development Loan Fund lent \$6 million to Indonesia for harbor development at fourteen Outer-Island ports. If this loan proves to be effectively used but needs to be supplemented, either to extend improvements at the fourteen ports or for additional harbors, favorable consideration should be given to further support. This appeared to the Team to be one of the most significant ways that the United States could help to develop Indonesian inter-island communications.

Additional requirements for harbor development include the following:

- (a) Provision of one sea-going tug which, together with the one the Ministry already has (but which requires further maintenance), is needed to pull dredges and floating cranes between the deep water harbors;
- (b) provision of one LST to the Ministry to serve in delivering heavy lift shipments to undeveloped ports;
- (c) assistance in salvaging and dredging operations to speed up the clearance of wrecks which are dangers to navigation within or near harbors and to keep harbors and channels free of siltage. This aid might include a loan for equipment, provided existing equipment has been repaired and put in working order to the maximum.

Ship Repair and Maintenance—The Marine Services Review Team prepared a complete set of recommendations in this field.² Supplementary information provided by the Ministry and the AID Maritime Advisor all tended to confirm these recommendations. The objective of the recommendations is “to have reliable drydocks and repair shops with trained personnel in order to reduce the existing delays and improve sailing schedules.” They call, in the first phase, for better utilization of existing facilities by preventive maintenance, through improved procedures for budgeting, funding and procuring spare parts, supplies and equipment, by installing a two-shift system as required at repair facilities,

² *A Joint Review of Ship Repair and Maintenance needs of the Republic of Indonesia*, 15 December 1960.

and by repairing existing drydocks and procuring adequate auxiliary equipment. Provision is also made for participant training, as noted in *Training* above, and for technicians. The latter, as approved by the Ministry, are two general shipyard supervisors, two marine surveyors, and instructors in management, ship repair, welding and foundry operations. We recommend that consideration be given to providing for such a group under contract for two to four years. The maritime survey also recommends, and the Ministry approves, the purchase of modern drydock equipment; approximately \$15,000 would be sufficient to supply both Tandjung Priok and Surabaya. In its second and third phase, the maritime survey recommends that ship repair facilities be expanded at existing sites and that new facilities be built at Makassar and Belawan (the port for Medan).

To these recommendations, which we accept as the most authoritative available, we add the requirement for spare parts for ship repair and the improvement of machine shops at repair facilities so that they can make their own replacement parts. They can be financed from our proposed general loan for this purpose. (See Recommendation 3).

Aids to Navigation—Since we were unable to study this phase of sea communications ourselves, we simply present the highlights of the recommendations of the Maritime Services Review Team,³ together with the proposals thereon of the Ministry of Sea Communications.

Their survey calls, in the first phase, for a “crash” program to purchase the minimum amount of equipment necessary to place existing aids to navigation in reliable operating condition, for a revision of budgeting, funding and procurement procedures for obtaining spare parts and supplies, and for training as summarized in *Training* above. The Division of Navigation has prepared a list of approximately \$500,000 worth of equipment, such as gas lanterns with flashing apparatuses for lighthouses, lighting buoys, machine tools for making replacement parts, lighthouse towers, etc. In the second and third phases, the survey recommends the drawing up of plans and then the construction of bases, workshops, tenders and aids to navigation, so that Indonesia can become self-sufficient in this field, except for continued imports of specialized equipment.

Maritime Communications—Here, again the Economic Team bases its recommendations on those of the Maritime Services Review Team,⁴ together with the Ministry’s proposals.

³ *A Joint Review of Needs of the Aids to Navigation System of the Republic of Indonesia*, 15 December 1960.

⁴ *A Joint Review of Needs of the Maritime Communications System of the Republic of Indonesia*, 15 December 1960.

The first phase calls for support of the existing communications system in order to utilize existing facilities to the maximum. This includes:

- (a) A revision of budgeting, funding and procurement procedures for spare parts, supplies and repair equipment to operate and maintain existing equipment and install new equipment;
- (b) the installation of a rapid message delivery service;
- (c) training of five engineers and administrators;
- (d) the provision of two electronics experts to establish an in-service training program and to assist in the planning, design and programming of new communications facilities.

During this phase also, the newly acquired Australian transmitters would be installed. The second phase calls for planning the construction or improvement of coastal radio stations, mobile marine facilities and electronic repair shops. The third phase would see the purchase and installation of the new equipment and facilities. For the third phase, the Ministry of Sea Communications has submitted an itemized list of radio equipment and supplies, including spare parts and maintenance gear, and personnel from abroad to assist in its installation (hence, a "turnkey" proposal) costing more than \$3.1 million.

In our view, this substantial package of commodities should not be supplied during the early years of the program to develop sea communications, but should be dealt with only on the basis of demonstrated ability of the Indonesians to man this complex equipment. Consideration might be given to urging other nations, such as members of the Colombo Plan, to contribute to the costs of this program either in direct grants, as the Australians have done, or in the form of a loan.

Hydrographic Services—Once again, we refer to the recommendations of the Maritime Services Review Team, which studied this field and made detailed recommendations.⁵

These recommendations call for training four hydrographic specialists for six months to a year, the provision of technicians, and an allowance for minimum essential hydrographic equipment, such as measuring devices and instruments for recording measurements on charts. Whereas the survey proposed the purchase of an additional hydrographic vessel, the Ministry did not accept this proposal and its request for equipment, based on the survey's lists, came to only about \$50,000 worth. Of these, some \$13,000 were listed as "urgently needed" by the survey. The Economic Team considers it to be a good investment for the United States to make the funds available on a grant basis for at least the minimum equipment that is urgently needed.

⁵ *A Joint Review of Needs of the Hydrographic Services of the Republic of Indonesia*, 15 December 1960.

The survey also makes a number of recommendations to the Indonesian Government for improving the collection of hydrographic information and facilitating the distribution of charts from such depots as those at Ambon, Balikpapan, Pontianak, Palembang and Belawan.

To summarize the sea transport recommendations, we propose participant training costing approximately \$500,000, on the assumption that 100 men would be trained for varying periods of time and that the program would run for four years. Providing technicians, as recommended in the preceding sections, would cost approximately \$700,000, on the assumption of two-year assignments for each one, spread out over a period of four years. To these figures we add the cost of continuing the Merchant Marine Academy program, \$1.5 million and four years; and \$13,000 for urgently needed hydrographic equipment. These costs, which approximate \$2.7 million, should be financed from grants. Except where modified above, we support the recommendations of the MSR Team for providing equipment, but on the basis of a long-term loan. We believe that \$5 million over a four-year period would be sufficient to cover these recommendations.

Air Transportation

The Team believes that assistance to air transport, although less urgent than assistance to the other forms of transportation, would be valuable.

The Team recommends that the United States assist the Indonesian Government in improving and extending runways and such other facilities as hangars, landing lights, power supply and fire-fighting equipment, for six provincial air fields: Pakanbaru (in Central Sumatra), Pontianak and Balikpapan (Kalimantan), Menado (Sulawesi), Ambon (Moluccas) and Kupang (Timor). This assistance would make possible an increase in air traffic between Java and these important Outer Islands centers, thereby improving trade and increasing facilities for the movement of persons and communications among the islands. Such a program would require the purchase of a certain amount of equipment from abroad, including heavy machinery and airfield construction, and the provision, under contract, of technicians to advise on this program. It is estimated that \$3 million would be sufficient, provided the Indonesian Government made rupiah available to cover local construction costs and personnel.

The Team further suggests that serious consideration be given to assisting the Government in strengthening and lengthening the main jet runway at the Djakarta air terminal, in modernizing approach lighting and other instrument-landing equipment, and in providing fire-fighting and crash-truck equipment. The cost of constructing facilities in Djakarta, based on the cost of similar facilities at the Taipeh airport—

but with provision for military as well as civilian use—is estimated at approximately \$4 million, of which about one-half would be in dollars.

In connection with this project, consideration should also be given to the construction of a new terminal building at the Djakarta airport. Present facilities are inadequate, both for passengers and cargo, and make it extremely difficult to handle the expected increase in air traffic. Again, comparing the requirements with those of the Taipeh airport, the foreign exchange cost would come to about \$2 million plus and the rupiah cost to about \$1 million dollars.

The Team recommends renewal by AID of the ICA contract with Garuda Indonesian Airways and Lockheed for the training of technical, operational and maintenance staff, so as to bring operational and maintenance capacities to the level of Indonesia's needs. We also favor the continuation of participant training in the use of instrument-landing equipment, civil aviation administration and Garuda Indonesian Airways operations. We estimate that training will cost approximately \$1 million over a three-year period. Depending on specific needs, consideration ought also be given to providing air navigation, meteorological and communications equipment, within the requirements outlined in the Eight-Year Plan; it would appear that \$3 million would be required.

Apart from the training activities, the Team recommends that all of the above projects be financed on a loan basis.

The estimated cost of the United States aid that we recommend for all transportation programs over the next five years, based on the foreign exchange cost of the proposals, is approximately \$47 million. Of this amount nearly \$7 million is proposed in the form of grants and about \$40 million in the form of loans. The distribution of these sums among the various forms of transportation, expressed in millions of dollars, is as follows:

	<i>Grants</i>	<i>Loans</i>	<i>Total</i>
Roads	0.9	6.2	7.1
Railroads	2.0	19.0	21.0
Sea	2.7	5.0	7.7
Air	1.0	10.0	11.0
	—	—	—
Total	6.6	40.2	46.8

3. SPARE PARTS AND MACHINE SHOPS

One of the reasons that so much of Indonesia's plant and equipment is being operated at no more than 50 to 60 percent of capacity is that much machinery and equipment is broken and cannot be repaired for lack of spare parts. Part of the trouble results from wartime deferral of

maintenance and from damage to equipment during the revolution and the 1958-59 Rebellion. The persistence of the trouble, however, results from other and more basic causes. Indonesia has too few people with training and experience in the proper maintenance and repair of equipment. As a result, the need for spare parts is greater than it should be. Indonesia also has too few people who have an adequate appreciation of the need both to procure spare parts promptly, and training and experience in the administrative functions needed to carry out the procurement, such as allocating the necessary foreign exchange. Such problems cannot be overcome quickly, but they may be expected to diminish in time, as a result both of the acquisition of greater experience and the expanded training program we have recommended.

In the meantime, much can be done to rehabilitate existing equipment and thereby make possible its fuller utilization, thus contributing to increasing both consumption and investment and to reducing inflationary pressures. These effects are of both political and economic importance. Fuller use of capacity would also provide added experience in operation of productive processes. We believe that the United States could best contribute to this rehabilitation by giving guidance and financial assistance to Indonesia in setting up and stocking a number of spare parts depots. Subject to further investigation by technicians, we recommend that these depots have heavy machine and repair shops in which available parts can be adapted to equipment when properly fitting parts cannot be obtained, and in which tools and other equipment can be made. The depots should be established by, and be under the supervision of, Americans familiar with ordering, receiving, stocking, controlling and otherwise managing large inventories of heterogeneous composition. The American staff should consider, however, that, once the depots are set up, an important part of its job is the training of the Indonesian staff in all aspects of depot operations. This training function is essential to carry out the long-term purpose of this recommendation. With these depots should also be associated classes for machinists, mechanics, and operators of machinery, to train them in the necessary skills, in proper maintenance practices, and in repairing major types of equipment, such as motor vehicles. These training classes can be considered part of the vocational and management training program included in our first recommendation.

In addition to the machine shops at the depots, which would be equipped for heavy work, we believe it would also be desirable, in areas where industrial activity is less geographically concentrated, to have associated with the depots not only delivery and repair trucks but trucks fitted out as mobile light machine shops to service the equipment in these

areas. The mobile machine shops and repair trucks could be in constant short wave radio communication with their depots so that they could go from place to place as needed.

Besides being an efficient way of serving such areas, these trucks could also serve an important psychological purpose. By being continuously on the road and acquiring a reputation for giving quick service, they could be a ubiquitous and dramatic reminder to the population that mechanical equipment is valuable, that keeping it in good condition is important, and that when it breaks down it should be repaired immediately. This attitude, which is taken for granted in countries where mechanical and electrical equipment is a standard part of the environment, is lacking in less technically developed countries, although these are the very countries where such equipment sometimes has the highest value. To inculcate this attitude is especially important in Indonesia, because there virtually everyone in charge of operations that use equipment has come to take for granted that nine months or a year or even 18 months will elapse before he obtains an imported spare part; he regards its delivery in less than six months as a miracle. This expectation has been justified for so long that the prevailing attitude is one of defeatism—"one must be philosophical". The result is that responsible people are either content to wait silently for a spare part or, assuming that there is no hope of getting it, place orders for a new piece of complete equipment, although a fraction of the expenditure it requires would suffice to put many such pieces of equipment into operation. Because we regard it as important to change this attitude and develop in its place the habit and expectation of quick repair, we stress that the proposal for radio-equipped mobile machine shops and repair trucks should not be judged solely by conventional standards of efficiency, and that it should be carried out beyond the point that such criteria alone would dictate.

The need to remedy the spare parts situation has been recognized by the Indonesian Government, and the USOM has in the past considered the possibility of a spare parts depot. In our view, a single depot, which would have to be located in Djakarta, would not carry out all the purposes of our recommendation. Besides slowing up delivery of spare parts to the places where they are needed, it would tend to sacrifice the opportunities for training personnel in other regions, which is a vital objective of our proposal. Establishment of 10 to 15 such depots would help more people outside the capital learn to assume responsibilities, enable more people to benefit by the training function the depots would perform, and expose more people to the idea of proper maintenance and quick repair.

An Indonesian who has responsibilities and knowledge in the fields of both economics and military logistics and who agrees that such depots

are badly needed suggested to us that they should be placed as follows: Three large ones in Java, four in Sumatra (one each in Kutaradja, Medan, Palembang, and Padang), three small ones in Kalimantan, two or three in Sulawesi, and three or four in the Moluccas.

These suggestions appear sensible. Before any decisions as to location of depots can be made, however, it will be necessary to consider much more carefully than our own training or time permitted the difficult technical question of how the program should be organized. An ill-considered program for wholesale importation of a vast variety of spare parts could easily be misdirected. It will not do to stock every depot with spare parts for all the equipment in Indonesia and perhaps not even with parts for all the equipment in the region that a given depot serves. It will probably be desirable to confine the program, at least at the outset, to the parts used by a few major industries. It may be that the program can be well designed only as a series of programs for specific industries, e.g., for the railroad, for the Garuda Airline, for shipyards, and for a few specified manufacturing and other industries. How many industries the program should serve, and, if only a few, which ones is a question that requires further investigation.

Whatever the answer to those questions, there is also a question of how many industries or types of equipment any one depot should service. It might be desirable for some depots to service only one industry even if the program as a whole serves many.

To design an efficient program will require task forces of technicians to visit plants, to examine their technical operations, to suggest improvements in them, to identify faulty operations and maintenance, and to determine what machinery is so obsolete or obsolescent that it is not worth repairing, whether repair problems might best be solved by improving existing machine shops, and what parts may best be stored for each industry. It will also require a high-level group to put the conclusion of these task forces together and determine what industries should be served by the program as a whole and how far specific depots should concentrate on meeting the requirements of one or a few industries.

In addition to these problems of programming the parts requirements, there are problems of procurement and financing. Whether parts manufacturers will provide depot stocks on consignment is one question. Another major problem, often thought to be an obstacle to such a program, is that Indonesian equipment comes from probably a dozen different countries. The question arises whether this fact implies that the program we recommend should be confined to providing American parts, a restriction that would seriously limit its effectiveness.

We believe that this difficulty can be avoided in two ways. The first and preferable way is for several countries that supply Indonesia to join in financing the program. The OECD would be an appropriate organization through which to work or, if that proved impossible, other multinational organizations could be tried, or a consortium could be formed for the purpose. If multinational financing could not be arranged, the United States might be able to finance part of the program by using currencies of other countries that it has acquired through sales of surplus agricultural commodities under P.L. 480, through loans made by the Development Loan Fund and by the Agency for International Development, and in other ways provided enough of our holdings of such currencies in industrial countries are not committed and significant amounts could be made available for this purpose.

Since this program should be a highly productive one for the Indonesian economy, it ought to be financed by a loan. Its cost cannot be accurately estimated until the program is more completely worked out, but we suggest, as a tentative figure that excludes spare parts for other programs we recommend, a loan of \$50 to \$60 million, disbursed over a three-year period. It is recommended that the United States finance 50 percent of this loan.

4. REPLENISHMENT OF INVENTORIES

Another important obstacle to fuller utilization of existing industrial capacity is lack of inventories of imported materials, such as industrial chemicals, bleaches, dyes, tinplate, and a wide variety of other materials. Part of the problem is that needed materials do not get into the hands of would-be users for technical reasons, such as transportation bottlenecks. Our recommendations for rehabilitation of the transportation system would contribute to overcoming this difficulty and to that extent would alleviate the physical problem. The major difficulty, however, seems to be that materials are imported at too slow a rate, owing to a combination of failure of enterprise administrators to foresee their needs correctly and to place orders in time, and failure of the authorities who allocate foreign exchange to give requirements of materials sufficient priority, especially in relation to fixed capital projects. The problem is accentuated by the prevailing inflationary environment, which makes it profitable to hoard goods. To obtain a quick increase in output of the industries handicapped by inadequate supplies of imported materials, we recommend a short-term loan to a central institution for re-lending to such industries, which should be specifically identified in the loan agreement. Besides permitting a quick increase in production, such a loan would stop increases in the prices of these materials and of goods made

from them, thereby providing at least a temporary respite from the rise in the general price level and, by the same token, eliminating the incentive to hoard materials.

If the full possibilities of this recommendation are to be realized, a number of problems must be recognized and plans for dealing with them must be made carefully in advance. One danger is that when additional foreign exchange becomes available as a result of the proposed inventory loan, the Government might permit greater use of foreign exchange for other purposes and substitute some of the loan proceeds for foreign exchange previously allocated for importation of materials. As a result, some of the loan would merely replace other foreign exchange used for material purchases, and imports of materials would increase by less than the full amount of the loan. To avoid this danger it will be necessary to have administration of the loan supervised by an Indonesian agency that has responsibility for maintenance of the foreign exchange reserves. This agency must have the authority and the will to resist transfers in the allocation of other foreign exchange from material purchases to other imports that would have received no allocation in the absence of the loan.

A second and analogous danger arises at the point where rupiah counterpart of the loan is made available to the individual enterprises that need additional materials. The danger here is that these enterprises will borrow rupiah to expand inventory but substitute them for funds they would otherwise have used for that purpose, using the funds thus freed for other purposes. In this event, too, the loan would not have its full effect in replenishing inventories. To the extent that it simply financed increased bidding by the borrowers for domestic goods or services, moreover, it would contribute to already existing inflationary pressures. If this danger is to be avoided, the funnelling of the money to individual enterprises must be in the hands of banks or other institutions that have the competence to supervise the borrowers' use of funds.

The third and perhaps the most difficult problem is to use the program to help remedy the causes of the present situation. The program should be designed, as our other recommendations are, to contribute in a fundamental way to improving the operation of the Indonesian economy; it should not merely provide a temporary increase in the supply of goods. It is true that even a temporary increase would have a lasting effect if it gave the Indonesian economy a respite from inflation and if the respite were used to bring inflationary pressures under control. It is also true that the additional training in management and the additional experience in administration of economic policy that would be gained during the period of the loan would reduce the likelihood that the same situation

would recur when the program ended. For these reasons, it would probably be worthwhile in any event. Nevertheless, every effort should be made to build into it devices that would help eliminate the causes of the problem. To carry out this purpose we believe that there is need for a more careful examination by a team of economists and business administrators of how and why supplies of materials came to be so inadequate that they limit production.

If such an investigation confirms our view that the causes include both poor administration of individual enterprises and of foreign exchange resources, the loan should be accompanied by provisions for training personnel of the borrowing enterprises in inventory planning and in materials programming and procurement, and by an offer of technical assistance in the planning and administration of Indonesia's foreign exchange budget.

It was suggested to us that the United States could well provide foreign exchange for additional imports of rice, textiles, and other consumers' goods in finished form or in advanced stages of fabrication for two or three years to restore stability to the price level and bring goods out of hoards. We prefer the course we have recommended because we believe it would accomplish these purposes as well as the suggested alternative and because it has greater potential value in stimulating Indonesia's own production and in fundamental "institution-building". The supervision by Indonesian banks of procurement and of administration of inventories by Indonesian enterprises, the lever of training personnel in these enterprises, the supervision of the Indonesian banks by the Indonesian agency that handles the loan in the first instance, and the more rigorous budgeting of foreign exchange that our proposal implies, together with whatever technical assistance the United States may be called upon to provide in carrying out the program and in training, are important advantages. They are partially, perhaps wholly, lacking in the alternative proposal. They are an important part of any proposal that is to make the most fundamental and lasting possible contribution to Indonesian economic development, which is the purpose underlying all our recommendations.

It has also been suggested that the causes of the present inventory difficulties could be eliminated by providing training in the administration of foreign exchange and of individual enterprises without making the loan that we propose. In our view, it is unrealistic to suppose that training in administration on the job, which is indispensable, would be as acceptable or, if accepted, would be taken as seriously if it were not connected with a loan. Moreover, the individual business decisions and the foreign exchange planning that Indonesians must learn to make are those relating to the management of production and the maintenance of

inventories in a situation where inventories are adequate. We question that this can be learned in an environment where inventories are not adequate. What is best or necessary in the latter situation may not be efficient in the former; the administrator's range of choice is quite different. In addition to these considerations is the fact that, without the loan, the desirable increase of output and respite from inflation could not be obtained.

Our present thinking is that the inventory replenishment loan could best be made to the Bank Indonesia. We envisage this Bank as re-lending portions of the proceeds to the Bank Negara Indonesia, which is the largest commercial bank, and to other commercial banks that deal directly with individual enterprises, but subject to the proviso that the Bank Indonesia and the United States are satisfied that these banks can and will check borrowers' inventories at sufficiently short intervals, required that they get payment from their customers sufficiently soon after delivery, and exercise other necessary supervision over the borrowers' use of the proceeds. This ability might be tested by first disbursing a limited amount on an experimental basis to the Bank Indonesia for re-lending to the Bank Negara Indonesia, which, in turn, would lend the proceeds to enterprises in only one or two industries, say the textile industry and one other. The experience thus acquired would indicate what revisions in the program are needed before it is put into full operation.

We believe that the inventory replenishment loan should be large enough to break any black markets that exist for the goods produced by the eligible industries and to cause dishoarding of such goods. It should also be large enough to fill the inventory pipelines of the eligible industries and keep them filled at the higher rates of output that it seeks to attain. The amount necessary to carry out this program might, at a guess, be in the neighborhood of \$75 to \$100 million. Since materials for the eligible industries would probably have to come from a number of different countries, multilateral financing of the full program would be appropriate. The United States should be prepared, at the outset, to contribute about \$20 million, in addition to P.L. 480 financing of cotton and other surplus non-food commodities. Local currencies held by the United States in other countries that produce materials imported by Indonesia might also be used for the purpose. The possibilities here appear to be somewhat greater than in the case of spare parts, since some materials come from countries in which we have large local currency holdings.

5. ACCELERATION OF RUBBER REPLANTING

Indonesia depends on rubber for 35 to 45 percent of exports. The decline in its competitive position in the world rubber market makes an increase in the nation's rubber production one of the most essential requirements for maintaining—to say nothing of increasing—its foreign exchange earnings and ability to import. A long-term program to increase rubber production requires both replanting and new planting. Our recommendation for the estates is limited to replanting, since estate acreage is at present practically 100 percent cultivated. For smallholders, however, we recommend both replanting and new planting: much old land can be restored to efficient production by replanting; elsewhere new planting would be more advantageous in order to regroup existing small holdings for more efficient use of transport, milling and marketing facilities, and to get away from low wet areas more suitable to rice than rubber.

Estates

In view of declining output and the advanced age of estate rubber trees, discussed in Chapter III, something more drastic than the replanting rate of about 3½ percent per year proposed in the Eight-Year Plan is required. The average yield of estate rubber production in 1959 was 538 kg. per hectare. Trees grown in Malaya from the new, high-yield rubber material have been producing over 1100 kg. per hectare after ten years' growth; there are even reports of twice that figure. The Indonesian Ministry of Agriculture has the same high-yield stock available for replanting purposes.

In order to speed up the replacement of old and low-yield trees with new and high-yield trees, the Team recommends that replanting be accelerated to an initial annual rate of 50,000 hectares, or about 10 percent of the total estate area, as contrasted with the proposed annual rate of 3½ percent. (The base of these percentages includes foreign estates, but since they have had an adequate replanting program for several years and can continue to finance their own programs, they need not be included in the program we are recommending.) This higher rate is essential if Indonesia is ever to make up for the two decades in which practically no replanting occurred and to grow high-yield trees, the production of which can compete with Malayan national rubber and "synthetic natural" rubber. The initial figure of 50,000 hectares per year is arbitrarily selected, but appears to be in the realm of feasibility. This acceleration, however, will require cutting down trees which are still productive and waiting several years for the new trees to begin to produce. It is possible to offset the resulting losses to some extent by "slaughter-tapping" the trees before cutting them down, i.e., tapping

them every day and cutting down to the wood, with longer cuts. This increases output about 50 percent and can be done for 1 to 1½ years before the latex is exhausted. This would be only a partial offset to the losses, however. If replanting (as distinct from new planting) is to be accelerated, it will be necessary to offset the foreign exchange losses, until such time as the high-yield trees come into production, as well as to cover certain other costs.

We have estimated the foreign exchange losses and gains on the basis of certain assumptions (explained in detail in Appendix E), including a natural rubber price beginning at 27 cents per pound (which is approximately the present yield to Indonesia) and declining one cent each year until it reaches 20 cents, at which price it is assumed to remain.

A few words of explanation about Table VI-1 are required. The additional yield from slaughter-tapping, shown in the second column, declines during the first three years despite the fact that the area slaughter-tapped remains unchanged, partly because prices are assumed to decline and partly because the trees slaughter-tapped in the second and third years are, on the average, older than those slaughter-tapped in the preceding years and their yields are consequently lower. Yield from slaughter-tapping is higher in the fourth and fifth years, despite the assumption of a continued price decline, because the trees slaughter-tapped in those years are younger and have higher yields. The declines in the sixth and seventh years reflect mainly the reduction in the area slaughter-tapped, indicated in the first column.

The third column, loss from cutting down trees, is the value of the rubber that the trees would have produced had they not been cut down. Its apparently erratic behavior results from the changes in the average age-composition and therefore in the average yield that the trees cut down in all the preceding years of the program would have had if they had not been cut down. For example, in the fourth year this loss is zero because the trees assumed to have been cut down in the preceding years would have been over-age by the fourth year and therefore would have produced nothing. A loss occurs in the fifth year, however, because the trees cut down in the fourth year would have been productive had they not been cut down. The yield of new trees, shown in the fourth column, remains at zero for the first six years because replanting does not begin until the second year and it is assumed that tapping cannot begin until the seventh year. The total net gain or loss, shown in the last column, is self-explanatory; its pattern reflects the three preceding columns.

Table VI-1

ESTIMATED EFFECTS OF SLAUGHTER-TAPPING AND REPLANTING
ON VALUE OF RUBBER OUTPUT

Year	<i>Value of Output Gained and Lost (in million \$)^a</i>				
	<i>Area slaughter- tapped (thou- sand hectares)</i>	<i>Additional yield from slaughter- tapping</i>	<i>Loss from cutting down trees</i>	<i>Yield of new trees^b</i>	<i>Total net gain or loss (-)</i>
1*	50	5.2	0	0	5.2
2*	50	4.3	8.6	0	-4.3
3*	50	3.5	13.8	0	-10.3
4*	50	6.2	0	0	6.2
5*	50	6.0	9.5	0	-3.5
6*	25	3.0	18.2	0	-15.2
7*	10	1.2	20.3	4.4	-14.7
8*	10	1.1	16.3	12.5	-2.7
9	10	1.1	13.7	25.0	12.4
10	10	1.1	11.3	37.5	27.3
Total, first					
8 years	295	30.5	86.7	16.9	-39.3
Total, 9th					
& 10 years	20	2.2	25.0	62.5	39.7
Total,					
10 years	315	32.7	111.7	79.4	.4

* Years to be covered by proposed loan.

^a These figures are approximations, based on assumptions stated in Appendix E.

^b Assumes that, beginning in Year 2, replanting occurs every year on the same area that was slaughter-tapped in the preceding year.

For a number of reasons, including insufficient accuracy of the figures entering into the complicated calculation and the insufficient time for greater study, the above estimates should be regarded as approximations. A more detailed examination of the effects of the recommended rates of replanting is needed.

To carry out this intensive replanting program, we recommend a loan, mainly to cover the foreign exchange losses and other foreign costs that it involves. We consider such a loan to be ideal for financing by the International Bank for Reconstruction and Development. We understand that the IBRD has generally acted on the theory that loans should cover the out-of-pocket costs of projects and has determined their amounts in relation to such costs. In our opinion, however, losses of revenue resulting from a project are as much a part of its costs as actual disbursements. We see no valid basis in economic reasoning for distinguishing between these two forms of cost.

The distinction that appears to us valid—indeed, necessary—is between costs (including both expenses incurred and revenue foregone) to the rubber producers and the costs to the national economy as a whole. The loan should cover the portion of the latter that cannot appropriately be covered by Indonesian sources. The problem of distributing the proceeds of the loan to the rubber producers who incur the expenses and suffer the losses is an important one. As noted in Chapter III, producers are currently paid for exports in rupiah equivalent to the world price converted at a fixed exchange rate, while the rupiah cost of everything connected with production keeps rising. Unless the Government of Indonesia makes an upward adjustment in the applicable exchange rate—and the rate involved in distributing the proceeds of the loan to meet revenue foregone—the estates will increasingly lose both the incentive to replant and the ability to finance replanting, and may be forced into a loss position. Since the purpose of the program would be defeated if price policy or failure to get the loan proceeds to producers makes replanting unprofitable, it is essential that these problems be worked out in negotiating the loan agreement.

Whether the IBRD would accept the view that the loan should cover foreign exchange losses or would maintain that only out-of-pocket expenses should be covered, we understand that it might consider a loan for the purpose of accelerating rubber replanting.

Assuming that this problem can be solved, the loan might be made to cover the first eight years of the intensified replanting program, these being the years during which the foreign exchange losses are not fully

offset. On the basis of our calculations, financing of these net losses would require about \$39 million.

The replanting of rubber trees on the estates will require the intensive use of labor, now available only in Java, during the period immediately preceding the annual rainy season. This will involve special transportation, housing and feeding problems and costs, to say nothing of efficient management of the logistics thereof, which has not so far been available. It is assumed, however, that the technical knowledge and the high-yielding planting material are, or can be made, available. Proceeds of the year-old tax on rubber are also available to defray these rupiah costs.

Apart from the increased replanting, it will be necessary to make available new rubber mill machinery, or spare parts for existing machinery, for the estates, or there will be serious danger that the increased supply of latex cannot be milled into high-grade rubber. Finally there is reported to be a shortage of acetic acid required for treating the latex prior to milling. This, too, must be imported. These requirements are roughly estimated to cost \$1½ million.

Smallholders

The problems of dealing with smallholder production are more difficult. With a program of slaughter-tapping and replanting only in areas of overage trees, estimated to be 50 to 60 percent of existing trees, and with new planting elsewhere, it would be possible to bring smallholder production up considerably, without any interim loss of foreign exchange. Machinery and equipment will be required for the effective operation of a large-scale planting program. Most of this is either not available locally, or is available only at a cost which is prohibitive to the smallholders. A former ICA rubber technician in Indonesia has estimated that about \$3½ million is required to purchase jeeps, station-wagons, pick-up trucks, tractors, etc. for the smallholder program. In addition, technicians with extensive experience in all phases of plantation operations, in marketing operations, in rural credit systems, and in the training of tractor operators and mechanics would also be required. Finally, there is a great need for an intensive education and information campaign among the smallholders in order to change their traditional production methods, which have been so harmful to the rubber trees. Such technical assistance might cost up to \$1 million.

These costs, added to the approximately \$39 million of foreign-exchange losses, suggest a loan of approximately \$45 million.

If Indonesia is to maintain its foreign exchange earnings from rubber, a drastic and expensive program such as this one must be initiated soon. At the same time, more intensive measures to stop smuggling—including a more favorable exchange rate for rubber exporters—must be undertaken. It would also be helpful if a domestic price scale were established which would weigh heavily in favor of the higher grades of rubber and discount the lower grades, so as to stimulate smallholders, in particular, to produce higher quality rubber.

If such programs are not undertaken, Malayan natural rubber and greater production of inexpensive synthetics will gradually squeeze out Indonesia's increasingly inefficient and costly production.

6. INCREASE OF TIN PRODUCTION

The Ministry of Basic Industries and Mining has requested loan assistance from the United States to meet the foreign exchange costs of financing a survey of tin mines on Bangka, Belitung, and Singkep, the three "tin islands", and of rehabilitating an existing tin mine on Bangka Island, reopening one on Belitung, and opening a new one on Bangka. An application for this loan is now before the AID. Exports of tin and tin ore have accounted for about 5 percent of Indonesian exports in recent years. In the past, they have been larger and the question is whether, with an adequate market, the ore reserves are sufficient to permit exports to be substantially increased in the future.

The Team thinks that the objective of this proposal is a desirable part of a program to increase Indonesian exports. We recommend that the United States provide a grant to finance the survey, expanded to include a study of the long-term market if existing studies do not suffice to provide enough market information. We believe that this would cost less than \$100,000. If these market and engineering studies conclude that production can be increased, either in the manner that the Indonesians propose or otherwise, we further recommend that a loan of about \$12.5 million also be provided to finance new diesel engines, spare parts for dredges, and other equipment needed to finance the foreign exchange cost of increasing production.

7. IMPROVEMENT OF FOOD PRODUCTION AND DISTRIBUTION

Since food shortages and soaring food prices can be focal points of social unrest, an increase of food production is essential to the success of Indonesia's program for economic development.

Indonesian officials indicate a desire for technical assistance in rice production, plant diseases, seed cultivation, fertilizer distribution, and

evaluation of soils. Although there are some things that we can do, it is not easy at this time to devise a detailed program of substantial magnitude with any assurance that it would be effective. The issues involved in getting a large increase of production and in marketable surpluses for shipment to deficit areas go beyond matters of technical competence. They cut across the policy prerogatives of the Government at many points and their solution must take account of existing social institutions. Thus far, the Government's own program, as well as our technical assistance, have not been effectively transmitted to the villages, and a solution of the production and distribution problems is handicapped by lack of a realistic analysis of the role of prices in obtaining a surplus that growers are willing to sell. These matters cannot be put right by technical assistance to agriculture in the usual sense.

At the same time, it must be emphasized that the question of organization is only part of the problem. While effective organization is indispensable in teaching growers how to use the knowledge developed by technical experts and in enabling them to apply that knowledge, it cannot, alone, provide the incentive for them to do so. If growers are to have the incentive to increase their production, and especially to market it so that it becomes available for deficit areas, they must be offered prices that are not too low, as the prices they now receive appear to be. Without a realistic price policy, organizational arrangements will not succeed in solving the distribution problem. They can be expected only to prepare the way for more rapid increases in output and for a solution of the distribution problem when improved price policies are adopted. The present problem, which is fundamentally to induce growers to produce more for the market, will persistently haunt any organizational arrangement; it will not be resolved merely by trying one type of organization after another.

So far as technical assistance is concerned, while the United States and Puerto Rico have augmented production of rice, Japan has had more experience with conditions similar to those affecting rice production in Indonesia. Japan has assisted India in markedly increasing production of rice, and we recommend that the United States Government encourage Japanese cooperation in this field, including the training of selected Indonesians in Japan.

Nevertheless, we feel confident that there is a good deal that the United States can and should do at the technical level. We recommend that up to \$3 million be made available in the form of a grant to provide such help, the exact amount to be used depending largely on the response of the Indonesian Government. This should be used to provide a number of forms of technical assistance. One is in the planning of fertilizer

procurement and distribution, so as to avoid the waste of recent "crash" programs and get the different types of fertilizer to the soil for which they are appropriate. With regard to improved seed, we already have an able specialist at Bogor who has the understanding and drive to carry through an effective program. The seed program can scarcely move forward on a large scale, however, until the Indonesian Government provides the small budget that is needed to construct drying facilities and carry on other necessary functions on village seed farms, one of a number of problems that technicians cannot solve. The grant should also support a program for control of pest and plant disease, on which little has been done. (We note especially the neglect of research on sugar cane, where yields have been declining, as is to be expected when the control of plant disease is neglected.) This support, however, should be subject to clear evidence that the Indonesian Government really means to carry the results of the research to the food grower. Since corn, sugar, and other food crops have been slighted in pursuit of the goal for rice production, we urge that attention also be given to these crops.

The difficulty of obtaining local currency budgets adequate to make technical assistance effective is a rather general one. In all fields, it is important to negotiate agreements for these local currency budgets when agreement is reached on the projects. In the case of agriculture, these agreements might best be settled when P.L. 480 agreements are closed. Otherwise, we are likely to find technical assistance efforts frustrated by budgetary shortages.

We believe that increased fertilizer production is highly desirable, but we think capital assistance to support it should be reserved for future consideration, for reasons given later in this chapter.

We are aware that our recommendations for immediate action are modest compared to the magnitude of the problem, and we would like to be able to recommend more. We believe, however, that additional aid should depend on the performance of the Indonesian Government.

While all the obstacles to expansion of food production and development of adequate market surpluses cannot be dealt with from the capital, successful use of technical assistance requires more realistic policies in Djakarta. Their adoption will provide opportunities for increasing the scale of effective assistance. The United States Government should be alert to these opportunities as they arise.

8. CAPITAL FOR LIGHT INDUSTRY

The activities of light industry in Indonesia are coordinated by the Ministry of People's Industries, which has jurisdiction over some 73,000 firms, engaged mainly in manufacture of cotton textiles, processed foods,

cigarettes, film, ceramics, paper, rubber products, leather, building materials, chemical and metal products. Almost all of these firms, accounting for 85 percent of the total output of light industry, are privately owned.

Shortages of foreign exchange for equipment and spare parts have seriously restricted the growth of light industry and particularly of the private sector since 1958. It is the opinion of the Team that a limited amount can be effectively used for expansion of fixed capital and that it should be made available on a loan basis, provided that adequate controls will be exercised to insure that funds are used for productive capital plant and that a reasonable distribution of funds is made between State and private enterprises. If these conditions can be insured, such aid will encourage the growth of existing small and medium-sized enterprises, and provide new opportunities for the private sector to contribute to the nation's economic development. (For example, a new technique for the manufacture of batik, an Indonesian specialty, has been proposed, which gives promise of making a substantial contribution to output and export earnings, but the proposal requires financing of imports of machinery and materials in the first few years.) The Minister of People's Industries and the backers of the proposed Private Development Bank have been authorized by the President to seek foreign loans for private industry.

We recommend that a loan of between \$30 and \$50 million be made to a banking institution to provide foreign capital for light industries.

9. ENERGY

Electric Power

The increase of electric power is a prime requisite for economic development. Considering the Indonesian Government's plans to expand this capacity, the Team believes that the most useful United States assistance in the immediate future is to assist in improving the long-term efficiency of distribution. First, the installed capacity in the three main regions of Java must be developed so that it more nearly meets the demands of this populous island. Only after that is done will it be productive to interconnect these grids. The Team recommends a three-year contract for 1962-1964, in the first two years to design improvements in the existing grids and, in the last year, to plan future interconnecting links. The estimated cost of the engineering is \$1.5 million. To improve the existing grids, we recommend a construction contract for the years 1963-1965. It is estimated that this will cost an additional \$3 million. To build more adequate safeguards and greater flexibility into the present system, it is desirable to procure materials in 1962-1963. Materials must

also be procured in 1964-65 for extending the capacity of the present distribution system and preparing the way for connecting the regional grids. The foreign exchange costs of these materials are placed at \$10.5 million. Thus the foreign exchange costs of engineering, construction, and materials would call for a loan of about \$15 million.

Coal

It is estimated that production of the Bukit Asam coal mine in southern Sumatra can be increased from the 1960 rate of 550,000 tons to an annual output of approximately two million tons. In order to help the Indonesian Government develop this mine, the Team recommends a grant to finance a survey of this mine, primarily to see what kind of equipment is most appropriate for its expanded operation. The Team also recommends that if the survey confirms that the output of this mine can be efficiently expanded on the general scale estimated, a loan be provided to finance technical services and equipment for it, up to \$3 million. There are other coal mines which also require rehabilitation, but this one is the most promising and the others appear to necessitate a much costlier investment, which should be put off for the present.

10. OTHER RESOURCE SURVEYS

The tin and coal surveys mentioned above are intended to focus primarily on the designated mines with a view to determining the best methods of increasing their output, although the tin survey is also intended to include some geological surveying. In addition to such specific surveys there is need for more general surveys to assess all mineral and forest resources. The Ministry of Basic Industries and Mining made specific requests of the Team for the services of trained geologists to make surveys of bauxite, coal and gold as well as tin. The Team recommends that favorable consideration be given to these requests if further examination shows that the prospects are promising and that they cannot be otherwise financed. Such surveys as are foreseen probably merit high priority among Indonesia's basic development requirements.

Indonesia has large forest resources that have barely been touched. In order to determine the real value and the feasibility of developing Indonesia's forest lands, much more intensive surveying is required, particularly in Kalimantan and Sumatra.

We understand that a Japanese firm, working on a production-share basis, is undertaking to develop 8,000 square kilometers of forests in East Kalimantan, on the basis of field surveys which it has conducted. This is only a beginning, however; these surveys provide only a rough estimate

of the available timber in a given area, since they are based on the evaluation of trees located along a series of strips, and leave the conditions between the strips to be inferred. In order to arrive at more precise estimates, and to ascertain where logging might profitably be undertaken, aerial surveys are required, including surveys of the areas between the strips. We therefore recommend that technical assistance be made available for conducting such surveys.

The Ministry of Agriculture requested assistance in the form of capital equipment for logging, saw mills and transport. It is the Team's view, however, that no action should be taken on this request until the results of current field surveys and eventual aerial surveys are available. Even then, the Japanese and other nations should be encouraged to provide assistance in this field before the United States contemplates a loan for this purpose.

We recommend that \$2 to \$3 million be provided for the conduct of the surveys we have proposed.

11. STATISTICAL SERVICES

The Indonesian Government has asked the United Nations Special Fund for a \$1 million grant to help eliminate the most serious gaps in Indonesian economic and social statistics. Specifically, they propose to establish a Statistical Research and Development Center under the auspices of the Central Bureau of Statistics to improve statistical series relating to production, domestic trade, prices and similar important economic variables, and to develop series that will make possible better estimates of national product, income, expenditure and other components of national accounts. They also propose to train more statisticians. The aid will support a three-year college level course run by the Central Bureau of Statistics, to be taught by members of its staff and nine experts provided by the United Nations, as well as by experts provided by the Colombo Plan.

There is no doubt about Indonesia's need for additional statisticians and, indeed, statistical personnel at all levels. The Bureau is proposing to set up regional offices and this will add to its already unsatisfied personnel requirements. The Team believes full support for the efforts to improve statistical services is essential if costly mistakes in planning are to be avoided. The proposed emphasis on the use of sample surveys, with censuses only to obtain benchmarks, is the most efficient method of making the improvements Indonesia needs. The request for aid from the United Nations is one of the most carefully worked out that the Team saw. We believe this modest request, which will support the statistical

work for a period of only three years, should be supported, and that if the United Nations does not provide it the United States Government should enlist other multinational support for it.

An expansion of advanced training in statistics abroad is also needed. Although Indonesia has requested support for such a program from the United Nations, it is not counting on the United Nations for much support in this score. We believe aid for this purpose from the United States is desirable in any event; it should be regarded as included in our recommendations for grants to support graduate study abroad under the heading "Education and Training".

12. REGIONAL CENTER FOR TECHNOLOGICAL RESEARCH

Western production experts are accustomed to thinking in terms of production methods that are suitable for an environment in which labor is scarce and capital abundant, relative to their proportions in underdeveloped countries. Students of economic development have been coming increasingly to the conclusion that research is needed to develop technical methods of production, use of by-products and waste materials, and other economic needs that are appropriate to countries in which labor is abundant and capital scarce. We recommend the United States act to meet this need by taking the initiative in establishing a regional center for technological research of this kind of South and Southeast Asia, and that consideration be given to establishing it in Indonesia. The Center could service a wide region, or might be one of several related centers. The case for establishing it in Indonesia is that (1) in population Indonesia is the second largest non-Communist underdeveloped country (second to India); (2) both for its symbolic significance and temperate climate Bandung would be one of the most suitable sites in Asia. (It is already a center of scientific education.) (3) Indonesia presents the problems of both sparsely and densely populated areas (Java being one of the most densely populated areas in the world and the other major islands being sparsely populated). (4) The location of an Asian Regional Research Center in Indonesia would further the development of Indonesia's national identity while at the same time helping to focus the attention of Indonesia on the rational solution of production problems.

For the purpose of allocating foreign aid expenditures, this project would be aid to South and Southeast Asia rather than to Indonesia, but it would help Indonesia, among other countries, and would contribute much to accomplishing our objectives there.

We envisage this Research Center as deserving and requiring top direction of high quality. It should have an international staff consisting

mainly of scientists and engineers but with some economists, statisticians, and other behavioral scientists. This staff should be recruited from both "developed" and "underdeveloped" countries. This common division of countries into two categories obscures the fact that the state of development is a matter of degree. Countries which are regarded as "underdeveloped" but which are in a more advanced stage than others have much to offer to the countries in less advanced stages.

We think such a Center is appropriate for multinational financing, perhaps coordinated through the Development Assistance Committee of OECD, and that the United States should contribute \$10 million to it for its first eight years.

It should be understood by all participants that this Center would be an international undertaking and that the host country would have no claim to leadership merely by virtue of being host. The intended emphasis on better technical methods that save capital would focus the attention of underdeveloped countries on the economic gains to be derived from using production methods that are most efficient for them, and on gains from using capital assistance in ways that yield greater additions to output and greater reductions of overt and disguised unemployment. The Center should, of course, cooperate closely with ECAFE.

PROPOSALS CONSIDERED BUT NOT RECOMMENDED AT PRESENT

The Team has considered certain other projects but refrains from recommending them because they are premature.

Expansion of Fertilizer Production

We think that an increase in fertilizer production is highly desirable. We do not recommend support for it at the present time, however, because construction of three plants is now under way and we think Indonesia's ability both to operate them and to distribute their output efficiently should be reviewed in detail before additional plant construction is supported.

New Ships

Existing ships are not now being fully utilized, and trained masters and crews are lacking. In addition, new tonnage is already assured from a number of other countries. United States aid for investment in new ships at the present time is therefore not desirable.

Transmigration Aid

In the future, the Indonesian Government may ask the American Government for assistance in paying the travel and relocation costs for

moving migrants from Java to Sumatra and other less-populated islands. The Team believes that improved transportation facilities, a vigorous rubber replanting program, and industrial development in Sumatra and the Outer Islands will, over the course of time, stimulate a spontaneous migration of needed labor without assistance from the United States. In any event, the costs of relocation require largely internal financing and organization.

Rayon Complex

United States capital amounting to \$50 million has been requested as part of multinational financing for the first of several integrated rayon complexes. We understand that the foreign exchange cost of an integrated complex is thought to be about \$80 million, with a total cost of perhaps \$200 million, but it is clear that firm plans have not been made and that the costs are still guesses. Judging it purely on economic grounds although not on narrow ones, we think the rayon project is at least premature now and would probably not be among the best use of resources. Our reasons for this conclusion are the following:

1. The costs of the project are still very uncertain. The expert advisers, the Von Kohorn Company, have not yet made a detailed survey. Even though they think a rayon complex appropriate for Indonesia, their preliminary survey led them to conclude that the proposal of the Indonesian Government needs reconsideration on a number of grounds, including the fact that experts regard Indonesia's timber resources as not suitable for production of chemical cellulose.
2. An integrated rayon complex, beginning with cutting of timber and ending with production of rayon, involves a variety of chemical and other plants and a technical process which, at the present time, the Indonesians do not have the personnel to operate and which is too complicated to constitute a good next step in the process of learning how to operate industrial facilities.
3. Even if there were a firm design for a more feasible complex and the Indonesians could operate it successfully, production of rayon would be very costly to the Indonesian economy, compared with other uses of the same capital. We outlined some of the reasoning that underlies this opinion in Chapter IV, when we used the rayon proposal to illustrate the nature of economic costs. The first point, briefly stated, is that the proposal involves using much capital, which is scarce, and little labor, which is abundant, so total costs would be very high even after the whole complex was completed. Moreover, after land is made available and cleared, and after roads, a source of power, and a town for the

workers to live in are available, which might require two years, completion of the plants to provide the raw materials would take at least another five years. In this interim of approximately seven years, Indonesia would have to import raw materials to produce the rayon, which would involve substantial foreign exchange costs. Between the initiation of the project and its completion, therefore, there would be a long period, during which the output would be costly in relation to the alternatives.

It is possible, of course, that the Von Kohorn Report will show possibilities for a complex of lower capital and operating costs. For this and other reasons, it may be desirable to postpone a final decision regarding support for some form of rayon production.

Petro-chemicals Industry

The Indonesian Government is interested in aid for construction of petro-chemical plants. It appeared to us, however, that plans are still in a vague state. For this reason, we recommend that United States aid be confined to technical assistance in planning the future development of this industry.

THE QUALITY OF APPLICATIONS FOR LOANS

The quality of applications for loans and its relationship to the decisions of lending agencies poses a problem that calls for comment.

In Indonesia, as in many other countries, few ministries are able to draw up applications that fully satisfy the Export-Import Bank, the Agency for International Development, and other lending agencies. Even within Indonesia, ministries differ in their capacity to prepare satisfactory applications for loans. We have the impression that there is some tendency in Washington to confuse the technical adequacy of loan applications with the development merits of the projects for which financing is sought. The degree to which loan applications may be satisfactory in a technical sense measures neither the priority of the project nor the interest of the United States in providing assistance for it. One ministry may prepare an application that is technically unacceptable, while another presents a more satisfactory application for a less important project.

The constructive approach to a faulty application, for lending agencies that are carrying out a policy of assisting economic development, is not merely to reject it, but to help the country understand what its proposal involves and, if the proposal still appears sound, to help the country develop it. If the project gives promise of being satisfactorily developed, funds should be tentatively and informally set aside in advance. To entertain only applications that are technically competent

is to risk assisting second-class projects and contributing to misuse of resources.

The Indonesian Government is aware of its deficiency in developing essential data for loan applications and has asked for United States assistance.

CHAPTER VII

THE PRESENT UNITED STATES TECHNICAL AID PROGRAM

After signing a bilateral agreement with Indonesia in 1950, the United States began providing technical assistance which was concentrated in education, agriculture, health and sanitation. This and other programs, including the malaria eradication program, amounted to \$160 million in the twelve fiscal years from July 1949 to June 1961, and nearly \$16 million in the fiscal year 1961 alone and over \$17 million is budgeted for FY 1962. The total of Export-Import Bank loans has amounted to \$163.5 million from 1950 to 1961. From sales of agricultural commodities under P.L. 480 Title I programs, a total of \$139 million of rupiah was planned for Grants and Loans through June 30, 1961. (The total sales agreements for this period were \$168 million of which \$29 was reserved for United States uses).^{*} In addition, approximately \$7 million in such commodities has been distributed through voluntary relief agencies. The DLF has made three loans to the Republic of Indonesia totalling nearly \$12 million. Thus, United States economic aid to Indonesia since Independence amounted to \$470 million through June 30, 1961.

These programs are administered and supervised by a United States Operations Mission in Djakarta and some 250 American experts.

At the request of ICA (as it then was), the Team examined the operation of the ICA program in Indonesia as well as it could in the limited time available for this and our more general assignment. The evaluations are based on the information we obtained during our visit, interpreted in the light of the Team's view of what the major objectives of the United States economic aid to Indonesia should be, as stated in Chapter V. Some of these objectives lead directly to criteria for the content of a desirable program. In judging the day-to-day conduct of any program, however, it is necessary to apply additional criteria. We have

^{*} On February 19, 1962 a Title I sales agreement for a 3-year period was signed in the amount of \$92.7 million of which \$83.4 million was planned for Grants and Loans. This agreement, together with an additional agreement and two amendments to existing agreements, raised the total sales agreements for FY 1962 to \$111.5 million of which \$98.5 million is to be available for country use.

used the following additional criteria as tests of whether the content and conduct of an existing aid project are satisfactory.

1. The Governments of both Indonesia and the United States should consider an activity as having a high priority in contributing to the development of Indonesia and the strengthening of her economy.

2. The Government of Indonesia should want the project and cooperate with it. The United States should not urge activities, advisors, or projects on the Government of Indonesia in which they are not really interested, even though the United States may think such activities are well advised.

3. In judging a proposed project, the United States Government should primarily consider whether a project is economically feasible and appropriate for Indonesia.

The Team was impressed by the usefulness of assistance for specific projects wherein Indonesian and American efforts are jointly directed toward well-defined objectives, and a group of United States technicians—either on contract or by direct hire—comes to Indonesia for as long a period as is necessary to achieve these objectives. These technicians have a clear concept of what is expected of them, and the Indonesians understand that the Americans are there for that purpose—and will go home when the job is completed.

The Team recommended, in addition to the proposals contained in Chapter VI of the Report, that much of the existing program be continued, that certain projects be eliminated and some consolidated. Final decisions on the existing projects as well as the new proposals must await future negotiations between the AID Mission in Indonesia and the Government of Indonesia.

CHAPTER VIII

CONCLUDING REMARKS

In this report we have sought to make clear that Indonesia, a land rich in natural resources and with great long-term economic potential, is still in an early stage of national development. Its colonial past left it with few people trained for responsibility in either political or economic administration. Its first years of independence have been devoted mainly to building a sense of nationhood and unity, searching for a workable political structure and governmental administration, and educating the population. With the attention of leaders absorbed mainly by political problems, management of the economy has suffered, but there are encour-

aging signs that Indonesia is making progress in this field. The unification of language, the spread of general education, the growing recognition of the need for specialized skills and training, the asking of questions, the gradual substitution of pragmatic tests for dogmatic demands—these are first steps in establishing the pre-conditions for political and economic development. We regard the signs of Indonesian progress in overcoming these inadequacies important. With its period of independence both short and unsettled, it should not be surprising that they have not yet been overcome.

The political and economic difficulties Indonesia has had in its 12 years of independence, such as the breakdown of one system of government and political organization, the need to substitute another, and its lack of internal unity, are suggested by the following quotation:

“As long as the war with the mother-country lasted, the principle of union was kept alive by necessity; and although the laws which constituted it were defective, the common tie subsisted in spirit of their imperfections. But no sooner was the peace concluded than the faults of the legislation became manifest, and the State seemed to be suddenly dissolved . . . The Federal Government . . . no longer sustained by the presence of a common danger, witnessed the outrages of its flag . . . while it was scarcely able to pay the interest of the debt which had been contracted . . . It was already on the verge of destruction, when it officially proclaimed its inability to conduct the government.”

This passage was not written about Indonesia. It comes from a description of the United States in the 1780's by de Tocqueville.¹ It should serve as a reminder of the difficulties faced by a newly independent country that has not developed nationhood. In appraising the progress of Indonesia during its 12 years of independence, we would do well to bear in mind our own history and recall that after our War of Independence, fought by a loose confederation of colonies with colonial rather than national loyalties, separatist tendencies were quick to develop and that it took the newly independent colonies six years, from 1783 to 1789, to find a form of government strong enough to overcome them. Yet our population was relatively advanced in general education, skilled in many professions and crafts, occupying contiguous territory, and speaking a common language. For a far larger population 90 percent illiterate at the time it became politically independent, living on separate islands, speaking many different languages, and with an insignificant fraction trained in the professions, in skilled crafts, and with experience in taking

¹ *Democracy in America* by Alexis de Tocqueville, abridged edition, edited by Henry Steele Commager, Oxford University Press, pp. 85-86.

responsibility, a dozen years to find a workable method of governing themselves does not seem excessive.

Looking at Indonesia from this perspective, we conclude that it is unwarranted to expect development to occur quickly. Accordingly, we have put the major emphasis of our recommendations on programs that may take longer to yield their fruits than our own sometimes impatient country is accustomed to expect. We conclude that Indonesia at present has a limited capacity to absorb aid for new capital projects which are not accompanied by training and management aid. This does not mean that Indonesia cannot benefit from aid, but only that the aid should be appropriate to its present stage of development, and should help the country move to the next stage, when its capacity to absorb new capital will be greater. The aid Indonesia needs is substantial compared to that received in the past, if not in relation to what some other countries have received, and it certainly must be sustained. Economic development is a long-term goal and the program to carry it out must be equally long in term. Our recommendations have this perspective.

Our national interest calls for strengthening the economy of Indonesia. As the first means of doing so, the United States should commit itself to a sustained program of loans and grants, concentrated on training people and building institutions, on improving the nation's infrastructure, and on assisting the Indonesians to use their natural resources effectively. At the same time, we must be prepared to expand this initial commitment later into a larger loan program aimed at forwarding the economic progress of this vast country, while making it clear that such an expanded program cannot be carried out until Indonesia makes greater progress in putting its house in order.

APPENDIX A

INDONESIAN OFFICIALS VISITED BY MEMBERS OF THE UNITED STATES ECONOMIC SURVEY TEAM

DEPARTMENT OF FOREIGN AFFAIRS

- H.E. Dr. Subandrio, Minister for Foreign Affairs
Mr. Soewito Koesoemowidagdo, Secretary General
H.E. Madam Supeni (Ambassador at Large)
Mr. Basuki Djatiasmoro, Senior Officer attached to the Minister
Mr. Ibnu Suwongso Hamimzar, Deputy Chief of Protocol
Mr. Alex Ticoalu, Bureau of Protocol, Section for Ceremonies
Mr. S. Surjotjondro, Chief, Bureau of the Minister
Mr. Max Maranis, Chief of the Directorate for the Americas
Mr. Soemarjo, Deputy Chief, Directorate for the Americas
Mr. J. P. Poedjosoebroto, Directorate for the Americas, Chief of Division
for North American Affairs
Mr. Ganis Harsono, Chief of the Directorate for Information
Mr. Achmad Ponsen, Acting Chief, Directorate for Foreign Economic
Relations
Mr. Tan Hoo Tong, Officer attached to Acting Chief, Directorate for
Foreign Economic Relations
Mrs. C. Budiardjo, Officer attached to Acting Chief, Directorate for
Foreign Economic Relations
Mr. Abdul Sidik, Directorate for Foreign Economic Relations, Chief of
Section for the Americas
Mr. Mustadjab, Directorate for Foreign Economic Relations, Officer in
charge of United States of America
Mr. R. N. P. K. Hadinoto, Directorate for Foreign Economic Relations,
Commercial Division

BUREAU OF FINANCE AND ECONOMICS (FINEK), OFFICE OF THE FIRST MINISTER

- Dr. Moh. Saubari, Head
Dr. Imam Soedjahri, Deputy Head
Dr. R. H. B. Mochtan, Chief of Foreign Aid Section
Mr. Soemardi, Program Officer, Foreign Aid Section
Ir. Sie Kwat Soen, Assistant for Economic and Financial Affairs
Dr. Soehono, Chief of Communications Section
Dr. Sujoto, Chief of Legal Section
Dr. Tjong Yu Lian, Chief of Finance Section
Dr. Sudarno, Officer, Finance Section
Dr. Muljatno, Officer, Finance Section

NATIONAL PLANNING COUNCIL

H.E. Prof. H. Muhammad Yamin, Chairman (and Minister)

Dr. M. Hutasoit, Secretary General

Mr. A. H. Nasution, Secretary

Mr. P. Siahaan, High Official attached to the Chairman

DEPARTMENT OF DISTRIBUTION

H.E. Dr. J. Leimena, Deputy Chief Minister and Minister for Distribution

DEPARTMENT OF LAND COMMUNICATIONS, POST, TELECOMMUNICATION AND TOURISM

H.E. Lt. General Djatikoesoemo, Minister of Land Communications, Post, Telecommunication and Tourism

DEPARTMENT OF TRADE

H.E. Dr. Arifin Harahap, Minister for Trade

Mr. Ambijah Hadiwinoto, Secretary General

Dr. Latief, Senior Assistant to the Minister

DEPARTMENT OF BASIC INDUSTRIES AND MINING

H.E. Chaerul Saleh, Minister for Construction and Development

Dr. Anondo, Secretary General

Drs. Surjo Soediono, Chief, Cabinet of the Minister

Dr. Mahaga, Chief of Public Relations

Dr. Miss Soemiarasih Pramadio, Chief of Foreign Aid Section

Mr. Sardju Ismoenandar, President Director, BPU—Industry

Dr. Ukar B. Bratakusuma, President Director, BPU—Mining

Col. R. Pirngadie, President Director, BPU—Tin

Lt. Col. Tajib, Director, BPU—Coal Mining

Dr. Tampubolon, President Director, BPU—Coal Mining

Drs. Zakaria Raib, Chief, Industrialization Bureau

Dr. B. Sulasmoro, Petrol Bureau

Dr. Ridwan Mahmud, Petrol Bureau

Mr. Djajadi Hadikusumo, Chief of Geological Division

Dr. Sunardjo, Division of Shipping, Chief of Education/Training

Mr. Sumartono, Member of the Minister's Cabinet

DEPARTMENT OF BASIC EDUCATION AND CULTURE

H.E. Prof. Dr. Prijono, Minister for Basic Education and Culture

Mr. Arsjad, M.A., Secretary to the Minister

Mr. Subroto, Chief of Foreign Relations Section

Mr. Hadi Sumantri, Director, Bureau of Technical Education

DEPARTMENT OF PRODUCTION

Brig. General Soeprajogi, Minister of Production

DEPARTMENT OF HIGHER EDUCATION AND SCIENCES

H.E. Prof. Dr. Iwa Kusumasumantri, Minister for Higher Education and Sciences

Dr. Subroto, Chief of Foreign Contracts Section

Prof. Dr. M. Sardjito, President, Gadjah Mada University

Prof. Dr. Soedjono D. Poesponegoro, President, University of Indonesia

Prof. Anues Andiwilaja, University of Indonesia

Prof. Mohang Sitindjak, University of Indonesia

Prof. Dr. Ir. Mohamad Sadli, University of Indonesia

DEPARTMENT OF SEA COMMUNICATIONS

H.E. Dr. Abdulmutalib Danuningrat, Minister of Sea Communications

Dr. Ong Ping Liang, Director of Harbors

BANK INDONESIA

H.E. Dr. Soemarno, Governor, Bank Indonesia and Deputy Minister of Finance

Dr. Soerjadi, Managing Director

Dr. Oei Beng To, Deputy Director

Dr. Khouw Bian Tie, Director

DEPARTMENT OF AGRICULTURE

H.E. Brig. General Dr. Azis Saleh, Minister of Agriculture

Mr. Amien, Secretary General

Mr. Soesilo, Director for Manpower

Col. Soehardi, Special Assistant to the Minister

COUNCIL OF SCIENCE (under First Minister)

Dr. Sarwono, President

DEPARTMENT OF PEOPLE'S INDUSTRY

H.E. Dr. Soeharto, Minister for People's Industry

Mr. Achmad Sunartadirdja, Secretary General

Dr. Pri Sosroatmodjo, First Assistant to the Minister

Dr. Adnan Kusuma, Assistant to the Minister

Dr. O. Soebroto, Assistant to the Minister

Mr. Andakijomo, Director of State Enterprises

Mr. F. Soeharto, Official, Cigarette Trade Association

DEPARTMENT OF PUBLIC WORKS

H.E. Dr. Sardjono Dipokusumo, Minister for Public Works

Dr. Srigati Santoso, Secretary General

Dr. Danoenegoro, Assistant to the Minister

DEPARTMENT OF NATIONAL DEFENSE

H.E. General A. H. Nasution, Minister of National Security/Army Chief of Staff

Col. Taswin, Assistant Deputy II, Army Headquarters

Col. R. Md. Sudarman, Chief Military Historian, Deputy Commander Asian Games Project

Lt. Col. S. Tjokroprawiro, Army Headquarters

Major Sudjono Rosendro, Army Headquarters

SUPREME ADVISORY COUNCIL

H.E. Roeslan Abdulgani, Vice Chairman of the Supreme Advisory Council

DEPARTMENT OF VETERANS AFFAIRS

H.E. Brig. General Sambas Atmadinata, Minister for Veterans Affairs

STATE DEVELOPMENT BANK

Dr. Soemanang, President Director

Dr. Soetjipto, Director

Mr. Barmawie Alwie, Director

Dr. Darmawan Mangoenkoesoemo, Director

Mr. Djasman, Director

Mr. Soerjosoemarno, Secretary

DEPARTMENT OF FINANCE

H.E. R. M. Notohamiprodjo, Minister of Finance

Dr. Atmodiningrat, Secretary General

Dr. Pratikto, Treasurer General

Mr. Harsoadi, Deputy Treasurer General/Special Advisor to the Minister

Mr. Pandelaki, Director of Customs

DEPARTMENT OF LABOR

H.E. Ahem Erningpradja, Minister for Labor

Mr. Djohar Abdulmadjid, Chief of Foreign Relations Section

Mr. Soetomo, Director, Manpower Division

Mr. Krul Air, Manpower Division

Mr. Tatung Mahmud, Manpower Division

OFFICIALS OUTSIDE DJAKARTA

- His Highness Hamengku Buwono IX, Sultan of Jogjakarta
Dr. Soemardjan, Secretary to the Sultan and Secretary General of
BAPEKAN
Prof. Dr. Prajudi, Director of the National Institute of Administration
Dr. Bohm, Director of Teachers Vocational Training School, **Bandung**
Dean Darman, Faculty for Veterinary Sciences, **Bogor**
H.E. Radja Djundjungan Lubis, Governor of North Sumatra
Brig. General Suprpto, Deputy Chief of Staff for Sumatra (Army)
Dr. F. Hutagalung, Chief of Economic Section, Office of the Governor,
North Sumatra
Major Muluk Lubis, Staff of Reconstruction Officer, Second Military
District (North Sumatra)
Mr. Masjrikul Rifai, Director of Medan Branch, Bank Indonesia
Mr. A. M. Siregar, Director PPN (Government Estate Enterprises), North
Sumatra
Mr. Alan Zahar, Inspector of External Trade, North Sumatra
Dr. Tarip Harahap, Director of Public Works, North Sumatra
Lt. Col. Kaharudin Nasution, Governor, Riau Province
H.E. Sis Tjakraningrat, Deputy Governor, Riau Province
Col. Surjosumpeno, Military Commander of Third Military District (Central
Sumatra)
Lt. Col. Sujoto, Military Commander of Riau Military District (part of
third Military District)

Appendix Table B-1

CONSUMER PRICE INDEX FOR DJAKARTA, MARCH 1958 TO SEPTEMBER 1961

(Year ending February 28, 1958 = 100)

<i>Period</i>	<i>Food</i> (63.41 %)	<i>Housing</i> (10.77 %)	<i>Clothing & footwear</i> (8.51 %)	<i>Miscel- laneous</i> (17.31 %)	<i>General Index</i>
1958 Mar.	157	104	116	116	141
June	122	103	131	112	121
Sept.	148	106	137	127	138
Dec.	152	107	187	130	146
1959 Mar.	167	123	215	143	162
June	162	125	256	149	164
Sept.	167	133	272	164	172
Dec.	165	125	366	162	178
1960 Jan.	182	140	400	165	193
Feb.	179	147	494	172	201
Mar.	188	143	514	167	206
Apr.	201	145	566	178	222
May	203	146	586	178	225
June	212	148	639	185	237
July	216	151	666	198	244
Aug.	211	152	694	199	244
Sept.	206	151	667	206	239
Oct.	203	151	655	207	237
Nov.	202	151	620	208	233
Dec.	204	152	574	208	230
1961 Jan.	207	152	526	208	228
Feb.	225	153	511	211	239
Mar.	244	154	505	223	253
Apr.					253
May					253
June					249
July					250
Aug.					258
Sept.					288
Oct.					315

Note: The figures in brackets under group headings represent the group weights in the total index.

Source: Ministry of Labour.

Appendix Table B-2

BALANCE OF PAYMENTS OF INDONESIA

(Millions of dollars)

	1956	1957	1958	1959	1960	<i>1st half 1961 p</i>
<i>Goods and services, net</i>	-165	-85	-65	25	-62	-92
Merchandise, net ^a	99	196	160	235	154	14
Exports (f.o.b.) ^a	843	848	647	817	870	371
Imports (f.o.b.) ^a	-744	-652	-487	-582	-716	-357
Services, net	-264	-281	-225	-210	-216	-106
Investment income, net	-65	-85	-68	-78	-67	-29
Other	-199	-196	-157	-132	-149	-77
 <i>Means of financing net goods and services</i>	 159	 81	 74	 -2	 65	 142
Donations, net	10	12	12 ^b	17	37	
Private	2	—	—	—	—	
Governmental	8	12	12 ^a	17	37	
Private capital, net	1	3	5	1	20	24
Central Government loans received	-10	-4	58	121	98)
Increase of rupiah debt to U.S. ^c	36	46	8	9	28)
Other increases of liabilities and decreases of assets	-4	-5	-12 ^b	-8	-22) 20
Change in monetary position	126	29	3	-142	-96) 98
Net IMF position	28	—	—	-23	-19	
Other central inst. liabilities	38	-2	-27	-5	-11	
Short term assets (increase-)	23	25	29	-119	-41	
Monetary gold (increase-)	37	6	1	5	-25	
 <i>Net errors and omissions</i>	 6	 4	 -9	 -23	 -3	 -50

^a Based on adjusted exchange records.

^b Credit of \$177 million covering cancellation of trade debts owed to Japan under Indonesian-Japanese Reparations agreement of 1958 is excluded from "Donations". The corresponding decreases of \$60 million and \$117 million long and short term liabilities resulting from this cancellation are excluded from "Other increases of long-term liabilities and decreases of long term assets", and "Increases of other foreign short-term liabilities", respectively.

^c These are changes in Indonesian liabilities to the United States Government arising from purchases of United States surplus agricultural commodities.

p= preliminary.

Source: International Financial Statistics.

APPENDIX C

TABLES C-1 TO C-13

"A" PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Appendix Table C-1

SUMMARY OF "A" PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN
(in millions of rupiahs)

Project Category	Form of Expenditure	Total Expenditure	On projects not allocated by years	On Projects Allocated by Years								
				Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Cultural	Total	1,554	44	1,510	310	196	196	161	161	161	162	163
	Rupiahs	1,554	44	1,510	310	196	196	161	161	161	162	163
	Foreign Exchange	—	—	—	—	—	—	—	—	—	—	—
Educational	Total	16,261	—	16,261	2,123	2,107	2,092	2,061	1,965	1,965	1,973	1,975
	Rupiahs	16,261	—	16,261	2,123	2,107	2,092	2,061	1,965	1,965	1,973	1,975
	Foreign Exchange	—	—	—	—	—	—	—	—	—	—	—
Research	Total	2,653	465	2,188	745	650	645	28	30	30	30	30
	Rupiahs	749	215	534	196	156	148	6	7	7	7	7
	Foreign Exchange	1,904	250	1,654	549	494	497	22	23	23	23	23
Public Welfare	Total	6,188	—	6,188	879	879	880	881	964	565	570	570
	Rupiahs	5,963	—	5,963	852	852	853	853	936	537	540	540
	Foreign Exchange	225	—	225	27	27	27	28	28	28	30	30
Government	Total	3,632	—	3,632	555	569	569	387	388	388	388	388
	Rupiahs	3,632	—	3,632	555	569	569	387	388	388	388	388
	Foreign Exchange	—	—	—	—	—	—	—	—	—	—	—
Special Project	Total	30,000	30,000									
	Rupiahs) Foreign Exchange)	Not Distributed										
Food	Total	25,120	488	24,632	5,367	5,368	5,369	5,370	836	836	743	743
	Rupiahs	13,992	310	13,682	2,639	2,640	2,640	2,641	827	827	743	743
	Foreign Exchange	11,128	178	10,950	2,728	2,728	2,729	2,729	9	9	9	9

Appendix Table C-1 (cont.)

SUMMARY OF "A" PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN
(in millions of rupiahs)

Project Category	Form of Expenditure	Total Expenditure	On projects not allocated by years	On Projects Allocated by Years								
				Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Clothing	Total	28,945	180	28,765	5,624	5,624	5,624	2,538	2,538	2,538	2,139	2,140
	Rupiahs	14,240	110	14,130	2,769	2,768	2,767	1,225	1,225	1,225	1,075	1,076
	Foreign Exchange	14,705	70	14,635	2,855	2,856	2,857	1,313	1,313	1,313	1,064	1,064
Industry	Total	52,022	1,915	50,107	6,685	6,209	7,027	8,171	7,917	4,164	4,168	5,766
	Rupiahs	28,192	1,630	26,562	3,529	3,232	3,644	4,312	4,154	2,304	2,305	3,082
	Foreign Exchange	23,830	285	23,545	3,156	2,977	3,383	3,859	3,763	1,860	1,863	2,684
Health	Total	2,175	240	1,935	413	414	414	138	139	139	139	139
	Rupiahs	1,675	240	1,435	351	352	352	76	76	76	76	76
	Foreign Exchange	500	—	500	62	62	62	62	63	63	63	63
Transportation and Communications	Total	60,182	11,432	48,750	5,303	5,304	6,354	6,354	6,356	6,358	6,360	6,361
	Rupiahs	36,167	4,460	31,707	3,907	3,908	3,981	3,981	3,981	3,982	3,983	3,984
	Foreign Exchange	24,015	6,972	17,043	1,396	1,396	2,373	2,373	2,375	2,376	2,377	2,377
Finance	Total	11,268	—	11,268	2,794	2,795	2,795	2,628	128	128	—	—
	Rupiahs	10,518	—	10,518	2,644	2,645	2,645	2,528	28	26	—	—
	Foreign Exchange	750	—	750	150	150	150	100	100	100	—	—
Total All Projects	Total	240,000	44,764	195,236	30,798	30,115	31,965	28,717	21,422	17,272	16,672	18,275
	Rupiahs	132,943	7,009	125,934	19,875	19,425	19,887	18,231	13,748	11,500	11,243	12,025
	Foreign Exchange	77,057	7,755	69,302	10,923	10,690	12,078	10,486	7,674	5,772	5,429	6,250
	Not Distributed ^a	30,000	30,000	—	—	—	—	—	—	—	—	—

^a Special Project is not distributed between rupiahs and foreign exchange.

Appendix Table C-2
CULTURAL PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

<i>Name of Project</i>	<i>Number of Years</i>	<i>Form of Expenditure</i>	<i>Expenditures (in millions of rupiahs)</i>								
			<i>Total</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>	<i>1968/69</i>
Collection of Cultural Heritage	8	Total	50	6	6	6	6	6	6	7	7
		Rupiahs	<u>50</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>6</u>	<u>7</u>	<u>7</u>
		Foreign Exchange	—	—	—	—	—	—	—	—	—
National Museum	8	Total	313	39	39	39	39	39	39	39	40
		Rupiahs	<u>313</u>	<u>39</u>	<u>40</u>						
		Foreign Exchange	—	—	—	—	—	—	—	—	—
National Art Gallery	8	Total	469	58	58	58	59	59	59	59	59
		Rupiahs	<u>469</u>	<u>58</u>	<u>58</u>	<u>58</u>	<u>59</u>	<u>59</u>	<u>59</u>	<u>59</u>	<u>59</u>
		Foreign Exchange	—	—	—	—	—	—	—	—	—
National Library	8	Total	453	56	56	56	57	57	57	57	57
		Rupiahs	<u>453</u>	<u>56</u>	<u>56</u>	<u>56</u>	<u>57</u>	<u>57</u>	<u>57</u>	<u>57</u>	<u>57</u>
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Language and Literature Foundation	N.A.	Total	44								
		Rupiahs	<u>44</u>								
		Foreign Exchange	—								
Cultural Garden	3	Total	110	36	37	37					
		Rupiahs	<u>110</u>	<u>36</u>	<u>37</u>	<u>37</u>					
		Foreign Exchange	—	—	—	—					

Appendix Table C-2 (cont.)

CULTURAL PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

<i>Name of Project</i>	<i>Number of Years</i>	<i>Form of Expenditure</i>	<i>Expenditures (in millions of rupiahs)</i>									
			<i>Total</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>	<i>1968/69</i>	
Translation of the Koran	1	Total	62	62								
		Rupiahs	62	62								
		Foreign Exchange	—	—								
Translation of the Bible	1	Total	33	33								
		Rupiahs	33	33								
		Foreign Exchange	—	—								
Translation of Weda and Dhamma Paddha	1	Total	20	20								
		Rupiahs	20	20								
		Foreign Exchange	—	—								
Total Cultural		Total	1,554									
		Rupiahs	1,554									
		Foreign Exchange	—									
Allocated by Year		Total	1,510	310	196	196	161	161	161	162	163	
		Rupiahs	1,510	310	196	196	161	161	161	162	163	
		Foreign Exchange	—	—	—	—	—	—	—	—	—	
Not Allocated by Year		Total	44									
		Rupiahs	44									
		Foreign Exchange	—									

Appendix Table C-3

EDUCATIONAL PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Expenditures (in millions of rupiahs) ^a								
		Total	1961	1962	1963	1964	1965	1966	1967	1968/69
University Gadjah Mada	8	1,650	206	206	206	206	206	206	207	207
University of Indonesia	8	1,400	175	175	175	175	175	175	175	175
University of Airlangga	8	950	118	118	119	119	119	119	119	119
University of Hasaruddin	8	700	87	87	87	87	88	88	88	88
University of North Sumatra	8	700	87	87	87	87	88	88	88	88
University of Andalas	8	700	87	87	87	87	88	88	88	88
University of Padjadjaran	8	1,050	131	131	131	131	131	131	132	132
Institute of Technology	8	1,082	135	135	135	135	135	135	136	136
University of Sriwidjaja	8	250	31	31	31	31	31	31	32	32
University of Kalimantan	8	250	31	31	31	31	31	31	32	32
University of Moluccas	8	250	31	31	31	31	31	31	32	32
Private Universities	8	250	31	31	31	31	31	31	32	32
Middle Technical Schools	8	156	19	19	19	19	20	20	20	20
Middle Technical Schools	8	132	16	16	16	16	17	17	17	17
Technical Teachers' Colleges	8	84	10	10	10	10	11	11	11	11
Technical Teachers' Colleges	3	12	4	4	4					
Technical Training Course	8	48	6	6	6	6	6	6	6	6
Technical Schools	8	1,081	135	135	135	135	135	135	135	136
Technical Schools	6	56	—	—	9	9	9	9	10	10
Academy of Public Works	1	4	4							
Private Technical Education	8	279	34	35	35	35	35	35	35	35
Academy of Agriculture	8	30	3	3	4	4	4	4	4	4
Veterans' Academy of Development	2	13	6	7						
Higher Institution for Textile Industry	2	4	2	2						
Academy of Navigation	3	8	2	3	3					

Appendix Table C-3 (cont.)

EDUCATIONAL PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Expenditures (in millions of rupiahs) ^a								
		Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Navigation and Ship Building	3	60	20	20	20					
P. T. T. Personnel Training	8	596	74	74	74	74	75	75	75	75
Institute for Cinematography	1	10	10							
Academy of Sugar Industry	1	2	2							
Analysts Institute	8	88	11	11	11	11	11	11	11	11
Hotel Personnel Training	1	4	4							
Senior Agricultural High School	2	20	10	10						
Quarantine Training	2	2	1	1						
Senior Forestry Mid. School	2	4	2	2						
Senior Fishery Mid. School	2	4	2	2						
Senior Veterinary Mid. School	2	4	2	2						
Senior Teachers College	8	900	112	112	112	112	113	113	113	113
Senior Domestic Science Teachers College	8	60	7	7	7	7	8	8	8	8
Senior Middle School	8	268	33	33	33	33	34	34	34	34
Primary School	8	2,625	328	328	328	328	328	328	328	329
Anti-Illiteracy, Social Courses, Libraries	4	423	105	106	106	106				
Vocational Training in Navigation Economy	3	12	4	4	4					
Training Institute for Deck Officers, Engineers, Wireless Operators	8	40	5	5	5	5	5	5	5	5
Total Education		16,261	2,123	2,107	2,092	2,061	1,965	1,965	1,973	1,975

^a All planned expenditures for Educational Projects are in the form of rupiahs.

Appendix Table C-4
RESEARCH PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

<i>Name of Project</i>	<i>Number of Years</i>	<i>Form of Expenditure</i>	<i>Expenditures (in millions of rupiahs)</i>							
			<i>Total</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>
Institute for Chemistry	3	Total	262.5	87	87	88.5				
		Rupiahs	60	20	20	20				
		Foreign Exchange	202.5	67	67	68.5				
Institute for Physics	3	Total	262.5	87	87	88.5				
		Rupiahs	60	20	20	20				
		Foreign Exchange	202.5	67	67	68.5				
Institute for Geology and Mining	3	Total	700	233	233	234				
		Rupiahs	160	53	53	54				
		Foreign Exchange	540	180	180	180				
Institute for Metallurgy	3	Total	175	58	58	59				
		Rupiahs	40	13	13	14				
		Foreign Exchange	135	45	45	45				
Institute for Electronics	3	Total	175	58	58	59				
		Rupiahs	40	13	13	14				
		Foreign Exchange	135	45	45	45				
Institute for Biology	3	Total	262	87	87	88				
		Rupiahs	60	20	20	20				
		Foreign Exchange	202	67	67	68				
Institute for Economy and Society	2	Total	25	12	13					
		Rupiahs	20	10	10					
		Foreign Exchange	5	2	3					

Appendix Table C-4 (cont.)

RESEARCH PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

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Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Research on Field of Geology and Mining	N.A.	Total	200								
		Rupiahs	65								
		Foreign Exchange	135								
Aerial	1	Total	96	96							
		Rupiahs	40	40							
		Foreign Exchange	56	56							
Research on Industry	N.A.	Total	100								
		Rupiahs	60								
		Foreign Exchange	40								
Research on Food Production	N.A.	Total	50								
		Rupiahs	40								
		Foreign Exchange	10								
Research on Estates and Forestry	N.A.	Total	75								
		Rupiahs	50								
		Foreign Exchange	25								
Postal, Telegraph and Telephone Research Laboratory	8	Total	100	12	12	12	12	13	13	13	13
		Rupiahs	54	7	7	6	6	7	7	7	7
		Foreign Exchange	46	5	5	6	6	6	6	6	6
State Railway Research	8	Total	100	12	12	12	12	13	13	13	13
		Rupiahs	—	—	—	—	—	—	—	—	—
		Foreign Exchange	100	12	12	12	12	13	13	13	13

Appendix Table C-4 (cont.)

RESEARCH PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Research Aviation and Aeroplane Production	8	Total	30	3	3	4	4	4	4	4	4
		Rupiahs	—	—	—	—	—	—	—	—	—
		Foreign Exchange	30	3	3	4	4	4	4	4	4
Research Promotion in Other Important Fields	N.A.	Total	40								
		Rupiahs	—								
		Foreign Exchange	40								
Total Research Group		Total	2,653								
		Rupiahs	749								
		Foreign Exchange	1,904								
Allocated by Years		Total	2,188	745	650	645	28	30	30	30	30
		Rupiahs	534	196	156	148	6	7	7	7	7
		Foreign Exchange	1,654	549	494	497	22	23	23	23	23
Not Allocated by Years		Total	465								
		Rupiahs	215								
		Foreign Exchange	250								

Appendix Table C-5

PUBLIC WELFARE PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Small Public Hospital and Combatting Public Diseases	8	Total	1,245	155	155	155	156	156	156	156	156
		Rupiahs	1,245	155	155	155	156	156	156	156	156
		Foreign Exchange	—	—	—	—	—	—	—	—	
Polyclinic Functioning as Health Center	8	Total	730	91	91	91	91	91	91	92	92
		Rupiahs	730	91	91	91	91	91	91	92	92
		Foreign Exchange	—	—	—	—	—	—	—	—	
Central Public Hospital	4	Total	330					82	82	83	83
		Rupiahs	330					82	82	83	83
		Foreign Exchange	—					—	—	—	
Housing Bank	5	Total	2,000	400	400	400	400	400			
		Rupiahs	2,000	400	400	400	400	400			
		Foreign Exchange	—	—	—	—	—	—			
City Planning Program Including Capital City	8	Total	130	16	16	16	16	16	16	17	17
		Rupiahs	40	5	5	5	5	5	5	5	5
		Foreign Exchange	90	11	11	11	11	11	11	12	12
City Planning Program	8	Total	76	9	9	9	9	10	10	10	10
		Rupiahs	31	4	4	4	3	4	4	4	4
		Foreign Exchange	45	5	5	5	6	6	6	6	6
City Planning Program	8	Total	290	36	36	36	36	36	36	37	37
		Rupiahs	200	25	25	25	25	25	25	25	25
		Foreign Exchange	90	11	11	11	11	11	11	12	12

Appendix Table C-5 (cont.)

PUBLIC WELFARE PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Drinking water. Improvement and Increase of Drinking Water	8	Total	787	98	98	98	98	98	99	99	99
		Rupiahs	787	98	98	98	98	98	99	99	99
Social Welfare. Rehabilitation of Disabled Persons	8	Foreign Exchange	—	—	—	—	—	—	—	—	—
		Total	198	24	24	25	25	25	25	25	25
Village Social Institution (Including Information, etc.)	8	Rupiahs	198	24	24	25	25	25	25	25	25
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Welfare of Farmers and Fishermen	8	Total	202	25	25	25	25	25	25	26	26
		Rupiahs	202	25	25	25	25	25	25	26	26
Total Public Welfare	8	Foreign Exchange	—	—	—	—	—	—	—	—	—
		Total	200	25	25	25	25	25	25	25	25
Transmigration	8	Rupiahs	200	25	25	25	25	25	25	25	25
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Total Public Welfare	8	Total	6,188	879	879	880	881	964	565	570	570
		Rupiahs	5,963	852	852	853	853	936	537	540	540
Transmigration	8	Foreign Exchange	225	27	27	27	28	28	28	30	30
		Total	1,000	125	125	125	125	125	125	125	125
Total Public Welfare	8	Rupiahs	1,000	125	125	125	125	125	125	125	125
		Foreign Exchange	—	—	—	—	—	—	—	—	—

Appendix Table C-6

GOVERNMENT PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Depernas	8	Total	100	12	12	12	12	13	13	13	13
		Rupiahs	100	12	12	12	12	13	13	13	13
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Cooperative	3	Total	500	166	167	167					
		Rupiahs	500	166	167	167					
		Foreign Exchange	—	—	—	—					
Modern Prison	2	Total	26	—	13	13					
		Rupiahs	26	—	13	13					
		Foreign Exchange	—	—	—	—					
Police	8	Total	2,000	250	250	250	250	250	250	250	250
		Rupiahs	2,000	250	250	250	250	250	250	250	250
		Foreign Exchange	—	—	—	—	—	—	—	—	—
National Law Foundations	3	Total	6	2	2	2					
		Rupiahs	6	2	2	2					
		Foreign Exchange	—	—	—	—					
Total Government		Total	3,632	555	569	569	387	388	388	388	388
		Rupiahs	3,632	555	569	569	387	388	388	388	388
		Foreign Exchange	—	—	—	—	—	—	—	—	—

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Table C-7

SPECIAL DEVELOPMENT PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Project in Special Field	N.A.	Total	30,000
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Appendix Table C-8

FOOD PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Increase of Rice Centers	4	Total	18,135	4,533	4,534	4,534	4,534				
		Rupiahs	7,255	1,813	1,814	1,814	1,814				
		Foreign Exchange	10,880	2,720	2,720	2,720	2,720				
Irrigation (Repairs, Expansion, New Projects)	8	Total	5,818	727	727	727	727	727	727	728	728
		Rupiahs	5,818	727	727	727	727	727	727	728	728
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Irrigation (Continuation)	6	Total	567	94	94	94	95	95	95		
		Rupiahs	567	94	94	94	95	95	95		
		Foreign Exchange	—	—	—	—	—	—	—		
Poultry Farming	N.A.	Total	103								
		Rupiahs	45								
		Foreign Exchange	58								
Construction of Sheds and Rice Silos	N.A.	Total	250								
		Rupiahs	250								
		Foreign Exchange	—								
Land Fishery	8	Total	102	12	12	13	13	13	13	13	13
		Rupiahs	32	4	4	4	4	4	4	4	4
		Foreign Exchange	70	8	8	9	9	9	9	9	9

Appendix Table C-8 (cont.)

FOOD PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Intensification of Soy Bean Cultivation	8	Total	10	1	1	1	1	1	1	2	2
		Rupiahs	10	1	1	1	1	1	1	2	2
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Intensification of Corn Cultivation	N.A.	Total	15								
		Rupiahs	15								
		Foreign Exchange	—								
Cattle Breeding (Cows)	N.A.	Total	120								
		Rupiahs	—								
		Foreign Exchange	120								
Total Food		Total	25,120								
		Rupiahs	13,992								
		Foreign Exchange	11,128								
Allocated by Years		Total	24,632	5,367	5,368	5,369	5,370	836	836	743	743
		Rupiahs	13,682	2,639	2,640	2,640	2,641	827	827	734	734
		Foreign Exchange	10,950	2,728	2,728	2,729	2,729	9	9	9	9
Not Allocated by Years		Total	488								
		Rupiahs	310								
		Foreign Exchange	178								

Appendix Table C-9

CLOTHING PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Spinnery	3	Total	7,820	2,606	2,607	2,607					
		Rupiahs	3,910	1,303	1,304	1,303					
		Foreign Exchange	3,910	1,303	1,303	1,304					
Completion of Textile Industry Project	3	Total	1,440	480	480	480					
		Rupiahs	720	240	240	240					
		Foreign Exchange	720	240	240	240					
Sewing Thread	N.A.	Total	180	60	60	60					
		Rupiahs	110	37	37	36					
		Foreign Exchange	70	23	23	24					
Cotton	6	Total	2,400	400	400	400	400	400	400		
		Rupiahs	900	150	150	150	150	150	150		
		Foreign Exchange	1,500	250	250	250	250	250	250		
Rayon	8	Total	16,830	2,103	2,103	2,104	2,104	2,104	2,104	2,104	2,104
		Rupiahs	8,415	1,052	1,051	1,052	1,052	1,052	1,052	1,052	1,052
		Foreign Exchange	8,415	1,051	1,052	1,052	1,052	1,052	1,052	1,052	1,052
Hemp	8	Total	130	16	16	16	16	16	16	17	17
		Rupiahs	130	16	16	16	16	16	16	17	17
		Foreign Exchange	—	—	—	—	—	—	—	—	—

Appendix Table C-9 (cont.)

CLOTHING PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

<i>Name of Project</i>	<i>Number of Years</i>	<i>Form of Expenditure</i>	<i>Expenditures (in millions of rupiahs)</i>								
			<i>Total</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>	<i>1968/69</i>
Mosquito Net (Tulle) Knitting	8	Total	145	18	18	18	18	18	18	18	19
		Rupiahs	55	7	7	7	7	7	7	6	7
		Foreign Exchange	90	11	11	11	11	11	11	12	12
Total Clothing		Total	28,945								
		Rupiahs	14,240								
		Foreign Exchange	14,705								
Allocated by Years		Total	28,765	5,624	5,624	5,624	2,538	2,538	2,538	2,139	2,140
		Rupiahs	14,130	2,769	2,768	2,767	1,225	1,225	1,225	1,075	1,076
		Foreign Exchange	14,635	2,855	2,856	2,857	1,313	1,313	1,313	1,064	1,064
Not Allocated by Years		Total	180								
		Rupiahs	110								
		Foreign Exchange	70								

Appendix Table C-10

INDUSTRY PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)							
			Total	1961	1962	1963	1964	1965	1966	1967 1968/69
Superphosphate Factory	4	Total	615				153	154	154	154
		Rupiahs	300				75	75	75	75
		Foreign Exchange	315				78	79	79	79
Ammonium-Sulphate Ammonia, Sulphuric Acid	4	Totals	1,000				250	250	250	250
		Rupiahs	500				125	125	125	125
		Foreign Exchange	500				125	125	125	125
Initial Stages of Chemical and Petro-Chemical Industry	4	Total	1,750				437	437	438	438
		Rupiahs	750				187	187	188	188
		Foreign Exchange	1,000				250	250	250	250
Sulphur	5	Total	50	10	10	10	10	10		
		Rupiahs	18	3	3	4	4	4		
		Foreign Exchange	32	7	7	6	6	6		
Electric Power (Hydro-electric, Steam, Diesel-power, Turbo-gas)	5	Total	14,150	2,830	2,830	2,830	2,830	2,830		
		Rupiahs	7,075	1,415	1,415	1,415	1,415	1,415		
		Foreign Exchange	7,075	1,415	1,415	1,415	1,415	1,415		
Petroleum	4	Total	3,850	962	962	963	963			
		Rupiahs	2,050	512	512	513	513			
		Foreign Exchange	1,800	450	450	450	450			
Coal and Coke (Repairs and Expansion, Purchase of Colliers)	5	Total	4,584	916	917	917	917	917		
		Rupiahs	2,178	435	436	436	436	435		
		Foreign Exchange	2,406	481	481	481	481	482		

Appendix Table C-10 (cont.)
INDUSTRY PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)									
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69	
Aluminum	1	Total	1,749									1,749
		Rupiahs	850									
		Foreign Exchange	899									899
Tin Smelter	3	Total	250	83	83	84						
		Rupiahs	142	47	47	48						
		Foreign Exchange	108	36	36	36						
Iron and Steel	5	Total	4,931				986	986	986	986	987	
		Rupiahs	3,050				610	610	610	610	610	
		Foreign Exchange	1,881				376	376	376	376	377	
Asphalt	1	Total	480	480								
		Rupiahs	300	300								
		Foreign Exchange	180	180								
Other Mining Industries	4	Total	300					75	75	75	75	
		Rupiahs	300					75	75	75	75	
		Foreign Exchange	—				—	—	—	—	—	
Cement Factories	8	Total	3,875	484	484	484	484	484	485	485	485	
		Rupiahs	2,313	289	289	289	289	289	290	289	289	
		Foreign Exchange	1,562	195	195	195	195	195	195	196	196	
Workshops	8	Total	500	62	62	62	62	63	63	63	63	
		Rupiahs	—	—	—	—	—	—	—	—	—	—
		Foreign Exchange	500	62	62	62	62	63	63	63	63	

Appendix Table C-10 (cont.)

INDUSTRY PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Paper Factories	8	Total	2,170	271	271	271	271	271	271	272	272
		Rupiahs	1,194	149	149	149	149	149	149	150	150
		Foreign Exchange	976	122	122	122	122	122	122	122	122
Shellac	8	Total	25	3	3	3	3	3	3	3	4
		Rupiahs	24	3	3	3	3	3	3	3	3
		Foreign Exchange	1	—	—	—	—	—	—	—	1
Forestry	8	Total	300	37	37	37	37	38	38	38	38
		Rupiahs	300	37	37	37	37	38	38	38	38
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Rice Mills	8	Total	375	46	47	47	47	47	47	47	47
		Rupiahs	375	46	47	47	47	47	47	47	47
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Government's Salt	8	Total	456	57	57	57	57	57	57	57	57
		Rupiahs	411	52	52	52	51	51	51	51	51
		Foreign Exchange	45	5	5	5	6	6	6	6	6
People's Salt	8	Total	250	31	31	31	31	31	31	32	32
		Rupiahs	250	31	31	31	31	31	31	32	32
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Sugar Factories	6	Total	5,000	—	—	833	833	833	833	834	834
		Rupiahs	2,500	—	—	417	417	416	416	417	417
		Foreign Exchange	2,500	—	—	416	416	417	417	417	417

Appendix Table C-10 (cont.)

INDUSTRY PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Coconut Oil Factories	8	Total	500	62	62	62	62	62	63	63	64
		Rupiahs	225	28	28	28	28	28	28	28	29
		Foreign Exchange	275	34	34	34	34	34	35	35	35
Soap Factories	8	Total	100	12	12	12	12	13	13	13	13
		Rupiahs	50	6	6	6	6	7	7	6	6
		Foreign Exchange	50	6	6	6	6	6	6	7	7
Gunny/Marsh Palm Bag Factories	8	Total	1,086	134	136	136	136	136	136	136	136
		Rupiahs	543	67	68	68	68	68	68	68	68
		Foreign Exchange	543	67	68	68	68	68	68	68	68
Tanneries	3	Total	25	8	8	9					
		Rupiahs	25	8	8	9					
		Foreign Exchange	—	—	—	—					
Rubber (Sheet, Tires and Articles)	4	Total	245	61	61	61	62				
		Rupiahs	145	36	36	36	37				
		Foreign Exchange	100	25	25	25	25				
Ceramic Factory	4	Total	300	75	75	75	75				
		Rupiahs	150	38	38	37	37				
		Foreign Exchange	150	37	37	38	38				
Kaolin Refinery	N.A.	Total	20								
		Rupiahs	10								
		Foreign Exchange	10								

Appendix Table C-10 (cont.)

INDUSTRY PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Fireproofing Materials	2	Total	40	20	20						
		Rupiahs	<u>20</u>	<u>10</u>	<u>10</u>						
		Foreign Exchange	20	10	10						
Glassware Factory (Drinking glasses and bottles)	5	Total	105	—	—	—	21	21	21	21	21
		Rupiahs	<u>50</u>	—	—	—	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>	<u>10</u>
		Foreign Exchange	55	—	—	—	11	11	11	11	11
Bulb Factories	4	Total	115	28	29	29	29				
		Rupiahs	<u>46</u>	<u>11</u>	<u>12</u>	<u>12</u>	<u>11</u>				
		Foreign Exchange	69	17	17	17	18				
Glassware Factory (Window panes, panels, etc.)	4	Total	40	10	10	10	10				
		Rupiahs	<u>20</u>	<u>5</u>	<u>5</u>	<u>5</u>	<u>5</u>				
		Foreign Exchange	20	5	5	5	5				
Glassware Factory (Pharmaceutical uses)	4	Total	16	4	4	4	4				
		Rupiahs	<u>8</u>	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>				
		Foreign Exchange	8	2	2	2	2				
Continuation of Incomplete Project of L.P. 31 ^a	N.A.	Total	375								
		Rupiahs	<u>200</u>								
		Foreign Exchange	175								

^a Not otherwise explained in available material.

Appendix Table C-10 (cont.)

INDUSTRY PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Atom Reactor	5	Total	375	—	—	—	75	75	75	75	75
		Rupiahs	150	—	—	—	30	30	30	30	30
		Foreign Exchange	225	—	—	—	45	45	45	45	45
Industry of Educational Equipment	4	Total	500					125	125	125	125
		Rupiahs	250					62	63	62	63
		Foreign Exchange	250					63	62	63	62
Industry of Telecommunication	N.A.	Total	200								
		Rupiahs	100								
		Foreign Exchange	100								
Ship Building Industry	N.A.	Total	1,320								
		Rupiahs	1,320								
		Foreign Exchange	—								
Total Industry		Total	52,022								
		Rupiahs	28,192								
		Foreign Exchange	23,830								
Allocated by Years		Total	50,107	6,685	6,209	7,027	8,171	7,917	4,104	4,168	5,766
		Rupiahs	26,562	3,529	3,232	3,644	4,312	4,154	2,304	2,305	3,082
		Foreign Exchange	23,545	3,156	2,977	3,383	3,859	3,763	1,860	1,863	2,684
Not Allocated by Years		Total	1,915								
		Rupiahs	1,630								
		Foreign Exchange	285								

Appendix Table C-11

HEALTH PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

<i>Name of Project</i>	<i>Number of Years</i>	<i>Form of Expenditure</i>	<i>Expenditures (in millions of rupiahs)</i>								
			<i>Total</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967</i>	<i>1968/69</i>
Processing of Medicines	3	Total	825	275	275	275					
		Rupiahs	825	275	275	275					
		Foreign Exchange	—	—	—	—					
Antibiotics	8	Total	1,110	138	139	139	138	139	139	139	139
		Rupiahs	610	76	77	77	76	76	76	76	76
		Foreign Exchange	500	62	62	62	62	63	63	63	63
Medical Supplies Factory, Protein Institute, Institute of Foot-and-Mouth Diseases	N.A.	Total	240								
		Rupiahs	240								
		Foreign Exchange	—								
Total Health		Total	2,175								
		Rupiahs	1,675								
		Foreign Exchange	500								
Allocated by Years		Total	1,935	413	414	414	138	139	139	139	139
		Rupiahs	1,435	351	352	352	76	76	76	76	76
		Foreign Exchange	500	62	62	62	62	63	63	63	63
Not Allocated by Years		Total	240								
		Rupiahs	240								
		Foreign Exchange	—								

Appendix Table C-12

TRANSPORTATION AND COMMUNICATION PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)									
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69	
Roads (Equipment, Personnel Training)	8	Total	1,450	181	181	181	181	181	181	181	182	182
		Rupiahs	100	13	13	12	12	12	12	12	13	13
		Foreign Exchange	1,350	168	168	169	169	169	169	169	169	169
Road Building, New	8	Total	8,985	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,123	1,124
		Rupiahs	8,029	1,004	1,004	1,004	1,004	1,003	1,003	1,003	1,003	1,004
		Foreign Exchange	956	119	119	119	119	120	120	120	120	120
Modernization of Asphalt State Highways	8	Total	1,693	211	211	211	212	212	212	212	212	212
		Rupiahs	1,693	211	211	211	212	212	212	212	212	212
		Foreign Exchange	—	—	—	—	—	—	—	—	—	—
Hardening Gravel (Sandy) State Highways	8	Total	2,582	322	322	323	323	323	323	323	323	323
		Rupiahs	2,582	322	322	323	323	323	323	323	323	323
		Foreign Exchange	—	—	—	—	—	—	—	—	—	—
Hardening of Provincial Gravel Roads	8	Total	8,115	1,014	1,014	1,014	1,014	1,014	1,015	1,015	1,015	1,015
		Rupiahs	8,115	1,014	1,014	1,014	1,014	1,014	1,015	1,015	1,015	1,015
		Foreign Exchange	—	—	—	—	—	—	—	—	—	—
Hardening of Regency (County) Roads	8	Total	2,674	334	334	334	334	334	334	334	335	335
		Rupiahs	2,674	334	334	334	334	334	334	334	335	335
		Foreign Exchange	—	—	—	—	—	—	—	—	—	—
Bridges and Ferry Boats	8	Total	1,000	125	125	125	125	125	125	125	125	125
		Rupiahs	600	75	75	75	75	75	75	75	75	75
		Foreign Exchange	400	50	50	50	50	50	50	50	50	50

Appendix Table C-12 (cont.)

TRANSPORTATION AND COMMUNICATION PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Purchase of Buses and Trucks	N.A.	Total	2,400								
		Rupiahs	—								
		Foreign Exchange	2,400								
Workshops, Auto Transport	N.A.	Total	1,700								
		Rupiahs	—								
		Foreign Exchange	1,700								
Assembling Vehicles	N.A.	Total	290								
		Rupiahs	40								
		Foreign Exchange	250								
Spare Auto Parts Manufacturing	N.A.	Total	34								
		Rupiahs	20								
		Foreign Exchange	14								
Railway Transport	8	Total	7,000	875	875	875	875	875	875	875	875
		Rupiahs	3,000	375	375	375	375	375	375	375	375
		Foreign Exchange	4,000	500	500	500	500	500	500	500	500
Building Up Postal Service	N.A.	Total	1,590								
		Rupiahs	1,090								
		Foreign Exchange	500								
Telegraph Service	8	Total	651	81	81	81	81	81	82	82	82
		Rupiahs	329	41	41	41	41	41	42	41	41
		Foreign Exchange	322	40	40	40	40	40	40	41	41

Appendix Table C-12 (cont.)

TRANSPORTATION AND COMMUNICATION PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Telephone Service	8	Total	4,904	613	613	613	613	613	613	613	613
		Rupiahs	2,234	280	280	279	279	279	279	279	279
		Foreign Exchange	2,670	333	333	334	334	334	334	334	334
Radio Service	8	Total	520	65	65	66	66	66	66	66	66
		Rupiahs	286	35	35	36	36	36	36	36	36
		Foreign Exchange	240	30	30	30	30	30	30	30	30
Merchant Fleet (Coastal and Ocean)	6	Total	6,290			1,048	1,048	1,048	1,048	1,049	1,049
		Rupiahs	440			73	73	73	73	74	74
		Foreign Exchange	5,850			975	975	975	975	975	975
Motorization of Sailing Fleet	8	Total	866	108	108	108	108	108	108	109	109
		Rupiahs	346	43	43	43	43	43	43	44	44
		Foreign Exchange	520	65	65	65	65	65	65	65	65
Rehabilitation and Construction of Shipping Safety Facilities	8	Total	1,527	190	191	191	191	191	191	191	191
		Rupiahs	989	123	124	124	124	124	124	123	123
		Foreign Exchange	538	67	67	67	67	67	67	68	68
Harbor Construction and Improvement	8	Total	1,450	181	181	181	181	181	181	182	182
		Rupiahs	1,450	181	181	181	181	181	181	182	182
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Airport Construction Improvement and Equipment	8	Total	1,480	185	185	185	185	185	185	185	185
		Rupiahs	1,125	141	141	141	141	141	140	140	140
		Foreign Exchange	355	44	44	44	44	44	45	45	45

Appendix Table C-12 (cont.)

TRANSPORTATION AND COMMUNICATION PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

Name of Project	Number of Years	Form of Expenditure	Expenditures (in millions of rupiahs)								
			Total	1961	1962	1963	1964	1965	1966	1967	1968/69
Aircraft Repair Shops	N.A.	Total	75								
		Rupiahs	25								
		Foreign Exchange	50								
Aircraft Equipment	8	Total	900	112	112	112	112	113	113	113	113
		Rupiahs	—	—	—	—	—	—	—	—	—
		Foreign Exchange	900	112	112	112	112	113	113	113	113
Hangars, Warehouses, etc. for Aviation	8	Total	500	62	62	62	62	63	63	63	63
		Rupiahs	500	62	62	62	62	63	63	63	63
		Foreign Exchange	—	—	—	—	—	—	—	—	—
Air Safety Facilities	N.A.	Total	1,500								
		Rupiahs	500								
		Foreign Exchange	1,000								
Total Transportation and Communications		Total	60,182								
		Rupiahs	36,167								
		Foreign Exchange	24,015								
Allocated by Years		Total	48,750	5,303	5,304	6,354	6,354	6,356	6,358	6,360	6,361
		Rupiahs	31,707	3,907	3,908	3,981	3,981	3,981	3,982	3,983	3,984
		Foreign Exchange	17,043	1,396	1,396	2,373	2,373	2,375	2,376	2,377	2,377
Not Allocated by Years		Total	11,432								
		Rupiahs	4,460								
		Foreign Exchange	6,972								

Appendix Table C-13

FINANCE (INCLUDING TOURISM) PROJECT EXPENDITURES IN INDONESIAN DEVELOPMENT PLAN

<i>Name of Project</i>	<i>Number of Years</i>	<i>Form of Expenditure</i>	<i>Expenditures (in millions of rupiahs)</i>							
			<i>Total</i>	<i>1961</i>	<i>1962</i>	<i>1963</i>	<i>1964</i>	<i>1965</i>	<i>1966</i>	<i>1967 1968/69</i>
Tin	6	Total	768	128	128	128	128	128	128	
		Rupiahs	168	28	28	28	28	28	28	
		Foreign Exchange	600	100	100	100	100	100	100	
Rural Development Bank	4	Total	10,000	2,500	2,500	2,500	2,500			
		Rupiahs	10,000	2,500	2,500	2,500	2,500			
		Foreign Exchange	—	—	—	—	—			
Tourism	3	Total	500	166	167	167				
		Rupiahs	350	116	117	117				
		Foreign Exchange	150	50	50	50				
Total Finance		Total	11,268	2,794	2,795	2,795	2,628	128	126	
		Rupiahs	10,518	2,644	2,645	2,645	2,528	28	28	
		Foreign Exchange	750	150	150	150	100	100	100	

Appendix Table D-1

UNITED STATES ECONOMIC ASSISTANCE TO INDONESIA (Obligations and commitments, in millions of dollars)

	1950	1951	1952	1953	1954	1955	1956
<i>Mutual Security Program</i>	39.7 ^a	8.0	-1.9	13.2	4.4	7.2	11.1
ICA	39.7 ^a	8.0	-1.9	13.2	4.4	7.2	11.1
Technical Cooperation	—	0.1	0.1	4.1	3.5	5.7	7.0
Other ICA	39.7 ^a	7.9	-1.9	9.1	0.9	1.5	4.1
Development Loan Fund	—	—	—	—	—	—	—
<i>Other Economic Assistance</i>	100.0	—	—	—	0.1	0.2	78.1
PL 480, Title I, Planned for Grants and Loans	—	—	—	—	—	—	77.4
Sales Agreement (Not in totals)	—	—	—	—	—	—	(96.7)
PL 480, Title III— Voluntary Relief	—	—	—	—	0.1	0.2	0.7
Ex-Im Bank Long-Term Loans	100.0	—	—	—	—	—	—
TOTAL ECONOMIC	139.7	8.0	-1.9	13.2	4.5	7.4	89.2
Grants	39.7	8.0	-1.9	13.2	4.5	7.4	24.0
Loans	100.0	—	—	—	—	—	65.2

	1957	1958	1959	1960	1961	Total 1950-1961
<i>Mutual Security Program</i>	11.7	21.3 ^b	16.2 ^b	10.5 ^b	8.3 ^b	143.7 ^{b,c}
ICA	11.7	21.3 ^b	7.2 ^b	7.9 ^b	8.3 ^b	132.1 ^{b,c}
Technical Cooperation	7.0	6.1	6.0	6.5	5.8	49.1 ^c
Other ICA	4.7	15.2	1.2	1.4	2.5	83.0 ^c
Development Loan Fund	—	—	9.0	2.6	—	11.6
<i>Other Economic Assistance</i>	1.3	5.0	47.5	60.1	17.2	309.5
PL 480, Title I, Planned for Grants and Loans	—	2.2	34.2	9.6	15.8	139.3
Sales Agreement (Not in totals)	—	—	(40.3)	(11.3)	(19.7)	(168.0)
PL 480, Title III— Voluntary Relief	1.3	1.0	1.4	0.7	1.4	6.7
Ex-Im Bank Long-Term Loans	—	1.8	11.9	49.8	—	163.5
TOTAL ECONOMIC	13.0	26.3 ^b	63.7 ^b	70.6 ^b	25.5 ^b	453.2 ^{b,c}
Grants	12.3	8.0 ^b	22.8 ^b	10.3 ^b	16.6 ^b	180.7 ^{b,c}
Loans	0.7	18.3	40.9	60.3	8.9	272.5

^a Marshall Plan aid channeled through Netherlands.

^b Excludes World Wide Malaria Eradication Program in Indonesia of \$2.7 million for FY 1958; \$3.2 for FY 1959; \$3.3 for FY 1960 and \$7.5 for FY 1961.

^c Sums of individual years may be larger than totals for 1950-1961 because ICA totals are on a "net" basis (funds appropriated for each year plus or minus reobligations or deobligations of prior years funds) whereas data for individual years 1955-1961 are on a "funds" basis (obligations only from appropriations for that year and do not reflect reobligations or deobligations of prior years funds).

Source: Agency for International Development, Office of Statistics and Reports.

APPENDIX E

METHOD OF ESTIMATING FOREIGN EXCHANGE GAINS AND LOSSES FROM PROPOSED ESTATE RUBBER PROGRAM

Recommendation 5 in Chapter VI proposed a program for slaughter-tapping of estate rubber trees and replanting the slaughter-tapped areas with high-yielding trees in the year after slaughter-tapping. The estimates of the foreign exchange gains and losses of such a program, presented in Table VI-1, were derived as described below.

It was assumed that the program would be carried out by slaughter-tapping and replanting the areas with the oldest trees first, subject to the constraint that no more than 50,000 hectares would be slaughter-tapped in a year. This limit was imposed because it is assumed that there is not enough trained manpower to replant a larger area with high-yielding clonal material in a single year, and it would involve loss to slaughter-tap areas in one year that cannot be replanted in the following year. The assumed age distribution of trees is shown in the first two columns of Table E-1 below and the assumed slaughter-tapping schedule is shown in the latter two columns.

Table E-1

AREA OF RUBBER ESTATES WITH TREES AGED 26 YEARS AND
MORE, AND PROPOSED SLAUGHTER-TAPPING SCHEDULE

<i>Area</i> (hectares)	<i>Assumed average</i> <i>age of trees</i> <i>in Year 1^a</i>	<i>Slaughter-tapping schedule</i>	
		<i>Years</i>	<i>Area</i>
150,000	38	1, 2 and 3	50,000 per year
25,000	34	4	25,000
25,000	33	4	25,000
25,000	32	5	25,000
25,000	31	5	25,000
25,000	30	6	25,000
10,000	29	7	10,000
10,000	28	8	10,000
10,000	27	9	10,000
10,000	26	10	10,000

^a Based on *Rubber Statistics*, published by Central Bureau of Statistics, Government of Indonesia, 1960.

To estimate the yield from slaughter-tapping, it is necessary to know the average ages of trees in an area when it is slaughter-tapped because that determines their average yield. These average ages were readily determined from the ages in Year 1 and the year when slaughter-tapping is scheduled.

Slaughter-tapping yields 1½ times as much rubber as normal tapping, so that the *additional* yield is half the normal yield. For purposes of the present estimates, it was assumed that the additional yield is obtained for one year. The average normal yields per hectare for trees of different ages and the average additional yields derived from them are shown in Table E-2 below.

Table E-2
YIELD OF ESTATE RUBBER TREES
(Kilograms per hectare)

<i>Average age of trees</i>	<i>Normal yield</i>	<i>Additional yield from slaughter-tapping</i>
35 years	500	250
36 years	450	225
37 years	400	200
38 years	350	175
39 years	300	150
40 years	250	125
41 years and over	0	0

The additional output of rubber from slaughter-tapping in any year was obtained by multiplying the number of hectares of trees of a given age, slaughter-tapped in that year, by the assumed additional yield per hectare for trees of that age. The results are shown in the first column of Table E-5, below.

Losses from Slaughter-Tapping

The loss of output from slaughter-tapping and cutting trees down is the yield that they would have had if their productive lives had not been ended to make way for higher-yielding trees. This foregone output begins in the year after slaughter-tapping and continues throughout the productive life of the trees. It was computed separately for each area having trees that would have attained a given average age in a given year. The hectareage of each such area, shown in the second column of Table E-3, was multiplied by the normal yield that the displaced trees would have attained had they not been cut down, shown in Table E-2 above. The results in each year, for each such area, are shown in the body of Table E-3. The total output foregone in each year is shown in the last line, and is carried to the second column of Table E-5.

Appendix Table E-3

GROSS LOSSES OF RUBBER OUTPUT RESULTING FROM PROPOSED SLAUGHTER-TAPPING

Year of slaughter- tapping	Acreage slaughter- tapped (thous. hect.)	Age when slaughter- tapped	Output Foregone in Year Indicated (in thous. kilograms)										
			1	2	3	4	5	6	7	8	9	10	
1	50	38	—	15,000	12,500	0	0	0	0	0	0	0	0
2	50	39	—	—	12,500	0	0	0	0	0	0	0	0
3	50	40	—	—	—	0	0	0	0	0	0	0	0
4	25	37	—	—	—	—	8,750	7,500	6,250	0	0	0	0
4	25	36	—	—	—	—	10,000	8,750	7,500	6,250	0	0	0
5	25	36	—	—	—	—	—	10,000	8,750	7,500	6,250	0	0
5	25	35	—	—	—	—	—	11,250	10,000	8,750	7,500	6,250	0
6	25	35	—	—	—	—	—	—	11,250	10,000	8,750	7,500	6,250
7	10	35	—	—	—	—	—	—	—	10,000	8,750	7,500	6,250
8	10	35	—	—	—	—	—	—	—	4,500	4,000	3,500	3,000
9	10	35	—	—	—	—	—	—	—	—	4,500	4,000	3,500
10	10	35	—	—	—	—	—	—	—	—	—	4,500	4,000
Total	315		0	15,000	25,000	0	18,750	37,500	43,750	37,000	31,000	25,750	25,750

Yield of New Trees

The new, high-yielding trees yield two to four times as much, after ten years, as the low-yielding trees. They do not all approach maturity at the same rate, however. In the present estimates, we have assumed that one-third of them begin producing in their sixth years (i.e., after they are five years old), another third begin in their seventh years, and all are producing in their eighth years. Since an area is replanted in the year after it is slaughter-tapped, an area slaughter-tapped in Year 1, while not reaching full production until Year 11, begins producing in Year 7. We have made the conservative assumption that the replanted areas yield 189 kilograms per hectare in the sixth year of life of the new trees, 378 kilograms per hectare in the seventh year, and 567 kilograms per hectare in the eighth and ninth years. The outputs from each area in a given year and the total output for each of the first ten years are shown in Table E-4, and are carried to Table E-5.

Table E-4

OUTPUT FROM PLANTING OF HIGH-YIELDING TREES IN FIRST TEN YEARS

<i>Year of replanting</i>	<i>Area replanted (thous. hect.)</i>	<i>Years 1 to 6</i>	<i>Year 7</i>	<i>Year 8</i>	<i>Year 9</i>	<i>Year 10</i>
2	50	0	9,450	18,900	28,350	28,350
3	50	0	0	9,450	18,900	28,350
4	50	0	0	0	9,450	18,900
5	50	0	0	0	0	9,450
6	50	0	0	0	0	0
7 to 10	55	0	0	0	0	0
Total	315	0	9,450	28,350	56,700	85,050

Value of Gains and Losses

The additions to output from slaughter-tapping and from new trees and the losses from foregone output of old trees, expressed in weight of output, are brought together in the first three columns of Table E-5, and net gain or loss in each year is shown in the fourth column. These output gains and losses were then converted into money values, expressed in millions of dollars, in accordance with the price schedule shown in the fifth and sixth columns of the table.

Appendix Table E-5

ESTIMATED GAINS AND LOSSES IN FIRST TEN YEARS OF RECOMMENDED RUBBER REPLANTING PROGRAM

Year	Weight in thousand kilograms			Net Gain or Loss	Price		Value in thousands dollars			
	Effect of slaughter-tapping Added yield	Loss	Yield of new trees		¢ per lb.	\$ per 1000 kilo	Effect of slaughter-tapping Added yield	Loss	Yield of new trees	Net Gain or Loss
1	8,750	0	0	+ 8,750	27	595.24	5,208	0	0	+ 5,208
2	7,500	15,000	0	- 7,500	26	573.20	4,299	8,598	0	- 4,299
3	6,250	25,000	0	-18,750	25	551.15	3,445	13,779	0	-10,334
4	11,625	0	0	+11,625	24	529.10	6,151	0	0	+ 6,151
5	11,875	18,750	0	- 6,875	23	507.06	6,021	9,507	0	- 3,486
6	6,250	37,500	0	-31,250	22	485.01	3,031	18,188	0	-15,157
7	2,500	43,750	9,450	-31,800	21	462.97	1,157	20,254	4,375	-14,722
8	2,500	37,000	28,350	- 6,150	20	440.92	1,102	16,314	12,500	- 2,712
9	2,500	31,000	56,700	+28,200	20	440.92	1,102	13,669	25,000	+12,433
10	2,500	25,750	85,050	+61,800	20	440.92	1,102	11,354	37,500	+27,248

Comment on General Method

It should be noted that the slaughter-tapping schedule on which these estimates are based was not determined by any rigorous process, such as maximizing the present value of the monetary gain or the sum of the annual gains. The accuracy of the figures used is not great enough to justify the additional effort that such a calculation would have required.

Among the inaccuracies is the fact that the assumed ages of trees, besides being only approximations based on grouped data in the original source, relate to 1959. No adjustment has been made for the fact that the trees would be at least three years older when the program begins. Failure to make this adjustment, however, has offsetting effects, since it cause overestimation of both the output gained by slaughter-tapping and the output lost by destruction of trees. It is believed that the net error is not serious relative to other unavoidable sources of error in the estimates.

APPENDIX F

PROPORTION OF DOMESTIC SAVING ABSORBED BY ADDITIONS TO INVENTORIES

In Chapter IV, a general formula was used to derive the proportion of current domestic saving absorbed by investment in additions to inventories from two other ratios: (1) the ratio of inventory investment to total investment and (2) the ratio of current domestic saving to total current saving (i.e., domestic saving plus the net deficit on current international account), when the government budget is balanced. This formula was derived from a fundamental national accounting identity:

total saving plus taxes equals total investment plus government expenditure. The derivation is as follows:

$$\text{Inventory investment} = \frac{\text{Inventory investment} \times (\text{Total invest.} + \text{Gov't expend.})}{\text{Total investment} + \text{Gov't expenditure}}$$

$$\text{Domestic saving} = \frac{\text{Domestic saving} \times (\text{Total saving} + \text{Taxes})}{\text{Total saving} + \text{Taxes}}$$

Dividing the first equation by the second, we get:

$$\frac{\text{Inventory investment}}{\text{Domestic savings}} = \frac{\frac{\text{Inventory investment} \times (\text{Total invest.} + \text{Gov't expend.})}{\text{Total investment} + \text{Gov't expenditure}}}{\frac{\text{Domestic saving} \times (\text{Total saving} + \text{Taxes})}{\text{Total saving} + \text{Taxes}}}$$

Since total investment + government expenditure = Total saving + taxes, it follows that:

$$\frac{\text{Inventory investment}}{\text{Domestic saving}} = \frac{\frac{\text{Inventory investment}}{\text{Total investment} + \text{Gov't expenditure}}}{\frac{\text{Domestic saving}}{\text{Total saving} + \text{Taxes}}}$$

If, in addition, government expenditure = taxes, then total investment = total saving, and it follows that:

$$\frac{\text{Inventory investment}}{\text{Domestic saving}} = \frac{\frac{\text{Inventory investment}}{\text{Total investment}}}{\frac{\text{Domestic saving}}{\text{Total saving}}}$$

This is the formula used in Chapter IV.